Asset Management Plan

First Edition
October 31, 2017
SAW Grant No. 1276-01

Technical Assistance Provided By:

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Asset Management Plan

City of St. Joseph SAW Grant No. 1276-01

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Introduction

The City of St. Joseph, Michigan's Asset Management Plan (AMP) for its Wastewater and Storm Water systems, has been completed using the funding made available through the SAW Grant Program (Grant No. 1276-01). The City's AMP is a snapshot in time as of October 2017. The AMP provides a summary of each task completed during the SAW Grant program (November 2014 through October 31, 2017). Asset Management Plans are intended to be updated regularly, to evolve as additional data is collected and to be a reminder that Asset Management is a continuous practice that doesn't end with this report.

Recommendations have been included in each section for future evolution of this plan, specifically addressing the five major components of an AMP (Asset Inventory and Condition, Criticality of Assets, Level of Service, Revenue Structure and Capital Improvement Planning), plus a list of the critical assets for each utility system. An Executive Summary of this document was prepared and submitted to the Michigan Department of Environmental Quality on October 27, 2017. The Executive Summary was prepared according to the guidelines provided by the MDEQ.

Please note that while the SAW Grant covered activities related to the preparation of this asset management plan for the City's wastewater and storm water systems, the City of St. Joseph invested its own resources to expand the AMP to include the City's water distribution system and roadway network so that all four major asset classes within the public right-of-way are covered under the initial version of this Asset Management Plan.

Persons interested in viewing the complete Asset Management Plan and all the attachments should contact:

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Executive Summary

In December 2013, the City of St. Joseph applied for a Storm water, Asset Management and Wastewater (SAW) Grant. The SAW Grant program was offered by the State of Michigan when the State Legislature recognized the need for communities to inventory, assess and better manage their storm water and wastewater infrastructure. The SAW Grant program replaced the under-utilized S2 Grant Program. The

City's SAW Grant application focused on the asset management area of the program with the goal of completing an asset management program (AMP) for all of the City's infrastructure in the right-of-way. The City SAW application included the integration of road and water distribution system infrastructure as part of the AMP even though those items were not eligible for grant funding. The proposed AMP development activities were organized into ten categories listed below.

1) Asset Management Policy Development
2) Initial Collection of Existing Data/Base Plan Development (Geographical Information System (GIS))
3) Global Positioning System (GPS) Structure (GIS)
4) Condition Assessment
5) Build the GIS System
6) GIS Implementation
7) Asset Management Evaluation
8) Develop Capital Improvement Plan (CIP)
9) Rate and Fund Management
10) Selection and Implementation of Computerized Maintenance Management System (CMMS) Software

When the SAW Grant application was submitted, the two main goals of the AMP were to develop a long-term capital improvement plan (CIP) and implement a computerized maintenance management system (CMMS) to more effectively operate and manage City infrastructure in the right-of-way. The City has succeeded in accomplishing both of those goals.

The City was awarded a SAW Grant in October 2014 and retained Wade Trim in November 2014 to provide professional services for the grant; the grant expires on October 31, 2017. The City's application was approved for $1,110,830 with a City match of 10%. The anticipated SAW Grant funding summary as of the date of the grant award is detailed in the following table.

SAW Grant Application – AMP Development- Cost Summary	
Project Planning Costs	$ 7,500
Total Wastewater & Stormwater AMP Cost	$ 1,103,330
Total SAW Grant Cost	$ 1,110,830
MDEQ Grant Total (90% of Total SAW Grant Cost)	$ 999,747
City of St. Joseph Grant Match (10% of Total SAW Grant Cost)	$ 111,083
Water Distribution & Roads – Ineligible Costs	$ 98,300
Total AMP Cost	$ 1,209,130
Total City Cost	$ 209,383

Please note that the numbers presented in the table above represent the maximum amounts, and final accounting of the grant has not been completed as of the date of this report.

A summary of the key dates related to the SAW Grant activity are presented below for reference:

1. Date of Application – December 2, 2013
2. Notice of Grant Application Approval – September 3, 2014
3. Date of Commission Action to accept Grant – November 24, 2014
4. Start Work – January 2015
5. Date of MDEQ Rate Structure Approval – February 13, 2017
6. Date of Certificate of Completeness – October 31, 2017

Asset Management Plan

1. Introduction

Asset Management (AM) is not just a buzz word or phrase, it's a forward thinking, data driven approach to managing assets to maximize the useful life of an asset while providing a quality level of service to the users of that asset at the lowest required cost over the life of the asset. Asset Management can apply to an asset, however in this report it applies to the City's assets within the public right-of-way. The City of St. Joseph has taken the first steps by using the State of Michigan SAW Grant program to create an Asset Management Plan (AMP) for its wastewater (sanitary) and storm water systems. While the SAW Grant program provided a grant for the creation of an AMP for wastewater and storm water, the City of St. Joseph invested its own resources to expand the AMP to include their public water distribution system and roadway network. As part of this process, the City commenced drafting an AM Policy that will be brought before the City Commission in the future for consideration and direction.

2. Asset Inventory and GIS System Development

The first step that the City and Wade Trim took in the AMP development process was to create a comprehensive inventory of City assets in the right-of-way. Much of the initial information was available and compiled from previous City projects. A geographical information systems (GIS) file had been developed for the storm water system as part of a 2010 total maximum daily loading (TMDL) grant, the water distribution system valves and hydrant information were pulled from the 2011/2012 valve turning and hydrant assessment programs, and road network data was pulled from County and State sources. Record drawings from recent construction projects were also used to improve the accuracy of the information in the GIS system to the extent possible. However, GIS quality data on the older portions of the wastewater collection/sanitary sewers was not available. During the Summer of 2015, sanitary sewer information was collected in the field by the Assistant City Engineer and Engineering Department Summer Intern.

In round figures, the City owns 43 miles of road, 34 miles of storm sewer gravity mains, 48 miles of sanitary sewer gravity mains, 4 miles of sanitary sewer force mains, 10 wastewater lift stations, 62 miles of water mains, and 465 fire hydrants. The City also owns a 1.5 million-gallon elevated water tank and a Water Plant rated to treat up to 16 million gallons of water per day. The water tank and Water Plant were not included in the scope of the AMP which focused predominantly on infrastructure in the public right-of-way.

Below is a detailed description of the Asset Inventory task, starting with the GIS data acquisition methodology, the organization of the City's utility GIS system, the asset nomenclature used in the GIS system, and the attribute data that was populated in the GIS system.

GIS Data Acquisition

Storm System

A TMDL grant project was completed by the engineering firm Fishbeck, Thompson, Carr, & Huber (FTC&H) in 2010. One result from that project was a geodatabase system that followed the ESRI local government model and included multiple feature classes for pipe and storm system structures. Since the information on the storm sewer system in the geodatabase was primarily complete, it was used as a starting point for the SAW Grant project. Wade Trim updated the data using an inventory of available record drawings and as-builts completed in the City of St. Joseph. This included infrastructure projects as well as road reconstruction projects. Project files were available from 1999 to 2014. (Beginning in 2005, the City required all record drawings to be in State Plane Coordinates.)

Sanitary System

In 2007 the City of St. Joseph created a CAD file (.dwg) based upon the City's sanitary sewer atlas. The CAD file was converted to a geodatabase, and provided the initial Geographic Information System (GIS) framework. The resulting geodatabase was incomplete and marginally accurate, but provided a general context of where the pipe systems were located. As part of the project scope, a City of St. Joseph Engineering Department crew collected the GPS coordinates of the sanitary sewer structures and manholes. Following the completion of the survey, pipe data was revised to create connections between the collected GPS points. Data was further confirmed and updated using available record drawings and as-builts completed between 1999 to 2014. A scanned copy of the sewer atlas was also used as a reference as updates were made.

Water System

WACHS Water Services conducted a Valve Turning Program, Hydrant Assessment and Unidirectional Flushing Program, and the data was uploaded in 2015. The resulting geodatabase contained feature classes for hydrants, water mains, and system valves. This information was combined with data gleaned from the City's scanned water department atlas. The City of St Joseph provided further updates in the form of a Water-Markup document. Data was further confirmed and updated using available record drawings and as-builts completed between 1999 to 2014.

Road System

Two feature classes were acquired as part of the transportation geodatabase. A street shapefile was provided by Berrien County. This shapefile contained several complete attribute fields, including address locater data and road classification. The Southwest Michigan Planning Commission (SWMPC) completed a road rating of the City street network in 2015 and previous years. This information was imported into the City GIS from Roadsoft software and served as the basis for a PASER rating feature class. Along with PASER rating data, attribute data for this feature class included ownership information and road surface type.

GIS Data Organization

Four geodatabases were used to organize the data: storm, sanitary, water, and transportation. Each geodatabase consisted of a single feature dataset, except for sanitary, which included two feature datasets: a sanitary storm feature dataset and a combined sewer feature dataset. The ESRI local government model was used as a foundation for the organization for sanitary, storm, and water systems. Over the course of several meetings, the model was reviewed and customized to meet the City's needs. Components of each system, such as pipes, manholes, and valves, were recorded as individual feature classes within the respective feature datasets (See **Figures 1, 2, 3, and 4**). Within the street facilities feature dataset, there are two feature classes (See **Figure 5**). The 'Street' feature class contains road centerline information and address information for every road segment. The 'StreetPASER' feature class includes PASER Rating data that was completed in 2015.

GIS Asset Nomenclature

Each asset in the sanitary, storm, and water systems was assigned a unique facility identification number. The facility identification number follows the form of "Quadrant – Utility Code – Number". **Figure 6** displays the four quadrants of the City; the quadrant the asset is in determines the first part of the facility ID. Each feature class type has its own Utility Code. Utility codes are shown in **Tables 1, 2, and 3** below. The quadrant letter and utility code are followed by a number, giving each asset a unique ID. Each asset is also assigned a range of numbers so that number values are not repeated between assets. The assigned range also accounted for potential future additions of assets. Note that while there are assets for Abandoned Lines and Abandoned Points in the sanitary and water systems, they were deliberately not assigned a unique id, nor a utility code. An example of a facility ID for a storm manhole located in the NE quadrant is NE-STMH-20293". An example of a facility ID for a sanitary gravity main located in the SE quadrant is "SE-SSM-12115". Streets were not assigned a unique facility identification number.

Figure 1: St. Joseph Utilities Geodatabase Framework (Combined)

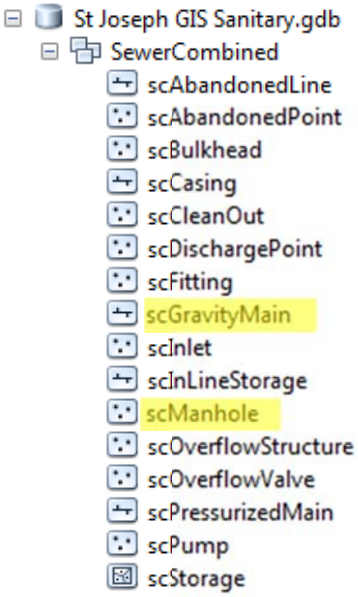


Figure 2: St. Joseph Utilities Geodatabase Framework (Sanitary)

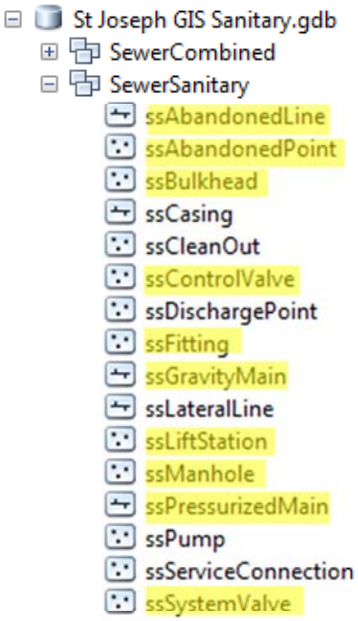


Figure 3: St. Joseph Utilities Geodatabase Framework (Storm)

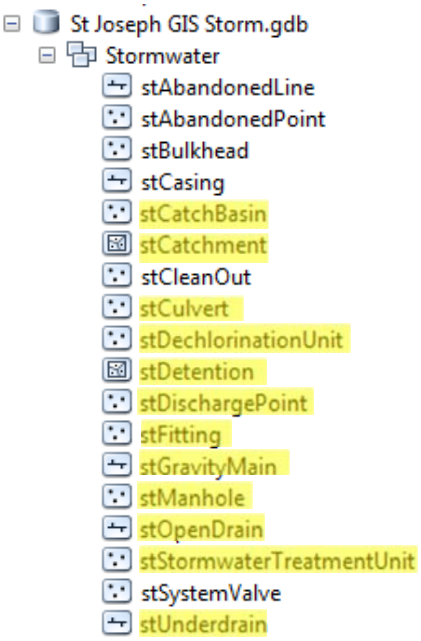


Figure 4: St. Joseph Utilities Geodatabase Framework (Water)

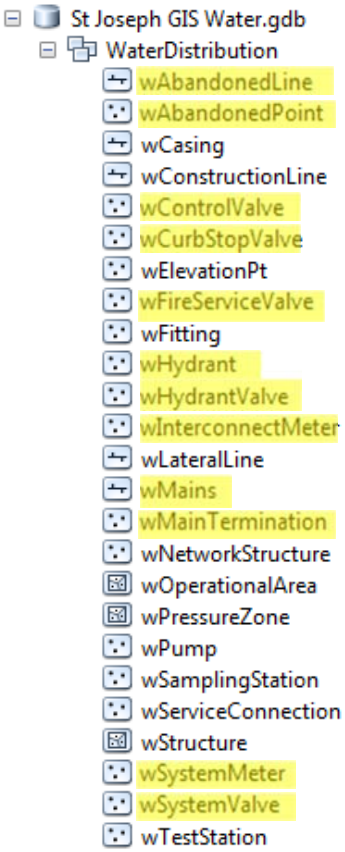


Figure 5: St. Joseph Utilities Geodatabase Framework (Transportation)

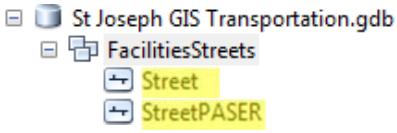
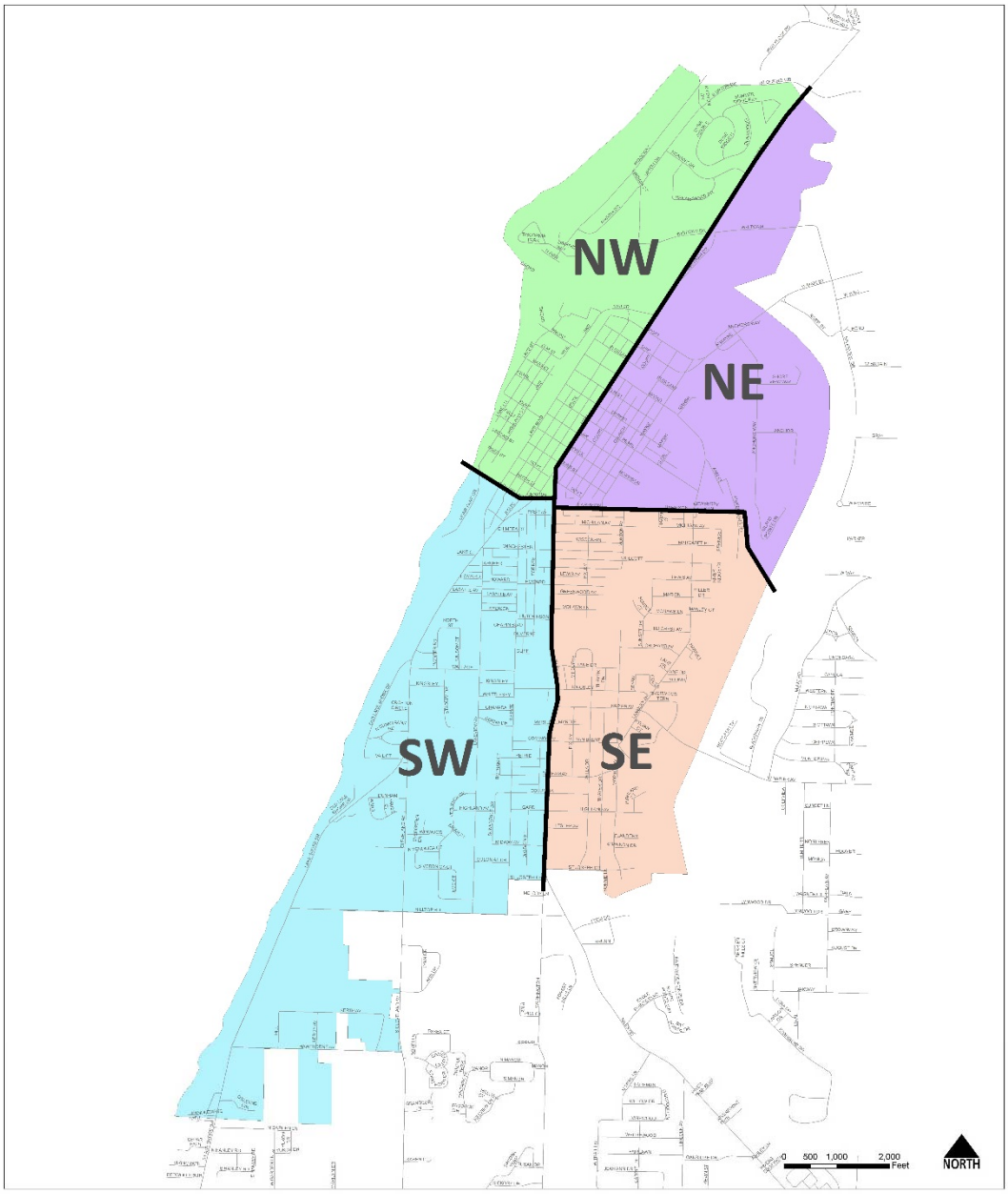


Figure 6: City of St. Joseph Utility Quadrants



Utility ID Quadrants

Facility ID Example:

SW-STMH-20894

Quadrant-Utility Code-Number

Sanitary System
Sewer Combined

Gravity Mains	SCM
Manholes	SCMH

Sanitary System
Sewer Sanitary

Abandoned Line	(na)	Manhole	SSMH
Abandoned Point	(na)	Pressurized Main	SSFM
Bulkhead	SSBH	System Valve	SSSV
Control Valve	SSCV		
Fitting	SSFT		
Gravity Main	SSM		
Lift Station	SSLS		

Storm System
Stormwater

Catch Basin	STCB	Gravity Main	STM
Catchment	STCA	Manhole	STMH
Culvert	STCV	Open Drain	STOD
Dechlorination Unit	STDU	Stormwater Treatment Unit	STTU
Detention	STD		
Discharge Point	STDP	Underdrain	STUD
Fitting	STFT		

Table 1: Sanitary System Feature Class Codes and Ranges

Feature Class Codes and Ranges						
Sanitary System: Sewer Combined				Sanitary System: Sewer Sanitary		
Asset	**Code**	**Range**		**Asset**	**Code**	**Range**
Manholes	SCMH	30001 - 31000		Abandoned Line	(na)	(na)
Gravity Mains	SCM	31001 - 32000		Abandoned Point	(na)	(na)
				Manhole	SSMH	10001 - 11500
				Gravity Main	SSM	11501 - 13000
				Pressurized Main	SSFM	13001 - 13100
				Control Valve	SSCV	13101 - 13150
				System Valve	SSSV	13151 - 13200
				Bulkhead	SSBH	13201 - 13250
				Lift Station	SSLS	13251 - 13300
				Fitting	SSFT	40001 - 40100

Table 2: Storm System Feature Class Codes and Ranges

Feature Class Codes and Ranges		
Storm System: Stormwater		
Asset	**Code**	**Range**
Discharge Point	STDP	20001 - 20200
Manhole	STMH	20201 - 21000
Catch Basin	STCB	21001 - 22500
Fitting	STFT	22501 - 23000
Gravity Main	STM	23001 - 25500
Underdrain	STUD	25501 - 25600
Detention	STD	25601 - 25700
Open Drain	STOD	25701 - 25800
Culvert	STCV	25801 - 25900
Catchment	STCA	25901 - 26000
Stormwater Treatment Unit	STTU	26001 - 26100
Dechlorination Unit	STDU	26101 - 26200

Table 3: Water System Feature Class Codes and Ranges

Feature Class Codes and Ranges		
Water System: Water Distribution		
Asset	**Code**	**Range**
Abandoned Line	(na)	(na)
Abandoned Point	(na)	(na)
Hydrant	WH	00001 - 00599
System Valve	WSV	00600 - 01599
Hydrant Valve	WHV	01600 - 01999
Control Valve	WCV	02000 - 02049
Fire Service Valve	WFV	02050 - 02999
Curb Stop Valve	WCS	03000 - 03049
Interconnect Meter	WIM	03050 - 03099
System Meter	WSM	03100 - 03999
Water Main	WM	04000 - 06999
Water Main Termination	WMT	00001 - 00011

GIS Attribute Data Collection

For most assets, attribute data collected included the installation date, material, and diameter. Other attributes based on the ESRI local government model were also populated, including who owns and manages the asset and when the data was last updated. Additional attribute information for certain assets were included either because it was readily available, or the City determined that it was necessary to dedicate the time to researching and populating the data. For the sanitary system, attributes were updated using record drawings, the City's sewer atlas, and comments from the City based on general knowledge of the system. As for the storm system, when the geodatabase was created by FTC&H in 2010, the attributes were largely completed. For this reason, only recent record drawings were used to update any changes that were made to the system in recent years. Similarly, only minor changes were made to the water system as information was made available from record drawings or comments from the City. For the road system, the 'StreetPASER' feature class includes attributes such as current and historical PASER rating data, pavement surface type and sub type, ACT 51 and NFC classifications, ownership, number of lanes, segment length, and last treatment.

Wastewater System Inventory

A summary of the wastewater system assets by pipe size, including the number of segments and total length is presented below in **Table 4**.

Table 4 – Sanitary Sewer Summary

Diameter	Number of Segments	Total Length	Comments
4"	3	953'	
6"	15	1,224'	
8"	151	26,401'	
10"	502	104,520'	
12"	284	56,911'	
15"	64	13,803'	
18"	101	22,122'	Major
21"	3	690'	Major
24"	83	16,677'	Major
30"	4	812'	Major
36"	29	4,560'	Major
Diameter Unknown	28	5,248'	
Force Mains	43	21,177'	

It should be noted that the City considers the large diameter interceptor pipes, generally 18-inch through 36-inch, to be major assets of the wastewater collection system. It should also be noted

that not all 18-inch sanitary sewer within the collection system is considered to be an interceptor.

The City of St. Joseph also maintains and operates 10 wastewater lift stations. A condition assessment was performed on each lift station during the SAW grant program. **Table 5** presents the City's lift stations alphabetically (along with those lift stations tributary to the primary). Each lift station is presented by name with the approximate number of dwelling units, hotel units, and businesses served by each station and the overall condition rating (from 1 to 5 with 1 being very good and 5 being very poor) of each lift station.

Table 5 – Sanitary Lift Stations

Name	Total Dwelling Units	Total Hotel Units	Total # of Businesses	Overall Condition Rating
Dunham	119	82	1	4 (Poor)
Edgewater	208	92	11	2 (Good)
Fairways (Tributary to Edgewater)	7	0	0	2 (Good)
North Pier (Tributary to Edgewater)	14	0	3	4 (Poor)
Whitwam (Tributary to Edgewater)	101	92	1	3 (Fair)
Hawthorne	104	5	29	3 (Fair)
Alco (Tributary to Hawthorne)	96	0	0	5 (Very Poor)
Island Point	61	0	1	2 (Good)
Vine Street	173	0	2	2 (Good)
Lake Street (Tributary to Vine)	28	0	0	4 (Poor)

As part of the SAW Grant, the City storm water collection system was inventoried in detail. A summary of the storm water system assets by pipe size, including the number of segments and total length is presented in **Table 6**. Please note the City also maintains an open channel ravine system that serves as the primary carrier of storm water for a major portion of the City during rain events.

Table 6 – Storm Sewer Summary		
Diameter	Number of Segments	Total Length
4"	1	20
6"	27	1,657'
8"	65	2,362’
10"	280	11,820'
12"	844	54,828'
15"	111	15,919'
18"	136	17,723'
21"	20	3,875'
24"	146	17,680'
27"	4	539'
30"	44	5,690'
36"	38	6,914'
42"	6	1,639'
48"	6	2,340'
60"	8	492'
Diameter Unknown	72	5,659'

A summary of the City’s water distribution system assets, by pipe size with the length of each pipe size within the distribution system is presented in **Table 7** below:

Table 7 – Water System Summary		
Diameter	Number of Segments	Total Length
1"	2	61'
2"	41	5,077'
3"	5	999'
4"	183	26,290'
6"	756	96,556'
8"	755	71,987'
10"	276	43,030'
12"	399	39,020'
14"	2	737'
16"	39	6,349'
20"	45	9,034'
24"	3	37'
30"	1	86'
Diameter Unknown	31	160'

3. Condition Assessments (Determination of Likelihood of Failure)

The City used the SAW grant to collect a significant amount of condition data on its wastewater and storm water system. The condition data was used to determine the likelihood of failure of each asset evaluated. The City Engineering Department collected the first set of updated data by using GPS technology to locate all of the manhole structures on the City's wastewater system. Through an independent contractor (Redzone Robotics), approximately 140,000 feet of sanitary sewer (roughly 55% of the system) and 23,000 feet of storm sewer (roughly 12.5 % of the system) along with more than 400 system manholes were inspected in accordance with NASSCO's PACP (Pipeline Assessment Condition Program) and MACP (Manhole Assessment Condition Program) guidelines. All of the data collected during the SAW Grant Program has been added to the City's GIS and is organized according to the unique asset identification number.

While only a portion of the system was inspected, the condition assessment data was valuable in helping the City to prioritize necessary improvements and develop programs (i.e. root cutting, sewer lining, etc.) as part of its Capital Improvement Program.

A summary of the coordinated condition assessment completed by the City on portions of all four of its major asset categories – sanitary sewer, storm sewer, water distribution system and road network – is described below.

PACP

In June of 2016, the City hired Redzone Robotics to clean and televise a portion of the City's sanitary sewer system and the City's storm sewer system. In May of 2017, the City extended their contract with Redzone Robotics to collect additional sanitary sewer data with a focus on smaller diameter sewers – 8, 10, and 12-inch in size. All work was performed in accordance with NASSCO's PACP (Pipeline Assessment Certification Program). Work was performed in two phases and included sewers on both systems that were over 20 years old. The data was processed and organized in a database and added to the City's GIS system in the form of a shapefile layer of point defects and quick codes. The database itself was merged into the GIS system for easy recall, sorting and access to the data in a digital format.

Each segment of sewer pipe that was televised was coded in accordance with NASSCO's PACP. The coding for each segment of pipe identified unique features within each pipe segment, including entry manhole ID, water level, pipe type, location of sewer leads, the type and location of any defects noted, and the severity (or extent) of those defects. Structural defects and Operation and Maintenance defects were both noted during the televising of each segment.

The type of defect, severity of each defect, and number of defects was used to rate each segment of the sewer by assigning a quick code to each segment. Defects are rated on a scale of 1 to 5, with 5 being a more severe defect. For example, a small crack or fracture in the sewer

might have a structural defect rating of 1. A broken pipe or hole in the side of the pipe would constitute a more severe rating of 5. The quick code is a 4-digit number that provides a quick summary of the condition of the pipe. The first two numbers in the quick code provide a summary of the highest rated defect (1 through 5) found along a segment and the number of defects at that severity level. The third and fourth numbers in the quick code provide a summary of the second highest rated defects (1 through 5) found along that segment and the number of defects at that severity level. For example, a quick code of 5211 would mean that the segment of pipe had two serious defects rated at a 5, and one defect rated a 1 along that segment of pipe.

Each segment of pipe was rated with a structural quick code, an O&M quick code, and an overall quick code. The overall quick code was used by the City as a measure of the overall condition for each segment of sewer pipe that was televised (i.e., to assess the likelihood of failure of each segment). **Table 8** and **Table 9** provide a summary of the results of the PACP condition assessment. Maps showing the geographic distribution of overall quick code ratings are included in the appropriate **Appendices**.

Table 8 – Sanitary Sewer PACP Condition Summary

Asset	Length (Feet)	Percentage of Total Pipes
Sanitary Sewer Pipes (Total System)	253,920	100%
Sanitary Sewer Pipes (< 20 years old)	74,488	29.3%
Sanitary Sewer Pipes – Attempted for Inspection*	150,610	59.3%

Overall Quick Codes	Actual Inspected Length (Feet)	Percentage of Inspected Pipes
Quick Code: 0 (No Defects)	5,803	4.1%
Quick Code: 1 (Very Good)	1,741	1.2%
Quick Code: 2 (Good)	8,209	5.9%
Quick Code: 3 (Fair)	57,338	40.9%
Quick Code: 4 (Poor)	46,639	33.2%
Quick Code: 5 (Very Poor)	20,582	14.7%
Totals**	140,312	100.0%

*Note: This is the total length of sewer pipes attempted to be inspected by Redzone during the SAW. The actual inspection length is less than the actual pipe length as it was not possible to inspect the entire length of all pipes due to obstructions. This total does not include segments that were determined to be too dirty to televise.

**Note: The total actual inspected length includes inspections completed in 2016 and 2017 as part of the SAW grant and the re-coding of videos obtained prior to the SAW grant.

Table 9 – Storm Sewer PACP Condition Summary		
Asset	Total Length (Feet)	Percentage of Total Pipes
Storm Sewer Pipes (Total System)	181,330	100%
Storm Sewer Pipes (<20 years old)	81,552	45.0%
Storm Sewer Pipes – Attempted for Inspection*	24,753	13.7%

Overall Quick Codes	Actual Inspected Length (Feet)	Percentage of Inspected Pipes
Quick Code: 0 (No Defects)	2,770	12.1%
Quick Code: 1 (Very Good)	1,870	8.2%
Quick Code: 2 (Good)	3,332	14.6%
Quick Code: 3 (Fair)	7,409	32.4%
Quick Code: 4 (Poor)	3,659	16.0%
Quick Code: 5 (Very Poor)	3,808	16.7%
Totals**	22,848	100.0%

*Note: This is the total length of sewer pipes attempted to be inspected. The actual inspection length is less than the actual pipe length as it was not possible to inspect the entire length of all pipes due to obstructions. This total does not include segments that were determined to be too dirty to televise.

**Note: The total actual inspected length includes inspections completed in 2016 and 2017 as part of the SAW grant and the re-coding of videos obtained prior to the SAW grant.

The overall quick code for each asset was used in the City's GIS to represent the likelihood of failure for each asset. For example, if the quick code began with a 1, it was assigned a likelihood of failure score of 1, which is the lowest probability of failure. If the quick code began with a 3, it was assigned a likelihood of failure of 3. These numerical scores were used in the calculation of risk (discussed in more detail in Section 4 – Asset Evaluation (Criticality Determination).

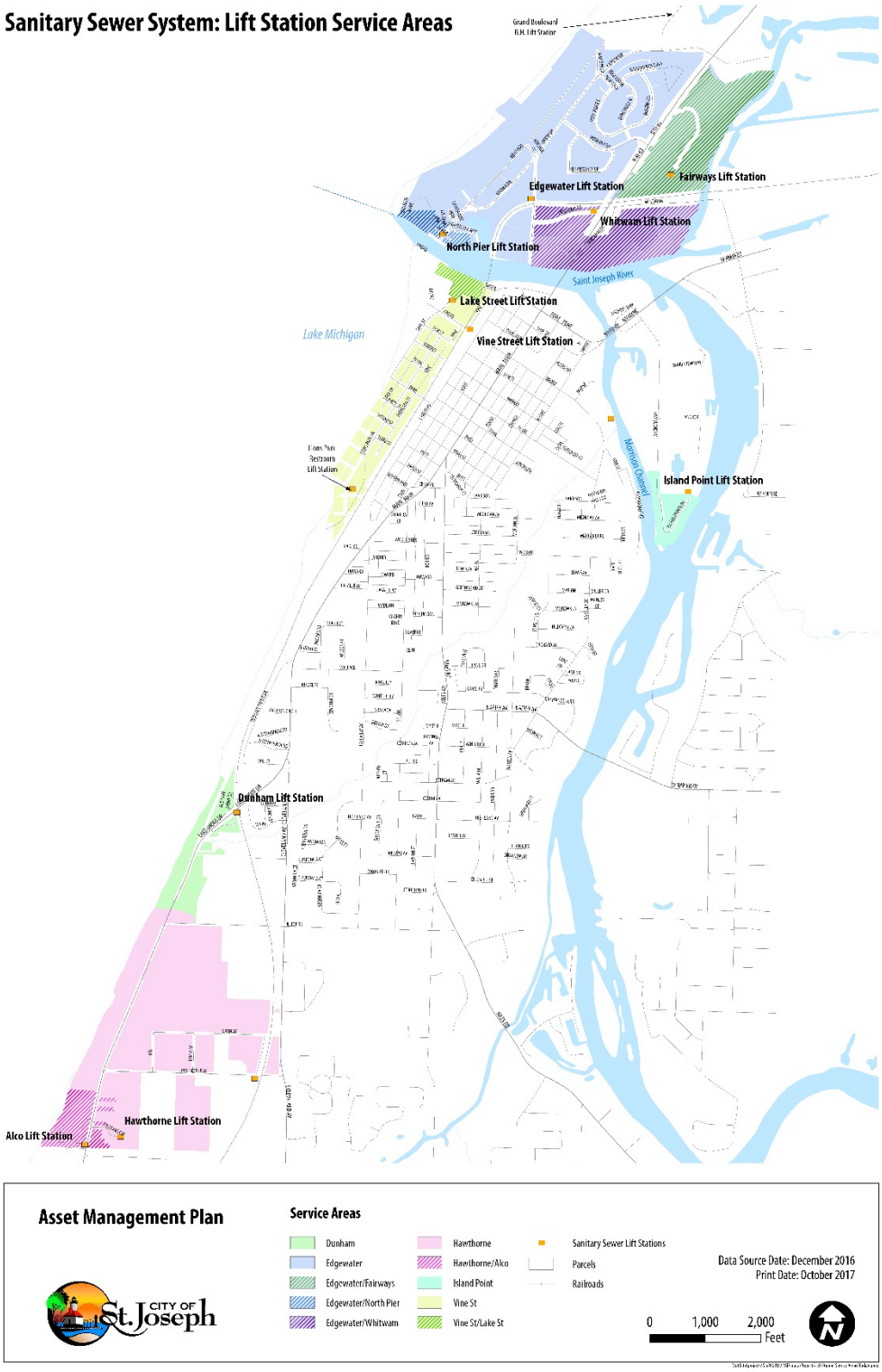
MACP

Concurrent with the PACP data collection on the City's sanitary and storm sewer systems, over 400 manholes across both systems were inspected in accordance with NASSCO's MACP (Manhole Assessment Certification Program). Similar data and defects were recorded in a digital format and incorporated into the City's GIS.

Sanitary Sewer Lift Stations

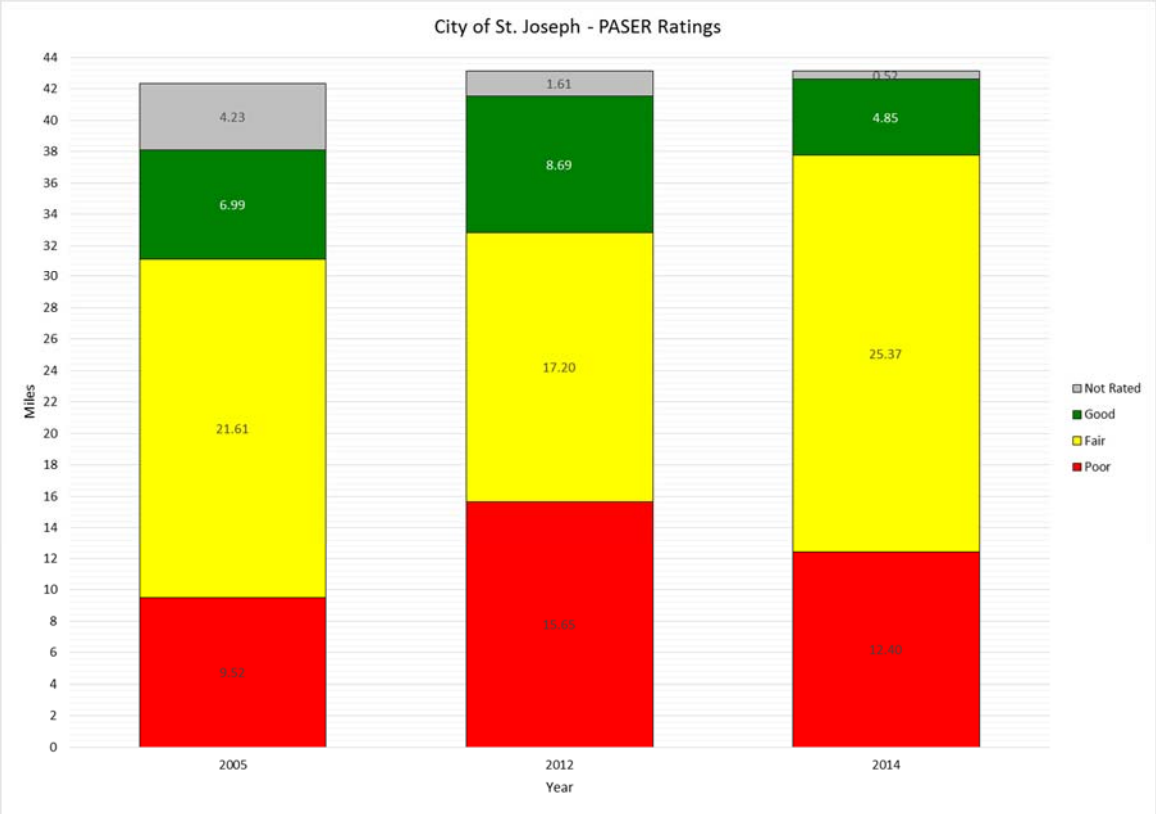
A thorough evaluation and rating of each of the City's 10 lift stations was completed in 2016. Each major component of each lift station was given a condition rating from 1 to 5 with 1 being new and 5 being structurally deficient. An overall condition rating was also provided and is shown previously in **Table 5**. The overall condition rating was used to prioritize the likelihood of failure of these assets. A summary of each of the ratings for each of the ten lift stations, along

with the detail from each evaluation, is included in **Appendix E**. Lift station upgrades and replacements have been included in the Capital Improvement Plan.



PASER Ratings

In 2014, the SWMPC rated the City of St. Joseph roadway network using the widely accepted PASER (Pavement Surface Evaluation Rating) system that has been promoted Statewide and Nationally by the Transportation Asset Management Council. Historical PASER ratings for the City are also available in Roadsoft software.



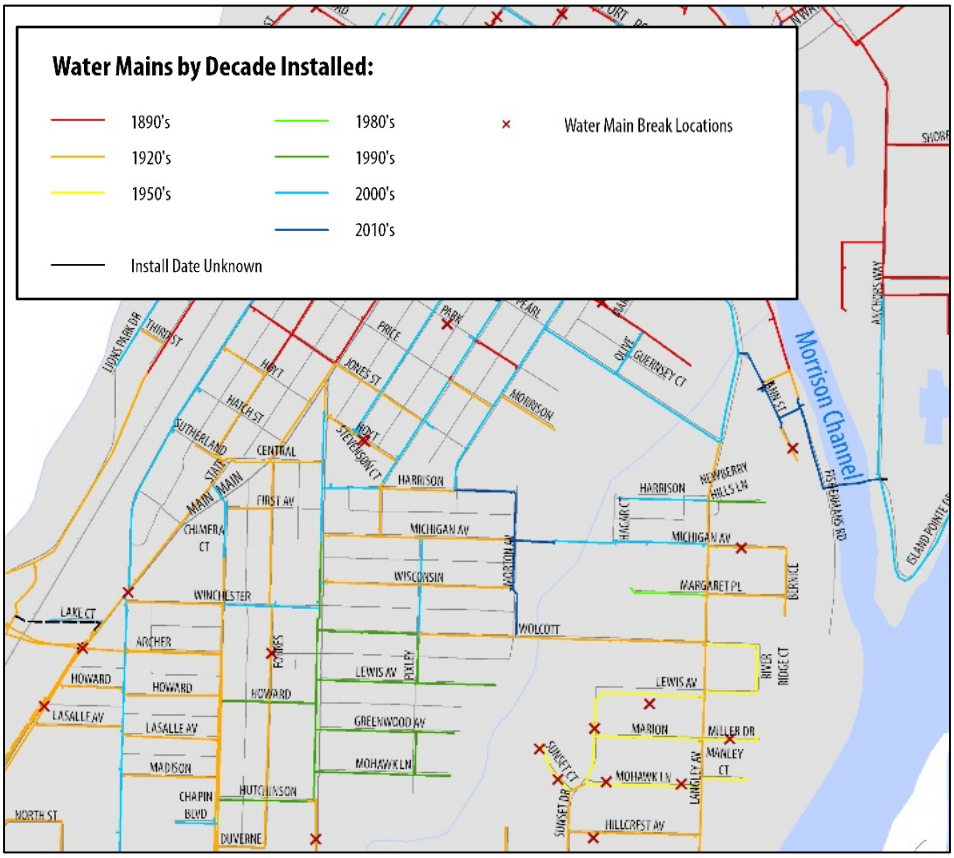
The improvement shown above in the fair rating category/decrease in the poor category from 2012 to 2014 is likely due to the subjectivity of the PASER Rating System rather than actual changes in pavement condition. The general trend suggests that the number of poor roads is increasing, and the number of good roads is decreasing which means that the City is not keeping pace with the necessary road improvements and likely not meeting resident expectations.

A map showing the Road Condition of the City street network based on the most recent PASER Ratings has been included in **Appendix D**.

Water Main Break Information

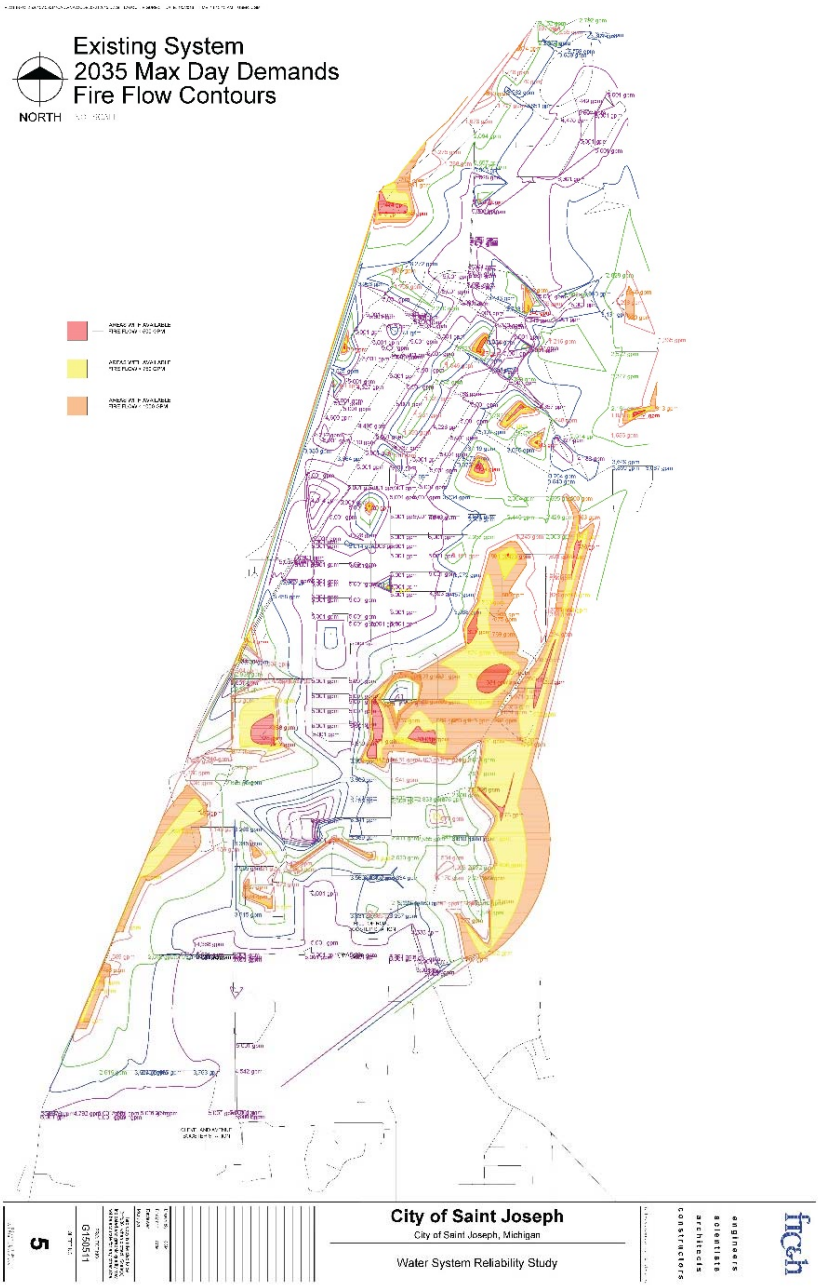
The City has kept written records of water main breaks that have occurred on the system over approximately the past 10 years. The location of each main break was added as a layer to the

City's GIS water system. A sample map showing the age of the water system and the recent water main break history is shown below. A larger version has been included in **Appendix C**.



Water System Pressure/Fire Flow – Reliability Study

The City completed a General Plan and Reliability Study of its Water System (FTCH) in 2016. The study analyzed water use and system pressures throughout the distribution system. Average day, Maximum day, and Maximum day plus fire flow scenarios were run for existing and future scenarios (refer to sample map below). The fire flow scenarios were used as additional condition data to evaluate the City's water system.



Recommendation for Continuous Future Data Collection

Since the City was not able to inspect 100% of its system, additional data should be collected in future years. It is recommended that the City should budget annually to collect additional CCTV data on the sanitary and storm sewer systems. Cleaning and televising portions of the City over several years is a good way to continuously monitor the condition of each system while spreading the cost out over a number of budget cycles.

4. Level of Service Determination

The City of St. Joseph has discussed their desired level of service for the community for over 20 years as it relates to its public infrastructure. In the late 1990's, the City focused its energy and resources to develop a long-term Combined Sewer Overflow control program and to improve fire flows throughout the City. Those initial decisions by the City residents and City Commission were the initial phase of the City's journey to maintain a high level of service related to its wastewater, storm sewer, and water distribution systems. The City currently strives to meet the desired level of service in all four of its major infrastructure systems. While each system is currently functioning in a safe and adequate manner, there are many infrastructure projects that need to be completed on the City waste water, storm sewer, water distribution, and roadway systems.

For nearly 18 years, annual infrastructure programs have been designed and constructed to update the essential utility systems (i.e. wastewater, water and storm water) and street network that are used by the residents, businesses, and visitors each day in the City of St. Joseph.

Summary of Public Involvement during the SAW Grant

The City of St. Joseph has emphasized the importance of public involvement in the SAW Grant program since learning about the grant award. In early 2015, the City provided updates to citizens on its website and in the community newsletters describing the grant program. The City held its first study session with the City Commission on October 15, 2015. At this meeting, the City Commission was provided an overview of the SAW Grant program and discussed the ten key steps (see Page 2) that the City was undertaking. Over the 3-year program, the SAW Grant has been discussed at multiple City Commission Meetings, as well as lengthy Commission Study Sessions that were specifically dedicated to the effort.

In 2017, as part of the capital improvement planning process, the City held three public meetings to discuss the SAW Grant program and the process leading up to the capital improvement planning process. The first meeting was held at the Public Works facility on April 22, 2017. The purpose of the first meeting was to explain to citizens how the City's infrastructure works and provide an introduction to the SAW Grant activities and the four major asset classes (water, sanitary, storm, and roads), as well as the equipment that the City has and uses to maintain these assets such as backhoes, loaders, snow plows, etc.

The Second Public Meeting was held on May 24, 2017 in City Commission Chambers and focused on managing infrastructure and introduced the capital improvement plan (CIP) developed as part of the AMP effort. The newly implemented computerized maintenance management system (CMMS) was also discussed at the second meeting. The presentation at the second meeting illustrated that the purpose of the CMMS is to more effectively manage day-to-day road, sewer, and water operations and maintenance activities.

The Third Public meeting was held on August 22, 2017. The predominant focus of the third open house was to present the City's 20-year Capital Improvement Plan and provide information to the citizens on the rate and tax structure being considered to address the City's infrastructure needs.

The Level of Service for each asset class in the City of St. Joseph has been broadly defined below as follows:

Wastewater Collection System

- The City wastewater collection system, including lift stations, shall be maintained in a safe and sound condition to provide safe collection and transport of wastewater from City users.
- The City recognizes the importance of having a properly functioning wastewater collection system in order to protect the environment.
- The City recognizes that maintaining a properly functioning wastewater collection system is important to protect the public health and welfare of the community.
- With the understanding that it is very costly to televise the sanitary sewer system frequently, the City strives to televise and clean those sanitary sewer segments that are a part of each year's capital improvement program.
- The City shall endeavor to implement an annual televising and cleaning program for a portion of its sanitary sewer system as funding allows.
- The City shall continue to implement its ongoing Combined Sewer Overflow (CSO) program to improve water quality and reduce overflows.
- The City shall budget to allow proper certifications to be maintained and regular training to occur so that City staff are properly certified and trained.
- The City shall continue to educate the public and enforce its Sewer Use Ordinance.

Storm Sewer Collection System

- The City storm sewer collection system shall be maintained to the extent possible (i.e. acknowledging that weather events and climate conditions are beyond our control) to provide for the safe collection and transport of storm water runoff to the surface waters.
- The City recognizes the importance of storm water management and its effect on the environment.
- The City recognizes that water quality and water quantity are important contributors to a healthy and safe environment.
- With the understanding that it is very costly to televise the storm sewer system frequently, the City strives to televise those storm sewer segments that are a part of each year's capital improvement program.

Water Distribution System

- The City water distribution system shall be maintained in a safe and sound condition to provide safe and reliable distribution of potable water to all residents, businesses, and visitors in the City.
- In accordance with Rule 1606 of Act 399, the City shall prepare and implement an Asset Management program for the water system by January 1, 2018. This AMP is intended to meet the requirements of the water distribution system component of that plan.
- The City recognizes the importance of providing safe drinking water, a reliable water distribution system, and sufficient fire flows for the protection of property. The City's 2017 Water Reliability Study makes recommendations for system improvements. The recommended system improvements served as input into the City's Capital Improvement Plan.
- The City shall budget to allow proper certifications to be maintained and regular training to occur so that City staff are properly licensed to operate and maintain the water system.
- The City shall continue to educate the public and enforce its water use ordinance.
- The City recognizes that it partners with neighboring municipalities in a larger water system. The City shall strive to work cooperatively with the neighboring municipalities to create a safe and reliable system for all users.
- The City intends to continue its valve turning, hydrant assessment, and flushing programs to maintain system reliability and safe drinking water for its customers.

Street Network

- The City roads shall be safe and passable for all users including residents, visitors, and emergency vehicles.
- The City recognizes that a well-maintained street network contributes to the public good, facilitates the distribution of goods and services, and helps people move around safely in their daily travels.
- The City recognizes that a well-maintained street network contributes to a high quality of life and has a positive effect on property values, community pride, and public confidence.
- The City strives for its street network to be in accordance with the latest standards for safe turning movements, pedestrian activity, and vehicle capacity.
- The City will strive to rate its road network every three years to maintain data on the condition of the roadway network.
- The City recognizes that its street network is adjacent to County and State roads and will work cooperatively and leverage funding with those agencies to achieve the best possible overall roadway network for its citizens and visitors.
- The City intends to continue to focus on pedestrian and non-motorized improvement projects, as well as its biennial sidewalk replacement program.

The level of services goals described above were determined through years of interaction with the public. These goals were discussed broadly with the residents as part of three public information meetings that the City held in 2017 (April 22nd, May 24th and August 22nd). The City shall review (and revise if necessary) their Level of Service goals for each asset class each year as a reminder of their importance and as part of updating the Asset Management Plan.

5. Asset Evaluation (Criticality Determination)

The City evaluated the Criticality of each major asset across each of the three utility systems. Criticality is determined by combining the answers to two important questions:

1. How likely is it that the asset will fail (based on condition assessment)?
2. What is the consequence of failure of the asset?

Determining an asset's criticality is an assessment of risk and assigning criticality factors to each asset that has been evaluated provides a method for managing the risk of multiple assets and is an aid in determining where to spend operation and maintenance dollars and plan capital expenditures. The criticality factor is the product of the consequence of failure (CoF) of an asset and the likelihood of failure (LoF), based on condition, of that same asset. In other words, the Criticality Factor = CoF x LoF. In evaluating the City of St. Joseph wastewater and storm water system assets, the CoF and LoF factors were assigned rating values ranging from 1 to 5.

Likelihood of Failure (based on asset condition)

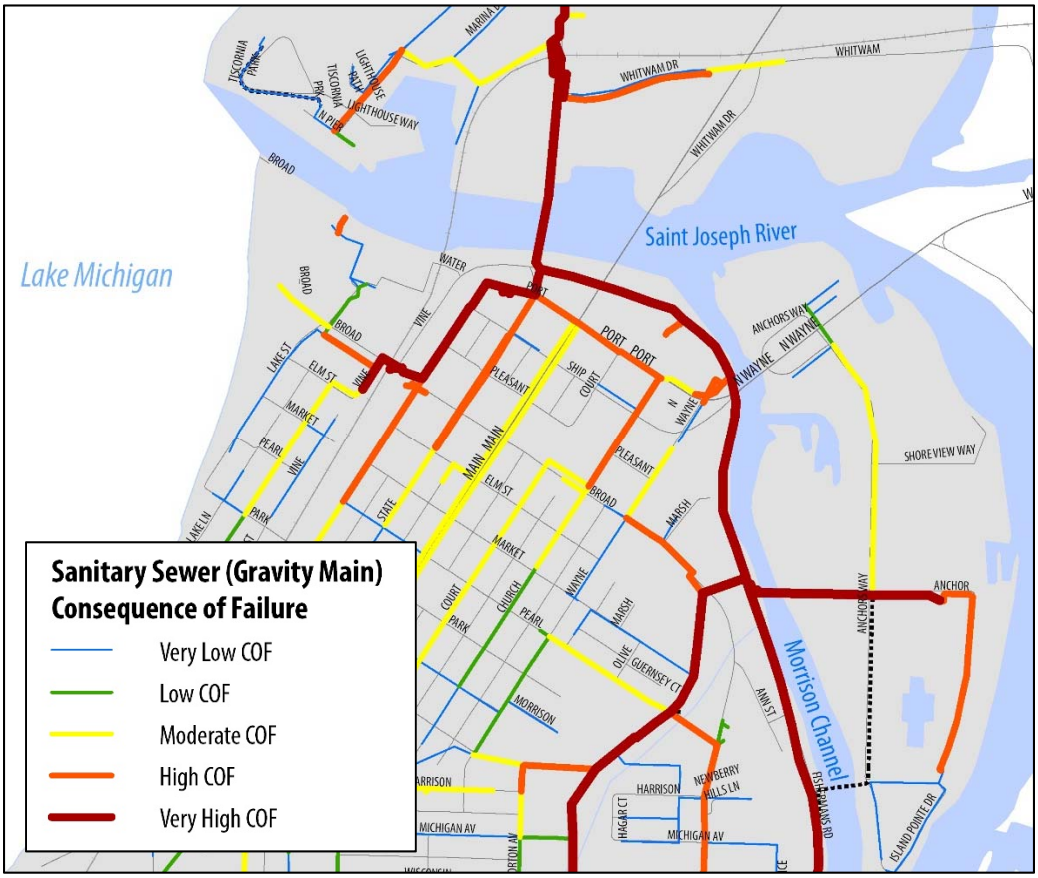
The likelihood of failure of each asset can be determined from a number of factors, including asset age, condition assessment data, failure history, historical knowledge, maintenance records, and general knowledge. For its wastewater and storm sewer systems, the City relied primarily on the condition assessment data that was collected in 2016 and 2017 to determine the likelihood of failure of an asset.

For the water distribution system, a combination of age, water main break records, and general knowledge gained from the water reliability study (i.e. pressure and fire flow data) were used to determine the likelihood of failure of the water distribution system assets.

Consequence of Failure

Consequence of failure maps were created for the water system (not grant eligible), sanitary sewer system, and storm sewer system. Each segment (including pipes and structures) of the City's wastewater, storm water and water system were rated on a system of 1 to 5 (with 1 representing the lowest consequence of failure and 5 representing the highest consequence of failure). In most cases, the City's largest diameter pipes were assigned a higher consequence of failure and the smaller pipes were assigned lower consequence of failure ratings. This follows from the logic that the larger diameter pipes ultimately carry more flow and serve a larger amount of people. The City did consider areas of their system that serve hospitals, schools, and

public buildings to be a factor that generally results in a higher consequence of failure in addition to the pipe size factor. The consequence of failure maps for each of the three systems are included in the appropriate **Appendices**. A zoomed-in view of the sanitary sewer consequence of failure map is shown below as an example.



The consequence of Failure (CoF) for each pipe segment on the different utility systems was rated from 1 to 5, according to the following scale:

1 = Very low CoF
2 = Low CoF
3 = Moderate CoF
4 = High CoF
5 = Very High CoF

Generally, for the City's sanitary sewer system, the larger diameter interceptors were rated with a very high consequence of failure because they carry more wastewater flow and affect a greater number of people. The City's interceptor sewers are considered the City's most vital pipe segments since they are the trunk sewers that collect significant amounts of the flow from large areas of the City. Most of the major interceptors received a 5 rating for a very high consequence of failure. Smaller diameter sewers were rated on the lower end of the scale

because they affect a smaller population. All sewers are important to the success of the system, but in order to differentiate the criticality of the different assets, assigning a unique consequence of failure to each asset in relationship to the entire system is a very important step in asset management.

Generally, for the City's storm sewer system, the larger diameter storm pipes were also rated very high, and the smaller storm pipes that served smaller tributary areas were rated lower on the scale. It should be noted that the discussion of consequence of failure on the City's system led to the identification of many areas within the City that are not currently served by a physical storm sewer system. Many of these areas have drainage problems that were identified and listed in the capital improvement plan (please see Section 6 and the detail in the Appendix).

Generally, for the City's water distribution system, the larger diameter water system pipes leading directly from the water treatment plant were rated very high on the scale of consequence of failure. The City's system is looped to provide redundancy throughout the system, so smaller water pipes were rated with a lower consequence of failure. Individual fire hydrants were rated based on fire flow capacity, which in most cases is a function of the size and age/condition of the water mains feeding them. Individual system valves were not rated, but the historical condition of any known valve with a deficiency has been included in the City's GIS. The City recently commenced a system wide valve turning program and will update the information in the GIS when the program is completed.

It should be noted that the City did use other factors other than pipe size when determining the consequence of failure of each pipe segments on all three utility systems. For example, utilities in the vicinity of hospitals, schools, and public safety facilities were considered to have a slightly higher consequence of failure than a utility of similar size elsewhere because of the potential impact to service at these important locations.

Assessment of Risk (Criticality Factor)

The City of St. Joseph is using its GIS system to organize and retain the data that was used in the risk assessment. The GIS contains consequence of failure data for each asset. The GIS contains likelihood of failure data for those assets where condition assessment was completed. The GIS system contains the calculated criticality factor for each asset where the data from both the CoF evaluation and LoF (condition assessment) is available. Where condition data is not yet available, the criticality factor has not been calculated and, therefore, no risk assessment has been completed for those assets. As additional data is collected in the future, this same methodology should be applied to further the risk assessment.

6. Capital Improvement Plan

Using the data collected during the asset inventory stage, the criticality of the system assets (based on likelihood of failure and consequence of failure), and their desired level of service, the City of St. Joseph prepared a 20-year Capital Improvement Plan for public comment and City Commission feedback. Individual projects were identified from the multiple data layers in the City's GIS (please refer to the CIP Prioritization Map included in **Appendix F**). The individual projects were organized and prioritized by year with input from the City Public Works and Engineering staff. Cost estimates for each project were developed. A summary of the 20-year plan (actually 21) for Fiscal Years 2016-2017 through FY 2036-2037 is included in **Table 10**.

Table 10 – City of St. Joseph Capital Improvement Plan Summary

Fiscal Year	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL
2016-2017	$ 303,000	$ 5,000	$ 440,000	**$ 748,000**
2017-2018	$ 428,000	$ 2,281,500	$ 150,500	**$ 2,860,000**
2018-2019	$ 742,225	$ 1,652,294	$ 75,000	**$ 2,469,519**
2019-2020	$ 451,048	$ 5,799,294	$ 160,000	**$ 6,410,341**
2020-2021	$ 2,286,838	$ 1,449,513	$ 2,216,892	**$ 5,953,242**
2021-2022	$ 2,269,277	$ 1,958,537	$ 982,925	**$ 5,210,739**
2022-2023	$ 1,780,271	$ 1,611,249	$ 747,227	**$ 4,138,747**
2023-2024	$ 1,285,959	$ 1,114,721	$ 532,489	**$ 2,933,168**
2024-2025	$ 1,947,477	$ 1,593,285	$ 835,654	**$ 4,376,415**
2025-2026	$ 1,848,431	$ 1,333,614	$ 787,146	**$ 3,969,191**
2026-2027	$ 2,237,831	$ 1,519,463	$ 960,918	**$ 4,718,211**
2027-2028	$ 1,834,922	$ 1,045,637	$ 692,130	**$ 3,572,689**
2028-2029	$ 972,269	$ 537,537	$ 308,390	**$ 1,818,196**
2029-2030	$ 1,667,341	$ 1,071,963	$ 707,694	**$ 3,446,997**
2030-2031	$ 2,198,050	$ 1,396,887	$ 917,922	**$ 4,512,859**
2031-2032	$ 3,547,840	$ 2,398,033	$ 1,513,912	**$ 7,459,785**
2032-2033	$ 2,772,219	$ 1,827,849	$ 1,195,289	**$ 5,795,357**
2033-2034	$ 1,782,825	$ 1,147,612	$ 755,169	**$ 3,685,606**
2034-2035	$ 1,848,914	$ 1,402,134	$ 784,567	**$ 4,035,615**
2035-2036	$ 3,148,794	$ 2,090,609	$ 1,275,308	**$ 6,514,710**
2036-2037	$ 2,856,676	$ 1,753,809	$ 1,140,914	**$ 5,751,399**
Totals	$ 38,210,203	$ 34,990,538	$ 17,180,045	$ 90,380,787

The full detailed Capital Improvement Plan can be found in **Appendix G**.

7. Revenue Structure Evaluation

Water and Sanitary Sewer

The City of St. Joseph retained Umbaugh & Associates to analyze the City's current revenue and expense structure. Umbaugh staff worked closely with the City Finance Director, City Engineer, and Wade Trim to first review the City's Sewer and Water Funds. These were completed at the same time because these two enterprise funds (Sewer – Fund 590, and Water – Fund 592) are set up similarly. As part of the revenue structure review, Umbaugh prepared a comparative statement of net position, a comparative statement of revenue, expenses and changes in net position, and a comparative detail of operational expenses for the City's sewer and water funds (water fund activity was not grant eligible and was paid for separately). Umbaugh reviewed the current debt schedules and prepared a cash flow analysis for both funds.

Using the proposed Capital Improvement Plan costs from **Table 8**, Umbaugh prepared a couple of scenarios to fund the recommended water and sewer system improvements. One scenario presented a consistent increase in the water and sewer rates of 3.5% and 7%, respectively, over the 20-year period. The second scenario proposed a large increase in year one followed by a lower increase in subsequent years of the plan.

Copies of these financial evaluations and funding scenarios are included in **Appendix H**.

Streets

Umbaugh was also asked to review the City's Street Improvement Fund (Fund 204). The City currently dedicates 1 mill from their General Fund millage toward street reconstruction and preventative maintenance projects. The 1 mill generates around $440,000 per year. The City currently uses this to fund their biennial sidewalk replacement program (approximately $100,000 every other year). The general consensus from discussion with City staff and the City Commission is that this amount is not enough to cover the future street improvements and preventative maintenance program at the level identified in the proposed Capital Improvement Program.

Using the proposed Capital Improvement Plan costs from **Table 8**, Umbaugh prepared three separate cash flow scenarios for the City's future consideration. The first cash flow analysis scenario proposed a dedicated street tax increase from 1 to 3 mills and assumed no taxable value increase; the second cash flow analysis scenario proposed a dedicated street tax increase from 1 to 3 mills plus an assumption of a 1% taxable value increase; and the third scenario proposed a dedicated street tax increase from 1 to 3.55 mills with no taxable value increase and no debt issuance. Scenarios 1 and 2 included debt issuance as part of the plan to fund the

necessary street improvements. There was virtually no difference in the effect of the 1% taxable value increase between scenario 1 and 2.

As of the date of this Asset Management Plan, the City Commission is still discussing which options to implement across all funds.

Copies of all revenue structure scenarios have been included in **Appendix H**.

8. Funding Discussion and Recommendations

The funding scenarios described above were first presented to the City Commission by a team of staff and consultants on June 19, 2017 and continued on July 31, 2017 in a public workshop held at City Hall. These scenarios were presented again at the third SAW Grant Public Information meeting held on August 22, 2017 (also at City Hall).

Analysis indicates that to fund the capital improvement plan per the schedule shown above, the City would need to implement water rate increases of approximately 3.5% over the next 20 years, sewer rate increases of 7% over the next eleven years with 3.5% increases afterward, and add a dedicated street mileage of approximately 2 mills. Detailed spreadsheets showing the cash flow analysis and recommended rate improvements have been included in **Appendix H** of this plan. However, both the program and the needed funding are subject to future actual project costs, potential additional sources of funding, and continued review and analysis of conditions.

9. O&M and Computerized Maintenance Management System

The City of St. Joseph has acknowledged the importance of regular operation and maintenance of their wastewater collection system and storm sewer system. As part of the SAW Grant, the City purchased and started using a computerized maintenance management system (see below) for planning and tracking their maintenance assignments. They also purchased a sewer televising camera to help them monitor their two systems.

The following is a list of operation and maintenance (O&M) strategies discussed and recommended for the City's wastewater collection system:

- The City shall flush all known flat sewers as needed to prevent buildup of fats, oils, and grease (FOG) and prevent blockages. The City shall continue to work with the business community (i.e. especially restaurants) to reinforce the importance of grease traps and to minimize the impact of FOG's on the collection system.
- The City shall regularly inspect sanitary manholes, especially along the larger collection system segments, to make sure there is proper flow within the sewer and that no backups or unusual flow levels are observed.

- The City shall conduct weekly on-site inspections of all sanitary lift stations. Lift stations will also have constant monitoring by staff via telemetry.
- Inspect the central ravine interceptor on at least an annual basis and inspect segments known to surcharge following high volume and/or high intensity rainfall events.
- As part of its Annual Budget, the City shall allocate resources to televise and review the video of all sanitary sewers within the planned capital project areas. Other areas of the system will be televised and assessed as funding allows. All coding during the television inspections should be completed in accordance with the NASSCO Pipeline Assessment Certification Program (PACP) and Manhole Assessment Certification Program (MACP). All structural or O&M defects should be noted and assigned to the unique facility ID for that asset.
- The City shall continue to monitor areas near the ravine interceptor for invasive species such as the Japanese Knotweed, and take action to prevent damage to the interceptor pipe.

The following is a list of operations and maintenance strategies discussed and recommended for the City's storm water collection system:

- The City should regularly inspect the open-channel portions of the ravine for fallen logs, tree damage, bank erosion, and potential blockages.
- The City should pay close attention to the numerous road culverts along the ravine and other areas. Keeping these culverts clear of debris will help prevent flooding during large rain events.
- Whenever time and funding allow, the City should perform dry weather screening at all outfalls. Dry weather screening is a proven technique for noticing and tracking unusual or excessive flow in the storm sewer system during dry weather.
- The City should sweep streets as needed to keep leaves, twigs, and unwanted debris from entering the storm inlets and catch basins. Regular street sweeping and proper disposal of surface debris keeps the storm sewers from getting clogged and keeps unwanted pollutants out of the receiving streams.
- As part of its capital improvement programs, the City shall televise and review the video of all storm sewers within the planned capital project areas. All coding during the television inspections should be completed in accordance with the NASSCO Pipeline Assessment Certification Program (PACP) and Manhole Assessment Certification Program (MACP). All structural or O&M defects should be noted and assigned to the unique facility ID for that asset.

The following is a list of operations and maintenance strategies discussed and recommended for the City's water distribution system:

- The City should continue to implement its annual valve turning program.
- The City should continue to implement its annual hydrant assessment and flushing program.

In addition to the O&M strategies specifically mentioned above, the City of St. Joseph has purchased and implemented the use of Cityworks Software as its computerized maintenance management system (CMMS). Cityworks is a GIS integrated, online CMMS. The CMMS includes and allows for the creation of work orders, inspection, maintenance, and inventory tracking. Cityworks was implemented in 2016 and will be utilized by all members of the City Department of Public Services and Engineering, with the goal of expanding to other City departments. The CMMS system will help to centralize the maintenance activities and streamline the work order process. The CMMS will also track cost data to assist the City in future budgeting and Capital Improvement planning. The City should build the preventative maintenance strategies identified above into their CMMS (Cityworks).

10. Pavement Management and Preventative Maintenance Strategies

There are three categories of pavement maintenance activities:

1. Routine Maintenance
2. Preventative Maintenance
3. Reconstruction Projects

Routine Maintenance

Routine maintenance activities occur throughout the year within the City right of ways. These activities are those generally performed by the City's Department of Public Works. Many of these activities are seasonal in nature.

- Routine maintenance activities include street sweeping, plowing, salting, sand removal, catch basin cleaning, pothole patching, tree removals within right of way, pavement markings, signs, traffic signal electricity plus the labor, equipment and materials used to perform these duties.
- Maintenance of alleys, parking lots, railroad crossings and the Public Works facility also fall under routine maintenance activities.
- Act 51 money (approximately $600,000 in 2017), plus $285,000 to $335,000 from the General Fund is used to fund Routine Maintenance.

Preventative Maintenance

The City currently designates 1 mill from the General Fund toward City Roads. In 2017, 1 mill generates approximately $440,000 in revenue. This revenue is directed toward preventative maintenance and reconstruction projects. $50,000 each fiscal year of this amount is directed toward the City's biennial sidewalk replacement program.

The following is a list of preventative maintenance techniques that the City anticipates using to maintain its asphalt, brick, and concrete road segments:

Asphalt Roads	Targeted Pavement Rating
Crack sealing	8 & 9
Fog sealing	7 & 8
Cape sealing	6 & 7
Ultrathin overlay/Micro-surfacing	6 & 7
Mill and overlay (2 to 3 inches)	5 & 6
Brick Roads	
Leveling	6 thru 9
Concrete Roads	
Joint and crack sealing	8 & 9
Joint Repairs	6 & 7
Full Depth panel replacement	4, 5 & 6

Preventative Maintenance Philosophy

1. The City will obtain PASER ratings from the SW Michigan Planning Commission. Generally, the SWMPC rates each major segment of roadway in accordance with the PASER methodology every two years. Local roadway segments are generally rated approximately every five years.
2. The first goal of preventative maintenance is to keep the good roads good. This is the most effective system for maintaining the greatest portion of good quality streets at the lowest cost to the public. The good roads are those roadway segments that are generally rated as 7 or higher on the City's PASER rating. The City will prioritize preventative maintenance funds on these roads first. The techniques identified above will be programmed annually based on the PASER rating to maximize the efficiency of these PM programs.
3. Many of the City roads are listed in fair condition. These are roads that have PASER ratings in the range of 4 to 6. Most of the concrete roads that are in fair condition are beyond their original design life, but based on recent condition inspections still have some observed remaining useful life. The City will use limited preventative maintenance fund dollars to keep these roads passable and safely in use. If there are small areas where safety concerns are evident, limited preventative maintenance funds will be directed to address these areas.
4. The roads listed in poor condition, as well as those roads designated for utility replacements, are not targeted for preventative maintenance. These road segments have structural deficiencies and/or drainage issues and should be listed on the City's CIP for Reconstruction (see below).

Pavement Reconstruction

Pavement reconstruction projects have been identified in the Capital Improvement Plan. Reconstruction of City roads will be completed as funding allows for roads in poor condition or

with structural deficiencies (i.e. PASER ratings 1 through 4) or to support utility projects that are addressing public utilities underneath the pavement.

11. List of Major Assets

All of the City's infrastructure assets are considered important as each one serves the community in some way. However, for the purpose of this Asset Management Plan, the following is a summary of the major assets that have been identified in the City's Asset Management Plan:

Wastewater System

- 44,860 feet of large diameter interceptor sewers (18 to 36-inch pipe).
- 10 Wastewater Lift Stations (the Edgewater, Hawthorne, and Vine Street lift stations serve the largest population/service areas) and the associated 4 miles of sanitary sewer force main.
- There are 1,217 sanitary manholes in the City's sanitary sewer system.

Storm Sewer System

- The City maintains an open-channel ravine system that serves as the primary drainage collection system throughout the City.
- The City has approximately 28 miles of storm sewer ranging in diameter from 4-inch to 60-inch that serve various areas of the City. All are considered important and need to function well.
- There are 641 storm manholes and 83 outlet structures within the City's storm sewer system.
- It should be noted that the City has several areas that lack a public storm sewer system. These areas are identified in the Capital Improvement plan as areas of focus and are mentioned here as future assets.

Water System

- The City maintains over 10 miles of larger diameter (12-inch to 30-inch) water main throughout the City. These larger pipes serve as the primary water carriers in the distribution system.
- The City maintains 465 fire hydrants throughout the distribution system to aid in fire prevention and system flushing.
- The City maintains 730 gate valves throughout the distribution system to aid in system operation and maintenance responsibilities.

Concluding Statement

This First Edition of the City of St. Joseph Asset Management Plan has been prepared for the City of St. Joseph by Wade Trim, in cooperation with the City Engineering Department and City Department of Public Works. We recommend that it is reviewed and updated regularly. We hope that it serves as a good example of how to be responsible and accountable for the public infrastructure and a building block for long-term asset management of all public assets and not just those in the City right of way.

As the City looks to the future, the following recommendations are presented as a summary of next steps:

1. The City should continue to prioritize funds for operation and maintenance of all four of its primary asset classes (Sanitary Sewer, Storm Sewer, Water Distribution, and Roads). Regular and ongoing maintenance should be a budgeted priority in order to maximize the useful life of existing assets.
2. The City should continue to update their Geographic Information System whenever a new asset is added to the system or whenever an existing asset is evaluated.
3. The City should continue to inspect, collect, and document the condition of its primary assets. Current condition data serves as the backbone for preventative maintenance programs and capital improvement planning and prioritization.
4. The City should continue to implement reasonable annual rate increases for its water and sewer funds in order to fund the recommended capital improvements on these systems. The CIP needs to be implemented in order to maintain a high level of service for all City residents, businesses, and other users.
5. The City should continue to evaluate reasonable millage increases for street improvements in order to fund the recommended capital street projects.

Appendix A – Sanitary Sewer System Mapping

Lift Station Service Areas

Lift Station Condition

Consequence of Failure

Year Installed

Manhole Condition

Pipe Condition

Risk Score

Sanitary Sewer System: Lift Station Service Areas

Asset Management Plan

CITY OF St. Joseph

Service Areas

- Dunham
- Edgewater
- Edgewater/Fairways
- Edgewater/North Pier
- Edgewater/Whitwam
- Hawthorne
- Hawthorne/Alco
- Island Point
- Vine St
- Vine St/Lake St

- Sanitary Sewer Lift Stations
- Sanitary Sewer Pressurized Mains
- Sanitary Sewer Gravity Mains
- Sanitary Manholes
- Parcels
- Railroads

Data Source Date: December 2016
Print Date: October 2017

0 1,000 2,000 Feet

N

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Sanitary Sewer System: Lift Station Condition

Summary of Impacted Parcels by Lift Station Service Areas

Service Area	Total Dwelling Units	Total Hotel Rooms	Total Number of Businesses
Dunham	119	82	1
Edgewater	208	0	11
Edgewater/Fairways	7	0	0
Edgewater/North Pier	14	0	3
Edgewater/Whitwam	101 (Under Construction)	92	1
Hawthorne	104	5	29
Hawthorne/Alco	96	0	0
Island Point	61	0	1
Vine St	173	0	2
Vine St/Lake St	28	0	0

Asset Management Plan

CITY OF St. Joseph

Sanitary Sewer Lift Stations

Condition Rating:

- Very Good
- Good
- Fair
- Poor
- Very Poor

Service Areas:

- Dunham
- Edgewater
- Edgewater/Fairways
- Edgewater/North Pier
- Edgewater/Whitwam
- Hawthorne
- Hawthorne/Alco
- Island Point
- Vine St
- Vine St/Lake St

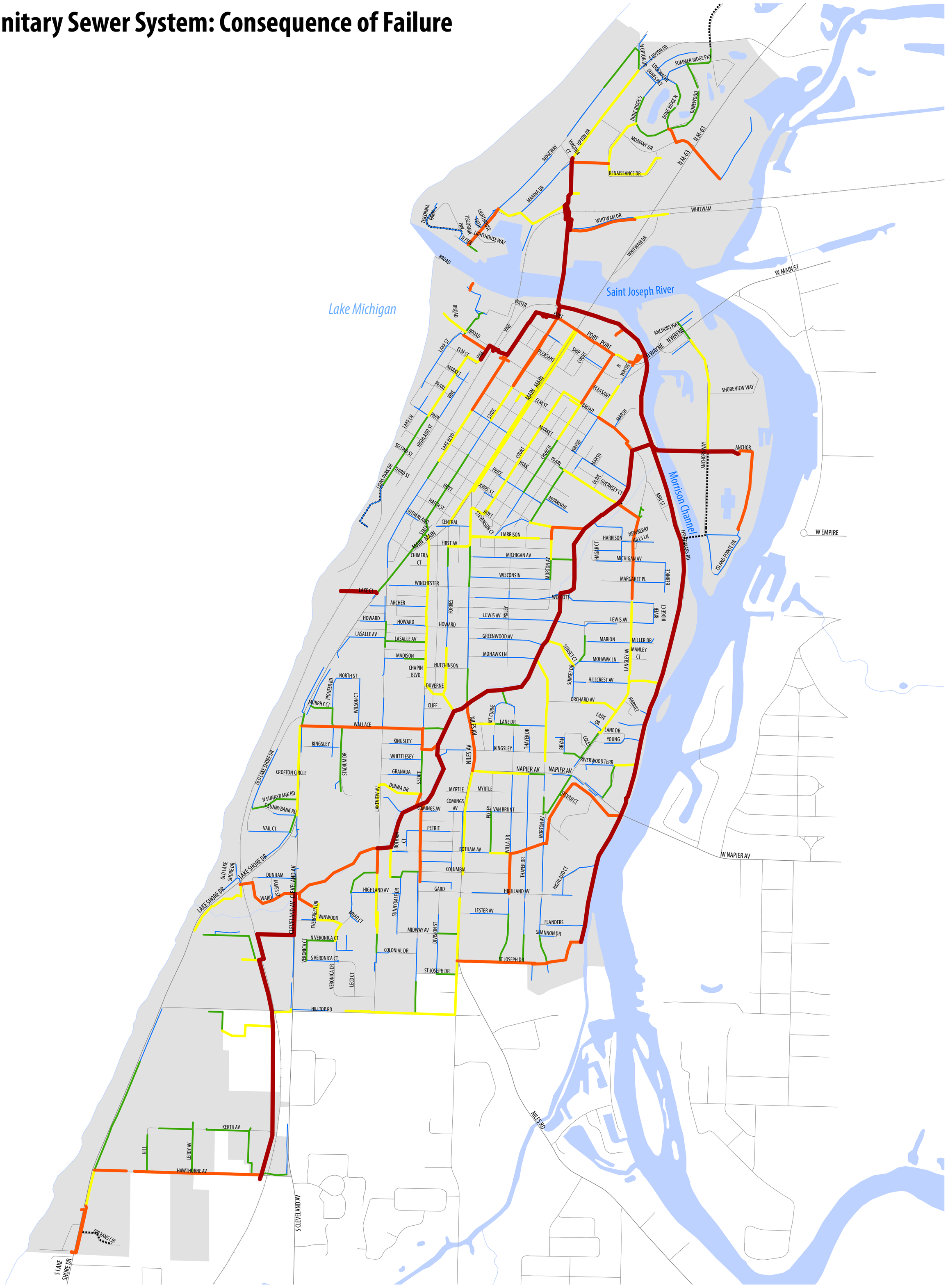
Data Source Date: April 2017
Print Date: October 2017

0 1,000 2,000 Feet

N

\\dtdata\projects\Sjo2000\02t\GIS-data\Projects\Public Information Meeting No 1\Lift Station Condition Public Information Meeting No1.mxd

Sanitary Sewer System: Consequence of Failure



Asset Management Plan

CITY OF St. Joseph

Sanitary Sewer (Gravity Main) Consequence of Failure

- Very Low COF
- Low COF
- Moderate COF
- High COF
- Very High COF

- Sanitary Sewers - Force Mains
- City Limits
- Streets
- Railroads

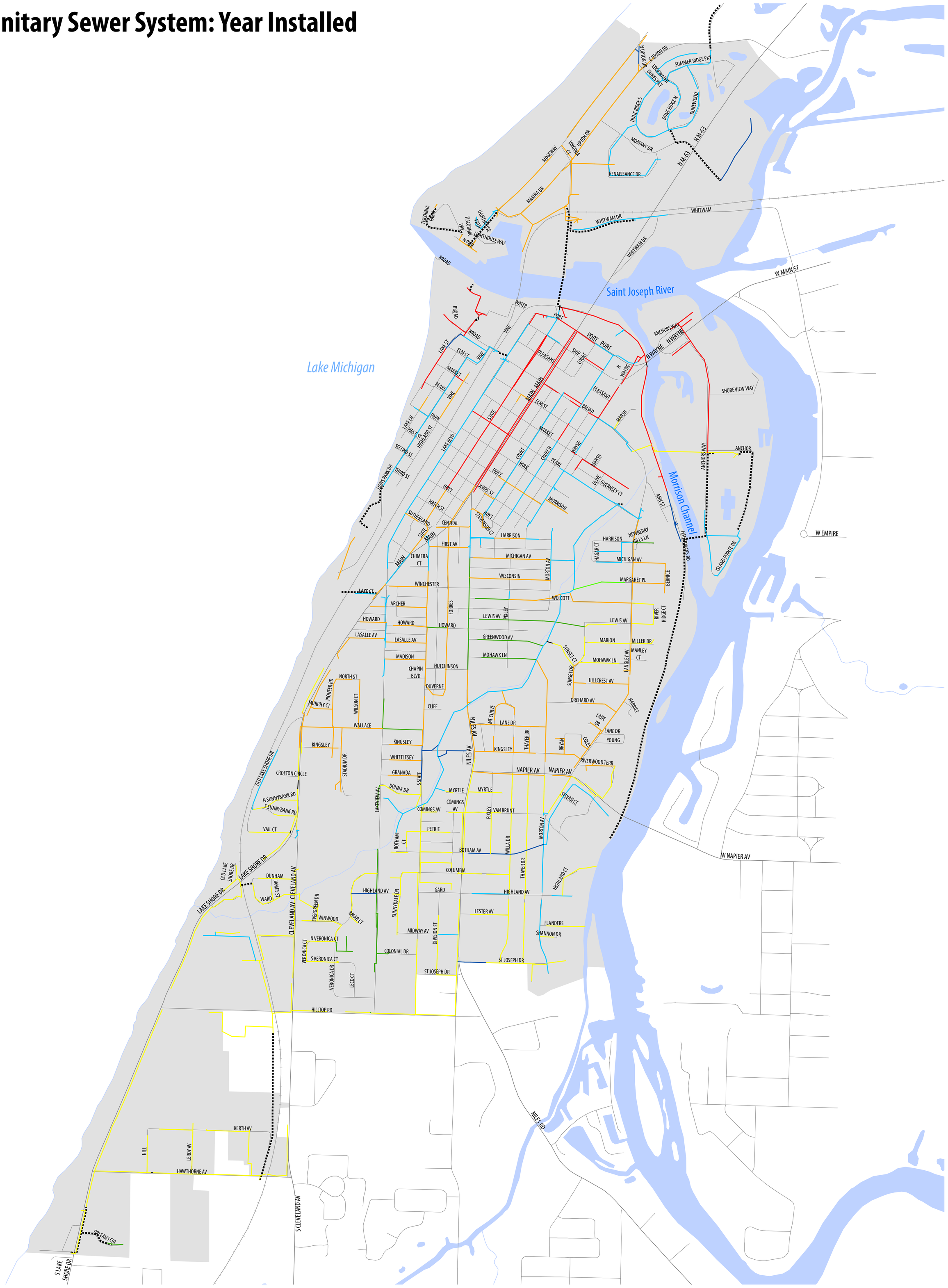
Data Source Date: April 2017
Print Date: October 2017

0 1,000 2,000 Feet

N

\\dtdata\projects\Sjo2000\02t\GIS-data\Projects\Public Information Meeting No 1\Sanitary Consequence of Failure Public Information Meeting No1.mxd

Sanitary Sewer System: Year Installed



Asset Management Plan

CITY OF St. Joseph

Sanitary Sewers (Gravity Main) by Decade Installed:

- 1890's
- 1920's
- 1950's
- Install Date Unknown
- 1980's
- 1990's
- 2000's
- 2010's
- Sanitary Sewers - Force Mains
- Streets
- City Limits
- Railroads

Data Source Date: October 2017
Print Date: October 2017

0 1,000 2,000 Feet

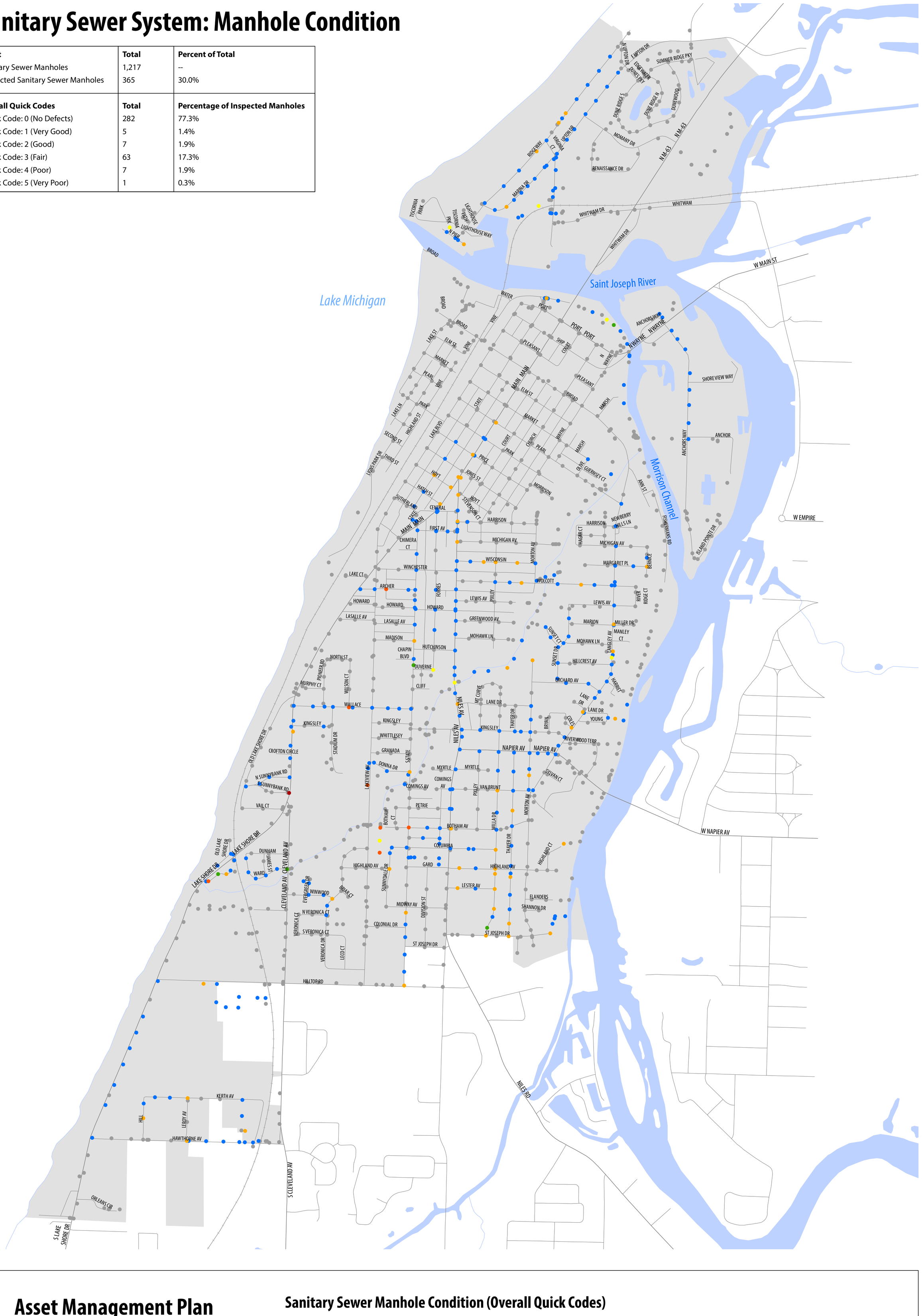
N

\\dtdata\projects\Sjo2000\02t\GIS-data\Projects\Sewer Sanitary Year Installed Map24x36.mxd

Sanitary Sewer System: Manhole Condition

Asset	Total	Percent of Total
Sanitary Sewer Manholes	1,217	--
Inspected Sanitary Sewer Manholes	365	30.0%

Overall Quick Codes	Total	Percentage of Inspected Manholes
Quick Code: 0 (No Defects)	282	77.3%
Quick Code: 1 (Very Good)	5	1.4%
Quick Code: 2 (Good)	7	1.9%
Quick Code: 3 (Fair)	63	17.3%
Quick Code: 4 (Poor)	7	1.9%
Quick Code: 5 (Very Poor)	1	0.3%



Asset Management Plan

CITY OF St. Joseph

Sanitary Sewer Manhole Condition (Overall Quick Codes)

- 0 (No Defects)
- 1 (Very Good)
- 2 (Good)
- 3 (Fair)
- 4 (Poor)
- 5 (Very Poor)
- No Data/Not Surveyed
- City Limits
- Streets
- Railroads

Data Source Date: October 2017
Print Date: October 2017

0 1,000 2,000 Feet

N

\\dt-vs\projects\Sjo2000\02t\GIS-data\Projects\Sanitary Manhole Condition.mxd

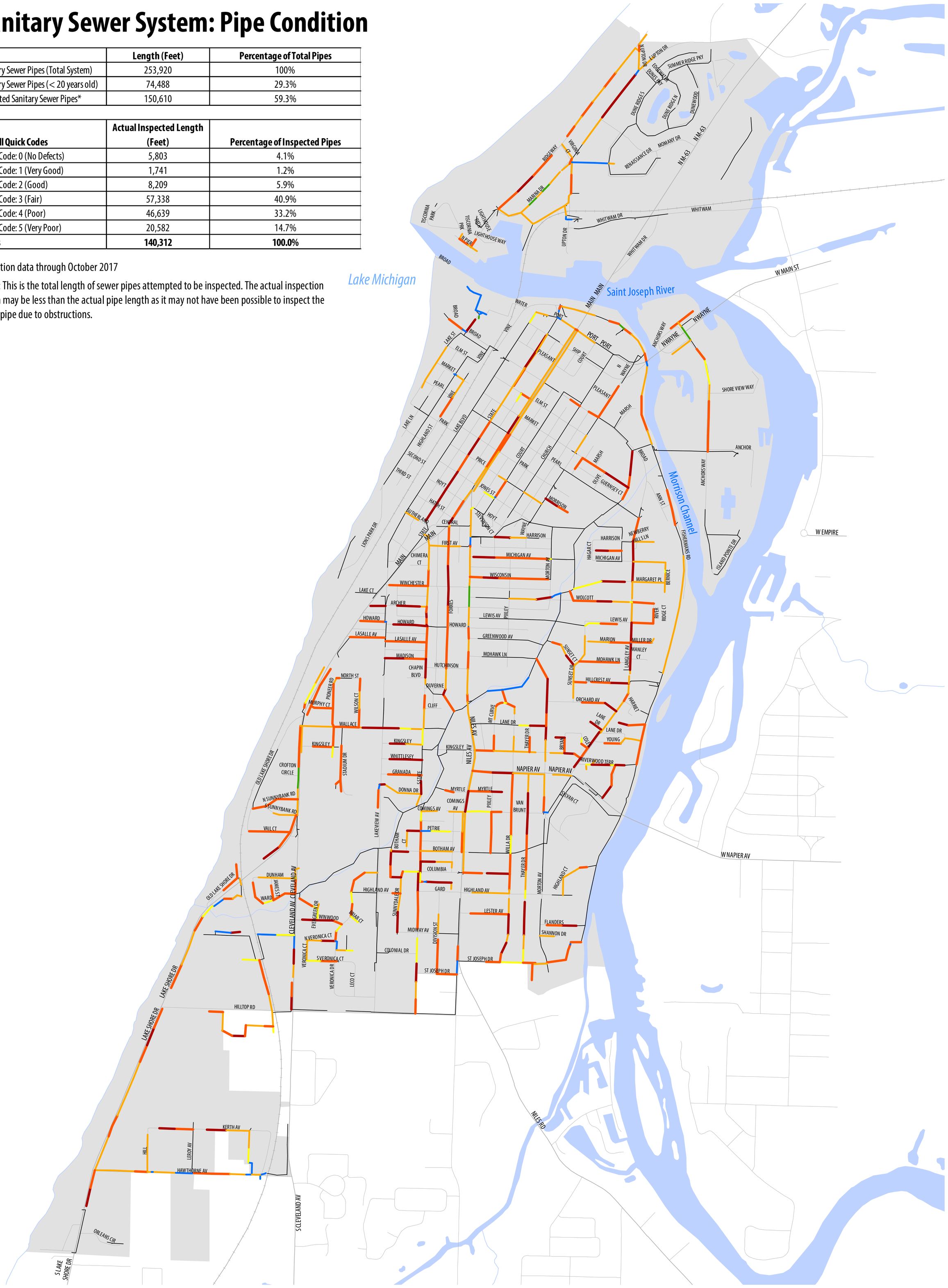
Sanitary Sewer System: Pipe Condition

Asset	Length (Feet)	Percentage of Total Pipes
Sanitary Sewer Pipes (Total System)	253,920	100%
Sanitary Sewer Pipes (< 20 years old)	74,488	29.3%
Inspected Sanitary Sewer Pipes*	150,610	59.3%

Overall Quick Codes	Actual Inspected Length (Feet)	Percentage of Inspected Pipes
Quick Code: 0 (No Defects)	5,803	4.1%
Quick Code: 1 (Very Good)	1,741	1.2%
Quick Code: 2 (Good)	8,209	5.9%
Quick Code: 3 (Fair)	57,338	40.9%
Quick Code: 4 (Poor)	46,639	33.2%
Quick Code: 5 (Very Poor)	20,582	14.7%
Totals	**140,312**	**100.0%**

Inspection data through October 2017

*Note: This is the total length of sewer pipes attempted to be inspected. The actual inspection length may be less than the actual pipe length as it may not have been possible to inspect the entire pipe due to obstructions.



Asset Management Plan

CITY OF St. Joseph

Condition Assessment: Sanitary Sewer (Gravity Main)

Overall Quick Code:

- No Defects
- Very Good
- Good
- Fair
- Poor
- Very Poor
- No Data/Not Surveyed

Note: Sanitary Force Mains Not Shown

Base Data:

- City Limits
- Streets
- Railroads

0 1,000 2,000 Feet

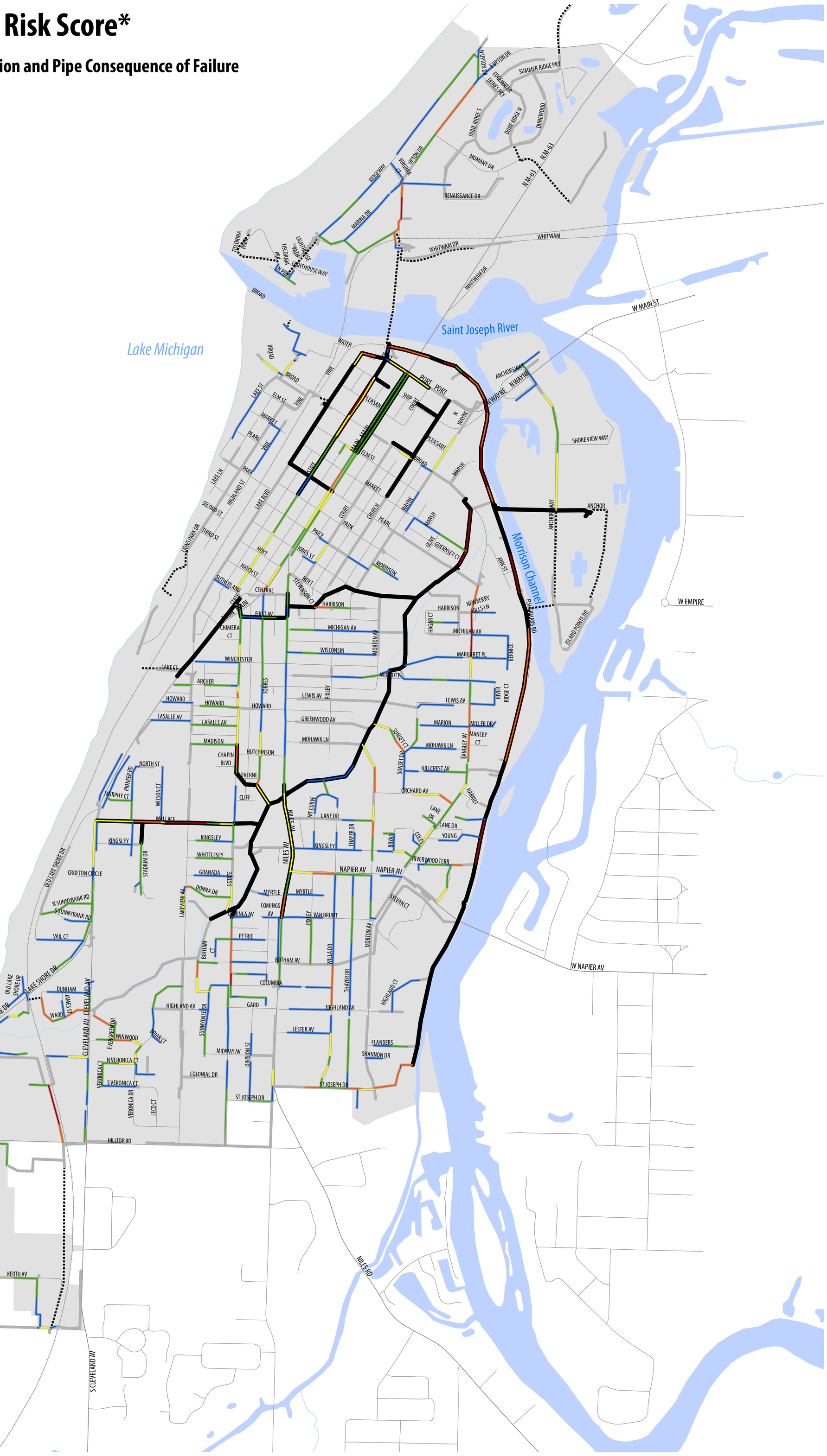
Data Source Date: April 2017
Print Date: October 2017

N

\\dtdata\projects\Sjo2000\02t\GIS-data\Projects\Public Information Meeting No 1\SS_Condition_Public_Information_Meeting_No1.mxd

Sanitary Sewer System: Risk Score*

***Risk Score is a Calculation of Pipe Condition and Pipe Consequence of Failure**



Asset Management Plan

CITY OF St. Joseph

Sanitary Sewer Risk Score

- 0 - 4, Very Low
- 5 - 9, Low
- 10 - 14, Moderate
- 15 - 19, High
- 20 - 25, Very High

None of the Above Colors = No Risk Score Data

- Sanitary Sewers Less than 18" Diameter
- Sanitary Sewers 18" Diameter or Greater
- Sanitary Sewers - Force Mains
- City Limits
- Streets
- Railroads

Data Source Date: October 2017
Print Date: October 2017

0 1,000 2,000 Feet

N

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Appendix B – Storm Sewer System Mapping

Consequence of Failure

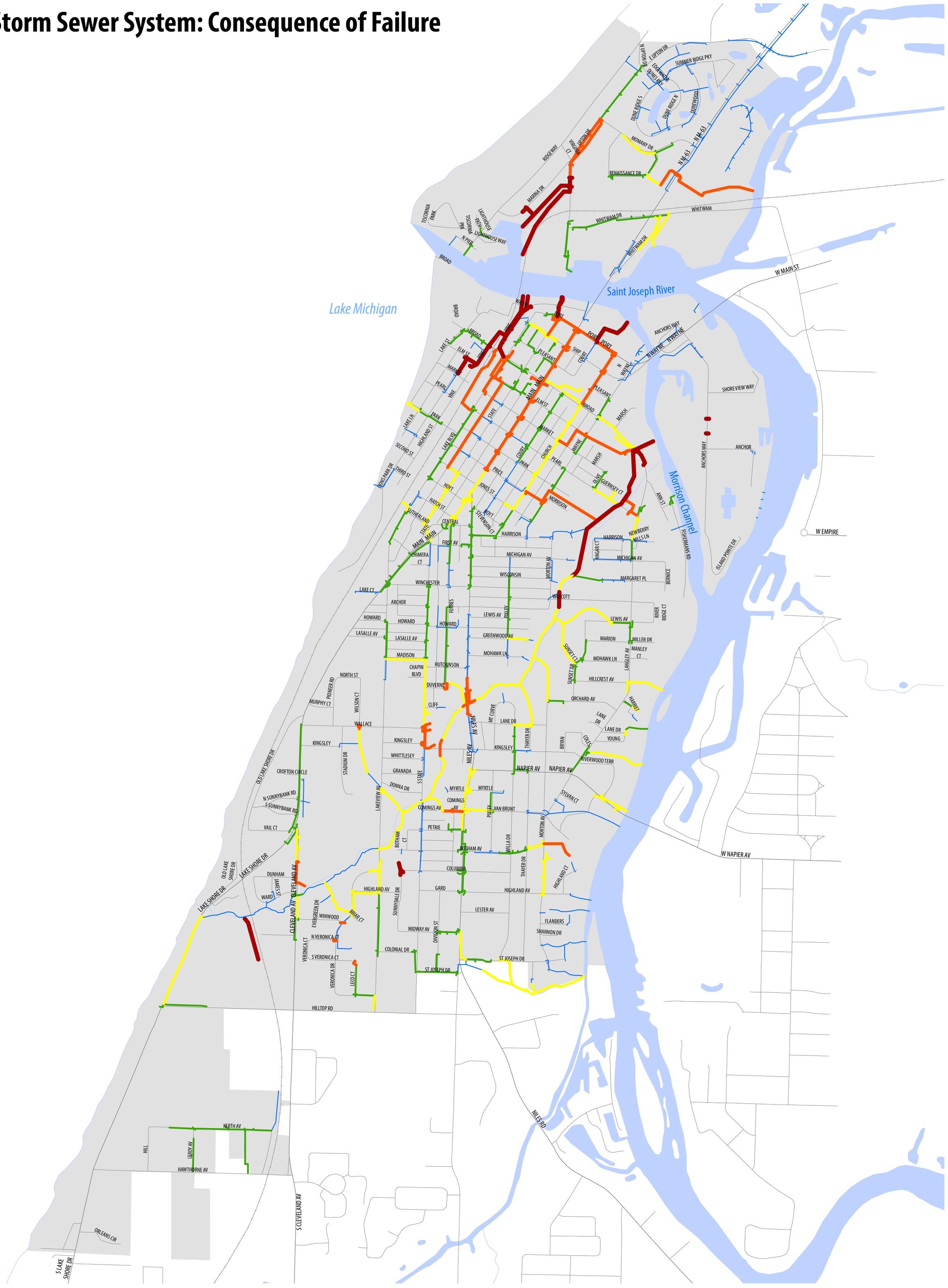
Year Installed

Manhole Condition

Pipe Condition

Risk Score

Storm Sewer System: Consequence of Failure



Asset Management Plan

Storm Sewer Consequence of Failure

- Very Low COF
- Low COF
- Moderate COF
- High COF
- Very High COF
- City Limits
- Streets
- Railroads

Data Source Date: December 2016
Print Date: October 2017

0 1,000 2,000 Feet

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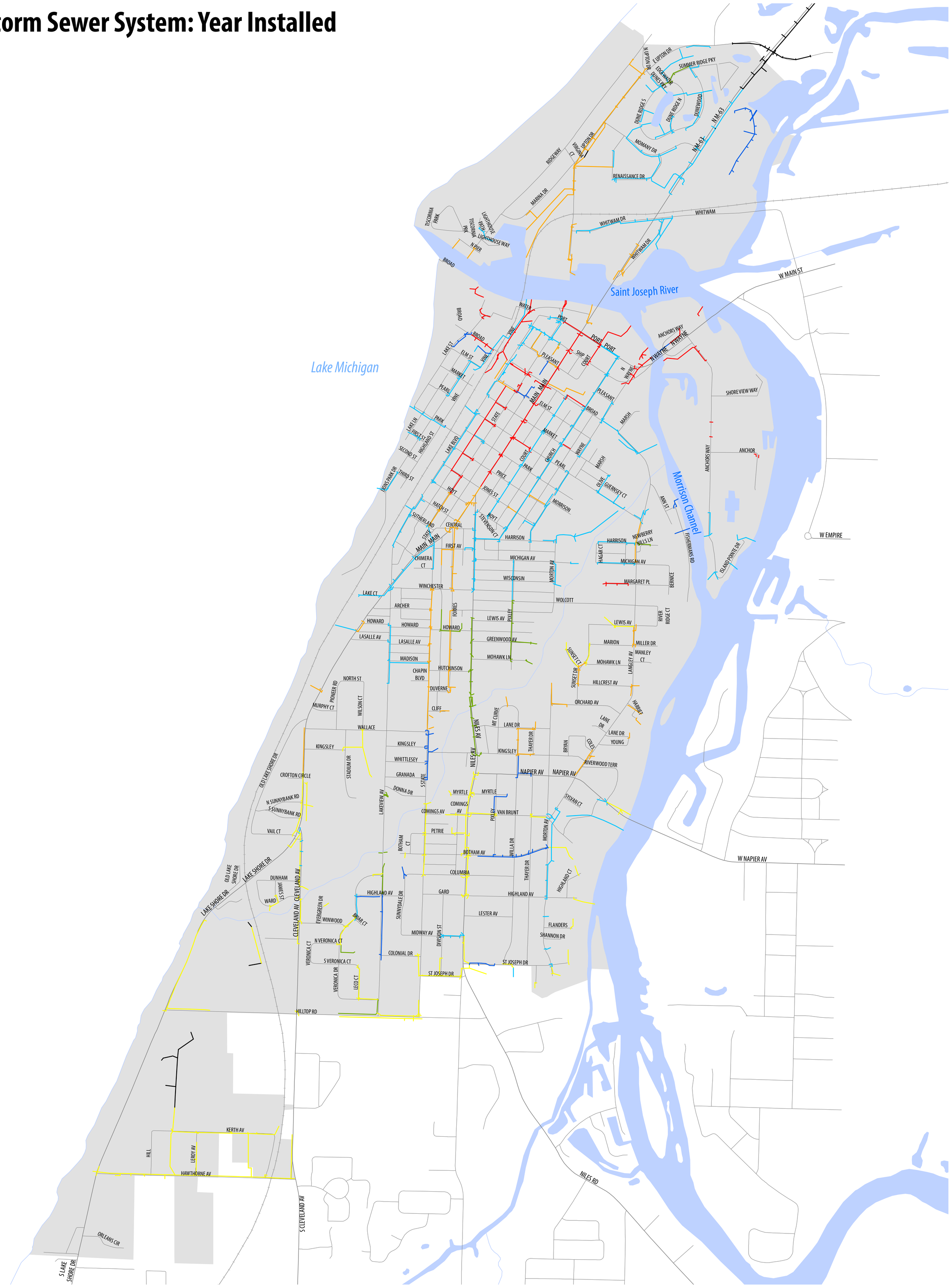
Storm Sewer System: Year Installed



Asset Management Plan

CITY OF St. Joseph

Storm Sewers by Decade Installed:

- 1890's
- 1920's
- 1950's
- Install Date Unknown
- 1980's
- 1990's
- 2000's
- 2010's
- Streets
- City Limits
- Railroads

Data Source Date: October 2017
Print Date: October 2017

0 1,000 2,000 Feet

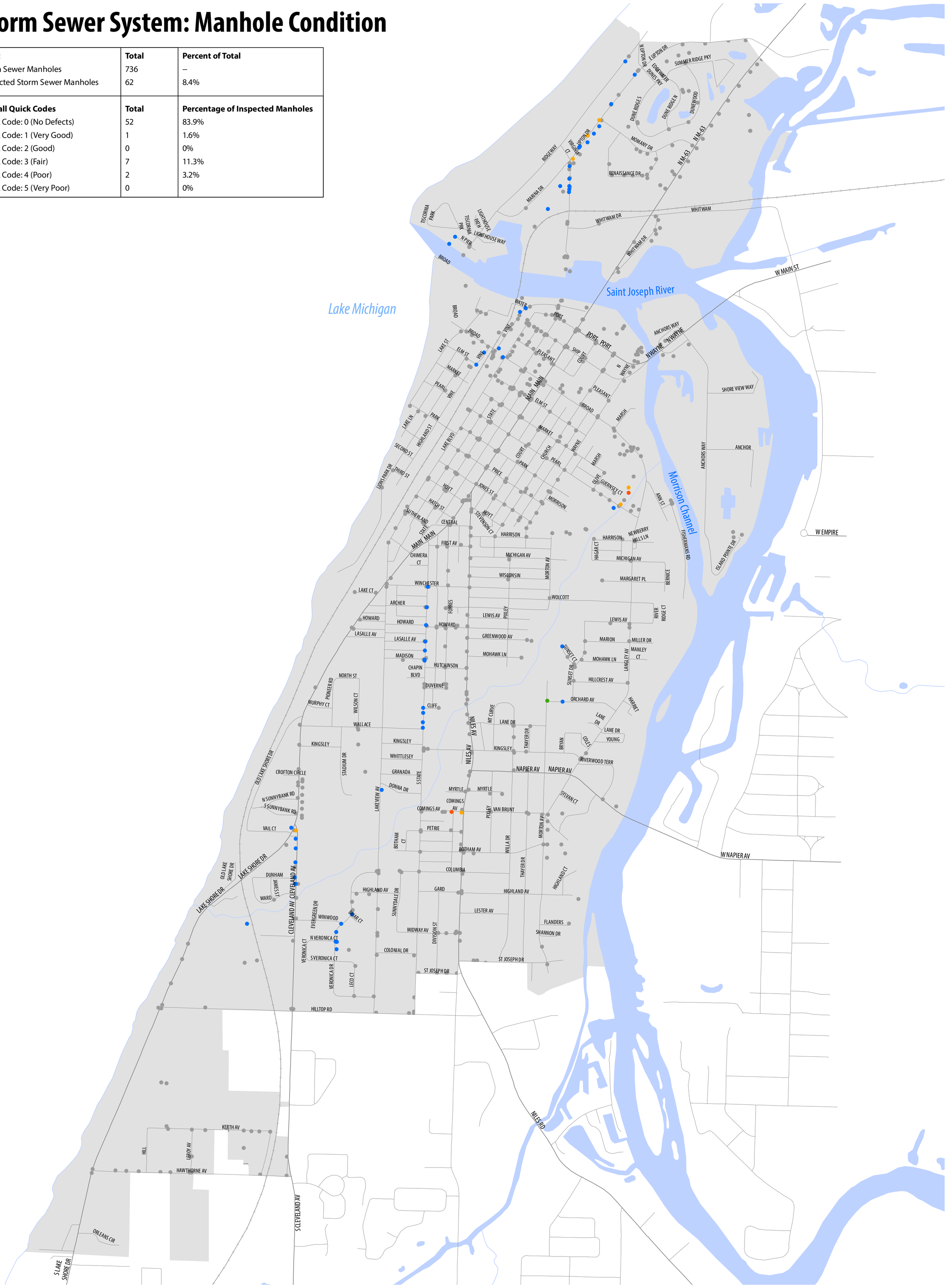
N

\\dtdata\projects\Sjo2000\02t\GIS-data\Projects\Sewer Storm Year Installed Map24x36.mxd

Storm Sewer System: Manhole Condition

Asset	Total	Percent of Total
Storm Sewer Manholes	736	--
Inspected Storm Sewer Manholes	62	8.4%

Overall Quick Codes	Total	Percentage of Inspected Manholes
Quick Code: 0 (No Defects)	52	83.9%
Quick Code: 1 (Very Good)	1	1.6%
Quick Code: 2 (Good)	0	0%
Quick Code: 3 (Fair)	7	11.3%
Quick Code: 4 (Poor)	2	3.2%
Quick Code: 5 (Very Poor)	0	0%



Asset Management Plan

Storm Sewer Manhole Condition (Overall Quick Codes)

- 0 (No Defects)
- 1 (Very Good)
- 2 (Good)
- 3 (Fair)
- 4 (Poor)
- 5 (Very Poor)
- No Data/Not Surveyed
- City Limits
- Streets
- Railroads

Data Source Date: October 2017
Print Date: October 2017

0 1,000 2,000 Feet

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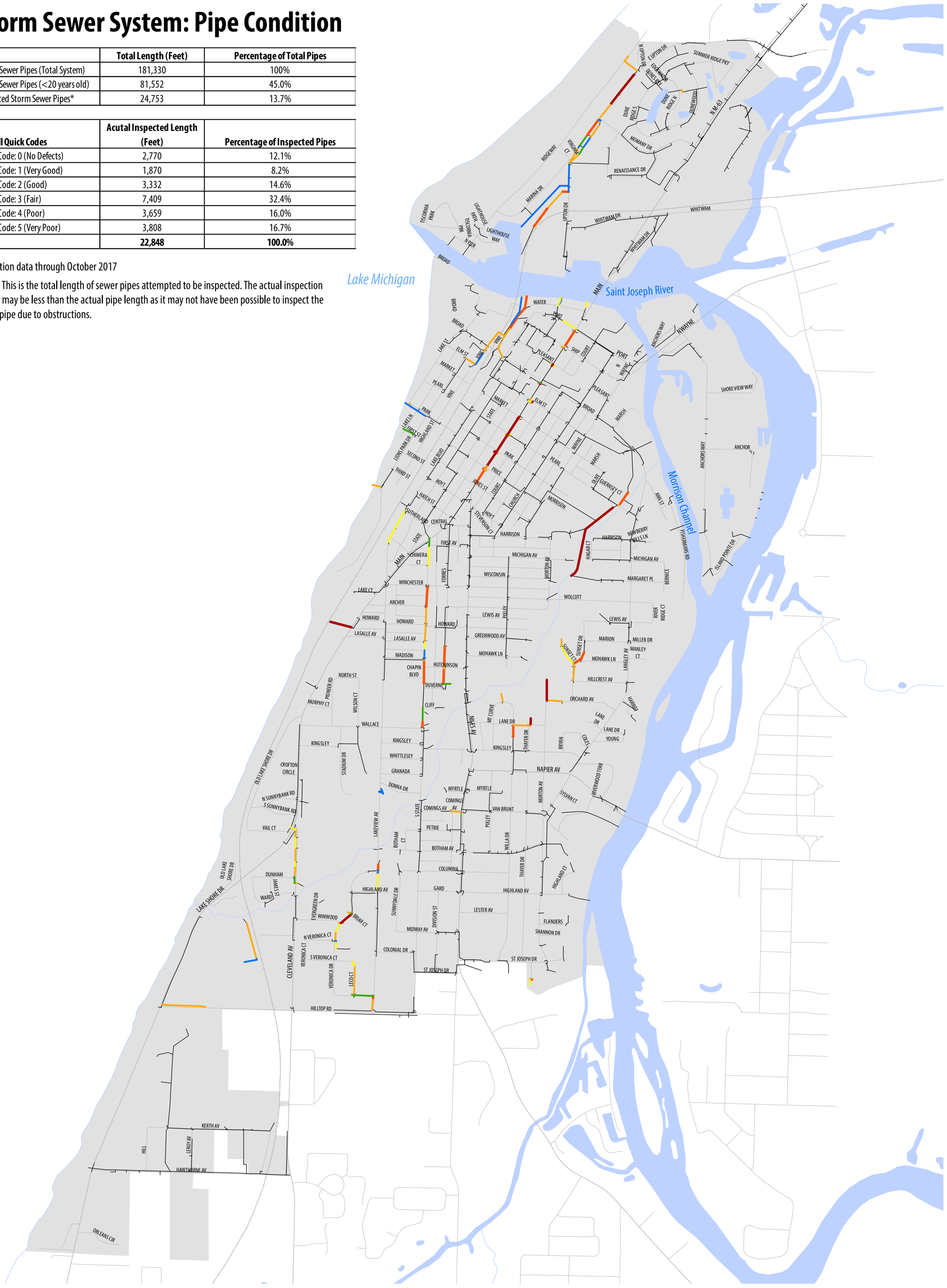
Storm Sewer System: Pipe Condition

Asset	Total Length (Feet)	Percentage of Total Pipes
Storm Sewer Pipes (Total System)	181,330	100%
Storm Sewer Pipes (<20 years old)	81,552	45.0%
Inspected Storm Sewer Pipes*	24,753	13.7%

Overall Quick Codes	Acutal Inspected Length (Feet)	Percentage of Inspected Pipes
Quick Code: 0 (No Defects)	2,770	12.1%
Quick Code: 1 (Very Good)	1,870	8.2%
Quick Code: 2 (Good)	3,332	14.6%
Quick Code: 3 (Fair)	7,409	32.4%
Quick Code: 4 (Poor)	3,659	16.0%
Quick Code: 5 (Very Poor)	3,808	16.7%
Totals	**22,848**	**100.0%**

Inspection data through October 2017

*Note: This is the total length of sewer pipes attempted to be inspected. The actual inspection length may be less than the actual pipe length as it may not have been possible to inspect the entire pipe due to obstructions.



Asset Management Plan

CITY OF St. Joseph

Condition Assessment: Storm Sewer

Overall Quick Code:

- No Defects
- Very Good
- Good
- Fair
- Poor
- Very Poor
- No Data/Not Surveyed

Base Data:

- City Limits
- Streets
- Railroads

Data Source Date: April 2017
Print Date: October 2017

0 1,000 2,000 Feet

N

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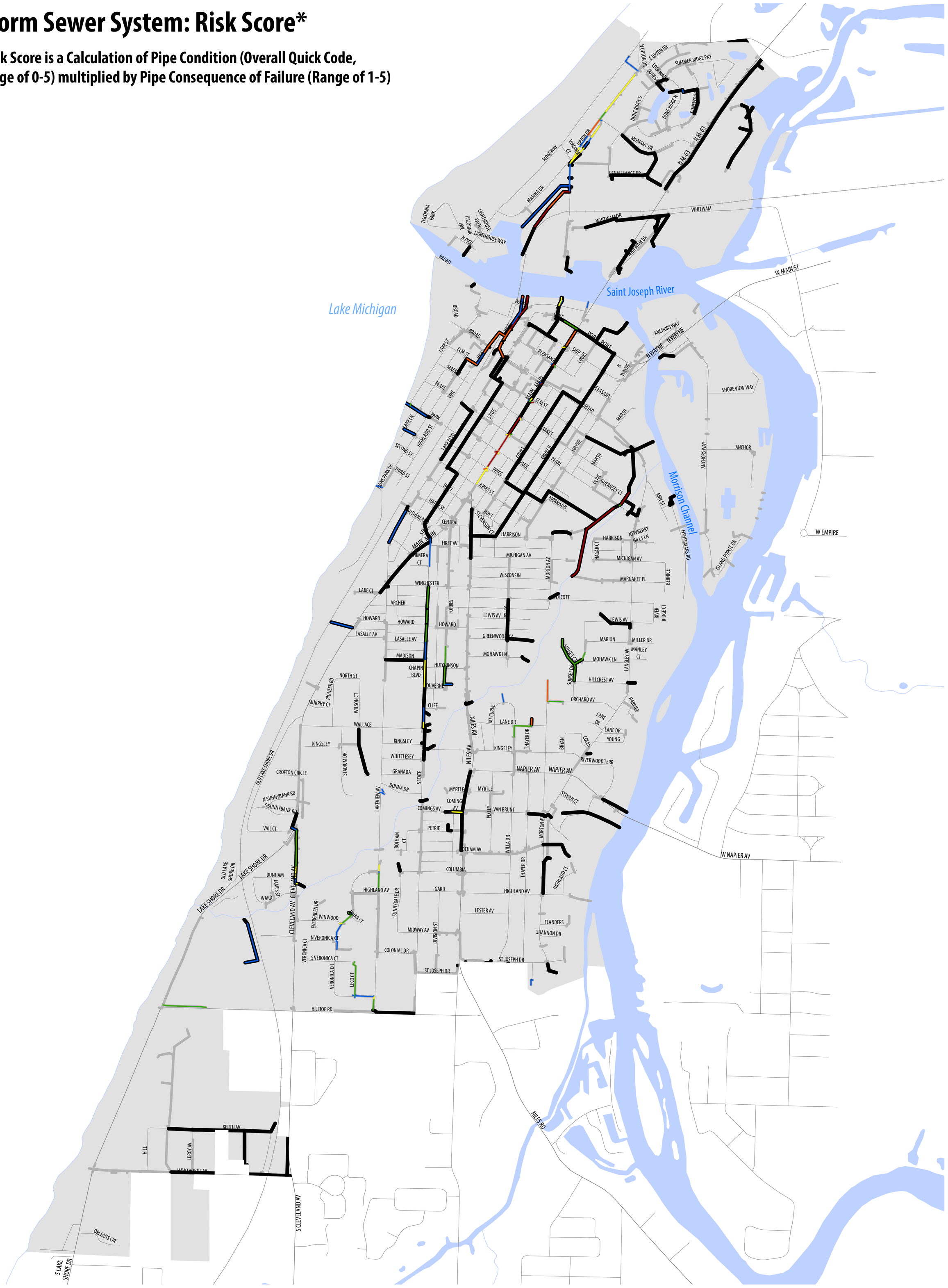
Storm Sewer System: Risk Score*

***Risk Score is a Calculation of Pipe Condition (Overall Quick Code, Range of 0-5) multiplied by Pipe Consequence of Failure (Range of 1-5)**



Asset Management Plan

CITY OF St. Joseph

Storm Sewer Risk Score

- 0 - 4, Very Low
- 5 - 9, Low
- 10 - 14, Moderate
- 15 - 19, High
- 20 - 25, Very High

None of the Above Colors = No Risk Score Data

- Storm Sewers Less than 18" Diameter
- Storm Sewers 18" Diameter or Greater
- City Limits
- Streets
- Railroads

Data Source Date: October 2017
Print Date: October 2017

0 1,000 2,000 Feet

N

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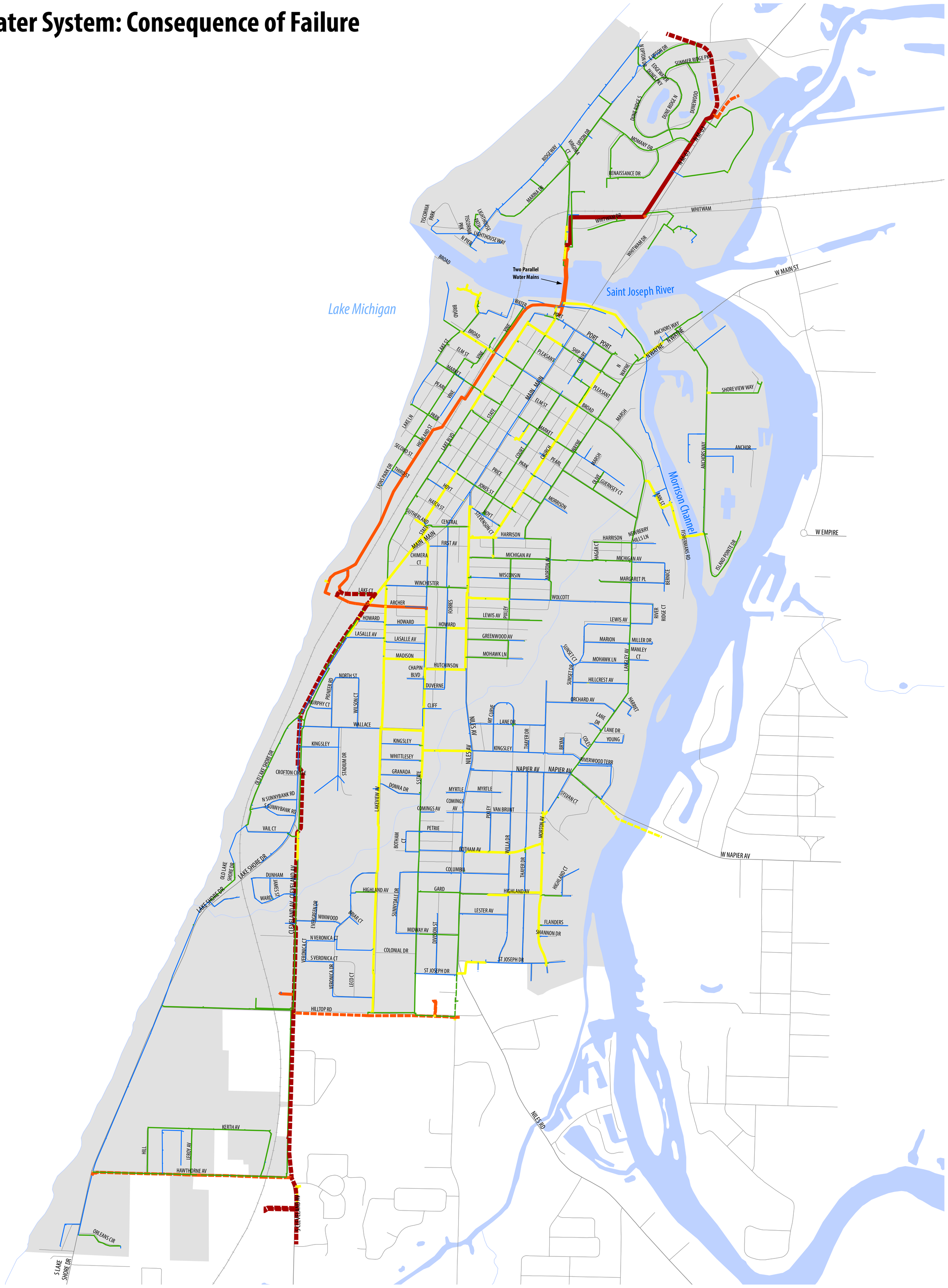
Appendix C – Water System Mapping

Consequence of Failure

Water Main Break Locations and Year Installed

Water System: Consequence of Failure



Asset Management Plan

CITY OF St. Joseph

Water System Consequence of Failure

- Very Low COF
- Low COF
- Moderate COF
- High COF
- Very High COF

Dashed Lines = Not Owned by City of St Joseph

- City Limits
- Streets
- Railroads

Data Source Date: December 2016
Print Date: October 2017

0 1,000 2,000 Feet

N

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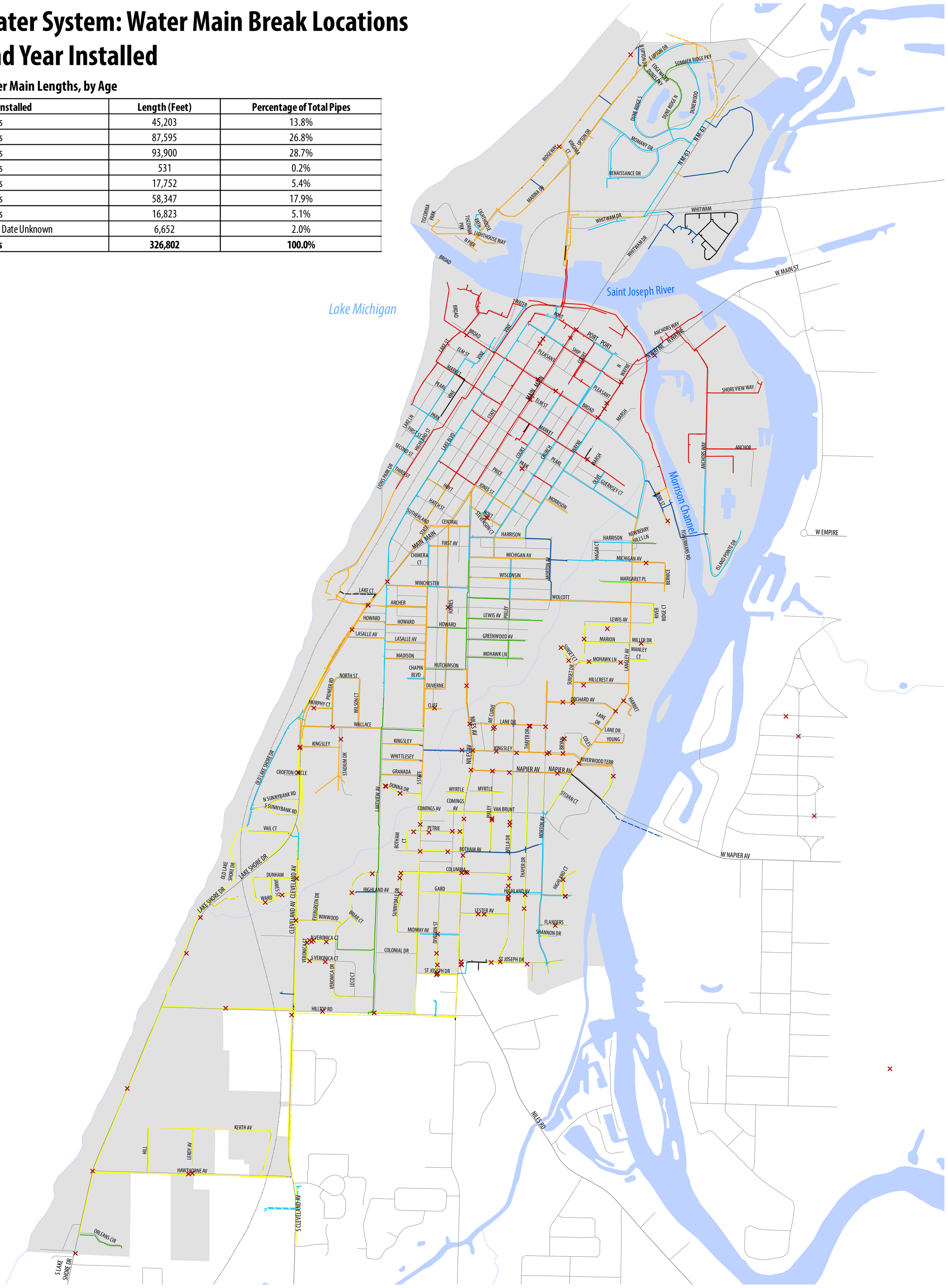
Water System: Water Main Break Locations and Year Installed

Water Main Lengths, by Age

Year Installed	Length (Feet)	Percentage of Total Pipes
1890's	45,203	13.8%
1920's	87,595	26.8%
1950's	93,900	28.7%
1980's	531	0.2%
1990's	17,752	5.4%
2000's	58,347	17.9%
2010's	16,823	5.1%
Install Date Unknown	6,652	2.0%
Totals	**326,802**	**100.0%**



Asset Management Plan

Water Mains by Decade Installed:

- 1890's
- 1920's
- 1950's
- 1980's
- 1990's
- 2000's
- 2010's
- Install Date Unknown

Dashed Lines = Not Owned by City of St Joseph

- Water Main Break Locations
- City Limits
- Streets
- Railroads

Main Break Data Source Date: April 2017
Installation Data Source Date: October 2017
Print Date: October 2017

0 1,000 2,000 Feet

\\dtdata\projects\Sjo2000\02t\GIS-data\Projects\Public Information Meeting No 1\Water Year Installed Public Information Meeting No1.mxd

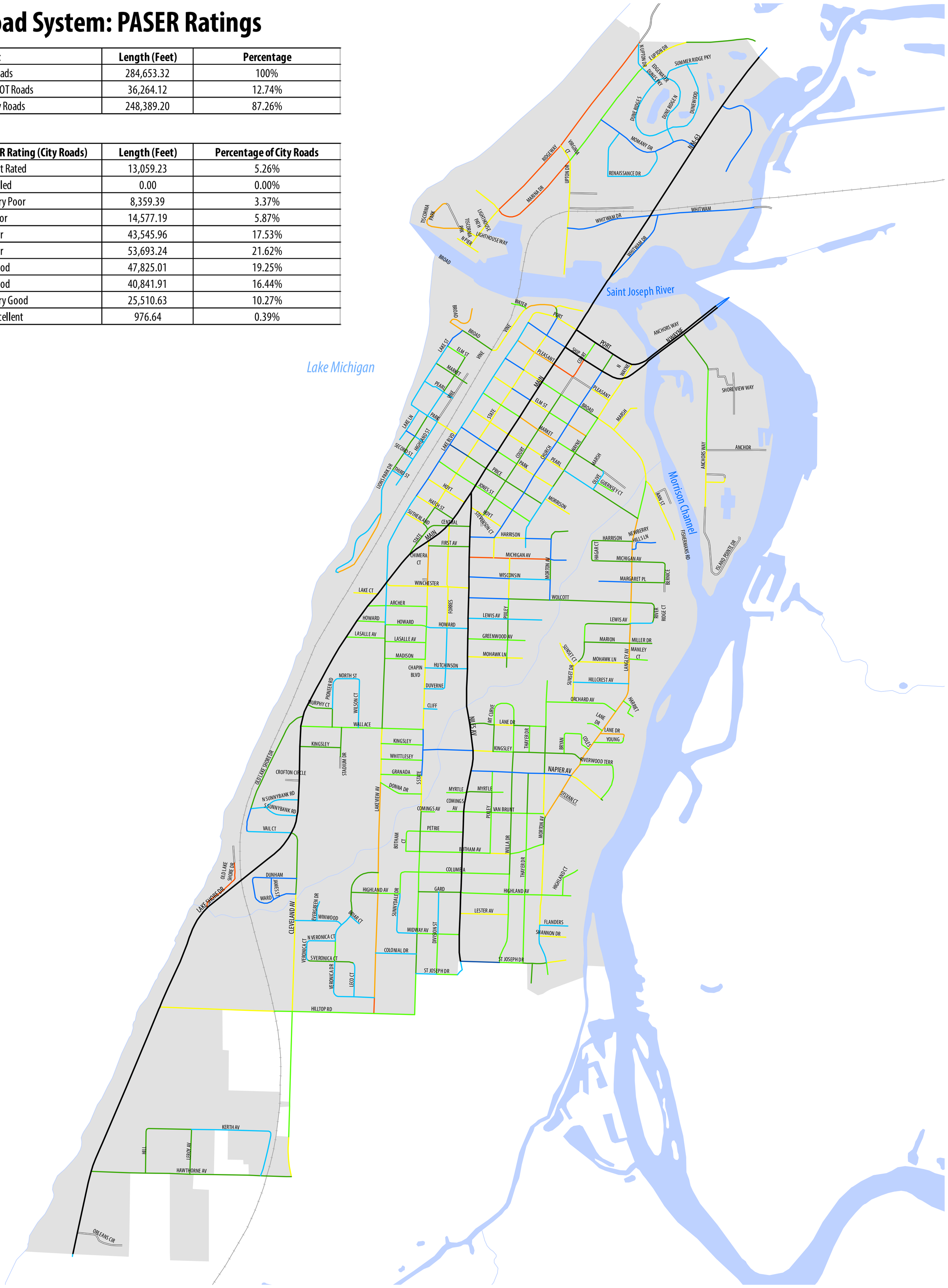
Appendix D – Road System Mapping

PASER Ratings

Road System: PASER Ratings

Asset	Length (Feet)	Percentage
All Roads	284,653.32	100%
MDOT Roads	36,264.12	12.74%
City Roads	248,389.20	87.26%

PASER Rating (City Roads)	Length (Feet)	Percentage of City Roads
0 - Not Rated	13,059.23	5.26%
1 - Failed	0.00	0.00%
2 - Very Poor	8,359.39	3.37%
3 - Poor	14,577.19	5.87%
4 - Fair	43,545.96	17.53%
5 - Fair	53,693.24	21.62%
6 - Good	47,825.01	19.25%
7 - Good	40,841.91	16.44%
8 - Very Good	25,510.63	10.27%
9 - Excellent	976.64	0.39%



Asset Management Plan

2015 PASER Ratings

- 0 - Not Rated (mostly alleys)
- 1 - Failed
- 2 - Very Poor
- 3 - Poor
- 4 - Fair
- 5 - Fair
- 6 - Good
- 7 - Good
- 8 - Very Good
- 9 - Excellent
- MDOT Roads
- City Limits
- Railroads

Data Source Date: 2015
Print Date: October 2017

0 1,000 2,000 Feet

\\dtdata\projects\Sjo2000\02t\GIS-data\Projects\Public Information Meeting No 1\PASER Rating Map Public Information Meeting No1.mxd

Appendix E – Lift Station Evaluations

DUNHAM

Dunham Sanitary pump station Dry Pit Style/ Original installation 1969	System	Equipment Unit	Assets	OVERALL CONDITION RATING BY VISUAL INSPECTION ONLY (1 - 5) 1=Like New, 2=Good, 3=Fair, 4=Poor, 5=Non-Functioning	Approximate Age of Equipment	Estimated Useful Life (YEARS)	Equipment Location	Asset Manufacture	Asset Model	Asset Part Number	Asset Serial Number	Asset Installation Date	Equipment Cost	CAPACITY (GPM)	HORSEPOWER (HP)	FULL LOAD AMPS (A)	Pump Size	REVELOUTION PER MINUTE (RPM)	TOTAL HEAD (FEET)	DIAMETER (INCHES)	IMPELLER SIZE (INCHES)	NEMA RATING	PHASE	VOLTAGE (VOLTS)	VOLUME (UOM)	Rating	SIZE (DIAMETER)	AMP DRAW L1 (AMPS)	AMP DRAW L2 (AMPS)	AMP DRAW L3 (AMPS)	MEGGER RESULTS (OHMS)	WATTAGE	RUN HOURS
	Process	Pump Train 1	P-1	3	4	15	Drywell	Yeoman	6260	65159		2012	$4,000.00	100	2.0	7	4072	1160	16		6.75		3	240										20694.9
	Process	Pump Train 1	Inlet Isolation Valve	4	47	25	Drywell	Kennedy				1969	$1,000.00							4													
	Process	Pump Train 1	Discharge Piping	4	47	25						1969	$1,000.00							4													
	Process	Pump Train 1	Discharge Isolation Valve	3	4	25	Drywell	Kennedy				1969	$1,000.00							4													
	Process	Pump Train 1	Discharge Check Valve	2	3	25	Drywell	Kennedy				2012	$1,800.00							4													
	Process	Pump Train 2	P-2	4	4	15	Drywell	Yeoman	6260	65159		2012	$4,000.00	100	2.0	7	4072	1160	16		6.75		3	240										19688.6
	Process	Pump Train 2	Inlet Isolation Valve	4	47	25	Drywell	Kennedy				1969	$1,000.00							4													
	Process	Pump Train 2	Discharge Piping	4	47	25						1969	$1,000.00							4													
	Process	Pump Train 2	Discharge Isolation Valve	3	4	25	Drywell	Kennedy				1969	$1,000.00							4													
	Process	Pump Train 2	Discharge Check Valve	2	3	25	Drywell	Kennedy				2012	$1,800.00							4													
	Process	Piping	Miscellaneous Piping and Valves	4	47	25						1969	$1,000.00																				
	Electrical	General Electrical	Main Disconnect	4	4	30	Outside	Siemens				2012	$2,200.00									3R	3	600									
	Electrical	General Electrical	Manual transfer switch	NA		30																											
	Electrical	General Electrical	Generator Receptacle and Backbox	NA																													
	Electrical	General Electrical	Electrical Equipment Mounting Rack	NA																													
	Electrical	General Electrical	Pump Control Panel	4	47	30	Drywell	Unknown				1969	$6,000.00																				
	Electrical	SCADA	Telemetry/SCADA Panel	NA																													
	Electrical	Support Equipment	Exhaust Fan System	5	25	15	Drwell	A.B. Smith					$1,000.00		0.3																		
	Electrical	Support Equipment	Sump Pump System	4	15	10	Sump Pit	Unknown					$500.00																				
	Electrical	Support Equipment	Dehumidifier	5	25	10	Drywell	Unknown					$600.00																				
	Electrical	Controls	Floats (4)																														
	Structural	Structural	Pump Station Can Exterior Condition	5																													
	Structural	Structural	Pump Can Interior Condition	4																													
	Structural	Structural	Ladder Condition	4																													
	Structural	Structural	Wet Well																														

Comments:

In 2012, the pumps were rebuilt and new check valves installed. During the visit, pump 1 and pump 2 were clogged and not pushing water. Pump 2 had a severe in-balance problem and was very wobbly. This station is very damp and most of the equipment is barely working or not working at all. The access hatch is in poor shape and a safety hazard. The electrical disconnect box is of the wrong type and style for 240V system. The location of this station is land-locked by the railroad company and surronding area. Owner states that they cannot get large service equipment to this location for major repairs.

FAIRWAYS

The fairways sanitary pump station Submersible Style Pump Station		System	Equipment Unit	Assets	OVERALL CONDITION RATING BY VISUAL INSPECTION ONLY (1 - 5) 1=Like New, 2=Good, 3=Fair, 4=Poor, 5=Non-Functioning	Approximate Age of Equipment	Estimated Useful Life (YEARS)	Equipment Location	Asset Manufacture	Asset Model	Asset Part Number	Asset Serial Number	Asset Installation Date	Equipment Cost	CAPACITY (GPM)	HORSEPOWER (HP)	FULL LOAD AMPS (A)	INVERTER RATED (Yes/No)	REVELOUTION PER MINUTE (RPM)	TOTAL HEAD (FEET)	DIAMETER (INCHES)	PHASE	VOLTAGE (VOLTS)	VOLUME (UOM)	RATING	AMP DRAW L1 (AMPS)	MEGGER RESULTS (OHMS)	RUN HOURS
		Process	Pump Train 1	P-1	2	5	15	Wet Well	Barnes	XSGV3022L			2010	$6,000.00	64	3			3450	44		1	240			15.5		1041.9
		Process	Pump Train 1	Discharge Piping	2	5	25						2010	$1,000.00							2							
		Process	Pump Train 1	Discharge Isolation Valve	2	5	25						2010	$400.00							2							
		Process	Pump Train 1	Discharge Check Valve	2	5	25						2010	$500.00							2							
		Process	Pump Train 2	P-2	2	5	15	Wet Well	Barnes	XSGV3022L			2010	$6,000.00	64	3			3450	44		1	240			15.5		1031.5
		Process	Pump Train 2	Discharge Piping	2	5	25						2010	$1,000.00							2							
		Process	Pump Train 2	Discharge Isolation Valve	2	5	25						2010	$400.00							2							
		Process	Pump Train 2	Discharge Check Valve	2	5	25						2010	$500.00							2							
		Process	Piping	Bypass isolation valve	2	5	25						2010	$500.00														
		Process	Piping	Miscellaneous Piping and Valves	2	5	25						2010	$1,000.00														
		Electrical	General Electrical	Main Disconnect	1	5	30						2010	$2,200.00														
		Electrical	General Electrical	Automatic Transfer Switch	1	5	20	Outside	Cummins	OTECA-4637079		D100113455	2010	$1,800.00			125					1	240					
		Electrical	General Electrical	Generator	2	5	20	Outside	Cummins	GGMA-4639157		D100115943	2010	$40,000.00								1			20KVA			
		Electrical	General Electrical	Electrical Equipment Mounting Rack	2	5	30						2010	$1,000.00														
		Electrical	General Electrical	Pump Control Panel	1	5	25	Outside	Gasvoda/Siemens	LC150		W3T112281	2010	$7,000.00								1	240					
		Electrical	SCADA	Alarm Dialer		5	15		Omnistie	Crystal Ball			2010	$2,500.00														
		Electrical	Controls	Floats		5																						
		Electrical	Controls	Level Sensor/Transmitter		5																						
		Structural	Structural	Wet Well		5																						

Comments:

This is a newer station and in very good condition. One noteable problem was the top brackets that hold the pump guides in place are already considerably rusty.

HAWTHORNE

Hawthorne Pump Station - Self Cleaning Vertical Style Pump Station	System	Equipment Unit	Assets	OVERALL CONDITION RATING BY VISUAL INSPECTION ONLY (1 - 5) 1=Like New, 2=Good, 3=Fair, 4=Poor, 5=Non-Functioning	Approximate Age of Equipment	Estimated Useful Life (YEARS)	Detailed Location (Floor, Room, Abo	Asset Manufacture	Asset Model	Asset Part Number	Asset Serial Number	Asset Installation Date	Equipment Cost	CAPACITY (GPM)	HORSEPOWER (HP)	FULL LOAD AMPS (A)	INVERTER RATED (Yes/No)	REVELOUTION PER MINUTE (RPM)	TOTAL HEAD (FEET)	DIAMETER (INCHES)	IMPELLER SIZE (INCHES)	NEMA RATING	PHASE	VOLTAGE (VOLTS)	KVA	TYPE	SIZE (DIAMETER)	AMP DRAW L1 (AMPS)	AMP DRAW L2 (AMPS)	AMP DRAW L3 (AMPS)	MEGGER RESULTS (OHMS)	RUN HOURS
	Process	Pump Train 1	P-1 with motor	4	47		Building	Chicago Pump	Flush Kleen	C-1745-1???		1969			30	84		885					3	240				70	64	64	NA	880.5
	Process	Pump Train 1	Wet Well Isolation Valve	4	47		Building					1969	$2,800.00							10												
	Process	Pump Train 1	Discharge Swing Check Valve	4	47		Building	Eddy-Iowa				1969	$4,000.00							8												
	Process	Pump Train 1	Discharge Isolation Valve	5	47		Building	Iowa-Valve				1969	$2,000.00							8												
	Process	Pump Train 1	Miscellaneous Piping and Valves	4	47		Building					1969	$5,000.00							8												
	Process	Pump Train 2	P-2 with motor	4	47		Building	Chicago Pump	Flush Kleen	C-1745-????		1969			30	84		885					3	240				80	77	77	NA	564
	Process	Pump Train 2	Wet Well Isolation Valve	4	47		Building					1969	$2,800.00							10												
	Process	Pump Train 2	Discharge Swing Check Valve	4	47		Building	Eddy-Iowa				1969	$4,000.00							8												
	Process	Pump Train 2	Discharge Isolation Valve	5	47		Building	Iowa-Valve				1969	$2,000.00							8												
	Process	Pump Train 2	Miscellaneous Piping and Valves	4	47		Building					1969	$5,000.00							8												
	Process	General Piping	Miscellaneous Piping and Valves	5	47		Building/Wet Well					1969	$10,000.00							10												
	Electrical	Pump 1 Electrical	P-1 Soft Start	3	8		MCC	Benshaw				2008	$3,000.00																		
	Electrical	Pump 2 Electrical	P-2 Soft Start	2	6		MCC	Benshaw				2010	$3,000.00																		
	Electrical	General Electrical	Automatic Transfer Switch	3	15		Building	Kohler	GLS-564341-0400		K0716031	2001	$4,000.00																		
	Electrical	General Electrical	Sump Pump	4			Building LL						$500.00																		
	Electrical	General Electrical	Generator	4	15		Outside	Kohler	100RZG	716338		2001						1800							113	Gas					
	Electrical	General Electrical	Motor Control Center	4	47		Building	Allen Bradley			760762	1969											3	240							
	Electrical	General Electrical	Pump Controller	2	6		Panel	Multitrode			L0910563	2010	$5,000.00																		
	Electrical	General Electrical	Building Heater	4			Building	Electromode					$1,000.00																		
	Electrical	General Electrical	Disconnect Switch	3	15		Outside	Siemens					$4,000.00			400															
	Electrical	SCADA	Telemetry/Alarm Dialer	2	5		Building	United Security Products	AD2000				$1,000.00																		
			Wet Well Hatch	5			Outside																								
	Structural	Structural	Wet Well																													
	Structural	Building	Pump House																													
	Structural	Discharge Structure	Concrete																													

Comments:

This is an older station that appears to have been built/installed in 1969. The pumps and piping/valves are in poor shape. The pump controller is newer. Some of this equipment is leaking. There is a lot of corrosion present on the metal equipment inside. The hatch to the wet well is in poor condition. The motor control center is old and nearing the end of it's useful life. Some of the piping for the self cleaning feature has been repaired in the last couple days before this site visit.

ISLAND POINTE

Island Pointe Sanitary Pump Station - Submersible Style Pump Station	System	Equipment Unit	Assets	OVERALL CONDITION RATING BY VISUAL INSPECTION ONLY (1 - 5) 1=Like New, 2=Good, 3=Fair, 4=Poor, 5=Non-Functioning	Approximate Age of Equipment	Estimated Useful Life (YEARS)	Equipment Location	Asset Manufacture	Asset Model	Asset Part Number	Asset Serial Number	Asset Installation Date	Equipment Cost	CAPACITY (GPM)	HORSEPOWER (HP)	FULL LOAD AMPS (A)	REVELOUTION PER MINUTE (RPM)	TOTAL HEAD (FEET)	DIAMETER (INCHES)	NEMA RATING	PHASE	VOLTAGE (VOLTS)	AMP DRAW L1 (AMPS)	AMP DRAW L2 (AMPS)	MEGGER RESULTS (OHMS)	RUN HOURS
	Process	Pump Train 1	P-1	3	15	15	Wet Well	Barnes	XSGV			2001	$7,000.00		5		3450				1	240	19.2	19.7	400M	2731.8
	Process	Pump Train 1	Discharge Piping	2	15	25	Wet well/Valve Pit						$2,000.00						4							
	Process	Pump Train 1	Discharge Isolation Valve	2	15	25	Valve Pit						$800.00						4							
	Process	Pump Train 1	Discharge Check Valve	2	15	25		Clow/Kennnedy					$1,800.00						4							
	Process	Pump Train 2	P-2	3	15	15	Wet Well	Barnes	XSGV			2001	$7,000.00		5		3450				1	240	19.9	20.5	300M	2998.4
	Process	Pump Train 2	Discharge Piping	2	15	25	Wet Well/Valve Pit						$2,000.00						4							
	Process	Pump Train 2	Discharge Isolation Valve	2	15	25	Valve Pit						$800.00						4							
	Process	Pump Train 2	Discharge Check Valve	2	15	25	Valve Pit	Clow/Kennnedy					$1,800.00						4							
	Process	Piping	Bypass isolation valve	2	15	25	Valve Pit						$800.00						4							
	Process	Piping	Miscellaneous Piping and Valves	2	15	25	Valve Pit						$1,000.00						4							
	Electrical	General Electrical	Main Disconnect	3	15	30	On Control Cabinet	Siemens	GF223NR				$300.00			100				3R	1	240				
	Electrical	General Electrical	Generator Plug	2	15	30	On Control Cabinet		7334R			2001	$500.00			100						250/600				
	Electrical	General Electrical				20																				
	Electrical	General Electrical				30																				
	Electrical	General Electrical	Pump Control Panel	3	15	25	Outside						$8,000.00													
	Electrical	SCADA	Alarm Dialer	2	6	15	Control Panel	United Security Products	AD-2000			2010	$1,000.00													
	Electrical	Controls	Floats																							
	Electrical	Controls	Level Sensor/Transmitter																							
	Structural	Structural	Wet Well																							

Comments:

This station provided by U.S. Filter is in fair condition. The phone line box was found open and there is a considerable amount of grease in the wet well. The pump 1 pump leads were a little loose and had signs of a corrosion. The disconnect was very dirty and needs cleaning. The pump leads were meggered and were near 300 to 400 Meg which indicates they are still good. Overall the pump station is in good condition.

LAKE STREET

Lake Street Sanitary Pump Station Submersible Style Pump Station	System	Equipment Unit	Assets	OVERALL CONDITION RATING BY VISUAL INSPECTION ONLY (1 - 5) 1=Like New, 2=Good, 3=Fair, 4=Poor, 5=Non-Functioning	Approximate Age of Equipment	Estimated Useful Life (YEARS)	Equipment Location	Asset Manufacture	Asset Model	Asset Part Number	Asset Serial Number	Asset Installation Date	Equipment Cost	CAPACITY (GPM)	HORSEPOWER (HP)	FULL LOAD AMPS (A)	REVELOUTION PER MINUTE (RPM)	TOTAL HEAD (FEET)	DIAMETER (INCHES)	NEMA RATING	PHASE	VOLTAGE (VOLTS)	AMP DRAW L1 (AMPS)	AMP DRAW L2 (AMPS)	AMP DRAW L3 (AMPS)	MEGGER RESULTS (OHMS)	RUN HOURS
	Process	Pump Train 1	P-1	4	27	15	Wet Well	Flygt	3085 MT			1989	$5,000.00		2						3	208	8.2	8.2	8.2	BAD	2.47
	Process	Pump Train 1	Discharge Piping	4	27	25	Wet well/Valve Pit						$1,000.00						6								
	Process	Pump Train 1	Discharge Check Valve	3	27	25		Ebby					$2,500.00						6								
	Process	Pump Train 2	P-2	4	27	15	Wet Well	Flygt	3085MT			1989	$5,000.00		2						3	208	10.2	10.2	10.2	BAD	7.61
	Process	Pump Train 2	Discharge Piping	4	27	25	Wet Well/Valve Pit						$1,000.00														
	Process	Piping	Bypass Valve	4	27	25	Valve Pit						$1,500.00						6								
	Process	Piping	Miscellaneous Piping and Valves	4	27	25	Valve Pit						$1,000.00						6								
	Electrical	General Electrical	Main Disconnect	4	27	30	On Control Cabinet	Square D					$1,400.00			60				3R	3	240					
	Electrical	General Electrical	Generator Plug	NA																							
	Electrical	General Electrical	Pump Control Panel	4	27	25	Outside	Kennedy	500632	711-7817	5100-0453	1989	$6,000.00														
	Electrical	SCADA	Alarm Dialer	NA		15	Control Panel																				
	Electrical	Controls	Floats																								
	Electrical	Controls	Level Sensor/Transmitter																								
	Structural	Structural	Wet Well																								

Comments:

This station provided by Kennedy was installed in 1989. The pumps meggered bad which may be due to pump problems or bad pump cables. According to the operator, the high-rise buildings are now connected to this pump station which may require upgrades to the station or a new station to be installed. There is only one discharge line from the wet well to the valve pit. There is no receptacle for emergency power. There is no alarm dialer, only local indication.

NORTH PIER

North Pier Sanitary Pump Station Submersible Style	System	Equipment Unit	Assets	OVERALL CONDITION RATING BY VISUAL INSPECTION ONLY (1 - 5) 1=Like New, 2=Good, 3=Fair, 4=Poor, 5=Non-Functioning	Approximate Age of Equipment	Estimated Useful Life (YEARS)	Equipment Location	Asset Manufacture	Asset Model	Asset Part Number	Asset Serial Number	Asset Installation Date	Equipment Cost	CAPACITY (GPM)	HORSEPOWER (HP)	FULL LOAD AMPS (A)	TOTAL HEAD (FEET)	DIAMETER (INCHES)	PHASE	VOLTAGE (VOLTS)	AMP DRAW L1 (AMPS)	AMP DRAW L2 (AMPS)	MEGGER RESULTS (OHMS)	RUN HOURS
	Process	Pump Train 1	P-1	4		15	Wet Well	Homa	GRP15-1	9505110			$2,000.00		2 or 3			4	1	120	7	Unable to get		1119175
	Process	Pump Train 1	Discharge Piping	3		25	Wet Well						$800.00					4						
	Process	Pump Train 1	Discharge Isolation Valve	3		25	Wet Well						$150.00					4						
	Process	Pump Train 1	Discharge Check Valve	NA		25																		
	Process	Pump Train 2	P-2	4		15	Wet Well	Homa	GRP-15-1	9505110			$2,000.00		2 or 3			4	1	120	6.8	Unable to get		937922
	Process	Pump Train 2	Discharge Piping	3		25	Wet Well						$800.00					4						
	Process	Pump Train 2	Discharge Isolation Valve	3		25	Wet Well						$150.00					4						
	Process	Pump Train 2	Discharge Check Valve	NA		25																		
	Process	Piping	Bypass isolation valve	NA		25																		
	Process	Piping	Miscellaneous Piping and Valves	4		25	Valve Pit						$1,000.00					4						
	Electrical	General Electrical	Main Disconnect	5		30	Electrical Pole	Cutler Hammer	Unknown				$2,200.00											
	Electrical	General Electrical	Generator Plug	4		30	Electrical Pole																	
	Electrical	General Electrical	Pump Control Panel	4		25	Pole						$3,000.00											
	Electrical	SCADA	Alarm Dialer	NA		15																		
	Electrical	Controls	Floats																					
	Electrical	Controls	Level Sensor/Transmitter																					
	Structural	Structural	Wet Well																					

Comments:

This pump station is old and in poor condition. The pump control panel is too small and not adequate for the purpose. Most of the internal components are out-dated and in very poor condition. The piping and valves in the wet well are PVC plastic. The pipe in the valve chamber was leaking but repaired with some type of tape material. No check valves were found. The main disconnect is of the old circular fuse style

ALCO

Alco Sanitary Pump Station Dry Pit Style (Original Installation 1968)	System	Equipment Unit	Assets	OVERALL CONDITION RATING BY VISUAL INSPECTION ONLY (1 - 5) 1=Like New, 2=Good, 3=Fair, 4=Poor, 5=Non-Functioning	Approximate Age of Equipment	Estimated Useful Life (YEARS)	Equipment Location	Asset Manufacture	Asset Model	Asset Part Number	Asset Serial Number	Asset Installation Date	Equipment Cost	CAPACITY (GPM)	HORSEPOWER (HP)	FULL LOAD AMPS (A)	TOTAL HEAD (FEET)	DIAMETER (INCHES)	PHASE	VOLTAGE (VOLTS)	AMP DRAW L1 (AMPS)	AMP DRAW L2 (AMPS)	AMP DRAW L3 (AMPS)	RUN HOURS
	Process	Pump Train 1	P-1	4	48	15	Drywell	Yeoman	4093		64244	1968	$6,000.00	100	3.0		26	4	3	240	6.4	7	7	17277.2
	Process	Pump Train 1	Inlet Isolation Valve	4	48	25	Drywell	Kennedy				1968	$800.00					4						
	Process	Pump Train 1	Discharge Piping	4	48	25	Drywell	Kennedy				1968	$1,000.00											
	Process	Pump Train 1	Discharge Isolation Valve	4	48	25	Drywell	Kennedy				1968	$800.00					4						
	Process	Pump Train 1	Discharge Check Valve	4	48	25	Drywell	Kennedy				1968	$1,800.00					4						
	Process	Pump Train 2	P-2	4	48	15	Drywell	Yeoman	4093			1968	$6,000.00	100	3.0		26	4	3	240	7.5	8.6	8.2	17885.4
	Process	Pump Train 2	Inlet Isolation Valve	4	48	25	Drywell	Kennedy				1968	$800.00					4						
	Process	Pump Train 2	Discharge Piping	4	48	25	Drywell	Kennedy				1968	$1,000.00											
	Process	Pump Train 2	Discharge Isolation Valve	4	48	25	Drywell	Kennedy				1968	$800.00					4						
	Process	Pump Train 2	Discharge Check Valve	4	48	25	Drywell	Kennedy				1968	$1,800.00					4						
	Process	Piping	Miscellaneous Piping and Valves	4	48	25						1968	$1,000.00											
	Electrical	General Electrical	Main Disconnect	2		30	Outside	Siemens					$1,200.00											
	Electrical	General Electrical	Manual transfer switch	3		30																		
	Electrical	General Electrical	Generator Receptacle and Backbox	2																				
	Electrical	General Electrical	Electrical Equipment Mounting Rack	NA																				
	Electrical	General Electrical	Pump Control Panel	4	48	30	Drywell	McCleary Engineering	B-5379	185523		1968	$6,000.00											
	Electrical	SCADA	Telemetry/SCADA Panel	NA																				
	Electrical	Support Equipment	Exhaust Fan System	5		15	Drwell																	
	Electrical	Support Equipment	Sump Pump System	3		10	Sump Pit	Unknown																
	Electrical	Support Equipment	Dehumidifier	5		10	Drywell	Unknown																
	Electrical	Controls	Floats (4)																					
	Structural	Structural	Pump Station Can Exterior Condition	NA																				
	Structural	Structural	Pump Can Interior Condition	4																				
	Structural	Structural	Ladder Condition	4																				
	Structural	Structural	Wet Well																					
		Structural	Pump Station Floor	4																				

Comments:

This station is very old and in very poor shape. The electrical service has some newer equipment and the pump controller is newer but the rest of this pump station is well beyond it's useful life.

EDGEWATER

Edgewater Sanitary Pump Station. Submersible Style Pump Station	System	Equipment Unit	Assets	OVERALL CONDITION RATING BY VISUAL INSPECTION ONLY (1 - 5) 1=Like New, 2=Good, 3=Fair, 4=Poor, 5=Non-Functioning	Approximate Age of Equipment	Estimated Useful Life (YEARS)	Equipment Location	Asset Manufacture	Asset Model	Asset Part Number	Asset Serial Number	Asset Installation Date	Equipment Cost	CAPACITY (GPM)	HORSEPOWER (HP)	FULL LOAD AMPS (A)	REVELOUTION PER MINUTE (RPM)	TOTAL HEAD (FEET)	DIAMETER (INCHES)	IMPELLER SIZE (INCHES)	PHASE	VOLTAGE (VOLTS)	AMP DRAW L1 (AMPS)	AMP DRAW L2 (AMPS)	AMP DRAW L3 (AMPS)	MEGGER RESULTS (OHMS)	WATTAGE	Run Hours
	Process	Pump Train 1	P-1	2	4	15	Wet Well	Barnes	6XSE40044HA	84774		2007	$40,000.00	1500	40		1750	75	6	10	3	480	27	27	27			2467
	Process	Pump Train 1	Discharge Piping	2	9	25	Building					2007	$5,000.00						8									
	Process	Pump Train 1	Discharge Isolation Plug Valve	2	9	25	Building					2007	$2,000.00						8									
	Process	Pump Train 1	Discharge Swing Check Valve	2	9	25	Building					2007	$4,000.00						8									
	Process	Pump Train 2	P-2	2	9	15	Wet Well	Barnes	6XSE40044HA	84774		2007	$40,000.00	1500	40		1750	75	6	10	3	480	31	32.5	32.5			2509
	Process	Pump Train 2	Discharge Piping	2	9	25	Building					2007	$5,000.00						8									
	Process	Pump Train 2	Discharge Isolation Plug Valve	2	9	25	Building					2007	$2,000.00						8									
	Process	Pump Train 2	Discharge Swing Check Valve	2	9	25	Building						$4,000.00						8									
	Process	Piping	Miscellaneous Piping and Valves	2	9	25	Building						$10,000.00						8									
	Electrical	General Electrical	Pump 1 VFD	2	9	15	Building	Allen Bradly	Powerflex 400				$4,000.00															
	Electrical	General Electrical	Pump 2 VFD	2	9	15	Building	Allen Bradly	Powerflex 400				$4,000.00															
	Electrical	General Electrical	Drive Isolation Transformer 1	2	9	20	Building	Acme	DTGB-063-4S				$2,500.00									480/266					63KVA	
	Electrical	General Electrical	Drive Isolation Transformer 2	2	9	20	Building	Acme					$2,500.00									480/266					63KVA	
	Electrical	General Electrical	Panelboard	2	9	30	Building	Square D	Iline	HCN14522N			$5,000.00			225						600						
	Electrical	General Electrical	Automatic transfer switch	2	9	20	Building	Cummins/Onan		OTC-3370987	D990891727		$2,400.00															
	Electrical	General Electrical	Sump Pump	3	9	10	Building	Liberty	280			2007	$500.00		0.5				1.5									
	Electrical	General Electrical	Pump Controller	2	9	15	Building	Multismart					$3,500.00															
	Electrical	Support	Building Heater																									
	Electrical	Support	Building Exhaust Fan																									
	Electrical	General Electrical	Transformer	2	9	30	Building						$8,000.00														150KVA	
	Electrical	General Electrical	Disconnect Switch	3	9	30	Outside	Eaton																				
	Electrical	General Electrical	Generator	3	9	20	Outside	Cummins/Onan	GGHD-3370908		D990901749																100KW	516.5
	Electrical	Support Equipment	Telog Data Recorder		1	10																						
	Electrical	SCADA	Telemetry			15	Building	United Security	AD-2000			2007	$2,000.00															
	Electrical	Controls	Floats																									
	Structural	Structural	Wet Well																									
	Structural	Building																										

Comments:

This submersible style pump station was partially rehabilitated in 2007. It was converted from a dry well style configuration. Pump 1 was rebuilt in 2012. Most of the equipment is in good condition with exception to some of the old electrical equipment that is partially being used. It appears that some of the electrical equipment was installed after 2007 but it is hard to determine exact age of that equipment. The building structure is older but in relatively good condition. There is a hole in the floor between levels that could be repaired.

VINE STREET

Vine Street Sanitary Pump Station Submersible Style pump station		System	Equipment Unit	Assets	OVERALL CONDITION RATING BY VISUAL INSPECTION ONLY (1 - 5) 1=Like New, 2=Good, 3=Fair, 4=Poor, 5=Non-Functioning	Approximate Age of Equipment	Estimated Useful Life (YEARS)	Equipment Location	Asset Manufacture	Asset Model	Asset Part Number	Asset Serial Number	Asset Installation Date	Asset Vendor	Equipment Cost	CAPACITY (GPM)	HORSEPOWER (HP)	FULL LOAD AMPS (A)	TOTAL HEAD (FEET)	DIAMETER (INCHES)	PHASE	VOLTAGE (VOLTS)	KVA	AMP DRAW L1 (AMPS)	AMP DRAW L2 (AMPS)	AMP DRAW L3 (AMPS)	MEGGER RESULTS (OHMS)
		Process	Pump Train 1	P-1	2	10	20	Wet Well	ITT Flygt								10				3	240		12.2	12.1	11.4	Good
		Process	Pump Train 1	Discharge Piping	3	10	25													6							
		Process	Pump Train 1	Discharge Isolation Valve	3	10	25													6							
		Process	Pump Train 1	Discharge Check Valve	3	10	25													6							
		Process	Pump Train 2	P-2	2	10	20	Wet Well	ITT Flygt								10				2	240		11.2	11	10.6	Good
		Process	Pump Train 2	Discharge Piping	3	10	25													6							
		Process	Pump Train 2	Discharge Isolation Valve	3	10	25													6							
		Process	Pump Train 2	Discharge Check Valve	3	10	25													6							
		Process	Piping	Bypass isolation valve	3	10	25													6							
		Process	Piping	Miscellaneous Piping and Valves	3	10	25													6							
		Electrical	General Electrical	Main Disconnect	2	10	30											125									
		Electrical	General Electrical	Manual transfer switch	NA See Notes																						
		Electrical	General Electrical	Generator Receptacle/Box	2	10	30																				
		Electrical	General Electrical	Electrical Equipment Mounting Rack	NA																						
		Electrical	General Electrical	Pump Control Panel	2	10	30	Outside	Kennedy	E370201-01	624842	E370201-01															
		Electrical	General Electrical	Transformer	2	10	30	Outside	G.E.	9T23B3883			2003		$5,000						3	480/240	45				
		Electrical	SCADA	Telemetry/SCADA Panel	2	6	20								$15,000												
		Electrical	Controls	Floats																							
		Electrical	Controls	Level Sensor/Transmitter	2	10	15		Multitrode	MT2PC-3			2003	Kennedy	$5,000												
		Structural	Structural	Wet Well																							

Comments

This is a relatively newer station in good condition. One potentially serious problem observed is that there is no mechanical interlock between the main breaker from the utility service and the breaker for the generator plug. If they are both on with utility power present and a generator connected, one of the devices may blow up. The control cabinet needs cleaning. The actual age of this station is unknown at the time of this report but appears to be approxiamtely 10 years old. One of the check valve arms was laying on floor but was put back on during our visit.

WHITWAM

Whitwam Sanitary Pump Station. Submersible Style pump station	System	Equipment Unit	Assets	OVERALL CONDITION RATING BY VISUAL INSPECTION ONLY (1 - 5) 1=Like New, 2=Good, 3=Fair, 4=Poor, 5=Non-Functioning	Approx Age of Equipment	Estimated Useful Life (YEARS)	Equipment Location	Asset Manufacture	Asset Model	Asset Serial Number	Asset Installation Date	Asset Vendor	Equipment Cost	CAPACITY (GPM)	HORSEPOWER (HP)	FULL LOAD AMPS (A)	REVELOUTION PER MINUTE (RPM)	TOTAL HEAD (FEET)	DIAMETER (INCHES)	PHASE	VOLTAGE (VOLTS)	KVA	Run Hours	AMP DRAW L1 (AMPS)	AMP DRAW L2 (AMPS)	AMP DRAW L3 (AMPS)	MEGGER RESULTS (OHMS)
	Process	Pump Train 1	P-1	3	15	20	Wet Well	ABS	AFP0831-2006 or AFP1062-1562		2001	Rhombus Tech	$12,000		9.4	12.3				3	480		24	9.2	9.3	9.3	400M
	Process	Pump Train 1	Discharge Piping	3	15	25	Wet Well				2001		$2,000						6								
	Process	Pump Train 1	Discharge Isolation Valve	3	15	25	Valve Pit				2001		$1,500						6								
	Process	Pump Train 1	Discharge Check Valve	3	15	25	Valve Pit				2001		$2,400						6								
	Electrical	General Electrical	P-1 VFD	3	15	20	Control Panel	Magnetek/Yaskawa	GPD506V-B014	1W0197072570118	2001		$2,500							3	480						
	Process	Pump Train 2	P-2	3	15	20	Wet Well	ABS	AFP0831-2006 or AFP1062-1562		2001	Rhombus Tech	$12,000		9.4	12.3				3	480		22.6	9.2	9.3	9.3	400M
	Process	Pump Train 2	Discharge Piping	3	15	25	Wet Well				2001		$2,000						6								
	Process	Pump Train 2	Discharge Isolation Valve	3	15	25	Valve Pit				2001		$1,500						6								
	Process	Pump Train 2	Discharge Check Valve	3	15	25	Valve Pit				2001		$2,400						6								
	Electrical	General Electrical	P-2 VFD	3	15	20	Control Panel	Magnetek	GPD506V-B014		2001		$2,500														
	Process	Piping	Bypass isolation valve	3	15	25	Valve Pit				2001		$1,500						6								
	Process	Piping	Miscellaneous Piping and Valves	3	15	25					2001		$2,000						6								
	Electrical	General Electrical	Main Disconnect	3	15	30	Outside				2001		$2,200														
	Electrical	General Electrical	Manual transfer switch	NA		30																					
	Electrical	General Electrical	Generator Receptacle/Box	NA		30																					
	Electrical	General Electrical	Electrical Equipment Mounting Rack	NA		30																					
	Electrical	General Electrical	Pump Control Panel	3	15	25	Outside	SJE Rhombus	CP32-719	11??45X-01295	2001		$25,000			26.6											
	Electrical	General Electrical	Control Panel PLC	2	15	20	Panel	Allen Bradly	Micrologix 1000		2001		$5,000							1	120						
	Electrical	General Electrical	Operator Touch Panel	3	15	15	Panel Mount	AVG					$1,500														
	Electrical	General Electrical	Tansformer	3	15	25							$500									3					
	Electrical	SCADA	Telemetry/SCADA Panel																								
	Electrical	Controls	Floats																								
	Electrical	Controls	Level Sensor/Transmitter																								
	Structural	Structural	Wet Well																								

Comments:

This station is in good condition and about in the middle of it's expected useful life. It has a very uncommon power feed from the utility service. 480V 3 phase 3 wire secondary with one of the phases that is actually bonded to ground. The control cabinet is in overall good condition but has a few rust spots that should be reparied to extend the life of the cabinet.

Appendix F – Miscellaneous

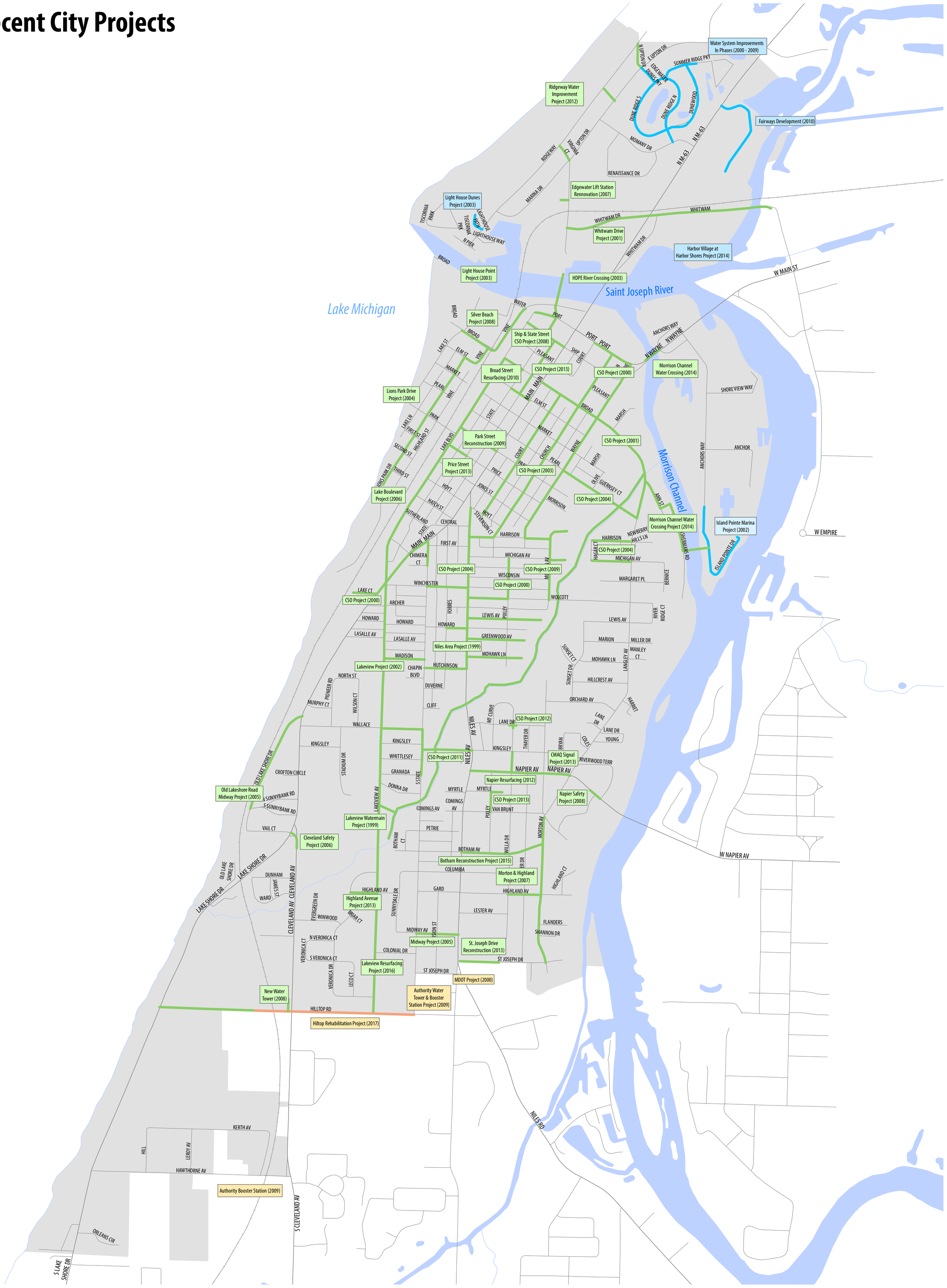
Urban Water Cycle in St. Joseph

Recent City Projects

CIP Prioritization map


URBAN WATER CYCLE
DISTRIBUTION PIPES
LINCOLN AND ROYALTON TOWNSHIPS AUTHORITY TOWERS
BOOSTER STATION
WASTEWATER TREATMENT PLANT
YOUR HOUSE
DISTRIBUTION PIPES
DISTRIBUTION PIPES
MORRISON CHANNEL
NORTH
M 63
BENTON HARBOR
ST. JOSEPH
WATER INTERCONNECT
CSO BYPASS
KIWANIS PARK
St. Joseph
WATER TOWER
EDGEWATER LIFT STATION
STORM SEWER
WATER TREATMENT PLANT
WATER DISTRIBUTION PIPE
HARBOR SHORES GOLF COURSE
TISCORNIA BEACH
JEAN KLOCK PARK
ST. JOSEPH RIVER
SILVER BEACH
LIONS PARK
WATER SUPPLY
LAKE MICHIGAN

Recent City Projects



Asset Management Plan

CITY OF St. Joseph

Recent Projects

- City Projects
- Private Development
- Other Public Project

Base Data

- City Limits
- Streets
- Railroads

Data Source Date: April 2017
Print Date: October 2017

0 1,000 2,000 Feet

N

\\dtdata\projects\Sjo2000\02t\GIS-data\Projects\Public Information Meeting No 1\Recent Projects Public Information Meeting No1.mxd

CIP Prioritization Map

Asset Management Plan

CITY OF St. Joseph

CIP Prioritization Considerations

Water Main Breaks:

× Water Main Break Locations

Water Mains Install Date:

1950's or Older

Sanitary Sewer/Storm Sewer Gravity Mains Quick Codes:

5 (Very Poor) or 4 (Poor)

Water Mains Consequence of Failure:

Very High or High COF

Sanitary Gravity Mains Consequence of Failure:

Very High or High COF

Stormwater Gravity Mains/ Open Drains Consequence of Failure:

Very High or High COF

Street PASER Ratings:

Structural Repairs Needed (2, 3 or 4 Rating)

Non-Structural Treatment Needed (5, 6 or 7 Rating)

Base Data:

City Limits

Streets

Railroads

Print Date: October 2017

0 1,000 2,000 Feet

N

\\dtdata\projects\Sjo2000\02t\GIS-data\Projects\CIP Prioritization.mxd

Appendix G – Detailed Capital Improvement Plan

			Project				Type				Utilities/Scope			16-17			
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	Location/Street	From	To	Reconstruction	Resurfacing/PM	O & M	Other	Water	Stormwater	Wastewater	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL
1 - 3	2017	N/A	2017 CSO Project	San Sewer Interceptor	Pearl St	DPW Entrance							X				$ -
1 - 3	2017	N/A	Dunham Lift Station Relocation	Dunham Ave	West of RR Tracks	East of RR Tracks				X			X		$ 5		$ 5
1 - 3	2017	5280	Hilltop Road Rehab	Hilltop Road	Lakeshore Dr	RR		X			X			$ 103		$ 440	$ 543
1 - 3	2018	N/A	Harrison Avenue Sewer Replacement	Harrison, Church, Jones, & Wayne St	Harrison & Church	Jones & Wayne				X			X				$ -
1 - 3	2018	N/A	Telemetry at Lift Stations	All 10 Lift Stations	-	-							X				$ -
1 - 3	2018	2020	Wallace Reconstruction	Wallace Ave	Lakeshore Dr	S State St.	X				X	X	X	$ 50	$ -	$ -	$ 50
1 - 3	2018	581	Water Street Retaining Wall Design	Water St	State St	Vine St		X		X				$ 5			$ 5
1 - 3	2018	N/A	Morrison Channel Sanitary Crossing Redundancy Study	Sanitary System	-	-				X			X				$ -
1 - 3	2018	N/A	CSO Compliance	N/A	-	-				X			X				$ -
1 - 3	2018	1000	State Street Sanitary Sewer Retirement	State St	Elm St	Ship St				X			X				$ -
1 - 3	2018	N/A	Alco Lift Station Renovation	Alco Lift Station	-	-				X			X				$ -
1 - 3	2019	N/A	2019 CSO Project - CSO storage	CSO 3 & 5	-	-				X			X				$ -
1 - 3	2019	1742	Anchors Way Drainage Project	Anchors Way	Harbor Isle Dr	Anchors Ct				X		X					$ -
1 - 3	2019	4435	Slip Lining Project	All projects identified on worksheet	-	-				X			X				$ -
1 - 3	2019	100	Water Street Sanitary Sewer Replacement	Water St & State St	-	-				X			X				$ -
1 - 3	2020	N/A	Cut & Cap 10 inch Marina Island to BH	Wayne St Drawbridge	-	-					X						$ -
1 - 3	2020	1162	Orchard Ave Reconstruction	Orchard Ave	Morton Ave	Langley Ave	X				X	X	X				$ -
1 - 3	2020	1162	Kingsley Ave Reconstruction	Kingsley Ave	Niles Ave	Morton Ave	X				X	X	X				$ -
1 - 3	2020	1214	Morton Ave Reconstruction	Morton Ave	Orchard Ave	Kingsley Ave	X				X	X	X				$ -
4 - 6	2021	2500	Langley Ave Reconstruction	Langley Ave	Napier Ave	Marion Ave	X				X	X	X	$ -	$ -	$ -	$ -
4 - 6	2021	2100	Langley Ave Reconstruction - 2	Langley Ave	Marion Ave	Pearl St	X				X	X	X	$ -	$ -	$ -	$ -
4 - 6	2022	N/A	Hawthorne Lift Station Renovation	Hawthorne Ave	N/A	N/A				X			X	$ -	$ -	$ -	$ -
4 - 6	2022	790	Lester Ave Reconstruction	Lester Ave	Niles Ave	Willa Drive	X				X	X	X	$ -	$ -	$ -	$ -
4 - 6	2022	1109	Willa Dr Reconstruction	Willa Dr	St. Joseph Dr	Highland Ave	X				X	X	X	$ -	$ -	$ -	$ -
4 - 6	2022	686	Willa Dr Reconstruction - 2	Willa Dr	Highland Ave	Van Brunt Ave	X				X	X	X	$ -	$ -	$ -	$ -
4 - 6	2022	330	Willa Dr Sanitary Sewer Replacement	Willa Dr	Columbia Ave	Botham Ave				X	X	X	X	$ -	$ -	$ -	$ -
4 - 6	2022	710	Donna Drive Project	Donna Drive	Lakeview Ave	S State St.	X				X	X	X	$ -	$ -	$ -	$ -
4 - 6	2022	2006	Upton Dr Reconstruction	Upton Dr	Virginia Ct	N Upton Dr	X				X	X	X	$ -	$ -	$ -	$ -
4 - 6	2022	1120	Ship Street Project	Ship St	Main St	Wayne St	X				X	X	X	$ -	$ -	$ -	$ -
4 - 6	2023	686	Botham Ave Water Main Replacement	Botham Ave	S State	Niles	X				X	X	X	$ -	$ -	$ -	$ -
4 - 6	2023	950	Morton Ave Reconstruction	Morton Ave	Kingsley Ave	Van Brunt Ave	X				X	X	X	$ -	$ -	$ -	$ -
4 - 6	2023	581	Water Street Retaining Wall Renovation	Water St	State St	Vine St				X				$ -	$ -	$ -	$ -
7 - 9	2024	333	Willa Dr Water Main Installation - 3	Willa Dr	Napier Ave	Kingsley Ave	X				X	X	X	$ -	$ -	$ -	$ -
7 - 9	2024	2006	Wolcott Ave Reconstruction	Wolcott Ave	Pixley Ave	Langley Ave	X				X	X	X	$ -	$ -	$ -	$ -
7 - 9	2024	N/A	Lake Street Lift Station Renovations	Lake Street Lift Station	-	-				X			X	$ -	$ -	$ -	$ -
7 - 9	2024	N/A	North Pier Lift Station Renovations	North Pier Lift Station	-	-				X			X	$ -	$ -	$ -	$ -
7 - 9	2024	850	St. Joseph River Interceptor Replacement North	St. Joseph River Interceptor	Bicentennial Bridge	Marsh St & Pier 33 Inter				X			X	$ -	$ -	$ -	$ -
7 - 9	2024	680	St. Joseph River Interceptor Replacement South	St. Joseph River Interceptor	Riverview Terrace	Terrace Lane				X			X	$ -	$ -	$ -	$ -
7 - 9	2024	1650	Napier Avenue Project	Napier Ave	Niles Ave	Langley Ave	X				X	X	X	$ -	$ -	$ -	$ -
7 - 9	2025	1320	Division St. Reconstruction	Division St.	St. Joseph Dr	Gard Ave	X				X	X	X	$ -	$ -	$ -	$ -
7 - 9	2025	1003	Forres St Reconstruction	Forres St	Main St	Winchester Ave	X				X	X	X	$ -	$ -	$ -	$ -
7 - 9	2025	2340	S State Street Project	S State St	Wallace Ave	Winchester Ave	X				X	X	X	$ -	$ -	$ -	$ -
7 - 9	2025	785	Columbia Avenue Project	Columbia Ave	Niles Ave	Willa Drive	X				X	X	X	$ -	$ -	$ -	$ -
7 - 9	2026	898	Hillcrest Ave Reconstruction	Hillcrest Ave	Sunset Dr.	Langley Ave	X				X	X	X	$ -	$ -	$ -	$ -
7 - 9	2026	1109	St. Joseph Dr. Reconstruction	St. Joseph Dr	West of Willa Dr	Morton Ave	X				X	X	X	$ -	$ -	$ -	$ -
7 - 9	2026	1373	Sunset Dr Reconstruction	Sunset Dr	Lewis Ave	Orchard Ave	X				X	X	X	$ -	$ -	$ -	$ -
7 - 9	2026	475	St. Joseph Drive Project	St. Joseph Dr	End	Interceptor				X			X	$ -	$ -	$ -	$ -

			Project				Type				Utilities/Scope			16-17			
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	Location/Street	From	To	Reconstruction	Resurfacing/PM	O & M	Other	Water	Stormwater	Wastewater	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL
10 - 14	2027	3800	Main Street Project	Main St	Niles Ave	Port St	X				X		X	$ -	$ -	$ -	$ -
10 - 14	2027	2650	State Street Project	State St	Sutherland Ave	Elm St	X				X	X	X	$ -	$ -	$ -	$ -
10 - 14	2027	1120	Port Street Project	Port St	Main St	Wayne St	X				X	X	X	$ -	$ -	$ -	$ -
10 - 14	2028	1070	Elm Street Project	Elm St	Main St	Wayne St	X							$ -	$ -	$ -	$ -
10 - 14	2029	634	Kingsley Ave Reconstruction - 2	Kingsley Ave	Morton Ave	Langley Ave	X				X	X	X	$ -	$ -	$ -	$ -
10 - 14	2029	528	Riverview Terrace Reconstruction	Riverview Terrace	Langley Ave	Riverview Terrace N/S	X				X	X	X	$ -	$ -	$ -	$ -
10 - 14	2029	1584	Sunnydale Dr. Reconstruction	Sunnydale, Midway , & Columbia	S State St	S State St.	X				X	X	X	$ -	$ -	$ -	$ -
10 - 14	2030	3907	Veronica Dr & Veronica Ct Reconstruction	Veronica Dr & Ct	Lakeview Ave	Lakeview Ave	X				X	X	X	$ -	$ -	$ -	$ -
10 - 14	2030	1050	Wayne Street Project	Wayne Street	Broad St	Port St	X				X	X	X	$ -	$ -	$ -	$ -
10 - 14	2031	3274	Hawthorne Rd Reconstruction	Hawthorne Ave	Lakeshore Dr	Cleveland Ave	X				X	X	X	$ -	$ -	$ -	$ -
10 - 14	2031	1325	Wisconsin Avenue Project	Wisconsin Ave	Niles Ave	Morton Ave	X				X	X	X	$ -	$ -	$ -	$ -
10 - 14	2031	790	Winwood Avenue Project	Winwood Avenue	Cleveland Ave	Veronica Drive	X				X	X	X	$ -	$ -	$ -	$ -
10 - 14	2031	325	Veronica Court Project	Veronica Ct	Veronica Drive	Leco Ct	X					X		$ -	$ -	$ -	$ -
15 - 20	2032	7800	Niles Avenue Project	Niles Ave	Main St	South City limits	X				X		X	$ -	$ -	$ -	$ -
15 - 20	2032	700	Petrie Avenue Project	Petrie Ave	S State St	Niles Ave	X				X	X	X	$ -	$ -	$ -	$ -
15 - 20	2032	3100	Thayer Drive Project	Thayer Drive	St. Joseph Dr	Napier Ave	X				X	X	X	$ -	$ -	$ -	$ -
15 - 20	2032	850	Highland Court Project	Highland Court	Highland Ave	Interceptor	X				X	X	X	$ -	$ -	$ -	$ -
15 - 20	2033	1320	Napier Ave Reconstruction	Napier Ave	Langley Ave	River Crossing	X				X	X	X	$ -	$ -	$ -	$ -
15 - 20	2034	264	Lane Dr Water Reconstruction	Lane Dr	Langley Ave	Dead End	X				X	X	X	$ -	$ -	$ -	$ -
15 - 20	2034	792	Pioneer St. Water Reconstruction	Pioneer St.	Wallace Ave	North St	X				X	X	X	$ -	$ -	$ -	$ -
15 - 20	2034	5861	Ridgeway Reconstruction	Ridgeway & Marina Dr*	N Pier Rd	N Upton Dr	X				X	X	X	$ -	$ -	$ -	$ -
15 - 20	2035	792	Lake St. Reconstruction	Lake St.	Park St.	Market St.	X				X	X	X	$ -	$ -	$ -	$ -
15 - 20	2035	898	Market St Reconstruction	Market St.	Church St	Olive St.	X				X	X	X	$ -	$ -	$ -	$ -
15 - 20	2035	1050	Ward Ave Sanitary Sewer Replacement	Ward Ave	Dunham Ave	Cleveland Ave				X			X	$ -	$ -	$ -	$ -
15 - 20	2036	686	Whitllesey Ave Reconstruction	Whittlesey Ave	Lakeview Ave	S State St.	X				X	X	X	$ -	$ -	$ -	$ -
15 - 20	2036	12400	Lakeshore Drive Project	Lakeshore Dr	Winchester Ave	South City limits	X				X		X	$ -	$ -	$ -	$ -
15 - 20	2036	1100	Anchors Court Drainage Project	Anchors Ct	Anchors Way	End	X					X		$ -	$ -	$ -	$ -
Reoccurring			Drain Projects	Various Storm Sewers\Open Drains	N/A	N/A						X		$ 60			$ 60
Reoccurring			Sanitary Sewer Chemical Root Treatment	Various Sanitary Sewers	N/A	N/A							X				$ -
Reoccurring			Sewer Clean & Televise	Various Sanitary Sewers	N/A	N/A							X				$ -
Reoccurring			Sewer CIPP Project	Various Sanitary Sewers	N/A	N/A						X	X				$ -
Reoccurring			Valve Turning/Hydrant Reliability/UDF	City-Wide	N/A	N/A					X						$ -
Reoccurring			Sidewalk Replacement	Per Quadrant	N/A	N/A								$ 85			$ 85
Reoccurring			Pavement Maintenance Program	City-Wide	N/A	N/A			X								$ -

				17-18				18-19				19-20				20-21			
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL
1 - 3	2017	N/A	2017 CSO Project		$ 825	$ 38	**$ 863**		$ 589		**$ 589**				**$ -**				**$ -**
1 - 3	2017	N/A	Dunham Lift Station Relocation		$ 530	$ 20	**$ 550**		$ 55		**$ 55**				**$ -**				**$ -**
1 - 3	2017	5280	Hilltop Road Rehab				**$ -**				**$ -**				**$ -**				**$ -**
1 - 3	2018	N/A	Harrison Avenue Sewer Replacement	$ 60	$ 453	$ 18	**$ 530**				**$ -**				**$ -**				**$ -**
1 - 3	2018	N/A	Telemetry at Lift Stations		$ 140		**$ 140**				**$ -**				**$ -**				**$ -**
1 - 3	2018	2020	Wallace Reconstruction	$ 50	$ 125	$ -	**$ 175**	$ 150	$ 150		**$ 300**				**$ -**				**$ -**
1 - 3	2018	581	Water Street Retaining Wall Design	$ 30			**$ 30**	$ 4			**$ 4**	$ 4			**$ 4**	$ 450			**$ 450**
1 - 3	2018	N/A	Morrison Channel Sanitary Crossing Redundancy Study				**$ -**				**$ -**		$ 10		**$ 10**				**$ -**
1 - 3	2018	N/A	CSO Compliance		$ 56		**$ 56**		$ 56		**$ 56**		$ 57		**$ 57**		$ 57		**$ 57**
1 - 3	2018	1000	State Street Sanitary Sewer Retirement	$ 8	$ 8		**$ 16**	$ 150	$ 115		**$ 265**				**$ -**				**$ -**
1 - 3	2018	N/A	Alco Lift Station Renovation		$ 85		**$ 85**		$ 85		**$ 85**				**$ -**				**$ -**
1 - 3	2019	N/A	2019 CSO Project - CSO storage				**$ -**		$ 450		**$ 450**		$ 5,550		**$ 5,550**				**$ -**
1 - 3	2019	1742	Anchors Way Drainage Project				**$ -**	$ 150			**$ 150**	$ 150			**$ 150**				**$ -**
1 - 3	2019	4435	Slip Lining Project				**$ -**		$ 60		**$ 60**		$ 60		**$ 60**				**$ -**
1 - 3	2019	100	Water Street Sanitary Sewer Replacement				**$ -**		$ 12		**$ 12**		$ 12		**$ 12**				**$ -**
1 - 3	2020	N/A	Cut & Cap 10 inch Marina Island to BH				**$ -**				**$ -**			$ 10	**$ 10**			$ 10	**$ 10**
1 - 3	2020	1162	Orchard Ave Reconstruction				**$ -**				**$ -**	$ 8	$ 8	$ 16	**$ 32**	$ 244	$ 244	$ 587	**$ 1,075**
1 - 3	2020	1162	Kingsley Ave Reconstruction				**$ -**				**$ -**	$ 8	$ 8	$ 16	**$ 32**	$ 244	$ 244	$ 587	**$ 1,075**
1 - 3	2020	1214	Morton Ave Reconstruction				**$ -**				**$ -**	$ 9	$ 9	$ 18	**$ 36**	$ 244	$ 244	$ 587	**$ 1,075**
4 - 6	2021	2500	Langley Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 447	$ 307	$ 199	**$ 953**
4 - 6	2021	2100	Langley Ave Reconstruction - 2	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 376	$ 258	$ 167	**$ 801**
4 - 6	2022	N/A	Hawthorne Lift Station Renovation	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	790	Lester Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	1109	Willa Dr Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	686	Willa Dr Reconstruction - 2	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	330	Willa Dr Sanitary Sewer Replacement	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	710	Donna Drive Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	2006	Upton Dr Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	1120	Ship Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2023	686	Botham Ave Water Main Replacement	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2023	950	Morton Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2023	581	Water Street Retaining Wall Renovation	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2024	333	Willa Dr Water Main Installation - 3	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2024	2006	Wolcott Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2024	N/A	Lake Street Lift Station Renovations	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2024	N/A	North Pier Lift Station Renovations	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2024	850	St. Joseph River Interceptor Replacement North	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2024	680	St. Joseph River Interceptor Replacement South	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2024	1650	Napier Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2025	1320	Division St. Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2025	1003	Forres St Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2025	2340	S State Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2025	785	Columbia Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2026	898	Hillcrest Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2026	1109	St. Joseph Dr. Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2026	1373	Sunset Dr Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2026	475	St. Joseph Drive Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**

				17-18				18-19				19-20				20-21			
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL
10 - 14	2027	3800	Main Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2027	2650	State Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2027	1120	Port Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2028	1070	Elm Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2029	634	Kingsley Ave Reconstruction - 2	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2029	528	Riverview Terrace Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2029	1584	Sunnydale Dr. Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2030	3907	Veronica Dr & Veronica Ct Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2030	1050	Wayne Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	3274	Hawthorne Rd Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	1325	Wisconsin Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	790	Winwood Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	325	Veronica Court Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	7800	Niles Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	700	Petrie Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	3100	Thayer Drive Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	850	Highland Court Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2033	1320	Napier Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	264	Lane Dr Water Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	792	Pioneer St. Water Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	5861	Ridgeway Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2035	792	Lake St. Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2035	898	Market St Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2035	1050	Ward Ave Sanitary Sewer Replacement	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2036	686	Whitllesey Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2036	12400	Lakeshore Drive Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2036	1100	Anchors Court Drainage Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
Reoccurring			Drain Projects	$ 90			**$ 90**	$ 60			**$ 60**	$ 70			**$ 70**	$ 80			**$ 80**
Reoccurring			Sanitary Sewer Chemical Root Treatment		$ 10		**$ 10**		$ 25		**$ 25**		$ 25		**$ 25**		$ 25		**$ 25**
Reoccurring			Sewer Clean & Televise		$ 50		**$ 50**		$ 55		**$ 55**		$ 60		**$ 60**		$ 70		**$ 70**
Reoccurring			Sewer CIPP Project				**$ -**				**$ -**				**$ -**				**$ -**
Reoccurring			Valve Turning/Hydrant Reliability/UDF			$ 75	**$ 75**			$ 75	**$ 75**			$ 100	**$ 100**			$ 80	**$ 80**
Reoccurring			Sidewalk Replacement	$ 90			**$ 90**	$ 90			**$ 90**	$ 95			**$ 95**	$ 95			**$ 95**
Reoccurring			Pavement Maintenance Program	$ 100			**$ 100**	$ 138			**$ 138**	$ 107			**$ 107**	$ 107			**$ 107**

				21-22				22-23				23-24				24-25			
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL
1 - 3	2017	N/A	2017 CSO Project				$ -				$ -				$ -				$ -
1 - 3	2017	N/A	Dunham Lift Station Relocation				$ -				$ -				$ -				$ -
1 - 3	2017	5280	Hilltop Road Rehab				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Harrison Avenue Sewer Replacement				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Telemetry at Lift Stations				$ -				$ -				$ -				$ -
1 - 3	2018	2020	Wallace Reconstruction				$ -				$ -				$ -				$ -
1 - 3	2018	581	Water Street Retaining Wall Design				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Morrison Channel Sanitary Crossing Redundancy Study				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	CSO Compliance		$ 58		**$ 58**				$ -				$ -				$ -
1 - 3	2018	1000	State Street Sanitary Sewer Retirement				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Alco Lift Station Renovation				$ -				$ -				$ -				$ -
1 - 3	2019	N/A	2019 CSO Project - CSO storage				$ -				$ -				$ -				$ -
1 - 3	2019	1742	Anchors Way Drainage Project				$ -				$ -				$ -				$ -
1 - 3	2019	4435	Slip Lining Project				$ -				$ -				$ -				$ -
1 - 3	2019	100	Water Street Sanitary Sewer Replacement				$ -				$ -				$ -				$ -
1 - 3	2020	N/A	Cut & Cap 10 inch Marina Island to BH				$ -				$ -				$ -				$ -
1 - 3	2020	1162	Orchard Ave Reconstruction				$ -				$ -				$ -				$ -
1 - 3	2020	1162	Kingsley Ave Reconstruction				$ -				$ -				$ -				$ -
1 - 3	2020	1214	Morton Ave Reconstruction				$ -				$ -				$ -				$ -
4 - 6	2021	2500	Langley Ave Reconstruction	$ 447	$ 307	$ 199	**$ 953**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2021	2100	Langley Ave Reconstruction - 2	$ 376	$ 258	$ 167	**$ 801**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	N/A	Hawthorne Lift Station Renovation	$ -	$ 400	$ -	**$ 400**	$ -	$ 400	$ -	**$ 400**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	790	Lester Ave Reconstruction	$ 141	$ 97	$ 63	**$ 301**	$ 141	$ 97	$ 63	**$ 301**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	1109	Willa Dr Reconstruction	$ 198	$ 136	$ 88	**$ 423**	$ 198	$ 136	$ 88	**$ 423**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	686	Willa Dr Reconstruction - 2	$ 123	$ 84	$ 55	**$ 262**	$ 123	$ 84	$ 55	**$ 262**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	330	Willa Dr Sanitary Sewer Replacement	$ -	$ 41	$ 26	**$ 67**	$ -	$ 41	$ 26	**$ 67**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	710	Donna Drive Project	$ 127	$ 87	$ 56	**$ 271**	$ 127	$ 87	$ 56	**$ 271**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	2006	Upton Dr Reconstruction	$ 359	$ 247	$ 160	**$ 765**	$ 359	$ 247	$ 160	**$ 765**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2022	1120	Ship Street Project	$ 200	$ 138	$ 89	**$ 427**	$ 200	$ 138	$ 89	**$ 427**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
4 - 6	2023	686	Botham Ave Water Main Replacement	$ -	$ -	$ -	**$ -**	$ 123	$ 84	$ 55	**$ 262**	$ 123	$ 84	$ 55	**$ 262**	$ -	$ -	$ -	**$ -**
4 - 6	2023	950	Morton Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ 170	$ 117	$ 76	**$ 362**	$ 170	$ 117	$ 76	**$ 362**	$ -	$ -	$ -	**$ -**
4 - 6	2023	581	Water Street Retaining Wall Renovation	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2024	333	Willa Dr Water Main Installation - 3	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 59	$ 41	$ 26	**$ 127**	$ 59	$ 41	$ 26	**$ 127**
7 - 9	2024	2006	Wolcott Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 359	$ 247	$ 160	**$ 765**	$ 359	$ 247	$ 160	**$ 765**
7 - 9	2024	N/A	Lake Street Lift Station Renovations	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ 80	$ -	**$ 80**	$ -	$ 80	$ -	**$ 80**
7 - 9	2024	N/A	North Pier Lift Station Renovations	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ 50	$ -	**$ 50**	$ -	$ 50	$ -	**$ 50**
7 - 9	2024	850	St. Joseph River Interceptor Replacement North	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ 104	$ -	**$ 104**	$ -	$ 104	$ -	**$ 104**
7 - 9	2024	680	St. Joseph River Interceptor Replacement South	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ 84	$ -	**$ 84**	$ -	$ 84	$ -	**$ 84**
7 - 9	2024	1650	Napier Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 295	$ 203	$ 131	**$ 629**	$ 295	$ 203	$ 131	**$ 629**
7 - 9	2025	1320	Division St. Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 236	$ 162	$ 105	**$ 503**
7 - 9	2025	1003	Forres St Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 179	$ 123	$ 80	**$ 383**
7 - 9	2025	2340	S State Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 418	$ 288	$ 186	**$ 892**
7 - 9	2025	785	Columbia Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 140	$ 97	$ 62	**$ 299**
7 - 9	2026	898	Hillcrest Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2026	1109	St. Joseph Dr. Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2026	1373	Sunset Dr Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
7 - 9	2026	475	St. Joseph Drive Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**

				21-22				22-23				23-24				24-25			
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL
10 - 14	2027	3800	Main Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2027	2650	State Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2027	1120	Port Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2028	1070	Elm Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2029	634	Kingsley Ave Reconstruction - 2	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2029	528	Riverview Terrace Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2029	1584	Sunnydale Dr. Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2030	3907	Veronica Dr & Veronica Ct Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2030	1050	Wayne Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	3274	Hawthorne Rd Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	1325	Wisconsin Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	790	Winwood Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	325	Veronica Court Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	7800	Niles Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	700	Petrie Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	3100	Thayer Drive Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	850	Highland Court Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2033	1320	Napier Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	264	Lane Dr Water Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	792	Pioneer St. Water Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	5861	Ridgeway Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2035	792	Lake St. Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2035	898	Market St Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2035	1050	Ward Ave Sanitary Sewer Replacement	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2036	686	Whitllesey Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2036	12400	Lakeshore Drive Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2036	1100	Anchors Court Drainage Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
Reoccurring			Drain Projects	$ 80			**$ 80**	$ 80			**$ 80**	$ 80			**$ 80**	$ 60			**$ 60**
Reoccurring			Sanitary Sewer Chemical Root Treatment		$ 30		**$ 30**		$ 30		**$ 30**		$ 30		**$ 30**		$ 35		**$ 35**
Reoccurring			Sewer Clean & Televise		$ 75		**$ 75**		$ 75		**$ 75**		$ 75		**$ 75**		$ 80		**$ 80**
Reoccurring			Sewer CIPP Project				**$ -**		$ 75		**$ 75**				**$ -**				**$ -**
Reoccurring			Valve Turning/Hydrant Reliability/UDF			$ 80	**$ 80**			$ 80	**$ 80**			$ 85	**$ 85**			$ 85	**$ 85**
Reoccurring			Sidewalk Replacement	$ 100			**$ 100**	$ 100			**$ 100**	$ 100			**$ 100**	$ 100			**$ 100**
Reoccurring			Pavement Maintenance Program	$ 119			**$ 119**	$ 159			**$ 159**	$ 100			**$ 100**	$ 100			**$ 100**

				Year/Funding Source/Cost ($1,000)															
				25-26				26-27				27-28				28-29			
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL
1 - 3	2017	N/A	2017 CSO Project				$ -				$ -				$ -				$ -
1 - 3	2017	N/A	Dunham Lift Station Relocation				$ -				$ -				$ -				$ -
1 - 3	2017	5280	Hilltop Road Rehab				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Harrison Avenue Sewer Replacement				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Telemetry at Lift Stations				$ -				$ -				$ -				$ -
1 - 3	2018	2020	Wallace Reconstruction				$ -				$ -				$ -				$ -
1 - 3	2018	581	Water Street Retaining Wall Design				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Morrison Channel Sanitary Crossing Redundancy Study				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	CSO Compliance				$ -				$ -				$ -				$ -
1 - 3	2018	1000	State Street Sanitary Sewer Retirement				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Alco Lift Station Renovation				$ -				$ -				$ -				$ -
1 - 3	2019	N/A	2019 CSO Project - CSO storage				$ -				$ -				$ -				$ -
1 - 3	2019	1742	Anchors Way Drainage Project				$ -				$ -				$ -				$ -
1 - 3	2019	4435	Slip Lining Project				$ -				$ -				$ -				$ -
1 - 3	2019	100	Water Street Sanitary Sewer Replacement				$ -				$ -				$ -				$ -
1 - 3	2020	N/A	Cut & Cap 10 inch Marina Island to BH				$ -				$ -				$ -				$ -
1 - 3	2020	1162	Orchard Ave Reconstruction				$ -				$ -				$ -				$ -
1 - 3	2020	1162	Kingsley Ave Reconstruction				$ -				$ -				$ -				$ -
1 - 3	2020	1214	Morton Ave Reconstruction				$ -				$ -				$ -				$ -
4 - 6	2021	2500	Langley Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2021	2100	Langley Ave Reconstruction - 2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	N/A	Hawthorne Lift Station Renovation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	790	Lester Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	1109	Willa Dr Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	686	Willa Dr Reconstruction - 2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	330	Willa Dr Sanitary Sewer Replacement	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	710	Donna Drive Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	2006	Upton Dr Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	1120	Ship Street Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2023	686	Botham Ave Water Main Replacement	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2023	950	Morton Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2023	581	Water Street Retaining Wall Renovation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	333	Willa Dr Water Main Installation - 3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	2006	Wolcott Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	N/A	Lake Street Lift Station Renovations	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	N/A	North Pier Lift Station Renovations	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	850	St. Joseph River Interceptor Replacement North	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	680	St. Joseph River Interceptor Replacement South	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	1650	Napier Avenue Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2025	1320	Division St. Reconstruction	$ 236	$ 162	$ 105	**$ 503**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2025	1003	Forres St Reconstruction	$ 179	$ 123	$ 80	**$ 383**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2025	2340	S State Street Project	$ 418	$ 288	$ 186	**$ 892**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2025	785	Columbia Avenue Project	$ 140	$ 97	$ 62	**$ 299**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2026	898	Hillcrest Ave Reconstruction	$ 161	$ 110	$ 71	**$ 342**	$ 161	$ 110	$ 71	**$ 342**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2026	1109	St. Joseph Dr. Reconstruction	$ 198	$ 136	$ 88	**$ 423**	$ 198	$ 136	$ 88	**$ 423**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2026	1373	Sunset Dr Reconstruction	$ 245	$ 169	$ 109	**$ 523**	$ 245	$ 169	$ 109	**$ 523**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2026	475	St. Joseph Drive Project	$ -	$ 58	$ -	**$ 58**	$ -	$ 58	$ -	**$ 58**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

				Year/Funding Source/Cost ($1,000)															
				25-26				26-27				27-28				28-29			
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL
10 - 14	2027	3800	Main Street Project	$ -	$ -	$ -	**$ -**	$ 679	$ 467	$ 302	**$ 1,449**	$ 679	$ 467	$ 302	**$ 1,449**	$ -	$ -	$ -	**$ -**
10 - 14	2027	2650	State Street Project	$ -	$ -	$ -	**$ -**	$ 474	$ 326	$ 211	**$ 1,010**	$ 474	$ 326	$ 211	**$ 1,010**	$ -	$ -	$ -	**$ -**
10 - 14	2027	1120	Port Street Project	$ -	$ -	$ -	**$ -**	$ 200	$ 138	$ 89	**$ 427**	$ 200	$ 138	$ 89	**$ 427**	$ -	$ -	$ -	**$ -**
10 - 14	2028	1070	Elm Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 191	$ -	$ -	**$ 191**	$ 191	$ -	$ -	**$ 191**
10 - 14	2029	634	Kingsley Ave Reconstruction - 2	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 113	$ 78	$ 50	**$ 242**
10 - 14	2029	528	Riverview Terrace Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 94	$ 65	$ 42	**$ 201**
10 - 14	2029	1584	Sunnydale Dr. Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 283	$ 195	$ 126	**$ 604**
10 - 14	2030	3907	Veronica Dr & Veronica Ct Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2030	1050	Wayne Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	3274	Hawthorne Rd Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	1325	Wisconsin Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	790	Winwood Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	325	Veronica Court Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	7800	Niles Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	700	Petrie Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	3100	Thayer Drive Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	850	Highland Court Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2033	1320	Napier Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	264	Lane Dr Water Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	792	Pioneer St. Water Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	5861	Ridgeway Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2035	792	Lake St. Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2035	898	Market St Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2035	1050	Ward Ave Sanitary Sewer Replacement	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2036	686	Whitllesey Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2036	12400	Lakeshore Drive Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2036	1100	Anchors Court Drainage Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
Reoccurring			Drain Projects	$ 60			**$ 60**	$ 70			**$ 70**	$ 70			**$ 70**	$ 70			**$ 70**
Reoccurring			Sanitary Sewer Chemical Root Treatment		$ 35		**$ 35**		$ 35		**$ 35**		$ 35		**$ 35**		$ 40		**$ 40**
Reoccurring			Sewer Clean & Televise		$ 80		**$ 80**		$ 80		**$ 80**		$ 80		**$ 80**		$ 85		**$ 85**
Reoccurring			Sewer CIPP Project		$ 75		**$ 75**				**$ -**				**$ -**		$ 75		**$ 75**
Reoccurring			Valve Turning/Hydrant Reliability/UDF			$ 85	**$ 85**			$ 90	**$ 90**			$ 90	**$ 90**			$ 90	**$ 90**
Reoccurring			Sidewalk Replacement	$ 100			**$ 100**	$ 100			**$ 100**	$ 100			**$ 100**	$ 100			**$ 100**
Reoccurring			Pavement Maintenance Program	$ 110			**$ 110**	$ 110			**$ 110**	$ 120			**$ 120**	$ 120			**$ 120**

				29-30				30-31				31-32				32-33			
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL
1 - 3	2017	N/A	2017 CSO Project				$ -				$ -				$ -				$ -
1 - 3	2017	N/A	Dunham Lift Station Relocation				$ -				$ -				$ -				$ -
1 - 3	2017	5280	Hilltop Road Rehab				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Harrison Avenue Sewer Replacement				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Telemetry at Lift Stations				$ -				$ -				$ -				$ -
1 - 3	2018	2020	Wallace Reconstruction				$ -				$ -				$ -				$ -
1 - 3	2018	581	Water Street Retaining Wall Design				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Morrison Channel Sanitary Crossing Redundancy Study				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	CSO Compliance				$ -				$ -				$ -				$ -
1 - 3	2018	1000	State Street Sanitary Sewer Retirement				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Alco Lift Station Renovation				$ -				$ -				$ -				$ -
1 - 3	2019	N/A	2019 CSO Project - CSO storage				$ -				$ -				$ -				$ -
1 - 3	2019	1742	Anchors Way Drainage Project				$ -				$ -				$ -				$ -
1 - 3	2019	4435	Slip Lining Project				$ -				$ -				$ -				$ -
1 - 3	2019	100	Water Street Sanitary Sewer Replacement				$ -				$ -				$ -				$ -
1 - 3	2020	N/A	Cut & Cap 10 inch Marina Island to BH				$ -				$ -				$ -				$ -
1 - 3	2020	1162	Orchard Ave Reconstruction				$ -				$ -				$ -				$ -
1 - 3	2020	1162	Kingsley Ave Reconstruction				$ -				$ -				$ -				$ -
1 - 3	2020	1214	Morton Ave Reconstruction				$ -				$ -				$ -				$ -
4 - 6	2021	2500	Langley Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2021	2100	Langley Ave Reconstruction - 2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	N/A	Hawthorne Lift Station Renovation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	790	Lester Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	1109	Willa Dr Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	686	Willa Dr Reconstruction - 2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	330	Willa Dr Sanitary Sewer Replacement	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	710	Donna Drive Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	2006	Upton Dr Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	1120	Ship Street Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2023	686	Botham Ave Water Main Replacement	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2023	950	Morton Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2023	581	Water Street Retaining Wall Renovation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	333	Willa Dr Water Main Installation - 3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	2006	Wolcott Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	N/A	Lake Street Lift Station Renovations	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	N/A	North Pier Lift Station Renovations	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	850	St. Joseph River Interceptor Replacement North	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	680	St. Joseph River Interceptor Replacement South	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	1650	Napier Avenue Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2025	1320	Division St. Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2025	1003	Forres St Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2025	2340	S State Street Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2025	785	Columbia Avenue Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2026	898	Hillcrest Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2026	1109	St. Joseph Dr. Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2026	1373	Sunset Dr Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2026	475	St. Joseph Drive Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

				29-30				30-31				31-32				32-33			
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	**TOTAL**	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	**TOTAL**	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	**TOTAL**	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	**TOTAL**
10 - 14	2027	3800	Main Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2027	2650	State Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2027	1120	Port Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2028	1070	Elm Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2029	634	Kingsley Ave Reconstruction - 2	$ 113	$ 78	$ 50	**$ 242**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2029	528	Riverview Terrace Reconstruction	$ 94	$ 65	$ 42	**$ 201**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2029	1584	Sunnydale Dr. Reconstruction	$ 283	$ 195	$ 126	**$ 604**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2030	3907	Veronica Dr & Veronica Ct Reconstruction	$ 699	$ 480	$ 311	**$ 1,490**	$ 699	$ 480	$ 311	**$ 1,490**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2030	1050	Wayne Street Project	$ 188	$ 129	$ 84	**$ 400**	$ 188	$ 129	$ 84	**$ 400**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	3274	Hawthorne Rd Reconstruction	$ -	$ -	$ -	**$ -**	$ 585	$ 402	$ 260	**$ 1,248**	$ 585	$ 402	$ 260	**$ 1,248**	$ -	$ -	$ -	**$ -**
10 - 14	2031	1325	Wisconsin Avenue Project	$ -	$ -	$ -	**$ -**	$ 237	$ 163	$ 105	**$ 505**	$ 237	$ 163	$ 105	**$ 505**	$ -	$ -	$ -	**$ -**
10 - 14	2031	790	Winwood Avenue Project	$ -	$ -	$ -	**$ -**	$ 141	$ 97	$ 63	**$ 301**	$ 141	$ 97	$ 63	**$ 301**	$ -	$ -	$ -	**$ -**
10 - 14	2031	325	Veronica Court Project	$ -	$ -	$ -	**$ -**	$ 58	$ -	$ -	**$ 58**	$ 58	$ -	$ -	**$ 58**	$ -	$ -	$ -	**$ -**
15 - 20	2032	7800	Niles Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 1,395	$ 959	$ 620	**$ 2,974**	$ 1,395	$ 959	$ 620	**$ 2,974**
15 - 20	2032	700	Petrie Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 125	$ 86	$ 56	**$ 267**	$ 125	$ 86	$ 56	**$ 267**
15 - 20	2032	3100	Thayer Drive Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 554	$ 381	$ 247	**$ 1,182**	$ 554	$ 381	$ 247	**$ 1,182**
15 - 20	2032	850	Highland Court Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 152	$ 104	$ 68	**$ 324**	$ 152	$ 104	$ 68	**$ 324**
15 - 20	2033	1320	Napier Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 236	$ 162	$ 105	**$ 503**
15 - 20	2034	264	Lane Dr Water Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	792	Pioneer St. Water Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	5861	Ridgeway Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2035	792	Lake St. Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2035	898	Market St Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2035	1050	Ward Ave Sanitary Sewer Replacement	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2036	686	Whitllesey Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2036	12400	Lakeshore Drive Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2036	1100	Anchors Court Drainage Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
Reoccurring			Drain Projects	$ 70			**$ 70**	$ 70			**$ 70**	$ 80			**$ 80**	$ 80			**$ 80**
Reoccurring			Sanitary Sewer Chemical Root Treatment		$ 40		**$ 40**		$ 40		**$ 40**		$ 40		**$ 40**		$ 45		**$ 45**
Reoccurring			Sewer Clean & Televise		$ 85		**$ 85**		$ 85		**$ 85**		$ 90		**$ 90**		$ 90		**$ 90**
Reoccurring			Sewer CIPP Project				**$ -**				**$ -**		$ 75		**$ 75**				**$ -**
Reoccurring			Valve Turning/Hydrant Reliability/UDF			$ 95	**$ 95**			$ 95	**$ 95**			$ 95	**$ 95**			$ 100	**$ 100**
Reoccurring			Sidewalk Replacement	$ 100			**$ 100**	$ 100			**$ 100**	$ 100			**$ 100**	$ 100			**$ 100**
Reoccurring			Pavement Maintenance Program	$ 120			**$ 120**	$ 120			**$ 120**	$ 120			**$ 120**	$ 130			**$ 130**

				33-34				34-35				35-36				36-37							
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL				
1 - 3	2017	N/A	2017 CSO Project				$ -				$ -				$ -				$ -				$ -
1 - 3	2017	N/A	Dunham Lift Station Relocation				$ -				$ -				$ -				$ -				$ -
1 - 3	2017	5280	Hilltop Road Rehab				$ -				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Harrison Avenue Sewer Replacement				$ -				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Telemetry at Lift Stations				$ -				$ -				$ -				$ -				$ -
1 - 3	2018	2020	Wallace Reconstruction				$ -				$ -				$ -				$ -				$ -
1 - 3	2018	581	Water Street Retaining Wall Design				$ -				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Morrison Channel Sanitary Crossing Redundancy Study				$ -				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	CSO Compliance				$ -				$ -				$ -				$ -				$ -
1 - 3	2018	1000	State Street Sanitary Sewer Retirement				$ -				$ -				$ -				$ -				$ -
1 - 3	2018	N/A	Alco Lift Station Renovation				$ -				$ -				$ -				$ -				$ -
1 - 3	2019	N/A	2019 CSO Project - CSO storage				$ -				$ -				$ -				$ -				$ -
1 - 3	2019	1742	Anchors Way Drainage Project				$ -				$ -				$ -				$ -				$ -
1 - 3	2019	4435	Slip Lining Project				$ -				$ -				$ -				$ -				$ -
1 - 3	2019	100	Water Street Sanitary Sewer Replacement				$ -				$ -				$ -				$ -				$ -
1 - 3	2020	N/A	Cut & Cap 10 inch Marina Island to BH				$ -				$ -				$ -				$ -				$ -
1 - 3	2020	1162	Orchard Ave Reconstruction				$ -				$ -				$ -				$ -				$ -
1 - 3	2020	1162	Kingsley Ave Reconstruction				$ -				$ -				$ -				$ -				$ -
1 - 3	2020	1214	Morton Ave Reconstruction				$ -				$ -				$ -				$ -				$ -
4 - 6	2021	2500	Langley Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2021	2100	Langley Ave Reconstruction - 2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	N/A	Hawthorne Lift Station Renovation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	790	Lester Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	1109	Willa Dr Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	686	Willa Dr Reconstruction - 2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	330	Willa Dr Sanitary Sewer Replacement	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	710	Donna Drive Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	2006	Upton Dr Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2022	1120	Ship Street Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2023	686	Botham Ave Water Main Replacement	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2023	950	Morton Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4 - 6	2023	581	Water Street Retaining Wall Renovation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	333	Willa Dr Water Main Installation - 3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	2006	Wolcott Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	N/A	Lake Street Lift Station Renovations	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	N/A	North Pier Lift Station Renovations	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	850	St. Joseph River Interceptor Replacement North	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	680	St. Joseph River Interceptor Replacement South	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2024	1650	Napier Avenue Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2025	1320	Division St. Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2025	1003	Forres St Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2025	2340	S State Street Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2025	785	Columbia Avenue Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2026	898	Hillcrest Ave Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2026	1109	St. Joseph Dr. Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2026	1373	Sunset Dr Reconstruction	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
7 - 9	2026	475	St. Joseph Drive Project	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

				33-34				34-35				35-36				36-37			
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL	204 Street Improvement Fund	590 Sewer Fund (Incl. 450)	592 City Water Fund	TOTAL
10 - 14	2027	3800	Main Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2027	2650	State Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2027	1120	Port Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2028	1070	Elm Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2029	634	Kingsley Ave Reconstruction - 2	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2029	528	Riverview Terrace Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2029	1584	Sunnydale Dr. Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2030	3907	Veronica Dr & Veronica Ct Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2030	1050	Wayne Street Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	3274	Hawthorne Rd Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	1325	Wisconsin Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	790	Winwood Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
10 - 14	2031	325	Veronica Court Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	7800	Niles Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	700	Petrie Avenue Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	3100	Thayer Drive Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2032	850	Highland Court Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2033	1320	Napier Ave Reconstruction	$ 236.03	$ 162.28	$ 105.00	**$ 503**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	264	Lane Dr Water Reconstruction	$ 47.21	$ 32.46	$ 21.00	**$ 101**	$ 47	$ 32	$ 21	**$ 101**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	792	Pioneer St. Water Reconstruction	$ 141.62	$ 97.37	$ 63.00	**$ 302**	$ 142	$ 97	$ 63	**$ 302**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2034	5861	Ridgeway Reconstruction	$ 1,047.97	$ 720.51	$ 466.18	**$ 2,235**	$ 1,048	$ 721	$ 466	**$ 2,235**	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**
15 - 20	2035	792	Lake St. Reconstruction	$ -	$ -	$ -	**$ -**	$ 142	$ 97	$ 63	**$ 302**	$ 142	$ 97	$ 63	**$ 302**	$ -	$ -	$ -	**$ -**
15 - 20	2035	898	Market St Reconstruction	$ -	$ -	$ -	**$ -**	$ 161	$ 110	$ 71	**$ 342**	$ 161	$ 110	$ 71	**$ 342**	$ -	$ -	$ -	**$ -**
15 - 20	2035	1050	Ward Ave Sanitary Sewer Replacement	$ -	$ -	$ -	**$ -**	$ -	$ 129	$ -	**$ 129**	$ -	$ 129	$ -	**$ 129**	$ -	$ -	$ -	**$ -**
15 - 20	2036	686	Whitllesey Ave Reconstruction	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 123	$ 84	$ 55	**$ 262**	$ 123	$ 84	$ 55	**$ 262**
15 - 20	2036	12400	Lakeshore Drive Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 2,217	$ 1,524	$ 986	**$ 4,728**	$ 2,217	$ 1,524	$ 986	**$ 4,728**
15 - 20	2036	1100	Anchors Court Drainage Project	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	**$ -**	$ 197	$ -	$ -	**$ 197**	$ 197	$ -	$ -	**$ 197**
Reoccurring			Drain Projects	$ 80			**$ 80**	$ 80			**$ 80**	$ 80			**$ 80**	$ 90			**$ 90**
Reoccurring			Sanitary Sewer Chemical Root Treatment		$ 45		**$ 45**		$ 45		**$ 45**		$ 50		**$ 50**		$ 50		**$ 50**
Reoccurring			Sewer Clean & Televise		$ 90		**$ 90**		$ 95		**$ 95**		$ 95		**$ 95**		$ 95		**$ 95**
Reoccurring			Sewer CIPP Project				**$ -**		$ 75		**$ 75**				**$ -**				**$ -**
Reoccurring			Valve Turning/Hydrant Reliability/UDF			$ 100	**$ 100**			$ 100	**$ 100**			$ 100	**$ 100**			$ 100	**$ 100**
Reoccurring			Sidewalk Replacement	$ 100			**$ 100**	$ 100			**$ 100**	$ 100			**$ 100**	$ 100			**$ 100**
Reoccurring			Pavement Maintenance Program	$ 130			**$ 130**	$ 130			**$ 130**	$ 130			**$ 130**	$ 130			**$ 130**

				Funding Source											Road Info				
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	DWRF ($1,000's or Eligible)	SRF ($1,000's or Eligible)	Water	Sewer	Local Street	Major Street	MDOT	BCRC	TIP ($1,000's or Eligible)	Other	Primary Deficiency	*PASER	ADT	NFC	Act 51	Pavement Type
1 - 3	2017	N/A	2017 CSO Project		1271		X							Sanitary Sewer	N/A	N/A	N/A	N/A	N/A
1 - 3	2017	N/A	Dunham Lift Station Relocation				X							Lift Station	N/A	N/A	N/A	N/A	N/A
1 - 3	2017	5280	Hilltop Road Rehab	X		X			X		X	230		Water Main	4	2,426	Minor Arterial	City Major / County Primary	Asphalt
1 - 3	2018	N/A	Harrison Avenue Sewer Replacement				X	X						Sanitary Sewer	5	N/A	Local Road	City Local	Asphalt & Concrete
1 - 3	2018	N/A	Telemetry at Lift Stations				X							Lift Station	N/A	N/A	N/A	N/A	N/A
1 - 3	2018	2020	Wallace Reconstruction	330		X	X		X			460		Water Main	5	N/A	Major Collector	City Major	Concrete
1 - 3	2018	581	Water Street Retaining Wall Design						X			X		Pavement	3	N/A	Major Collector	City Major	Asphalt
1 - 3	2018	N/A	Morrison Channel Sanitary Crossing Redundancy Study				X							Sanitary Sewer	N/A	N/A	N/A	N/A	N/A
1 - 3	2018	N/A	CSO Compliance				X							CSO	N/A	N/A	N/A	N/A	N/A
1 - 3	2018	1000	State Street Sanitary Sewer Retirement				X		X			X		Sanitary Sewer	4	N/A	Major Collector	City Major	Concrete & Brick
1 - 3	2018	N/A	Alco Lift Station Renovation				X							Lift Station	N/A	N/A	N/A	N/A	N/A
1 - 3	2019	N/A	2019 CSO Project - CSO storage		$ 6,000		X							CSO	N/A	N/A	N/A	N/A	N/A
1 - 3	2019	1742	Anchors Way Drainage Project						X			X		Drainage/Storm Sewer	N/A	N/A	Local Road	City Major	Concrete
1 - 3	2019	4435	Slip Lining Project				X							Sanitary Sewer	N/A	N/A	N/A	N/A	N/A
1 - 3	2019	100	Water Street Sanitary Sewer Replacement				X	X						Sanitary Sewer	4	N/A	N/A	City Local	Asphalt
1 - 3	2020	N/A	Cut & Cap 10 inch Marina Island to BH	X		X								Water Main	N/A	N/A	N/A	N/A	N/A
1 - 3	2020	1162	Orchard Ave Reconstruction	X		X	X	X						Water Main	5	N/A	Local Road	City Local	Concrete
1 - 3	2020	1162	Kingsley Ave Reconstruction	X		X	X	X						Water Main	4-6	N/A	Local Road	City Local	Concrete
1 - 3	2020	1214	Morton Ave Reconstruction	X		X	X	X						Water Main	4-6	N/A	Local Road	City Local	Concrete
4 - 6	2021	2500	Langley Ave Reconstruction	X		X	X		X			X		Multiple Primary Deficiencies	3	6,914	Minor Arterial	City Major	Asphalt & Concrete
4 - 6	2021	2100	Langley Ave Reconstruction - 2	X		X	X		X			X		Multiple Primary Deficiencies	3	6,914	Minor Arterial	City Major	Asphalt & Concrete
4 - 6	2022	N/A	Hawthorne Lift Station Renovation				X							Lift Station	N/A	N/A	N/A	N/A	N/A
4 - 6	2022	790	Lester Ave Reconstruction	X		X	X	X						Pavement	4	N/A	Local Road	City Local	Concrete
4 - 6	2022	1109	Willa Dr Reconstruction	X		X	X	X						Water Main	5	N/A	Local Road	City Local	Concrete
4 - 6	2022	686	Willa Dr Reconstruction - 2	X		X	X	X						Water Main	6	N/A	Local Road	City Local	Concrete
4 - 6	2022	330	Willa Dr Sanitary Sewer Replacement	X	X	X	X	X						Sanitary Sewer	6	N/A	Local Road	City Local	Concrete
4 - 6	2022	710	Donna Drive Project			X	X	X						Pavement	5	N/A	Local Road	City Local	Asphalt
4 - 6	2022	2006	Upton Dr Reconstruction	X		X	X		X			X		Water Main	5	N/A	Major Collector	City Major	Concrete
4 - 6	2022	1120	Ship Street Project			X	X			X				Water Main	4	6200	Other Principal Arterial	State Trunkline	Asphalt
4 - 6	2023	686	Botham Ave Water Main Replacement	X		X	X	X						Water Main	5	N/A	Major Collector	City Local	Concrete
4 - 6	2023	950	Morton Ave Reconstruction	X		X	X	X						Water Main	4	N/A	Local Road	City Local	Concrete
4 - 6	2023	581	Water Street Retaining Wall Renovation						X			X		Other	N/A	N/A	N/A	City Major	Asphalt
7 - 9	2024	333	Willa Dr Water Main Installation - 3	X		X	X	X						Water Main	6	N/A	Local Road	City Local	Concrete
7 - 9	2024	2006	Wolcott Ave Reconstruction	X		X	X		X			X		Water Main	6	N/A	Major Collector	City Major	Concrete
7 - 9	2024	N/A	Lake Street Lift Station Renovations				X							Lift Station	N/A	N/A	N/A	N/A	N/A
7 - 9	2024	N/A	North Pier Lift Station Renovations				X							Lift Station	N/A	N/A	N/A	N/A	N/A
7 - 9	2024	850	St. Joseph River Interceptor Replacement North		X		X							Sanitary Sewer	N/A	N/A	N/A	N/A	N/A
7 - 9	2024	680	St. Joseph River Interceptor Replacement South		X		X							Sanitary Sewer	N/A	N/A	N/A	N/A	N/A
7 - 9	2024	1650	Napier Avenue Project			X	X		X			X		Sanitary Sewer	8	N/A	Other Principal Arterial	City Major	Asphalt
7 - 9	2025	1320	Division St. Reconstruction	X		X	X	X						Water Main	5-7	N/A	Local Road	City Local	Concrete
7 - 9	2025	1003	Forres St Reconstruction	X		X	X	X						Water Main	4	N/A	Local Road	City Local	Brick
7 - 9	2025	2340	S State Street Project			X	X	X						Sanitary Sewer	4	N/A	Major Collector	City Local	Asphalt
7 - 9	2025	785	Columbia Avenue Project			X	X	X						Water Main	5	N/A	Local Road	City Local	Concrete
7 - 9	2026	898	Hillcrest Ave Reconstruction	X		X	X	X						Water Main	7	N/A	Local Road	City Local	Concrete
7 - 9	2026	1109	St. Joseph Dr. Reconstruction	X		X	X	X						Water Main	6	N/A	Local Road	City Local	Concrete
7 - 9	2026	1373	Sunset Dr Reconstruction	X		X	X	X						Water Main	4-6	N/A	Local Road	City Local	Concrete
7 - 9	2026	475	St. Joseph Drive Project				X							Sanitary Sewer	N/A	N/A	N/A	N/A	N/A

				Funding Source											Road Info				
Estimated Construction Start (Years)	Proposed Year of Construction	Length (feet)	Name	DWRF ($1,000's or Eligible)	SRF ($1,000's or Eligible)	Water	Sewer	Local Street	Major Street	MDOT	BCRC	TIP ($1,000's or Eligible)	Other	Primary Deficiency	*PASER	ADT	NFC	Act 51	Pavement Type
10 - 14	2027	3800	Main Street Project			X	X			X				Sanitary Sewer	6	21400	Other Principal Arterial	State Trunkline	Concrete
10 - 14	2027	2650	State Street Project			X	X	X	X			X		Sanitary Sewer	4	N/A	Major Collector / Local Road	City Major / City Local	Asphalt & Brick
10 - 14	2027	1120	Port Street Project			X	X			X				Water Main	5	4600	Other Principal Arterial	State Trunkline	Asphalt
10 - 14	2028	1070	Elm Street Project					X						Pavement	3	N/A	Local Road	City Local	Concrete
10 - 14	2029	634	Kingsley Ave Reconstruction - 2	X		X	X	X						Water Main	6	N/A	Local Road	City Local	Concrete
10 - 14	2029	528	Riverview Terrace Reconstruction	X		X	X	X						Water Main	5	N/A	Local Road	City Local	Concrete
10 - 14	2029	1584	Sunnydale Dr. Reconstruction	X		X	X	X						Water Main	5-7	N/A	Local Road	City Local	Concrete
10 - 14	2030	3907	Veronica Dr & Veronica Ct Reconstruction	X		X	X	X						Water Main	6-7	N/A	Local Road	City Local	Concrete
10 - 14	2030	1050	Wayne Street Project			X	X		X			X		Water Main	4	N/A	Local Road	City Major	Asphalt & Concrete
10 - 14	2031	3274	Hawthorne Rd Reconstruction	X		X	X		X		X	X		Water Main	6	N/A	Major Collector	City Major / County Primary	Asphalt & Concrete
10 - 14	2031	1325	Wisconsin Avenue Project			X	X	X						Sanitary Sewer	7	N/A	Local Road	City Local	Concrete
10 - 14	2031	790	Winwood Avenue Project			X	X	X						Sanitary Sewer	7	N/A	Local Road	City Local	Concrete
10 - 14	2031	325	Veronica Court Project					X						Drainage/Storm Sewer	6	N/A	Local Road	City Local	Concrete
15 - 20	2032	7800	Niles Avenue Project			X	X			X				Sanitary Sewer	5	N/A	Other Principal Arterial	State Trunkline	Asphalt
15 - 20	2032	700	Petrie Avenue Project			X	X	X						Water Main	5	N/A	Local Road	City Local	Concrete
15 - 20	2032	3100	Thayer Drive Project			X	X	X						Sanitary Sewer	5	N/A	Local Road	City Local	Concrete
15 - 20	2032	850	Highland Court Project			X	X	X						Water Main	5	N/A	Local Road	City Local	Concrete
15 - 20	2033	1320	Napier Ave Reconstruction	X		X	X		X			X		Water Main	4-6	3,483	Other Principal Arterial	City Major	Asphalt
15 - 20	2034	264	Lane Dr Water Reconstruction	X		X	X	X						Water Main	5	N/A	Local Road	City Local	Concrete
15 - 20	2034	792	Pioneer St. Water Reconstruction	X		X	X	X						Water Main	7	N/A	Local Road	City Local	Concrete
15 - 20	2034	5861	Ridgeway Reconstruction	X		X	X	X						Water Main	2	N/A	Local Road	City Local	Asphalt & Brick
15 - 20	2035	792	Lake St. Reconstruction	X		X	X		X			X		Water Main	7	3,958	Major Collector	City Major	Concrete
15 - 20	2035	898	Market St Reconstruction	X		X	X	X						Water Main	6	N/A	Local Road	City Local	Asphalt
15 - 20	2035	1050	Ward Ave Sanitary Sewer Replacement		X		X	X						Sanitary Sewer	N/A	N/A	Local Road	City Local	Concrete
15 - 20	2036	686	Whitllesey Ave Reconstruction	X		X	X	X						Water Main	5	N/A	Local Road	City Local	Asphalt
15 - 20	2036	12400	Lakeshore Drive Project			X	X			X				Sanitary Sewer	6	12900	Other Principal Arterial	State Trunkline	Asphalt
15 - 20	2036	1100	Anchors Court Drainage Project					X						Drainage/Storm Sewer	N/A	N/A	Local Road	City Local	Asphalt
Reoccurring			Drain Projects											Drainage/Storm Sewer	N/A	N/A	N/A	N/A	N/A
Reoccurring			Sanitary Sewer Chemical Root Treatment				X							Sanitary Sewer	N/A	N/A	N/A	N/A	N/A
Reoccurring			Sewer Clean & Televise				X							Sanitary Sewer	N/A	N/A	N/A	N/A	N/A
Reoccurring			Sewer CIPP Project				X							Sanitary Sewer	N/A	N/A	N/A	N/A	N/A
Reoccurring			Valve Turning/Hydrant Reliability/UDF											Water Main	N/A	N/A	N/A	N/A	N/A
Reoccurring			Sidewalk Replacement											Pavement	N/A	N/A	N/A	N/A	N/A
Reoccurring			Pavement Maintenance Program											Pavement	N/A	N/A	N/A	N/A	N/A

Appendix H – Revenue Structure Scenarios

Water Fund

Sewer Fund

Street Improvement Fund

CITY OF ST. JOSEPH (MICHIGAN) CITY WATER FUND

COMPARATIVE STATEMENT OF NET POSITION

	As of		
	6/30/2014	**6/30/2015**	**6/30/2016**
	(----------Per Audit----------)		
Assets			
Current assets:			
Cash and cash equivalents	$1,219,114	$1,323,837	$1,407,109
Due from other funds	100	-	-
Accounts receivables	173,292	169,542	169,487
Total current assets	1,392,506	1,493,379	1,576,596
Noncurrent assets:			
Land	827,081	-	-
Construction in process	722,854	-	-
Utility Systems	8,468,561	-	-
Capital assets not being depreciated	-	877,386	827,080
Capital assets, net of depreciation	-	7,321,110	7,374,345
Accumulated depreciation	(1,673,478)	-	-
Total noncurrent assets	8,345,018	8,198,496	8,201,425
Total Assets	$9,737,524	$9,691,875	$9,778,021
Liabilities			
Current liabilities:			
Accounts payable	$128,951	-	-
Accrued interest payable	-	$15,535	$14,660
Other accrued liabilities	18,983	-	-
Due to other funds	50,021	-	-
Current portion of long-term debt	135,000	140,000	140,000
Total current liabilities	332,955	155,535	154,660
Noncurrent liabilities:			
Noncurrent portion of long-term debt	2,485,496	2,345,496	2,205,496
Total Liabilities	2,818,451	2,501,031	2,360,156
Net Position			
Net investment in capital assets	5,724,522	5,713,000	5,855,929
Unrestricted	1,194,551	1,477,844	1,561,936
Total Net Position	6,919,073	7,190,844	7,417,865
Total Liabilities and Net Position	$9,737,524	$9,691,875	$9,778,021

CITY OF ST. JOSEPH (MICHIGAN) CITY WATER FUND

COMPARATIVE STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	Fiscal Year Ended		
	6/30/2014	6/30/2015	6/30/2016
	(----------Per Audit----------)		
Operating Revenues			
Charges for services	$681,347	$682,474	$682,022
Total operating revenues	681,347	682,474	682,022
Operating Expenses			
Contractural services	-	177,005	105,495
Supplies	-	1,397	-
Repairs	-	-	3,718
Operations	33,236	-	-
Subtotal	33,236	178,402	109,213
Depreciation expense	189,475	201,983	206,309
Total operating expenses	222,711	380,385	315,522
Net operating income (loss)	458,636	302,089	366,500
Non-Operating Revenues (Expenses)			
Interest income	1,597	1,439	1,345
Interest expense and fees	(68,762)	(62,064)	(61,262)
Total non-operating revenues (expenses)	(67,165)	(60,625)	(59,917)
Income before capital contributions	391,471	241,464	306,583
Capital Contributions			
Transfers in	-	50,307	209,238
Transfers out	(45,000)	(20,000)	(288,800)
Total capital contributions	(45,000)	30,307	(79,562)
Change in net position	346,471	271,771	227,021
Net position, beginning of year	6,572,602	6,919,073	7,190,844
Net position, end of year	$6,919,073	$7,190,844	$7,417,865

CITY OF ST. JOSEPH (MICHIGAN) CITY WATER FUND

COMPARATIVE DETAIL OF OPERATING EXPENSES

		Fiscal Year Ended			
		6/30/2016	6/30/2017	6/30/2018	
		(----------Per Client----------)			
Operating Expenses					
592-447.000-801.000	Professional Services	-	$25,000	-	
592-447.000-930.000	Routine Maintenance	-	75,000	$75,000	
592-536.000-740.000	Supplies	-	5,000	5,000	
592-536.000-801.000	Professional Services	$11,940	12,800	12,800	
592-536.000-825.000	Administrative Expense	42,600	42,500	48,800	
592-536.000-930.000	Routine Maintenance	3,718	12,500	12,500	
592-536.000-956.000	Miscellaneous	-	-	-	
592-536.000-968.000	Depreciation	-	-	-	[1]
592-536.000-972.000	Water System Infrastructure	-	-	-	
592-901.000-930.000	Routine Maintenance	-	-	-	
592-903.160-974.000	Land Improvements	-	-	-	
592-904.800-801.000	Reliability Program	50,955	-	-	
592-905.000-991.000	Water Tower Principal	-	-	-	[2]
592-905.000-995.000	Water Tower Interest on Debt	-	-	-	[2]
592-905.000-998.000	Water Tower Agent Fees	-	500	500	
592-965.000-999.204	Transfer Out - Street Improve	-	-	-	[3]
592-965.000-999.404	Transfer Out to SAW Grant Fund	-	-	-	[3]
592-965.000-999.450	Transfer Out - CSO	-	-	-	[3]
592-965.000-999.590	Transfer Out - Sewer Fund	-	-	-	[3]
	Total Operating Expenses - City Water Fund	$109,213	$173,300	$154,600	

[1] Depreciation Expense is removed from this section of the report as this study is performed on the cash basis.
[2] Principal and interest on debt are removed from this section of the report. These items are discussed later in the report.
[3] Transfers out are capital related and are included in the capital improvement section in the cash flow.

CITY OF ST. JOSEPH (MICHIGAN) CITY WATER FUND

SCHEDULE OF AMORTIZATION OF $2,345,496 PRINCIPAL AMOUNT OUTSTANDING OF 2008 CAPITAL IMPROVEMENT BONDS

Payment Date	Principal Balance	Interest Rate	Debt Service			Fiscal Year Total
			Principal	Interest	Total	
	(In Dollars)	(%)	(In Dollars)			
10/1/2016	$2,345,496			$29,318.70	$29,318.70	
4/1/2017	2,345,496	2.50	$140,000	29,318.70	169,318.70	$198,637.40
10/1/2017	2,205,496			27,568.70	27,568.70	
4/1/2018	2,205,496	2.50	145,000	27,568.70	172,568.70	200,137.40
10/1/2018	2,060,496			25,756.20	25,756.20	
4/1/2019	2,060,496	2.50	150,000	25,756.20	175,756.20	201,512.40
10/1/2019	1,910,496			23,881.20	23,881.20	
4/1/2020	1,910,496	2.50	155,000	23,881.20	178,881.20	202,762.40
10/1/2020	1,755,496			21,943.70	21,943.70	
4/1/2021	1,755,496	2.50	155,000	21,943.70	176,943.70	198,887.40
10/1/2021	1,600,496			20,006.20	20,006.20	
4/1/2022	1,600,496	2.50	160,000	20,006.20	180,006.20	200,012.40
10/1/2022	1,440,496			18,006.20	18,006.20	
4/1/2023	1,440,496	2.50	165,000	18,006.20	183,006.20	201,012.40
10/1/2023	1,275,496			15,943.70	15,943.70	
4/1/2024	1,275,496	2.50	170,000	15,943.70	185,943.70	201,887.40
10/1/2024	1,105,496			13,818.70	13,818.70	
4/1/2025	1,105,496	2.50	175,000	13,818.70	188,818.70	202,637.40
10/1/2025	930,496			11,631.20	11,631.20	
4/1/2026	930,496	2.50	180,000	11,631.20	191,631.20	203,262.40
10/1/2026	750,496			9,381.20	9,381.20	
4/1/2027	750,496	2.50	180,000	9,381.20	189,381.20	198,762.40
10/1/2027	570,496			7,131.20	7,131.20	
4/1/2028	570,496	2.50	185,000	7,131.20	192,131.20	199,262.40
10/1/2028	385,496			4,818.70	4,818.70	
4/1/2029	385,496	2.50	190,000	4,818.70	194,818.70	199,637.40
10/1/2029	195,496			2,443.70	2,443.70	
4/1/2030	195,496	2.50	195,496	2,443.70	197,939.70	200,383.40
	Totals		$2,345,496	$463,298.60	$2,808,794.60	$2,808,794.60

CITY OF ST. JOSEPH (MICHIGAN) CITY WATER FUND

CASH FLOW ANALYSIS

		2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Rate revenue increase assumption over previous year				3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Rate revenues		$680,000	$680,000	$703,800	$728,433	$753,928	$780,316	$807,627	$835,894
Other revenues		3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
Total revenues		683,500	683,500	707,300	731,933	757,428	783,816	811,127	839,394
	Increase								
Total expenditures	1.50%	173,300	154,600	156,919	159,273	161,662	164,087	166,548	169,046
Net operating revenue		510,200	528,900	550,381	572,660	595,766	619,729	644,579	670,347
Less: Current year debt service		198,637	200,137	201,512	202,762	198,887	200,012	201,012	201,887
Estimated cash-funded capital improvements		440,000	150,500	75,000	160,000	574,892	982,925		
Estimated debt service #1 2018/19 Bonds [1]					21,500	21,500	21,500	21,500	21,500
Estimated debt service #2 2020/21 Bonds [2]							105,500	105,500	105,500
Estimated debt service #3 2022/23 Bonds [3]									136,000
Estimated debt service #4 2026/27 Bonds [4]									
Estimated debt service #5 2030/31 Bonds [5]									
Estimated debt service #6 2035/36 Bonds [6]									
Net cash flow		($128,437)	$178,263	$273,869	$188,398	($199,513)	($690,209)	$316,566	$205,460
Cash & investments	*$1,407,109*	*$1,278,672*	*$1,456,934*	*$1,730,803*	*$1,919,201*	*$1,719,687*	*$1,029,479*	*$1,346,045*	*$1,551,505*

[1] Estimated debt service payments based on a $332,000 20-year bond issue at current DWRF rates.
[2] Estimated debt service payments based on a $1,642,000 20-year bond issue at current DWRF rates.
[3] Estimated debt service payments based on a $2,115,370 20-year bond issue at current DWRF rates.
[4] Estimated debt service payments based on a $1,653,048 20-year bond issue at current DWRF rates.
[5] Estimated debt service payments based on a $3,627,123 20-year bond issue at current DWRF rates.
[6] Estimated debt service payments based on a $1,275,308 20-year bond issue at current DWRF rates.

CITY OF ST. JOSEPH (MICHIGAN) CITY WATER FUND

(Continued)

CASH FLOW ANALYSIS

2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37
3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
$865,150	$895,430	$926,770	$959,207	$992,779	$1,027,527	$1,063,490	$1,100,712	$1,139,237	$1,179,111	$1,220,379	$1,263,093	$1,307,301
3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
868,650	898,930	930,270	962,707	996,279	1,031,027	1,066,990	1,104,212	1,142,737	1,182,611	1,223,879	1,266,593	1,310,801
171,582	174,156	176,768	179,420	182,111	184,843	187,615	190,429	193,286	196,185	199,128	202,115	205,147
697,068	724,774	753,502	783,288	814,169	846,184	879,375	913,783	949,451	986,425	1,024,751	1,064,478	1,105,654
202,637	203,262	198,762	199,262	199,637	200,383							
	787,146			308,390	707,694				755,169	784,567		1,140,914
21,500	21,500	21,500	21,500	21,500	21,500	21,500	21,500	21,500	21,500	21,500	21,500	21,500
105,500	105,500	105,500	105,500	105,500	105,500	105,500	105,500	105,500	105,500	105,500	105,500	105,500
136,000	136,000	136,000	136,000	136,000	136,000	136,000	136,000	136,000	136,000	136,000	136,000	136,000
			106,250	106,250	106,250	106,250	106,250	106,250	106,250	106,250	106,250	106,250
							232,750	232,750	232,750	232,750	232,750	232,750
												82,000
$231,430	($528,634)	$291,740	$214,775	($63,109)	($431,143)	$510,125	$311,783	$347,451	($370,744)	($361,816)	$462,478	($719,260)
$1,782,935	*$1,254,301*	*$1,546,041*	*$1,760,816*	*$1,697,707*	*$1,266,564*	*$1,776,689*	*$2,088,472*	*$2,435,923*	*$2,065,180*	*$1,703,364*	*$2,165,842*	*$1,446,582*

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

COMPARATIVE STATEMENT OF NET POSITION

	As of			
	6/30/2013	**6/30/2014**	**6/30/2015**	**6/30/2016**
	(----------Per Audit----------)			
Assets				
Current assets:				
Cash and cash equivalents	$1,249,154	$1,252,771	$1,604,707	$1,399,556
Due from other funds	1,195	4,000	-	-
Due from other governments	199,074	358,718	-	-
Inventory	913	38	-	259
Accounts receivables	434,011	403,234	675,472	620,516
Total current assets	1,884,347	2,018,761	2,280,179	2,020,331
Noncurrent assets:				
Investment in joint venture	12,692,960	12,846,207	12,846,207	13,191,982
Construction in process	50,698	52,339	-	-
Furniture and equipment	132,041	86,416	-	-
Utility systems	3,100,493	3,484,558	-	-
Capital assets not being depreciated	-	-	194,998	252,766
Capital assets, net of depreciation	-	-	2,990,560	3,187,266
Accumulated depreciation	(500,107)	(516,796)	-	-
Total noncurrent assets	15,476,085	15,952,724	16,031,765	16,632,014
Total Assets	$17,360,432	$17,971,485	$18,311,944	$18,652,345
Liabilities				
Current liabilities:				
Accounts payable	$255,226	$163,784	$602,354	$411,794
Accrued wages	-	1,914	2,055	2,751
Other accrued liabilities	-	-	-	-
Net OPEB obligation	39,308	35,447	-	-
Due to other funds	49,563	50,021	-	-
Due to other governmental units	499,751	638,148	186,519	260,085
Unearned revenue	1,500	1,000	500	-
Current portion of long-term debt	-	-	30,000	30,000
Compensated absences	-	1,013	-	2,021
Bond and notes payable	20,000	30,000	-	-
Total current liabilities	865,348	921,327	821,428	706,651
Noncurrent liabilities:				
Compensated absences	-	338	-	-
Bonds and notes payable	381,000	589,702	-	-
Noncurrent portion of long-term debt	-	-	559,702	529,702
Total Noncurrent Liabilities	381,000	590,040	559,702	529,702
Total Liabilities	1,246,348	1,511,367	1,381,130	1,236,353
Net Position				
Net investment in capital assets	2,382,125	2,486,815	2,595,856	2,880,330
Unrestricted	13,731,959	13,973,303	14,334,958	14,535,662
Total Net Position	16,114,084	16,460,118	16,930,814	17,415,992
Total Liabilities and Net Position	$17,360,432	$17,971,485	$18,311,944	$18,652,345

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

COMPARATIVE STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	Fiscal Year Ended			
	6/30/2013	6/30/2014	6/30/2015	6/30/2016
	(----------Per Audit----------)			
Operating Revenues				
Charges for services	$1,588,651	$1,530,089	$1,541,867	$1,623,141
State revenue	26,492	-	-	-
Fines and forfeitures	58,197	62,572	56,007	56,071
Other	7,778	8,639	732	1,259
Total operating revenues	1,681,118	1,601,300	1,598,606	1,680,471
Operating Expenses				
Salaries and wages	-	-	48,611	33,714
Fringe benefits	-	-	17,967	11,631
Contractual services	-	-	257,486	291,429
Supplies	-	-	1,142	10,244
Utilities	-	-	813,483	796,322
Insurance	-	-	21,778	21,743
Communications	-	-	2,288	3,158
Transportation	-	-	196	121
Printing and publishing	-	-	-	264
Repairs	-	-	41,710	46,824
Building and equipment rental	-	-	15,085	21,250
Sewer	1,248,457	1,321,250	-	-
Others	-	-	6,570	8,133
Subtotal	1,248,457	1,321,250	1,226,316	1,244,833
Depreciation expense	59,677	62,314	68,268	68,268
Total operating expenses	1,308,134	1,383,564	1,294,584	1,313,101
Net operating income (loss)	372,984	217,736	304,022	367,370
Non-Operating Revenues (Expenses)				
Intergovernmental	-	-	129,729	46,307
Income from joint venture	256,609	153,247	-	345,775
Interest income	1,688	1,880	1,696	1,098
Gain (loss) on disposition of assets	-	4,000	-	-
Interest expense and fees	(8,929)	(10,829)	(13,047)	(13,599)
Total non-operating revenues (expenses)	249,368	148,298	118,378	379,581
Income before capital contributions	622,352	366,034	422,400	746,951
Capital Contributions				
Transfers in	62,414	25,000	32,849	126,827
Transfers out	(44,000)	(45,000)	(20,000)	(388,600)
Total capital contributions	18,414	(20,000)	12,849	(261,773)
Change in net position	640,766	346,034	435,249	485,178
Net position, beginning of year	15,473,318	16,114,084	16,495,565	16,930,814
Net position, end of year	$16,114,084	$16,460,118	$16,930,814	$17,415,992

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

COMPARATIVE DETAIL OF OPERATING EXPENSES

		Fiscal Year Ended										
		6/30/2015	6/30/2016	6/30/2017	6/30/2018	Test Year	Multiplier	2018/19	2019/20	2020/21	2021/22	2022/23
		(----------Per Client----------)										
Operating Expenses												
Dept: 447.000 - City Engineer Office												
590-447.000-930.000	Routine Maintenance	-	-	-	$50,000	$50,000	0.0%	$50,000	$50,000	$50,000	$50,000	$50,000
	Total City Engineer Office Expenses	-	-	-	50,000	50,000		50,000	50,000	50,000	50,000	50,000
Dept: 527.000 - Sanitary Operating												
590-527.000-702.000	Salaries - Regular Full Time	$39,700	$31,318	$47,600	46,100	46,100	1.5%	46,792	47,493	48,206	48,929	49,663
590-527.000-703.000	Overtime - Regular	6,900	656	6,100	6,500	6,500	1.5%	6,598	6,696	6,797	6,899	7,002
590-527.000-706.000	Salaries - Regular Part Time	1,300	1,739	2,700	-	-	0.0%	-	-	-	-	-
590-527.000-709.000	Other Compensation	-	-	-	-	-	0.0%	-	-	-	-	-
590-527.000-710.000	Longevity	700	-	-	-	-	1.5%	-	-	-	-	-
590-527.000-715.000	FICA - Employer	3,500	2,425	4,300	4,000	4,000	1.5%	4,060	4,121	4,183	4,245	4,309
590-527.000-716.000	Health Insurance Premiums	6,500	6,500	6,500	16,300	16,300	5.0%	17,115	17,971	18,869	19,813	20,803
590-527.000-717.000	Life Insurance	-	10	100	100	100	1.5%	102	103	105	106	108
590-527.000-718.000	Pension Contribution	6,200	1,397	5,000	5,100	5,100	1.5%	5,177	5,254	5,333	5,413	5,494
590-527.000-719.000	Workers Compensation	1,200	799	1,200	1,200	1,200	1.5%	1,218	1,236	1,255	1,274	1,293
590-527.000-720.000	Unemployment & Sick Leave	500	500	500	500	500	1.5%	508	515	523	531	539
590-527.000-740.000	Supplies	900	9,974	10,000	10,000	10,000	3.0%	10,300	10,609	10,927	11,255	11,593
590-527.000-775.000	Repair & Maintenance Supplies	200	-	-	-	-	0.0%	-	-	-	-	-
590-527.000-801.000	Professional Services	5,500	5,742	16,300	22,500	22,500	0.5%	22,613	22,726	22,839	22,953	23,068
590-527.000-825.000	Administrative Expense	252,000	240,000	246,800	259,200	259,200	0.0%	259,200	259,200	259,200	259,200	259,200
590-527.000-830.000	Internal Services	-	45,686	-	-	-	2.0%	-	-	-	-	-
590-527.000-850.000	Communications	2,300	3,158	4,800	6,000	6,000	2.0%	6,120	6,242	6,367	6,495	6,624
590-527.000-860.000	Transportation/Education	200	121	600	600	600	2.0%	612	624	637	649	662
590-527.000-900.000	Printing & Publishing	-	264	-	-	-	0.0%	-	-	-	-	-
590-527.000-910.000	Insurance Premiums	21,800	21,743	22,400	24,000	24,000	1.0%	24,240	24,482	24,727	24,974	25,224
590-527.000-920.000	Public Utilities	13,800	13,875	16,000	17,000	17,000	3.0%	17,510	18,035	18,576	19,134	19,708
590-527.000-925.000	Sewage Treatment Fees	799,700	782,447	770,000	850,000	850,000	2.0%	867,000	884,340	902,027	920,067	938,469
590-527.000-930.000	Routine Maintenance	41,700	46,824	87,000	98,000	98,000	1.5%	99,470	100,962	102,476	104,014	105,574
590-527.000-940.000	Vehicle & Equipment Usage	15,100	21,250	30,000	35,000	35,000	1.0%	35,350	35,704	36,061	36,421	36,785
590-527.000-956.000	Miscellaneous Expense	6,600	7,083	7,500	8,000	8,000	0.5%	8,040	8,080	8,121	8,161	8,202
590-527.000-968.000	Depreciation	-	-	-	- [1]	-	0.0%	-	-	-	-	-
590-527.000-973.000	Sewer System R&R	-	1,050	39,700	20,000	20,000	1.5%	20,300	20,605	20,914	21,227	21,546
590-527.000-977.000	Equipment	-	-	100,000	40,000	40,000	1.5%	40,600	41,209	41,827	42,455	43,091
	Total Sanitary Operating Expenses	1,226,300	1,244,562	1,425,100	1,470,100	1,470,100		1,492,922	1,516,208	1,539,969	1,564,215	1,588,958
Dept: 901.000 - Asset Management												
590-901.000-740.000	Supplies	-	270	-	-	-	0.0%	-	-	-	-	-
590-901.000-930.000	Routine Maintenance	-	-	-	-	-	0.0%	-	-	-	-	-
	Total Asset Management Expenses	-	270	-	-	-		-	-	-	-	-
Dept: 904.915 - Sewer Improvement Project												
590-904.915-801.000	Professional Services	-	-	-	-	-	0.0%	-	-	-	-	-
590-904.915-973.000	Sewer System Improvements	-	-	-	-	-	0.0%	-	-	-	-	-
	Total Sewer Improvement Project Expenses	-	-	-	-	-		-	-	-	-	-
Dept: 904.920 - Flow Model S2												
590-904.920-801.000	Sewer System Improvements	-	-	10,000	-	-	0.0%	-	-	-	-	-
	Total Flow Model S2 Expenses	-	-	10,000	-	-		-	-	-	-	-

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

(Continued)

COMPARATIVE DETAIL OF OPERATING EXPENSES

		Fiscal Year Ended										
		6/30/2015	6/30/2016	6/30/2017	6/30/2018	Test Year	Multiplier	2018/19	2019/20	2020/21	2021/22	2022/23
		(----------Per Client----------)										
Operating Expenses (Cont'd)												
Dept: 904.930 - Harrison Sewer Replacement												
590-904.930-977.000	Professional Services	-	-	30,000	60,000	-	0.0%	-	-	-	-	-
590-904.930-801.000	Sewer System Infrastructure	-	-	-	440,000	-	0.0%	-	-	-	-	-
	Total Harrison Sewer Replacement Expenses	-	-	30,000	500,000	-		-	-	-	-	-
Dept: 904.931 - Dunham Lift Station Relocation												
590-904.931-801.000	Professional Services	-	-	5,000	100,000	-	0.0%	-	-	-	-	-
590-904.931-977.000	Equipment & Machinery	-	-	-	450,000	-	0.0%	-	-	-	-	-
	Total Dunham Lift Station Expenses	-	-	5,000	550,000	-		-	-	-	-	-
Dept: 904.940 - ALCO Lift Station Renovation												
590-904.930-977.000	Professional Services	-	-	-	25,000	-	0.0%	-	-	-	-	-
	Total ALCO Lift Station Expenses	-	-	-	25,000	-		-	-	-	-	-
Dept: 905.000 - Debt Service												
590-905.000-991.000	CSO Debt - Principal	-	-	-	- [2]	-	0.0%	-	-	-	-	-
590-905.000-995.000	CSO Debt - Interest on Debt	-	-	-	- [2]	-	0.0%	-	-	-	-	-
	Total Debt Service Expenses	-	-	-	-	-		-	-	-	-	-
Dept: 965.000 - Transfer Out												
590-965.000-999.204	Transfer Out - Street Improve	-	-	-	- [3]	-	0.0%	-	-	-	-	-
590-965.000-999.401	Transfer Out - Capital Improve	-	-	-	- [3]	-	0.0%	-	-	-	-	-
590-965.000-999.404	Transfer Out to SAW Grant Fund	-	-	-	- [3]	-	0.0%	-	-	-	-	-
590-965.000-999.450	Transfer Out - CSO Construction	-	-	-	- [3]	-	0.0%	-	-	-	-	-
590-965.000-999.592	Transfer out to City Water Fund	-	-	-	- [3]	-	0.0%	-	-	-	-	-
	Total Transfer Out Expenses	-	-	-	-	-		-	-	-	-	-
	Total Operating Expenses - Sewer	$1,226,300	$1,244,832	$1,470,100	$2,595,100	$1,520,100		$1,542,922	$1,566,208	$1,589,969	$1,614,215	$1,638,958

[1] Depreciation Expense is removed from this section of the report as this study is performed on the cash basis.
[2] Principal and interest on debt are removed from this section of the report. These items are discussed later in the report.
[3] Transfers out are capital related and are included in the capital improvement section in the cash flow.

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

(Continued)

COMPARATIVE DETAIL OF OPERATING EXPENSES

2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37
$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000
50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
50,408	51,164	51,931	52,710	53,501	54,303	55,118	55,945	56,784	57,636	58,500	59,378	60,268	61,172
7,107	7,214	7,322	7,432	7,544	7,657	7,772	7,888	8,006	8,127	8,248	8,372	8,498	8,625
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,374	4,439	4,506	4,574	4,642	4,712	4,782	4,854	4,927	5,001	5,076	5,152	5,229	5,308
21,844	22,936	24,083	25,287	26,551	27,879	29,272	30,736	32,273	33,887	35,581	37,360	39,228	41,189
109	111	113	114	116	118	120	121	123	125	127	129	131	133
5,577	5,660	5,745	5,831	5,919	6,008	6,098	6,189	6,282	6,376	6,472	6,569	6,667	6,767
1,312	1,332	1,352	1,372	1,393	1,414	1,435	1,456	1,478	1,500	1,523	1,546	1,569	1,592
547	555	563	572	580	589	598	607	616	625	634	644	654	663
11,941	12,299	12,668	13,048	13,439	13,842	14,258	14,685	15,126	15,580	16,047	16,528	17,024	17,535
-	-	-	-	-	-	-	-	-	-	-	-	-	-
23,183	23,299	23,416	23,533	23,651	23,769	23,888	24,007	24,127	24,248	24,369	24,491	24,613	24,736
259,200	259,200	259,200	259,200	259,200	259,200	259,200	259,200	259,200	259,200	259,200	259,200	259,200	259,200
-	-	-	-	-	-	-	-	-	-	-	-	-	-
6,757	6,892	7,030	7,171	7,314	7,460	7,609	7,762	7,917	8,075	8,237	8,401	8,569	8,741
676	689	703	717	731	746	761	776	792	808	824	840	857	874
-	-	-	-	-	-	-	-	-	-	-	-	-	-
25,476	25,731	25,989	26,248	26,511	26,776	27,044	27,314	27,587	27,863	28,142	28,423	28,708	28,995
20,299	20,908	21,535	22,181	22,847	23,532	24,238	24,965	25,714	26,485	27,280	28,098	28,941	29,810
957,238	976,383	995,910	1,015,829	1,036,145	1,056,868	1,078,006	1,099,566	1,121,557	1,143,988	1,166,868	1,190,205	1,214,009	1,238,289
107,157	108,765	110,396	112,052	113,733	115,439	117,171	118,928	120,712	122,523	124,361	126,226	128,119	130,041
37,153	37,525	37,900	38,279	38,662	39,048	39,439	39,833	40,232	40,634	41,040	41,451	41,865	42,284
8,243	8,284	8,326	8,367	8,409	8,451	8,493	8,536	8,579	8,621	8,665	8,708	8,751	8,795
-	-	-	-	-	-	-	-	-	-	-	-	-	-
21,869	22,197	22,530	22,868	23,211	23,559	23,912	24,271	24,635	25,005	25,380	25,760	26,147	26,539
43,738	44,394	45,060	45,736	46,422	47,118	47,825	48,542	49,270	50,009	50,759	51,521	52,294	53,078
1,614,208	1,639,977	1,666,277	1,693,120	1,720,520	1,748,487	1,777,037	1,806,182	1,835,937	1,866,315	1,897,332	1,929,003	1,961,343	1,994,368
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

(Continued)

COMPARATIVE DETAIL OF OPERATING EXPENSES

2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
$1,664,208	$1,689,977	$1,716,277	$1,743,120	$1,770,520	$1,798,487	$1,827,037	$1,856,182	$1,885,937	$1,916,315	$1,947,332	$1,979,003	$2,011,343	$2,044,368

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

SCHEDULE OF 2017/18 BUDGETED OPERATING EXPENSES AND ADJUSTMENTS

	2017/18 Budget (Per Client)	Adjustments	Test Year
Operating Expenses			
Dept: 447.000 - City Engineer Office			
590-447.000-930.000 Routine Maintenance	$50,000		$50,000
Total City Engineer Office Expenses	50,000	-	50,000
Dept: 527.000 - Sanitary Operating			
590-527.000-702.000 Salaries - Regular Full Time	46,100		46,100
590-527.000-703.000 Overtime - Regular	6,500		6,500
590-527.000-706.000 Salaries - Regular Part Time	-		-
590-527.000-709.000 Other Compensation	-		-
590-527.000-710.000 Longevity	-		-
590-527.000-715.000 FICA - Employer	4,000		4,000
590-527.000-716.000 Health Insurance Premiums	16,300		16,300
590-527.000-717.000 Life Insurance	100		100
590-527.000-718.000 Pension Contribution	5,100		5,100
590-527.000-719.000 Workers Compensation	1,200		1,200
590-527.000-720.000 Unemployment & Sick Leave	500		500
590-527.000-740.000 Supplies	10,000		10,000
590-527.000-775.000 Repair & Maintenance Supplies	-		-
590-527.000-801.000 Professional Services	22,500		22,500
590-527.000-825.000 Administrative Expense	259,200		259,200
590-527.000-830.000 Internal Services	-		-
590-527.000-850.000 Communications	6,000		6,000
590-527.000-860.000 Transportation/Education	600		600
590-527.000-900.000 Printing & Publishing	-		-
590-527.000-910.000 Insurance Premiums	24,000		24,000
590-527.000-920.000 Public Utilities	17,000		17,000
590-527.000-925.000 Sewage Treatment Fees	850,000		850,000
590-527.000-930.000 Routine Maintenance	98,000		98,000
590-527.000-940.000 Vehicle & Equipment Usage	35,000		35,000
590-527.000-956.000 Miscellaneous Expense	8,000		8,000
590-527.000-968.000 Depreciation	-		-
590-527.000-973.000 Sewer System R&R	20,000		20,000
590-527.000-977.000 Equipment	40,000		40,000
Total Sanitary Operating Expenses	1,470,100	-	1,470,100
Dept: 901.000 - Asset Management			
590-901.000-740.000 Supplies	-		-
590-901.000-930.000 Routine Maintenance	-		-
Total Asset Management Expenses	-	-	-
Dept: 904.915 - Sewer Improvement Project			
590-904.915-801.000 Professional Services	-		-
590-904.915-973.000 Sewer System Improvements	-		-
Total Sewer Improvement Project Expenses	-	-	-
Dept: 904.920 - Flow Model S2			
590-904.920-801.000 Sewer System Improvements	-		-
Total Flow Model S2 Expenses	-	-	-

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

(Continued)

SCHEDULE OF 2017/18 BUDGETED OPERATING EXPENSES AND ADJUSTMENTS

	2017/18 Budget (Per Client)	Adjustments	Test Year
Operating Expenses (Cont'd)			
Dept: 904.930 - Harrison Sewer Replacement			
590-904.930-977.000 Professional Services	60,000	($60,000)	-
590-904.930-801.000 Sewer System Infrastructure	440,000	(440,000)	-
Total Harrison Sewer Replacement Expenses	500,000	(500,000)	-
Dept: 904.931 - Dunham Lift Station Relocation			
590-904.931-801.000 Professional Services	100,000	(100,000)	-
590-904.931-977.000 Equipment & Machinery	450,000	(450,000)	-
Total Dunham Lift Station Expenses	550,000	(550,000)	-
Dept: 904.940 - ALCO Lift Station Renovation			
590-904.930-977.000 Professional Services	25,000	(25,000)	-
Total ALCO Lift Station Expenses	25,000	(25,000)	-
Dept: 905.000 - Debt Service			
590-905.000-991.000 CSO Debt - Principal	-		-
590-905.000-995.000 CSO Debt - Interest on Debt	-		-
Total Debt Service Expenses	-	-	-
Dept: 965.000 - Transfer Out			
590-965.000-999.204 Transfer Out - Street Improve	-		-
590-965.000-999.401 Transfer Out - Capital Improve	-		-
590-965.000-999.404 Transfer Out to SAW Grant Fund	-		-
590-965.000-999.450 Transfer Out - CSO Construction	-		-
590-965.000-999.592 Transfer out to City Water Fund	-		-
Total Transfer Out Expenses	-	-	-
Total Operating Expenses - Sewer	$2,595,100	($1,075,000)	$1,520,100

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

SCHEDULE OF AMORTIZATION OF $171,000 PRINCIPAL AMOUNT OUTSTANDING OF SRF BONDS, SERIES 2009

Payment Date	Principal Balance	Interest Rate	Debt Service			Fiscal Year Total
			Principal	Interest	Total	
	(In Dollars)	(%)	(In Dollars)			
10/1/2016	$171,000			$2,137.50	$2,137.50	
4/1/2017	171,000	2.50	$10,000	2,137.50	12,137.50	$14,275.00
10/1/2017	161,000			2,012.50	2,012.50	
4/1/2018	161,000	2.50	10,000	2,012.50	12,012.50	14,025.00
10/1/2018	151,000			1,887.50	1,887.50	
4/1/2019	151,000	2.50	10,000	1,887.50	11,887.50	13,775.00
10/1/2019	141,000			1,762.50	1,762.50	
4/1/2020	141,000	2.50	10,000	1,762.50	11,762.50	13,525.00
10/1/2020	131,000			1,637.50	1,637.50	
4/1/2021	131,000	2.50	10,000	1,637.50	11,637.50	13,275.00
10/1/2021	121,000			1,512.50	1,512.50	
4/1/2022	121,000	2.50	10,000	1,512.50	11,512.50	13,025.00
10/1/2022	111,000			1,387.50	1,387.50	
4/1/2023	111,000	2.50	10,000	1,387.50	11,387.50	12,775.00
10/1/2023	101,000			1,262.50	1,262.50	
4/1/2024	101,000	2.50	11,000	1,262.50	12,262.50	13,525.00
10/1/2024	90,000			1,125.00	1,125.00	
4/1/2025	90,000	2.50	15,000	1,125.00	16,125.00	17,250.00
10/1/2025	75,000			937.50	937.50	
4/1/2026	75,000	2.50	15,000	937.50	15,937.50	16,875.00
10/1/2026	60,000			750.00	750.00	
4/1/2027	60,000	2.50	15,000	750.00	15,750.00	16,500.00
10/1/2027	45,000			562.50	562.50	
4/1/2028	45,000	2.50	15,000	562.50	15,562.50	16,125.00
10/1/2028	30,000			375.00	375.00	
4/1/2029	30,000	2.50	15,000	375.00	15,375.00	15,750.00
10/1/2029	15,000			187.50	187.50	
4/1/2030	15,000	2.50	15,000	187.50	15,187.50	15,375.00
	Totals		$171,000	$35,075.00	$206,075.00	$206,075.00

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

SCHEDULE OF AMORTIZATION OF $170,000 PRINCIPAL AMOUNT OUTSTANDING OF SRF BONDS, SERIES 2012

Payment Date	Principal Balance	Interest Rate	Debt Service			Fiscal Year Total
			Principal	Interest	Total	
	(In Dollars)	(%)	(In Dollars)			
10/1/2016	$170,000			$2,125.00	$2,125.00	
4/1/2017	170,000	2.50	$10,000	2,125.00	12,125.00	$14,250.00
10/1/2017	160,000			2,000.00	2,000.00	
4/1/2018	160,000	2.50	10,000	2,000.00	12,000.00	14,000.00
10/1/2018	150,000			1,875.00	1,875.00	
4/1/2019	150,000	2.50	10,000	1,875.00	11,875.00	13,750.00
10/1/2019	140,000			1,750.00	1,750.00	
4/1/2020	140,000	2.50	10,000	1,750.00	11,750.00	13,500.00
10/1/2020	130,000			1,625.00	1,625.00	
4/1/2021	130,000	2.50	10,000	1,625.00	11,625.00	13,250.00
10/1/2021	120,000			1,500.00	1,500.00	
4/1/2022	120,000	2.50	10,000	1,500.00	11,500.00	13,000.00
10/1/2022	110,000			1,375.00	1,375.00	
4/1/2023	110,000	2.50	10,000	1,375.00	11,375.00	12,750.00
10/1/2023	100,000			1,250.00	1,250.00	
4/1/2024	100,000	2.50	10,000	1,250.00	11,250.00	12,500.00
10/1/2024	90,000			1,125.00	1,125.00	
4/1/2025	90,000	2.50	10,000	1,125.00	11,125.00	12,250.00
10/1/2025	80,000			1,000.00	1,000.00	
4/1/2026	80,000	2.50	10,000	1,000.00	11,000.00	12,000.00
10/1/2026	70,000			875.00	875.00	
4/1/2027	70,000	2.50	10,000	875.00	10,875.00	11,750.00
10/1/2027	60,000			750.00	750.00	
4/1/2028	60,000	2.50	10,000	750.00	10,750.00	11,500.00
10/1/2028	50,000			625.00	625.00	
4/1/2029	50,000	2.50	10,000	625.00	10,625.00	11,250.00
10/1/2029	40,000			500.00	500.00	
4/1/2030	40,000	2.50	10,000	500.00	10,500.00	11,000.00
10/1/2030	30,000			375.00	375.00	
4/1/2031	30,000	2.50	15,000	375.00	15,375.00	15,750.00
10/1/2031	15,000			187.50	187.50	
4/1/2032	15,000	2.50	15,000	187.50	15,187.50	15,375.00
	Totals		$170,000	$37,875.00	$207,875.00	$207,875.00

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

SCHEDULE OF AMORTIZATION OF $218,702 PRINCIPAL AMOUNT OUTSTANDING OF SRF BONDS, SERIES 2013

Payment Date	Principal Balance	Interest Rate	Debt Service			Fiscal Year Total
			Principal	Interest	Total	
	(In Dollars)	(%)	(In Dollars)			
10/1/2016	$218,702			$2,187.02	$2,187.02	
4/1/2017	218,702	2.00	$10,000	2,187.02	12,187.02	$14,374.04
10/1/2017	208,702			2,087.02	2,087.02	
4/1/2018	208,702	2.00	10,000	2,087.02	12,087.02	14,174.04
10/1/2018	198,702			1,987.02	1,987.02	
4/1/2019	198,702	2.00	10,000	1,987.02	11,987.02	13,974.04
10/1/2019	188,702			1,887.02	1,887.02	
4/1/2020	188,702	2.00	10,000	1,887.02	11,887.02	13,774.04
10/1/2020	178,702			1,787.02	1,787.02	
4/1/2021	178,702	2.00	10,000	1,787.02	11,787.02	13,574.04
10/1/2021	168,702			1,687.02	1,687.02	
4/1/2022	168,702	2.00	10,000	1,687.02	11,687.02	13,374.04
10/1/2022	158,702			1,587.02	1,587.02	
4/1/2023	158,702	2.00	10,000	1,587.02	11,587.02	13,174.04
10/1/2023	148,702			1,487.02	1,487.02	
4/1/2024	148,702	2.00	10,000	1,487.02	11,487.02	12,974.04
10/1/2024	138,702			1,387.02	1,387.02	
4/1/2025	138,702	2.00	15,000	1,387.02	16,387.02	17,774.04
10/1/2025	123,702			1,237.02	1,237.02	
4/1/2026	123,702	2.00	15,000	1,237.02	16,237.02	17,474.04
10/1/2026	108,702			1,087.02	1,087.02	
4/1/2027	108,702	2.00	15,000	1,087.02	16,087.02	17,174.04
10/1/2027	93,702			937.02	937.02	
4/1/2028	93,702	2.00	15,000	937.02	15,937.02	16,874.04
10/1/2028	78,702			787.02	787.02	
4/1/2029	78,702	2.00	15,000	787.02	15,787.02	16,574.04
10/1/2029	63,702			637.02	637.02	
4/1/2030	63,702	2.00	15,000	637.02	15,637.02	16,274.04
10/1/2030	48,702			487.02	487.02	
4/1/2031	48,702	2.00	15,000	487.02	15,487.02	15,974.04
10/1/2031	33,702			337.02	337.02	
4/1/2032	33,702	2.00	15,000	337.02	15,337.02	15,674.04
10/1/2032	18,702			187.02	187.02	
4/1/2033	18,702	2.00	18,702	187.02	18,889.02	19,076.04
	Totals		$218,702	$43,558.68	$262,260.68	$262,260.68

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

SCHEDULE OF COMBINED DEBT SERVICE

Fiscal Year	2009 SRF Bonds	2012 SRF Bonds	2013 SRF Bonds	Total	
2016/17	$14,275.00	$14,250.00	$14,374.04	$42,899.04	
2017/18	14,025.00	14,000.00	14,174.04	42,199.04	
2018/19	13,775.00	13,750.00	13,974.04	41,499.04	
2019/20	13,525.00	13,500.00	13,774.04	40,799.04	
2020/21	13,275.00	13,250.00	13,574.04	40,099.04	
2021/22	13,025.00	13,000.00	13,374.04	39,399.04	
2022/23	12,775.00	12,750.00	13,174.04	38,699.04	
2023/24	13,525.00	12,500.00	12,974.04	38,999.04	
2024/25	17,250.00	12,250.00	17,774.04	47,274.04	*
2025/26	16,875.00	12,000.00	17,474.04	46,349.04	
2026/27	16,500.00	11,750.00	17,174.04	45,424.04	
2027/28	16,125.00	11,500.00	16,874.04	44,499.04	
2028/29	15,750.00	11,250.00	16,574.04	43,574.04	
2029/30	15,375.00	11,000.00	16,274.04	42,649.04	
2030/31		15,750.00	15,974.04	31,724.04	
2031/32		15,375.00	15,674.04	31,049.04	
2032/33			19,076.04	19,076.04	
Totals	$206,075.00	$207,875.00	$262,260.68	$676,210.68	

* Maximum annual combined debt service

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

CASH FLOW ANALYSIS - STEP PLUS INFLATIONARY INCREASES

		2016/17		2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Assumptions			Increase							
Meter equivalents billed - quarter		4,372		4,372	4,372	4,372	4,372	4,372	4,372	4,372
Ready-to-serve charge (per meter equivalent)		$17.50	7.00%	$18.73	$20.04	$21.44	$22.94	$24.54	$26.26	$28.10
Volume sold - annual ccf		464,963		464,963	464,963	464,963	464,963	464,963	464,963	464,963
Commodity charge - ccf		$2.42	7.00%	$2.59	$2.77	$2.96	$3.17	$3.39	$3.63	$3.89
Revenues										
Rates & charges										
Ready-to-serve charge		$306,047		$327,470	$350,393	$374,921	$401,165	$429,247	$459,294	$491,445
Commodity charge		1,125,210		1,203,975	1,288,253	1,378,431	1,474,921	1,578,166	1,688,637	1,806,842
Total rates & charges revenue		1,431,257		1,531,445	1,638,647	1,753,352	1,876,087	2,007,413	2,147,932	2,298,287
Township agreements		175,000		175,000	175,000	175,000	175,000	175,000	175,000	175,000
WWTP agreement		90,000		90,000	90,000	90,000	90,000	90,000	90,000	90,000
Fines & forfeitures		56,071		56,071	56,071	56,071	56,071	56,071	56,071	56,071
Other		1,259		1,259	1,259	1,259	1,259	1,259	1,259	1,259
Total revenues		1,753,587		1,853,775	1,960,977	2,075,682	2,198,417	2,329,743	2,470,262	2,620,617
Total expenditures		1,470,100		1,520,100	1,542,922	1,566,208	1,589,969	1,614,215	1,638,958	1,664,208
Net operating revenue		283,487		333,675	418,055	509,474	608,448	715,527	831,304	956,409
Less: Current debt service payment		42,899		42,199	41,499	40,799	40,099	39,399	38,699	38,999
Estimated cash-funded capital improvements		5,000								
Estimated debt service #1 2017/18 Bonds [1]					77,500	77,500	77,500	77,500	77,500	77,500
Estimated debt service #2 2018/19 Bonds [2]						187,750	187,750	187,750	187,750	187,750
Estimated debt service #3 2019/20 Bonds [3]							385,000	385,000	385,000	385,000
Estimated debt service #4 2020/21 Bonds [4]								99,750	99,750	99,750
Estimated debt service #5 2021/22 Bonds [5]									403,000	403,000
Estimated debt service #6 2025/26 Bonds [6]										
Estimated debt service #7 2029/30 Bonds [7]										
Estimated debt service #8 2033/34 Bonds [8]										
Net cash flow		$235,588		$291,476	$299,056	$203,425	($81,901)	($73,872)	($360,395)	($235,590)
Cash & investments	*$1,399,556*	*$1,635,144*		*$1,926,621*	*$2,225,676*	*$2,429,101*	*$2,347,200*	*$2,273,328*	*$1,912,933*	*$1,677,343*
Typical homeowner's bill (using 18 ccf/quarter)		*$61.06*		*$65.33*	*$69.91*	*$74.80*	*$80.04*	*$85.64*		

[1] Estimated debt service payments based on a $1,205,000 20-year bond issue at current SRF rates.
[2] Estimated debt service payments based on a $2,728,794 20-year bond issue at current market rates.
[3] Estimated debt service payments based on a $6,000,000 20-year bond issue at current SRF rates.
[4] Estimated debt service payments based on a $1,449,513 20-year bond issue at current market rates.
[5] Estimated debt service payments based on a $6,277,792 20-year bond issue at current SRF rates.
[6] Estimated debt service payments based on a $4,436,251 20-year bond issue at current SRF rates.
[7] Estimated debt service payments based on a $6,694,732 20-year bond issue at current SRF rates.
[8] Estimated debt service payments based on a $6,394,164 20-year bond issue at current SRF rates.

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

(Continued)

CASH FLOW ANALYSIS - STEP PLUS INFLATIONARY INCREASES

2024/25	2025/26	2026/27	2027/28	Increase	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37
4,372	4,372	4,372	4,372		4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372
$30.07	$32.17	$34.43	$36.83	3.50%	$38.12	$39.46	$40.84	$42.27	$43.75	$45.28	$46.86	$48.50	$50.20
464,963	464,963	464,963	464,963		464,963	464,963	464,963	464,963	464,963	464,963	464,963	464,963	464,963
$4.16	$4.45	$4.76	$5.09	3.50%	$5.27	$5.46	$5.65	$5.85	$6.05	$6.26	$6.48	$6.71	$6.94
$525,846	$562,655	$602,041	$644,184		$666,730	$690,066	$714,218	$739,216	$765,088	$791,866	$819,581	$848,267	$877,956
1,933,321	2,068,654	2,213,459	2,368,401		2,451,295	2,537,091	2,625,889	2,717,795	2,812,918	2,911,370	3,013,268	3,118,732	3,227,888
2,459,167	2,631,308	2,815,500	3,012,585		3,118,026	3,227,156	3,340,107	3,457,011	3,578,006	3,703,236	3,832,849	3,966,999	4,105,844
175,000	175,000	175,000	175,000		175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000
90,000	90,000	90,000	90,000		90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000
56,071	56,071	56,071	56,071		56,071	56,071	56,071	56,071	56,071	56,071	56,071	56,071	56,071
1,259	1,259	1,259	1,259		1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259
2,781,497	2,953,638	3,137,830	3,334,915		3,440,356	3,549,486	3,662,437	3,779,341	3,900,336	4,025,566	4,155,179	4,289,329	4,428,174
1,689,977	1,716,277	1,743,120	1,770,520		1,798,487	1,827,037	1,856,182	1,885,937	1,916,315	1,947,332	1,979,003	2,011,343	2,044,368
1,091,520	1,237,362	1,394,710	1,564,395		1,641,868	1,722,449	1,806,255	1,893,404	1,984,021	2,078,234	2,176,177	2,277,986	2,383,806
47,274	46,349	45,424	44,499		43,574	42,649	31,724	31,049	19,076				
77,500	77,500	77,500	77,500		77,500	77,500	77,500	77,500	77,500	77,500	77,500	77,500	77,500
187,750	187,750	187,750	187,750		187,750	187,750	187,750	187,750	187,750	187,750	187,750	187,750	187,750
385,000	385,000	385,000	385,000		385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000
99,750	99,750	99,750	99,750		99,750	99,750	99,750	99,750	99,750	99,750	99,750	99,750	99,750
403,000	403,000	403,000	403,000		403,000	403,000	403,000	403,000	403,000	403,000	403,000	403,000	403,000
		285,000	285,000		285,000	285,000	285,000	285,000	285,000	285,000	285,000	285,000	285,000
							429,500	429,500	429,500	429,500	429,500	429,500	429,500
											410,250	410,250	410,250
($108,754)	$38,012	($88,714)	$81,896		$160,294	$241,800	($92,970)	($5,145)	$97,445	$210,734	($101,573)	$236	$106,056
$1,568,589	*$1,606,602*	*$1,517,887*	*$1,599,784*		*$1,760,078*	*$2,001,878*	*$1,908,908*	*$1,903,763*	*$2,001,208*	*$2,211,942*	*$2,110,368*	*$2,110,605*	*$2,216,661*

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

CASH FLOW ANALYSIS - ONE-TIME PLUS INFLATIONARY INCREASES

		2016/17		2017/18		2018/19		2019/20	2020/21	2021/22	2022/23
Assumptions			Increase		Increase		Increase				
Meter equivalents billed - quarter		4,372		4,372		4,372		4,372	4,372	4,372	4,372
Ready-to-serve charge (per meter equivalent)		$17.50	7.00%	$18.73	36.00%	$25.47	3.50%	$26.36	$27.28	$28.23	$29.22
Volume sold - annual ccf		464,963		464,963		464,963		464,963	464,963	464,963	464,963
Commodity charge - ccf		$2.42	7.00%	$2.59	36.00%	$3.52	3.50%	$3.64	$3.77	$3.90	$4.04
Revenues											
Rates & charges											
Ready-to-serve charge		$306,047		$327,470		$445,360		$460,947	$477,080	$493,778	$511,060
Commodity charge		1,125,210		1,203,975		1,637,406		1,694,715	1,754,031	1,815,422	1,878,961
Total rates & charges revenue		1,431,257		1,531,445		2,082,766		2,155,663	2,231,111	2,309,200	2,390,022
Township agreements		175,000		175,000		175,000		175,000	175,000	175,000	175,000
WWTP agreement		90,000		90,000		90,000		90,000	90,000	90,000	90,000
Fines & forfeitures		56,071		56,071		56,071		56,071	56,071	56,071	56,071
Other		1,259		1,259		1,259		1,259	1,259	1,259	1,259
Total revenues		1,753,587		1,853,775		2,405,096		2,477,993	2,553,441	2,631,530	2,712,352
Total expenditures		1,470,100		1,520,100		1,542,922		1,566,208	1,589,969	1,614,215	1,638,958
Net operating revenue		283,487		333,675		862,174		911,784	963,472	1,017,315	1,073,394
Less: Current debt service payment		42,899		42,199		41,499		40,799	40,099	39,399	38,699
Estimated cash-funded capital improvements		5,000							1,449,513		
Estimated debt service #1 2017/18 Bonds [1]						77,500		77,500	77,500	77,500	77,500
Estimated debt service #2 2018/19 Bonds [2]								187,750	187,750	187,750	187,750
Estimated debt service #3 2019/20 Bonds [3]									385,000	385,000	385,000
Estimated debt service #4 2021/22 Bonds [4]											403,000
Estimated debt service #5 2025/26 Bonds [5]											
Estimated debt service #6 2029/30 Bonds [6]											
Estimated debt service #7 2033/34 Bonds [7]											
Net cash flow		$235,588		$291,476		$743,175		$605,735	($1,176,390)	$327,666	($18,555)
Cash & investments	*$1,399,556*	*$1,635,144*		*$1,926,621*		*$2,669,796*		*$3,275,531*	*$2,099,141*	*$2,426,806*	*$2,408,252*
Typical homeowner's bill (using 18 ccf/quarter)		*$61.06*		*$65.33*		*$88.85*		*$91.96*	*$95.18*	*$98.51*	

[1] Estimated debt service payments based on a $1,205,000 20-year bond issue at current SRF rates.
[2] Estimated debt service payments based on a $2,728,794 20-year bond issue at current market rates.
[3] Estimated debt service payments based on a $6,000,000 20-year bond issue at current SRF rates.
[4] Estimated debt service payments based on a $6,277,792 20-year bond issue at current SRF rates.
[5] Estimated debt service payments based on a $4,436,251 20-year bond issue at current SRF rates.
[6] Estimated debt service payments based on a $6,694,732 20-year bond issue at current SRF rates.
[7] Estimated debt service payments based on a $6,394,164 20-year bond issue at current SRF rates.

CITY OF ST. JOSEPH (MICHIGAN) SEWER FUND

(Continued)

CASH FLOW ANALYSIS - ONE-TIME PLUS INFLATIONARY INCREASES

2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37
4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372
$30.25	$31.30	$32.40	$33.53	$34.71	$35.92	$37.18	$38.48	$39.83	$41.22	$42.66	$44.16	$45.70	$47.30
464,963	464,963	464,963	464,963	464,963	464,963	464,963	464,963	464,963	464,963	464,963	464,963	464,963	464,963
$4.18	$4.33	$4.48	$4.64	$4.80	$4.97	$5.14	$5.32	$5.51	$5.70	$5.90	$6.11	$6.32	$6.54
$528,947	$547,461	$566,622	$586,454	$606,979	$628,224	$650,212	$672,969	$696,523	$720,901	$746,133	$772,247	$799,276	$827,251
1,944,725	2,012,790	2,083,238	2,156,151	2,231,617	2,309,723	2,390,564	2,474,233	2,560,831	2,650,461	2,743,227	2,839,240	2,938,613	3,041,464
2,473,672	2,560,251	2,649,860	2,742,605	2,838,596	2,937,947	3,040,775	3,147,202	3,257,354	3,371,362	3,489,359	3,611,487	3,737,889	3,868,715
175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000
90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000
56,071	56,071	56,071	56,071	56,071	56,071	56,071	56,071	56,071	56,071	56,071	56,071	56,071	56,071
1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259	1,259
2,796,002	2,882,581	2,972,190	3,064,935	3,160,926	3,260,277	3,363,105	3,469,532	3,579,684	3,693,692	3,811,689	3,933,817	4,060,219	4,191,045
1,664,208	1,689,977	1,716,277	1,743,120	1,770,520	1,798,487	1,827,037	1,856,182	1,885,937	1,916,315	1,947,332	1,979,003	2,011,343	2,044,368
1,131,795	1,192,604	1,255,913	1,321,814	1,390,406	1,461,789	1,536,068	1,613,350	1,693,747	1,777,376	1,864,357	1,954,814	2,048,876	2,146,677
38,999	47,274	46,349	45,424	44,499	43,574	42,649	31,724	31,049	19,076				
77,500	77,500	77,500	77,500	77,500	77,500	77,500	77,500	77,500	77,500	77,500	77,500	77,500	77,500
187,750	187,750	187,750	187,750	187,750	187,750	187,750	187,750	187,750	187,750	187,750	187,750	187,750	187,750
385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000
403,000	403,000	403,000	403,000	403,000	403,000	403,000	403,000	403,000	403,000	403,000	403,000	403,000	403,000
			285,000	285,000	285,000	285,000	285,000	285,000	285,000	285,000	285,000	285,000	285,000
							429,500	429,500	429,500	429,500	429,500	429,500	429,500
											410,250	410,250	410,250
$39,546	$92,080	$156,314	($61,860)	$7,657	$79,965	$155,169	($186,124)	($105,052)	($9,450)	$96,607	($223,186)	($129,124)	($31,323)
$2,447,797	*$2,539,878*	*$2,696,191*	*$2,634,332*	*$2,641,989*	*$2,721,955*	*$2,877,124*	*$2,690,999*	*$2,585,948*	*$2,576,498*	*$2,673,105*	*$2,449,919*	*$2,320,795*	*$2,289,472*

CITY OF ST. JOSEPH (MICHIGAN) STREET IMPROVEMENT FUND

CASH FLOW ANALYSIS - NO TAXABLE VALUE INCREASE

	2017/18	Increase	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Assumptions								
Taxable Value	454,604,354	0.00%	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354
Street Improvement Mills Levied - Phase I	1.0000		3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
Street Improvement Mills Levied - Phase II [1]	-		-	-	-	-	-	-
Dedicated Bond Issue Mills Levied	-		-	-	-	0.0715	0.4069	0.4069
Total Street and Bond Mills Levied	1.0000		3.0000	3.0000	3.0000	3.0715	3.4069	3.4069
Revenues								
Street Improvement Millage Revenue - Phase I	454,604		1,363,813	1,363,813	1,363,813	1,363,813	1,363,813	1,363,813
Street Improvement Millage Revenue - Phase II	-		-	-	-	-	-	-
Dedicated Bond Issue Millage Revenue	-		-	-	-	32,500	185,000	185,000
Total revenues	454,604		1,363,813	1,363,813	1,363,813	1,396,313	1,548,813	1,548,813
Expenditures								
Less: Estimated cash-funded capital improvements	428,000		742,225	444,000	2,286,838	-	1,577,884	1,116,017
Estimated debt service #1 2021/22 Bonds [2]						32,500	185,000	185,000
Estimated debt service #2 2031/32 Bonds [3]								
Net cash flow	$26,604		$621,588	$919,813	($923,025)	$1,363,813	($214,071)	$247,796
Cash & investments	*$26,604*		*$648,192*	*$1,568,005*	*$644,981*	*$2,008,794*	*$1,794,723*	*$2,042,519*

[1] This phase is implemented when the CSO Debt Retirement 2 bonds mature on May 1, 2027. First levy will be for the 2027/28 fiscal year.
[2] Estimated debt service payments based on a $2,250,777 15-year bond issue at current market rates.
[3] Estimated debt service payments based on a $3,081,435 15-year bond issue at current market rates.

CITY OF ST. JOSEPH (MICHIGAN) STREET IMPROVEMENT FUND

(Continued)

CASH FLOW ANALYSIS - NO TAXABLE VALUE INCREASE

2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37
454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354
3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
-	-	-	0.8670	0.8670	0.8670	0.8670	0.7691	0.3099	0.3099	0.3099	0.3099	0.3099
0.4069	0.4069	0.4069	0.4069	0.4069	0.4069	0.4069	0.5048	0.9640	0.9640	0.9640	0.9640	0.9640
3.4069	3.4069	3.4069	4.2739	4.2739	4.2739	4.2739	4.2739	4.2739	4.2739	4.2739	4.2739	4.2739
1,363,813	1,363,813	1,363,813	1,363,813	1,363,813	1,363,813	1,363,813	1,363,813	1,363,813	1,363,813	1,363,813	1,363,813	1,363,813
-	-	-	394,142	394,142	394,142	394,142	349,636	140,882	140,882	140,882	140,882	140,882
185,000	185,000	185,000	185,000	185,000	185,000	185,000	229,500	438,250	438,250	438,250	438,250	438,250
1,548,813	1,548,813	1,548,813	1,942,955	1,942,955	1,942,955	1,942,955	1,942,949	1,942,945	1,942,945	1,942,945	1,942,945	1,942,945
1,947,477	1,848,431	2,237,831	1,834,922	972,269	1,667,341	1,731,644	-	2,584,152	759,742	872,279	3,007,176	2,856,676
185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000
							44,500	253,250	253,250	253,250	253,250	253,250
($583,664)	($484,618)	($874,018)	($76,967)	$785,686	$90,614	$26,311	$1,713,449	($1,079,457)	$744,953	$632,416	($1,502,481)	($1,351,981)
$1,458,855	*$974,237*	*$100,219*	*$23,252*	*$808,938*	*$899,552*	*$925,863*	*$2,639,312*	*$1,559,855*	*$2,304,808*	*$2,937,224*	*$1,434,743*	*$82,762*

CITY OF ST. JOSEPH (MICHIGAN) STREET IMPROVEMENT FUND

CASH FLOW ANALYSIS - 1% TAXABLE VALUE INCREASE

	2017/18	Increase	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Assumptions								
Taxable Value	454,604,354	1.00%	459,150,398	463,741,902	468,379,321	473,063,114	477,793,745	482,571,682
Street Improvement Mills Levied - Phase I	1.0000		3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
Dedicated Bond Issue Mills Levied	-		-	-	-	0.0687	0.3626	0.3626
Total Street and Bond Mills Levied	1.0000		3.0000	3.0000	3.0000	3.0687	3.3626	3.3626
Revenues								
Street Improvement Millage Revenue - Phase I	454,604		1,377,451	1,391,226	1,405,138	1,419,189	1,433,381	1,447,715
Dedicated Bond Issue Millage Revenue	-		-	-	-	32,500	173,250	175,000
Total revenues	454,604		1,377,451	1,391,226	1,405,138	1,451,689	1,606,631	1,622,715
Expenditures								
Less: Estimated cash-funded capital improvements	428,000		742,225	444,000	2,286,838	-	1,577,884	1,116,017
Estimated debt service #1 2021/22 Bonds [1]						32,500	173,250	175,000
Estimated debt service #2 2031/32 Bonds [2]								
Net cash flow	$26,604		$635,226	$947,226	($881,700)	$1,419,189	($144,503)	$331,698
Cash & investments	*$26,604*		*$661,831*	*$1,609,056*	*$727,356*	*$2,146,546*	*$2,002,043*	*$2,333,741*

[1] Estimated debt service payments based on a $2,250,777 15-year bond issue at current market rates.
[2] Estimated debt service payments based on a $3,081,435 15-year bond issue at current market rates.

CITY OF ST. JOSEPH (MICHIGAN) STREET IMPROVEMENT FUND

(Continued)

CASH FLOW ANALYSIS - 1% TAXABLE VALUE INCREASE

2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37
487,397,399	492,271,373	497,194,087	502,166,028	507,187,688	512,259,565	517,382,161	522,555,982	527,781,542	533,059,357	538,389,951	543,773,850	549,211,589
3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
0.3625	0.3618	0.3610	0.3598	0.3681	0.3658	0.3634	0.4456	0.8061	0.8086	0.8013	0.8025	0.8032
3.3625	3.3618	3.3610	3.3598	3.3681	3.3658	3.3634	3.4456	3.8061	3.8086	3.8013	3.8025	3.8032
1,462,192	1,476,814	1,491,582	1,506,498	1,521,563	1,536,779	1,552,146	1,567,668	1,583,345	1,599,178	1,615,170	1,631,322	1,647,635
176,675	178,125	179,500	180,675	186,675	187,375	188,000	232,875	425,425	431,025	431,425	436,375	441,125
1,638,867	1,654,939	1,671,082	1,687,173	1,708,238	1,724,154	1,740,146	1,800,543	2,008,770	2,030,203	2,046,595	2,067,697	2,088,760
1,947,477	1,848,431	2,237,831	1,834,922	972,269	1,667,341	1,731,644	-	2,584,152	759,742	872,279	3,007,176	2,856,676
176,675	178,125	179,500	180,675	186,675	187,375	188,000	188,500	193,750	193,750	193,675	198,375	197,875
							44,375	231,675	237,275	237,750	238,000	243,250
($485,285)	($371,617)	($746,249)	($328,424)	$549,294	($130,562)	($179,498)	$1,567,668	($1,000,807)	$839,436	$742,891	($1,375,854)	($1,209,041)
$1,848,456	*$1,476,839*	*$730,590*	*$402,166*	*$951,461*	*$820,898*	*$641,401*	*$2,209,069*	*$1,208,261*	*$2,047,697*	*$2,790,588*	*$1,414,734*	*$205,693*

CITY OF ST. JOSEPH (MICHIGAN) STREET IMPROVEMENT FUND

CASH FLOW ANALYSIS - NO TAXABLE VALUE INCREASE & NO DEBT ISSUANCE

	2017/18	Increase	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Assumptions								
Taxable Value	454,604,354	0.00%	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354
Street Improvement Mills Levied - Phase I	1.0000		3.5500	3.5500	3.5500	3.5500	3.5500	3.5500
Street Improvement Mills Levied - Phase II [1]	-		-	-	-	-	-	-
Total Street and Bond Mills Levied	1.0000		3.5500	3.5500	3.5500	3.5500	3.5500	3.5500
Revenues								
Street Improvement Millage Revenue - Phase I	454,604		1,613,845	1,613,845	1,613,845	1,613,845	1,613,845	1,613,845
Street Improvement Millage Revenue - Phase II	-		-	-	-	-	-	-
Total revenues	454,604		1,613,845	1,613,845	1,613,845	1,613,845	1,613,845	1,613,845
Expenditures								
Less: Estimated cash-funded capital improvements	428,000		742,225	444,000	2,286,838	2,250,777	1,577,884	1,116,017
Net cash flow	$26,604		$871,620	$1,169,845	($672,993)	($636,932)	$35,961	$497,828
Cash & investments	*$26,604*		*$898,225*	*$2,068,070*	*$1,395,078*	*$758,146*	*$794,108*	*$1,291,936*

[1] This phase is implemented when the CSO Debt Retirement 2 bonds mature on May 1, 2027. First levy will be for the 2027/28 fiscal year.

CITY OF ST. JOSEPH (MICHIGAN) STREET IMPROVEMENT FUND

(Continued)

CASH FLOW ANALYSIS - NO TAXABLE VALUE INCREASE & NO DEBT ISSUANCE

2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37
454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354	454,604,354
3.5500	3.5500	3.5500	3.5500	3.5500	3.5500	3.5500	3.5500	3.5500	3.5500	3.5500	3.5500	3.5500
-	-	-	0.8670	0.8670	0.8670	0.8670	0.8670	0.5500	0.5500	0.5500	0.5500	0.5500
3.5500	3.5500	3.5500	4.4170	4.4170	4.4170	4.4170	4.4170	4.1000	4.1000	4.1000	4.1000	4.1000
1,613,845	1,613,845	1,613,845	1,613,845	1,613,845	1,613,845	1,613,845	1,613,845	1,613,845	1,613,845	1,613,845	1,613,845	1,613,845
-	-	-	394,142	394,142	394,142	394,142	394,142	250,032	250,032	250,032	250,032	250,032
1,613,845	1,613,845	1,613,845	2,007,987	2,007,987	2,007,987	2,007,987	2,007,987	1,863,878	1,863,878	1,863,878	1,863,878	1,863,878
1,947,477	1,848,431	2,237,831	1,834,922	972,269	1,667,341	1,731,644	3,081,435	2,584,152	759,742	872,279	3,007,176	2,856,676
($333,632)	($234,586)	($623,986)	$173,065	$1,035,718	$340,646	$276,343	($1,073,448)	($720,274)	$1,104,136	$991,599	($1,143,298)	($992,798)
$958,305	*$723,719*	*$99,733*	*$272,799*	*$1,308,517*	*$1,649,164*	*$1,925,507*	*$852,060*	*$131,785*	*$1,235,921*	*$2,227,520*	*$1,084,222*	*$91,424*