



City Council Agenda Item Report

FROM: Ryan Cummins, City Manager

MEETING DATE: June 4, 2025

SUBJECT: Fee Schedule Increases

DESCRIPTION:

Staff is recommending updates to the fee schedule as follows.

Capital Improvement Charge

In April 2021, the City agreed in a corrective action plan submitted to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) to submit a Drinking Water Asset Management Plan (AMP) and associated Capital Improvement Plan (CIP) for the water system assets located within our jurisdiction.

In September 2023, the City completed the AMP and CIP and City Council approved the submittal of the attached plan to EGLE.

A major component of the AMP was a recommendation from consultant, Andy Campbell (formerly Baker Tilly, now Bendzinski & Co.), to implement a water capital improvement charge to provide adequate cash flow to help fund necessary future improvements to water mains and lead service lines. The cost of the future improvements is over \$10,000,000.

Last year, City Council adopted the recommendation to establish a water infrastructure charge of \$20 per month per meter equivalent unit (MEU). A MEU is a water customer with a 5/8" meter size. For those with larger meter sizes, they pay a higher proportion based on their meter size.

The current fee is generating \$24,726.67/month, or \$296,720.04 a year. This is lower than the AMP projections of \$331,680. A recent discovery showed some accounts are being charged for less MEUs than they should be. KLSWA advised this is being corrected for future bills. This should bring revenue closer to the AMP estimate.

The AMP recommends a \$3 per month increase for FY 25/26 which was estimated to bring in an additional \$49,752 in revenue. The following chart summarizes the proposed charge and percentage of customers impacted:

Meter Size	Meter Equivalent (per KLSWA)	Customers with this Meter Size	Current Water Capital Improvement Charge (per month)	Proposed Water Capital Improvement Charge (per month)
5/8"	1	84.5%	\$20	\$23
1"	2.5	11.3%	\$50	\$57.50
1 ½"	5	1.2%	\$100	\$115
2"	8	1.8%	\$160	\$184
3"	15	.1%	\$300	\$345

Short-Term Rental Fees

Last year, City Council established fees to cover the costs of short-term rental licenses and re-inspections. The Fire Department is raising the cost of short-term rental inspections and re-inspections by \$25. After evaluating staff time, inspection and enforcement costs and legal fees associated with short-term rentals, I am recommending the following:

- Annual license fee increase from \$525 to \$540
- Re-inspection fee increase from \$150 to \$175.

LEGAL REVIEW:

The City Attorney previously reviewed these types of charges and fees. The City Attorney will be at your meeting for any questions.

SAMPLE MOTION:

Motion to approve Resolution No. 250604-B approving a change in the City's schedule of fees to increase the water capital improvement charge and approve Resolution No. 250604-C approving a change in the City's schedule of fees to increase the short-term rental license and reinspection fees.

**CITY OF SAUGATUCK
COUNTY OF ALLEGAN
STATE OF MICHIGAN**

RESOLUTION NO. 250604-B

A RESOLUTION APPROVING A CHANGE IN THE CITY’S SCHEDULE OF FEES

Council Member _____, offered the following resolution and moved for its adoption, seconded by Council Member _____:

WHEREAS, the City of Saugatuck amended its Code of Ordinances to authorize the assessment of a water capital improvement charge, billable monthly to all users of the water system, to finance necessary capital improvements of City-owned water system assets; and

WHEREAS, the Code of Ordinances provides that the City Council shall establish the amount of the water improvement charge by resolution and include the same in the City’s Schedule of Fees; and

WHEREAS, based on the City’s water system asset management plan, water system capital improvement plan and other matters of record presented to it, the City Council previously established a water capital improvement charge at a rate of \$20 per meter equivalent unit per month; and

WHEREAS, City’s water system asset management plan, water system capital improvement plan, and other matters of record presented to it, call for annual increases of \$3 per meter equivalent per month.

NOW, THEREFORE, IT IS RESOLVED THAT:

1. The City Council hereby approves a change in the City’s adopted Schedule of Fees to update the “Water Capital Improvement Charge”, effective July 1, 2025:

WATER CAPITAL IMPROVEMENT CHARGE			
Meter Size	Meter Equivalent Unit	Current Capital Improvement Charge	New Capital Improvement Charge
5/8”	1	\$20/mo	\$23/mo
1”	2.5	\$50/mo	\$57.50/mo
1½”	5	\$100/mo	\$115/mo
2”	8	\$160/mo	\$184/mo
3”	15	\$300/mo	\$345/mo

2. The City Manager and City Clerk are authorized to take all actions necessary to effectuate the terms of the Resolution including, without limitation, modifying the City’s adopted Schedule of Fees maintained at City Hall.

3. All resolutions and parts of resolutions that conflict with the provisions of this Resolution are hereby rescinded; provided, however, that the remainder of the City’s Schedule of Fees shall remain in full force and effect.

YEAS: Council Members: _____

NAYS: Council Members: _____

ABSTAIN: Council Members: _____

ABSENT: Council Members: _____

ADOPTED this ____ day of ____, 2025.

Signed:

Holly Anderson, Mayor

Jamie Wolters, City Clerk

CERTIFICATION

I, Jamie Wolters, the duly appointed clerk of the City of Saugatuck do hereby certify the foregoing is a true and complete copy of a resolution adopted by the Saugatuck City Council at a regular meeting held _____, 2025, in compliance with the Open Meetings Act, Act No. 267 of the Public Acts of Michigan, 1976, as amended, the minutes of the meeting were kept and will be or have been made available as required by said Act.

Jamie Wolters, City Clerk

**CITY OF SAUGATUCK
COUNTY OF ALLEGAN
STATE OF MICHIGAN**

RESOLUTION NO.250604-C

A RESOLUTION APPROVING A CHANGE IN THE CITY'S SCHEDULE OF FEES

Council Member _____, offered the following resolution and moved for its adoption, seconded by Council Member _____:

WHEREAS, the City of Saugatuck, acting through the City Council, is authorized by various ordinances and state law to set fees for the provision of permits, etc.; and

WHEREAS, the City Council adopts and establishes such fees from time to time by resolution; and

WHEREAS, based on matters of record presented to it, the City Council is of the opinion that certain City-imposed fees and charges need to be approved and incorporated into the City's Schedule of Fees.

NOW, THEREFORE, IT IS RESOLVED THAT:

1. The City Council hereby approves a change in the City's adopted Scheduled of Fees as follows:

Business Licenses	Current Fee	New Fee
Short-Term Rental	\$525/annually	\$540/annually
Short-Term Rental Reinspection Fee	\$150	\$175

2. The City Manager and City Clerk are authorized to take all actions necessary to effectuate the terms of the Resolution including, without limitation, modifying the City's adopted Schedule of Fees maintained at City Hall.

3. All resolutions and parts of resolutions that conflict with the provisions of this Resolution are rescinded.

YEAS: Council Members: _____

NAYS: Council Members: _____

ABSTAIN: Council Members: _____

ABSENT: Council Members: _____

ADOPTED this _____ day of _____, 2025

CITY OF SAUGATUCK

BY: _____
Holly Anderson, Mayor

BY: _____
Jamie Wolters, City Clerk

CERTIFICATION

I, Jamie Wolters, the duly appointed clerk of the City of Saugatuck do hereby certify the foregoing is a true and complete copy of a resolution adopted by the City Council at a regular meeting held _____, 2025.

Signed: _____
Jamie Wolters, City Clerk



Baker Tilly Municipal Advisors, LLC
2852 Eyde Pkwy, Suite 150
East Lansing, MI 48823
(517) 321-0110
bakertilly.com

September 21, 2023

City of Saugatuck
102 Butler St.
PO Box 86
Saugatuck, MI 49453

Re: City of Saugatuck (Michigan) Water Asset Management Plan

Dear City of Saugatuck:

The attached schedules (listed below) present unaudited and limited information for the purpose of discussion and consideration in the preliminary planning stage of a rate study by the appropriate officers, officials and advisors of the City of Saugatuck. The use of these schedules should be restricted to this purpose, for internal use only, as the information is subject to future revision and final report.

Page

- | | |
|---|--|
| 1 | Comparative Statement of Net Position |
| 2 | Comparative Statement of Revenues, Expenses, and Changes in Net Position |
| 3 | Comparative Detail of Operating Expenses |
| 4 | Schedule of Estimated Capital Improvements – Scenario One |
| 5 | Cash Flow Analysis – Scenario One |
| 6 | Schedule of Estimated Capital Improvements – Scenario Two |
| 7 | Cash Flow Analysis – Scenario Two |

We would appreciate your questions or comments on this information and would provide additional information upon request.

Sincerely,

BAKER TILLY MUNICIPAL ADVISORS, LLC

Andy Campbell, CPA, Director

CITY OF SAUGATUCK (MICHIGAN) WATER FUND

COMPARATIVE STATEMENT OF NET POSITION

	As Of		
	6/30/2020	6/30/2021	6/30/2022
	(-----Per Audit-----)		
Assets			
Cash and cash equivalents	\$464,503	\$381,884	\$318,985
Investments	193,702	168,885	169,296
Total Assets	<u>\$658,205</u>	<u>\$550,769</u>	<u>\$488,281</u>
Liabilities			
Accounts payable	<u>\$127,735</u>	<u>-</u>	<u>-</u>
Fund Balances			
Public Works	<u>530,470</u>	<u>\$550,769</u>	<u>\$488,281</u>
Total Liabilities and Fund Balances	<u>\$658,205</u>	<u>\$550,769</u>	<u>\$488,281</u>

CITY OF SAUGATUCK (MICHIGAN) WATER FUND

COMPARATIVE STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	Fiscal Year Ended		
	6/30/2020	6/30/2021	6/30/2022
	(-----Per Audit-----)		
Operating Revenues			
Charges for services	\$8,450	\$19,810	\$29,650
Interest and rents	15,468	1,489	306
Total operating revenues	<u>23,918</u>	<u>21,299</u>	<u>29,956</u>
Operating Expenses			
Public Works	<u>41,566</u>	<u>1,000</u>	<u>92,444</u>
Net operating income (loss)	<u>(17,648)</u>	<u>20,299</u>	<u>(62,488)</u>
Fund balance, beginning of year	<u>548,118</u>	<u>530,470</u>	<u>550,769</u>
Fund balance, end of year	<u><u>\$530,470</u></u>	<u><u>\$550,769</u></u>	<u><u>\$488,281</u></u>

CITY OF SAUGATUCK (MICHIGAN) WATER FUND

COMPARATIVE DETAIL OF OPERATING EXPENSES

		Fiscal Year Ended			Test Year	Multiplier
		6/30/2022	6/30/2023	6/30/2024		
		(-----Per Client-----)				
Expenditures						
801.000	Contractual Services	\$92,444	-	\$5,000	-	3.0%
	Salaries, Wages, & Benefits	-	-	-	\$10,000	3.0%
	Total Water Operating Expenses	<u>\$92,444</u>	<u>-</u>	<u>\$5,000</u>	<u>\$10,000</u>	

CITY OF SAUGATUCK (MICHIGAN) WATER FUND

SCHEDULE OF ESTIMATED CAPITAL IMPROVEMENTS - SCENARIO ONE

<u>Project Name/Description</u>	<u>2023/24</u>	<u>2024/25</u>	<u>2025/26</u>	<u>2026/27</u>
Complete Distribution System Materials Inventory	\$150,000			
Lead Service Line Replacement - Systemwide	500,000	\$5,000,000		
Wellhouse #5 Improvements	20,000	200,000		
Install Permanent Generator for Wells #4 & #5	10,000	100,000		
Maple Street Water Service Separation (720/ Olde Mill)		30,000		
Maple Street Water Main Replacement - Blue Star to S of North	115,000	1,150,000		
Elizabeth Street Water Main Replacement - Allegan to Main	35,000	350,000		
Lucy Street Water Main Replacement - Water to Butler	15,000	150,000		
Hoffman Street Water Main Replacement - Griffith to Grand	20,000	200,000		
Butler Street Water Main Replacement - Culver to Lucy	100,000	1,000,000		
Grand Street Water Main Replacement - Mason to Hoffman & Francis to St. Joseph	20,000	200,000		
Water Main Replacement/Looping in Well Field, Maple to High School	35,000	350,000		
River Crossing Water Main Replacement - Park to Water	85,000	850,000		
Bridge Street Water Main Extension				\$600,000
Total Estimated Capital Improvements:	<u>\$1,105,000</u>	<u>\$9,580,000</u>	<u>-</u>	<u>\$600,000</u>
Cash Funded:	\$150,000	\$30,000	-	-
Bond Funded:	-	10,505,000 [1]	-	\$600,000 [2]

[1] Includes 2023/24 & 2024/25 capital improvements.

[2] Includes 2026/27 capital improvements.

CITY OF SAUGATUCK (MICHIGAN) WATER FUND

CASH FLOW ANALYSIS - SCENARIO ONE

	<u>2023/24</u>		<u>Increases Per Year</u>	<u>2024/25</u>	<u>2025/26</u>	<u>2026/27</u>	<u>2027/28</u>	<u>Increases Per Year</u>	<u>2028/29</u>	<u>2029/30</u>
	<u>July - Dec.</u>	<u>Jan. - June</u>								
Assumptions										
Meter Equivalent Units (MEU) Billed	1,382	1,382		1,382	1,382	1,382	1,382		1,382	1,382
MEU Charge (monthly)	\$0.00	\$23.00	\$3.00	\$26.00	\$29.00	\$32.00	\$35.00	\$1.00	\$36.00	\$37.00
<i>Typical homeowner's monthly bill</i>										
Charges from City	-	\$23.00		\$26.00	\$29.00	\$32.00	\$35.00		\$36.00	\$37.00
Charges from KLSWA	\$25.40	25.40		26.16	26.95	27.76	28.59		29.45	30.33
Typical homeowner's monthly bill (assumes 4,500 gallons/month)	\$25.40	\$48.40		\$52.16	\$55.95	\$59.76	\$63.59		\$65.45	\$67.33
Revenue										
MEU Charge	-	\$190,716		\$431,184	\$480,936	\$530,688	\$580,440		\$597,024	\$613,608
Miscellaneous	\$3,000	-		3,000	3,000	3,000	3,000		3,000	3,000
Total Revenues	3,000	190,716		434,184	483,936	533,688	583,440		600,024	616,608
Less: Total Operating Expenditures	(5,000)	-		(10,300)	(10,609)	(10,927)	(11,255)		(11,593)	(11,941)
Net Operating Revenue	(2,000)	190,716		423,884	473,327	522,761	572,185		588,431	604,667
Less: Estimated Cash-Funded Capital Improvements	(150,000)	-		(30,000)	-	-	-		-	-
Estimated Debt Service #1 2024/25 State Revolving Fund Bonds [1]	-	-		(100,000)	(430,000)	(430,000)	(430,000)		(430,000)	(430,000)
Estimated Debt Service #2 2026/27 Open Market Bonds [2]	-	-		-	-	(15,000)	(80,000)		(80,000)	(80,000)
Net Cash Flow	<u>(\$152,000)</u>	<u>\$190,716</u>		<u>\$293,884</u>	<u>\$43,327</u>	<u>\$77,761</u>	<u>\$62,185</u>		<u>\$78,431</u>	<u>\$94,667</u>
Cash & Investments	\$260,957	\$108,957	\$299,673	\$593,557	\$636,884	\$714,644	\$776,829		\$855,260	\$949,928

[1] Estimated debt service payments based on \$9,454,500 30-year state revolving fund bond issue at an estimated interest rate. Total project assumed to be \$10,505,000 with \$1,050,500 grant.

[2] Estimated debt service payments based on \$600,000 10-year open market bond issue at an estimated interest rate.

CITY OF SAUGATUCK (MICHIGAN) WATER FUND

SCHEDULE OF ESTIMATED CAPITAL IMPROVEMENTS - SCENARIO TWO

<u>Project Name/Description</u>	<u>2023/24</u>	<u>2024/25</u>	<u>2025/26</u>	<u>2026/27</u>
Complete Distribution System Materials Inventory	\$150,000			
Lead Service Line Replacement - Systemwide	100,000	\$200,000	\$200,000	\$5,000,000
Wellhouse #5 Improvements				220,000
Install Permanent Generator for Wells #4 & #5				110,000
Maple Street Water Service Separation (720/ Olde Mill)			30,000	
Maple Street Water Main Replacement - Blue Star to S of North				1,265,000
Elizabeth Street Water Main Replacement - Allegan to Main				385,000
Lucy Street Water Main Replacement - Water to Butler				165,000
Hoffman Street Water Main Replacement - Griffith to Grand				220,000
Butler Street Water Main Replacement - Culver to Lucy				1,100,000
Grand Street Water Main Replacement - Mason to Hoffman & Francis to St. Joseph				220,000
Water Main Replacement/Looping in Well Field, Maple to High School				385,000
River Crossing Water Main Replacement - Park to Water				935,000
Bridge Street Water Main Extension				600,000
Total Estimated Capital Improvements:	<u>\$250,000</u>	<u>\$200,000</u>	<u>\$230,000</u>	<u>\$10,605,000</u>
Cash Funded:	\$250,000	\$200,000	\$230,000	-
Bond Funded:	-	-	-	\$10,605,000 [1]

[1] Includes 2026/27 capital improvements.

CITY OF SAUGATUCK (MICHIGAN) WATER FUND

CASH FLOW ANALYSIS - SCENARIO TWO

	2023/24		Increases Per Year	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30
	July - Dec.	Jan. - June							
Assumptions									
Meter Equivalent Units (MEU) Billed	1,382	1,382		1,382	1,382	1,382	1,382	1,382	1,382
MEU Charge (monthly)	\$0.00	\$20.00	\$3.00	\$23.00	\$26.00	\$29.00	\$32.00	\$35.00	\$38.00
<i>Typical homeowner's monthly bill</i>									
Charges from City	-	\$20.00		\$23.00	\$26.00	\$29.00	\$32.00	\$35.00	\$38.00
Charges from KLSWA	\$25.40	25.40		26.16	26.95	27.76	28.59	29.45	30.33
Typical homeowner's monthly bill (assumes 4,500 gallons/month)	\$25.40	\$45.40		\$49.16	\$52.95	\$56.76	\$60.59	\$64.45	\$68.33
Revenue									
MEU Charge	-	\$165,840		\$381,432	\$431,184	\$480,936	\$530,688	\$580,440	\$630,192
Miscellaneous	\$3,000	-		3,000	3,000	3,000	3,000	3,000	3,000
Total Revenues	3,000	165,840		384,432	434,184	483,936	533,688	583,440	633,192
Less: Total Operating Expenditures	(5,000)	-		(10,300)	(10,609)	(10,927)	(11,255)	(11,593)	(11,941)
Net Operating Revenue	(2,000)	165,840		374,132	423,575	473,009	522,433	571,847	621,251
Less: Estimated Cash-Funded Capital Improvements	-	(250,000)		(200,000)	(230,000)	-	-	-	-
Estimated Debt Service #1 2026/27 State Revolving Fund Bonds [1]	-	-		-	-	(160,000)	(540,000)	(540,000)	(540,000)
Net Cash Flow	<u>(\$2,000)</u>	<u>(\$84,160)</u>		<u>\$174,132</u>	<u>\$193,575</u>	<u>\$313,009</u>	<u>(\$17,567)</u>	<u>\$31,847</u>	<u>\$81,251</u>
Cash & Investments	\$260,957	\$258,957	\$174,797	\$348,929	\$542,504	\$855,512	\$837,945	\$869,792	\$951,044

[1] Estimated debt service payments based on \$10,605,000 30-year state revolving fund bond issue at an estimated interest rate.

CITY OF SAUGATUCK
ALLEGAN COUNTY, MI



DRINKING WATER
ASSET MANAGEMENT PLAN

September 2023
Project No. 862350



ASSET MANAGEMENT TEAM

Utility Information

Utility Name: Saugatuck Water Utility System
Street Address: 102 Butler St
City: Saugatuck
Zip Code: 49453
Phone Number: (269) 857-2603
WSSN: 03525

Number of Connections: 907

Personnel

City of Saugatuck

Contact Person: Scott Herbert
Title: Superintendent, Department of Public Works
Email: scott@saugatuckcity.com

Team Member: Ryan Heise
Title: City Manager
Email: ryan@saugatuckcity.com

Kalamazoo Lake Sewer & Water Authority

Contact Person: Daryl VanDyke
Title: Manager, Kalamazoo Lake Sewer & Water Authority
Email: daryl@klswa.com

Fleis & VandenBrink

Contact Person: Jon Moxey, PE
Title: Client Manager
Email: jmoxey@fveng.com

Team Member: Elaine Venema, PE
Title: Project Manager
Email: evenema@fveng.com

Team Member: Peter Drogosh, PE
Title: Project Engineer
Email: pdrogosh@fveng.com

TABLE OF CONTENTS

I. Background 1

II. Asset Inventory 2

III. Criticality Assessment 2

IV. Level of Service Goals 4

V. Capital Improvements Plan 6

VI. Revenue Structure & Rate Methodology 7

- Appendix A: Figures
- Appendix B: Asset Inventory
- Appendix C: Capital Improvements Plan
- Appendix D: Water System Budget
- Appendix E: Billing Rate Structure

I. BACKGROUND

A. SERVICE AREA

The City of Saugatuck (City) is located in western Allegan County on Lake Michigan and has an area of 1.77 square miles. Saugatuck is located 11 miles southwest of the City of Holland and 18 miles north of the City of South Haven. As of the 2020 U.S. Census, Saugatuck has a permanent population of 865, though the City and other surrounding municipalities see a large increase in seasonal population during the summer months. According to the City's 2019 Parks & Recreation Plan, a seasonal influx of cottage owners, visitors, and boaters is estimated to virtually double the region's population.

The City of Saugatuck, the City of the Village of Douglas, and Saugatuck Township are Constituent Municipalities of the Kalamazoo Lake Sewer & Water Authority (KLSWA). KLSWA provides sanitary sewer and water service within the three Constituent Municipalities, as well as within Laketown Township. Laketown Township receives service through various contractual arrangements, but is not a Constituent Municipality of KLSWA under Act 233 and KLSWA's Articles of Incorporation.

B. PURPOSE

In a letter dated January 11, 2021 addressed to KLSWA and the managers of the Constituent Municipalities, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) outlined deficiencies identified in a Partial Sanitary Survey of the KLSWA water system. The following is an excerpt from the letter:

EGLE's evaluation of KLSWA has revealed issues with ownership accountability, defined authority between owners and managers/operators, and fiscal management and revenue sourcing.

EGLE understands that KLSWA operates and maintains the water supply facilities, and the individual units of government have retained ownership of the water supply facilities within their jurisdictional boundaries. Therefore, the owner of the water supply facilities is not maintaining their own facilities; KLSWA is serving as a contract operator with additional authority to make operation and maintenance decisions and repairs. This agreement only establishes authority for daily operations and maintenance of facilities, and does not include a structure for capital improvements, long term asset management, authority for cross connection inspections, or other items necessary for the long term management of a water supply.

In a Corrective Action Plan dated April 27, 2021 addressed to EGLE, KLSWA and the managers of the Constituent Municipalities elected to develop, adopt, and implement a new water service agreement between KLSWA and the Constituent Municipalities. Additionally, each Constituent Municipality would prepare and submit an Asset Management Plan (AMP) and associated Capital Improvements Plan (CIP) for the water system assets located within their jurisdictional boundary.

The purpose of this report is to provide the City of Saugatuck with an AMP and associated CIP for the water system assets located within its jurisdictional boundary, to comply with EGLE and the Michigan Safe Drinking Water Act (Act 399 of 1976). Rule 1606 of Act 399 (R 325.11606) states that a community water supply that serves more than 1,000 people shall implement an asset management program (as defined in R 325.10102).

The intent of asset management is to ensure the long-term sustainability of the water utility by helping the utility manager make informed decisions on when it is most appropriate to repair, replace, or rehabilitate particular assets and by developing a long-term funding strategy. This report is intended to be the master plan for guiding the City on the overall water system improvements needed to ensure its ability to perpetually deliver the required level of service.

II. ASSET INVENTORY

Saugatuck's publicly owned water system assets consist of two groundwater production wells, approximately 13 miles of water main, and a concrete ground storage reservoir; the City shares equal ownership of the reservoir with the City of the Village of Douglas. A map of the system is provided as Figure 1 in Appendix A.

Well #4 is rated for a capacity of 500 gpm, Well #5 is rated for 300 gpm, and together they produce between 51 and 64 million gallons of water annually. Water treatment at the wells consists of injection of chlorine for disinfection and polyphosphate for iron sequestration. The wells are housed in two separate buildings.

Water mains range from 4" to 16" in diameter and are composed of cast iron, ductile iron, and HDPE. The oldest water mains pre-date 1927, and were constructed as part of the original distribution system. Throughout the system, there are 134 fire hydrants with valves and approximately 162 water main isolation valves.

The storage reservoir has a capacity of 1,000,000 gallons and is the only storage available for Saugatuck, as well as the greater KLSWA water system.

The water asset inventory is presented in Appendix B and provides asset descriptions, year installed, location, manufacturer (where applicable), replacement cost, useful life, and criticality assessment. All information in the asset inventory is based on construction record drawings and other data received from the City and KLSWA. Not all assets had record drawings available, so their construction dates are either unknown or approximated based on record drawings from adjacent projects. There is currently a Geographic Information System (GIS) in place for refining the inventory as assets are replaced and further documented.

III. CRITICALITY ASSESSMENT

The criticality of each water system asset is based on a combination of its Probability of Failure and its Consequence of Failure. Determining each asset's criticality allows the City to manage its risk and aids in determining where to spend operation and maintenance dollars and plan capital expenditures.

When determining an asset's Probability of Failure, the following factors are considered: asset age, physical condition of asset, failure history, historical knowledge, experiences with that type of asset in general, maintenance records, and knowledge regarding how that type of asset is likely to fail. The table below details the Probability of Failure rating system. These ratings have been applied to each asset listed in the asset inventory in Appendix B.

Probability of Failure		
Rating	Probability	Description
5	Imminent	Will occur several times in the life of an item
4	Probable	Likely to occur several times in the life of an item
3	Occasional	Likely to occur sometime in the life of an item
2	Remote	Unlikely, but possible to occur in the life of an item
1	Improbable	So unlikely, it can be assumed occurrence may not be experienced

When determining an asset's Consequence of Failure, the following factors are considered: cost of repair; social cost associated with the loss of the asset; repair/replacement costs related to collateral damage caused by the failure; legal costs related to additional damage caused by the failure; environmental costs created by the failure; loss of business revenue to the community; and any other associated costs or asset losses. The Consequence of Failure can be high if any one of these costs is significant or the accumulation of several costs occur with a failure. Other considerations when determining an asset's Consequence of Failure may include the following:

- Can the system continue to produce an acceptable quantity and quality of water if asset fails?
- Is there redundancy for the asset built into the system?
- Are replacements / replacement parts on hand to replace/repair the asset on site?
- How long does it take to obtain parts or have service completed?

The table below details the Consequence of Failure rating system. These ratings have been applied to each asset listed in the asset inventory in Appendix B.

Consequence of Failure		
Rating	Consequence	Description
5	Catastrophic disruption	Massive system failure, severe health effects and death, persistent and extensive damage
4	Major disruption	Major effect, major loss of system capacity, major health effects, major costs, important LOS compromised
3	Moderate disruption	Moderate effect, moderate loss of system capacity, moderate health effects, moderate costs, important LOS still achieved
2	Minor disruption	Minor effect, minor loss of system capacity, minor health effects, minor costs
1	Insignificant disruption	Slight effect, slight loss of system capacity, slight health effects

Assessing an asset's criticality requires an examination of its Probability of Failure and its Consequence of Failure as discussed above. The assets that have the greatest probability of failure and the greatest consequences associated with the failure will be the assets that are the most critical and, therefore, present the greatest business risk to the City. An analysis of each asset reveals which assets have the highest criticality factors and, therefore, which assets require the most attention either for repair or replacement. The following formula is used to determine an asset's criticality:

$$\text{Criticality Factor} = \text{Probably of Failure} \times \text{Consequence of Failure}$$

The matrix below presents the various possible criticality factors, which are color coded based on their associated business risk. These factors have been applied to each asset listed in the asset inventory in Appendix B.

		Criticality Factor				
Probability of Failure	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
		Consequence of Failure				

Assets with higher criticality factors and associated business risk should be more closely monitored and scheduled for rehabilitation or replacement. The table below provides recommended inspection and rehabilitation strategies based on an asset's business risk.

Business Risk Management		
Criticality Factor	Business Risk	Strategies for Asset Rehabilitation or Replacement
17 - 25	Very High	Inspect immediately and replace in 1-2 years
10 - 16	High	Inspect immediately and develop short- to medium-term rehabilitation plan
5 - 9	Medium	Inspect immediately and develop long-term rehabilitation plan
3 - 4	Low	Develop short-term inspection strategy and long-term rehabilitation plan
1 - 2	Very Low	Develop medium- to long-term inspection strategy and long-term rehabilitation plan

IV. LEVEL OF SERVICE GOALS

The City of Saugatuck's mission, as it relates to the water system, is to provide the community with continuous, safe drinking water and adequate fire protection that meets or exceeds Federal and State requirements by maintaining and improving the water system through the most cost-effective means without sacrificing quality.

The Asset Management Team (F&V and City staff) reviewed the City's Level of Service (LOS) goals to ensure they aligned with the City's standards and capabilities; the goals are detailed in the table below. The goals will be reviewed on an annual basis to determine if the City was successful in achieving the goals and what steps can be taken to improve the City's performance.

LOS Determinant	Define the Goal	How the Goal is Achieved
Safe Drinking Water	Meet all Federal and State water quality regulations	Monitor water quality: monthly for bacteria, annually for partial chemical, and triennially for metals.
Health & Safety	Provide a safe and injury-free workplace	Conduct regular safety meetings. Incur no MIOSHA safety violations.
Security	Secure all water installations from tampering	Maintain well-lit, fenced and/or locked facilities with proper signage.
Operator Certification	Retain certified personnel to operate and maintain the system	Employ at least 1 operator in charge and 1 backup operator. Operators must maintain a minimum of D-2 and S-2 licenses.
Customer Complaints	Provide excellent customer service	Investigate all customer complaints within 2 business days of report. Report results of the complaint to customer verbally, via the phone, in person, or in writing. Follow up on all complaints to ensure customer satisfaction.
Regulatory Changes	Be aware of regulatory changes and comply with changes as they occur	Attend industry conferences and training sessions to stay informed of changes and requirements. Request annual meeting with local EGLE representative to ensure compliance.
Response Time	Provide excellent customer service	Respond to customer emergencies within 2 hours. Provide customers with written notice 24 hours in advance of any planned interruption in service.
Financial	Maintain funds to address unexpected breakdowns and major expenses	Evaluate water rates every 5 years and adjust the rates/budget accordingly. Seek external funding for major projects as they present themselves. Maintain an operating reserve of 10%.
Water Supply	Maintain all well-related equipment	Have wells and pumps professionally inspected annually, then complete recommended maintenance items. Regularly test and perform maintenance on backup power generators. Maintain well houses in adequate condition.
Water Quality	Provide high-quality, good-tasting drinking water	Maintain water treatment equipment. Flush water mains at least once annually.
Water Storage	Maintain storage tank for longer lifespan	Have the storage tank professionally inspected every 5 years, then complete recommended maintenance items.
Water Distribution	Maintain water mains, hydrants, and valves to ensure good working order	Flush all hydrants at least once annually. Exercise all primary valves on a 4-year rotation. Maintain system pressure above 35 psi, but strive for 60-80 psi under normal conditions. Monitor water losses annually and maintain below 10%.
Administrative	Ensure accurate billing	Review discrepancies and correct in a timely fashion.
Rules & Regulations	Monitor and enforce	Update and review rules annually - cross connections, site sampling plan, required lab analysis, consumer confidence report, safety program.

V. CAPITAL IMPROVEMENTS PLAN

A Capital Improvements Plan (CIP) was developed for the City of Saugatuck based on the Water System Reliability Study (WSRS) completed for KLSWA in February 2021 by Fleis & VandenBrink. Some items have been refined as better information has become available since then. The CIP is summarized below and a complete table of capital improvements, including anticipated costs and dates of completion, is presented in Appendix C. A map of the proposed improvements is provided as Figure 2 in Appendix A.

A. WATER SUPPLY

According to the WSRS, the system's water supply capacity is sufficient to meet projected water demands. The City's well pumps were last inspected in November 2019 by Peerless Midwest and were found to be operating at their rated capacities. No improvements to the well pumps are recommended at this time.

Well 5 is housed in a building that is constructed of sheet metal, which is in fair to poor condition. The wellhouse should be replaced with an appropriate block/brick building to provide better protection and security for Well 5. Additionally, the underground electric line that serves Wells 4 and 5 is not well protected and needs to be replaced with additional protection against potential damage or tampering. It is also recommended that the City install a permanent generator to power Wells 4 and 5 in the event of a power outage.

B. WATER STORAGE

The storage tank was last inspected in October 2019 by Dixon Engineering and was found to be in good overall condition. No improvements to the tank are recommended at this time.

C. WATER DISTRIBUTION

EGLE requires all water supplies to submit a complete Distribution System Materials Inventory (DSMI) by January 1, 2025. The DSMI involves physically verifying the material of a uniformly random, statistically sound number (20%) of service lines of unknown material. Due to the prevalence of known lead service lines throughout Saugatuck's system, it is recommended that the City verify at least 50% of its 229 service lines of unknown material, which equates to 115 service line verifications. Once lead service lines throughout the system are confidently located, they must all be replaced by January 1, 2041.

Distribution system improvements are recommended to improve available fire flows and overall system reliability. These improvements should be considered and implemented by City officials as deemed necessary and as funding allows. The City should plan on replacing any water mains smaller than 6 inches as road improvements are conducted in the service area. These pipes should be replaced with minimum 8-inch pipes.

Anticipated project costs are meant to be rough estimates for budgeting purposes only. Unit prices were assumed at \$385 per foot of 8" water main, \$410 per foot of 12" water main, and \$1,000 per foot of 16" water main (directional drill river crossing). Unit prices were based on recent contractor bid prices from similar projects designed by Fleis & VandenBrink. The unit price of water main includes the cost of appurtenances (hydrants, valves, fittings, etc.) and surface restoration, assuming a worst case scenario of the water main being installed along the centerline of the roadway, requiring two lanes of road pavement restoration.

D. FUNDING SOURCES

Four possible sources of funding have been identified for The City of Saugatuck to complete the capital improvement projects if desired. A brief description of each follows:

Drinking Water State Revolving Fund

This is a preferred alternative. It is a low interest loan program sponsored by EGLE. The current interest rate is 1.875% for 20-year loans (or 30- to 40-year loans for overburdened applicants), and 2.125% for 30-year loans. Some communities may be eligible for principal forgiveness based on their overburdened status.

The program is competitive, and projects are scored on a point system that ranks them on a priority list. Not all submitted projects are funded, so it is important to maximize points on the application. Requirements include a fairly extensive project plan, but most expenses, including the project plan, are eligible activities that can be rolled into the loan. In order for a community to be competitive, they should have an active Source Water Protection Program. Applications are submitted by June 1st of every year.

Special Assessment Bonds

Special assessments levied under PA 188 of 1954 are one of the most common ways to finance infrastructure improvements. The City may levy special assessments against properties that receive special benefits from a public improvement. Property owners have petition rights that must be satisfied before the special assessment can go forward.

Special assessments typically can be repaid in installments with interest. The bonds may not exceed the amount of the special assessment roll and may be secured secondarily by a pledge of the City's full faith and credit.

Revenue Bonds

Revenue bonds are authorized by PA 94 of 1933. They authorize the City to borrow money and issue bonds. They are paid from user fees generated by the operation of the improvements.

Revenue bonds are subject to the right of referendum. Petitions for a public vote can be filed by registered City voters during a 45-day referendum period. Voter approval is not required if the referendum period expires without petitions being filed.

Contract Bonds

Contract bonds are authorized by several state laws. They authorize the City to enter into an agreement with the County or a public authority in order to have the County or authority issue bonds on behalf of the City.

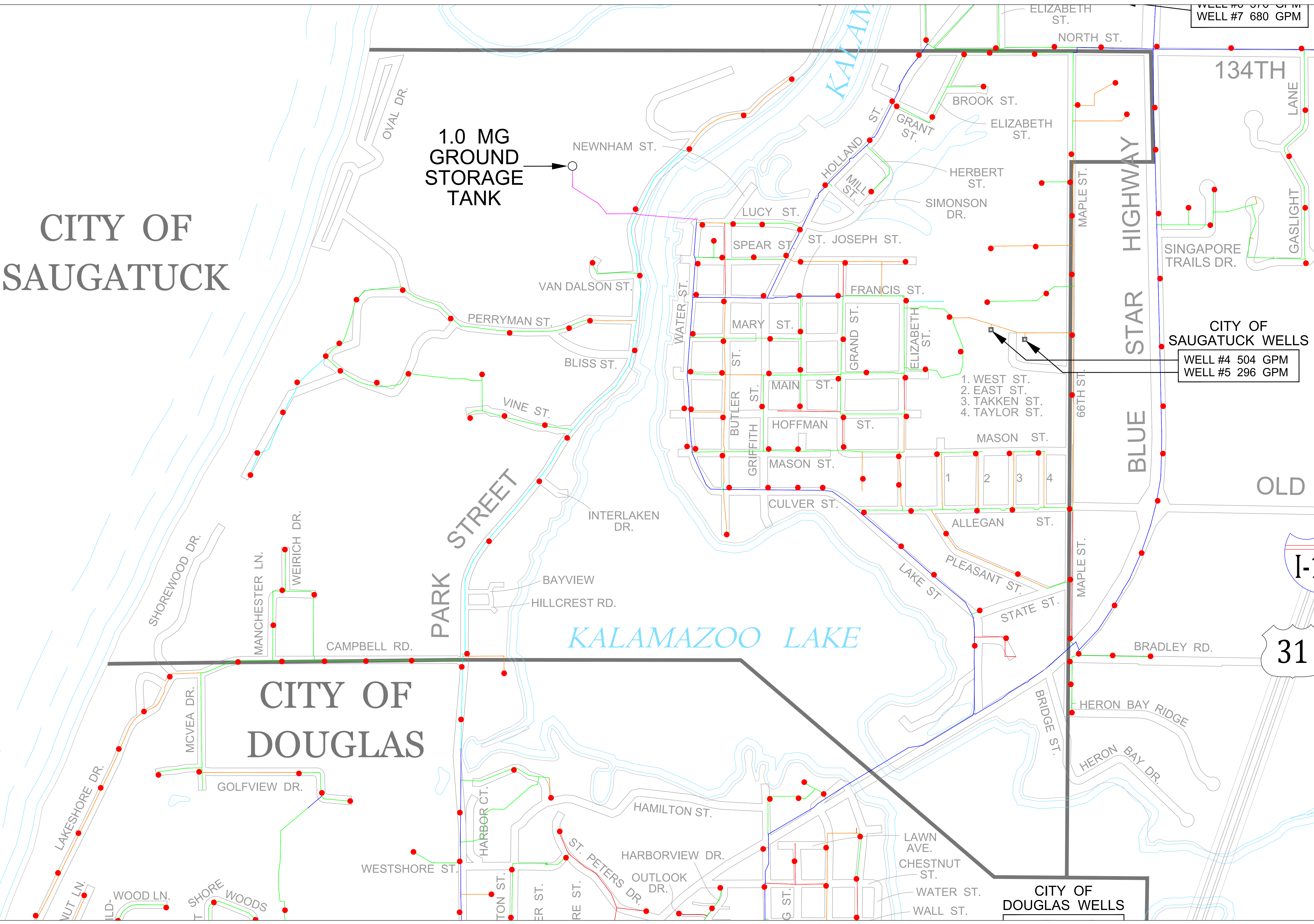
The City may want to consider a contract bond as the County may be able to borrow at a more favorable rate than the City if they are willing to pledge its taxing power as secondary security for repayment of the bonds. Also contract bonds may be paid back by a number of sources including specials assessments, connection fees, and user fees.

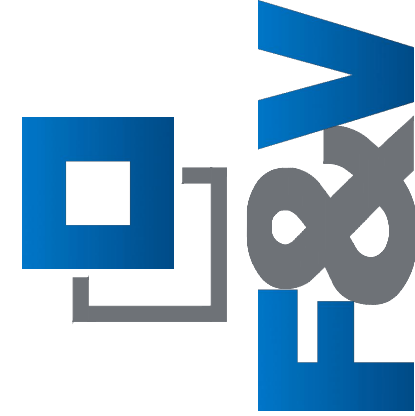
VI. REVENUE STRUCTURE & RATE METHODOLOGY

Saugatuck's financial advisor incorporated the CIP into the City's water system budget and determined the adjustments to the billing rate structure that will be required to generate sufficient revenue for implementing the CIP. The City has provided its water system budget in Appendix D and its current rate structure in Appendix E.

APPENDIX A: FIGURES

CITY OF SAUGATUCK





862350

F&V PROJECT NO.

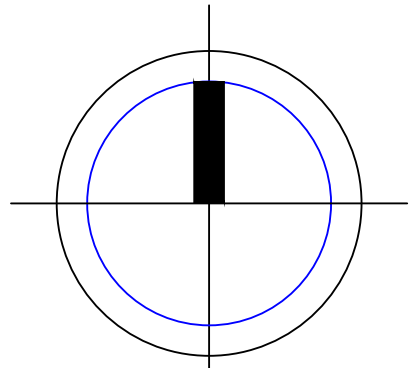
CITY OF SAUGATUCK
ALLEGAN COUNTY, MICHIGAN

WATER ASSET MANAGEMENT PLAN

FIGURE 1:
EXISTING WATER SYSTEM

LEGEND

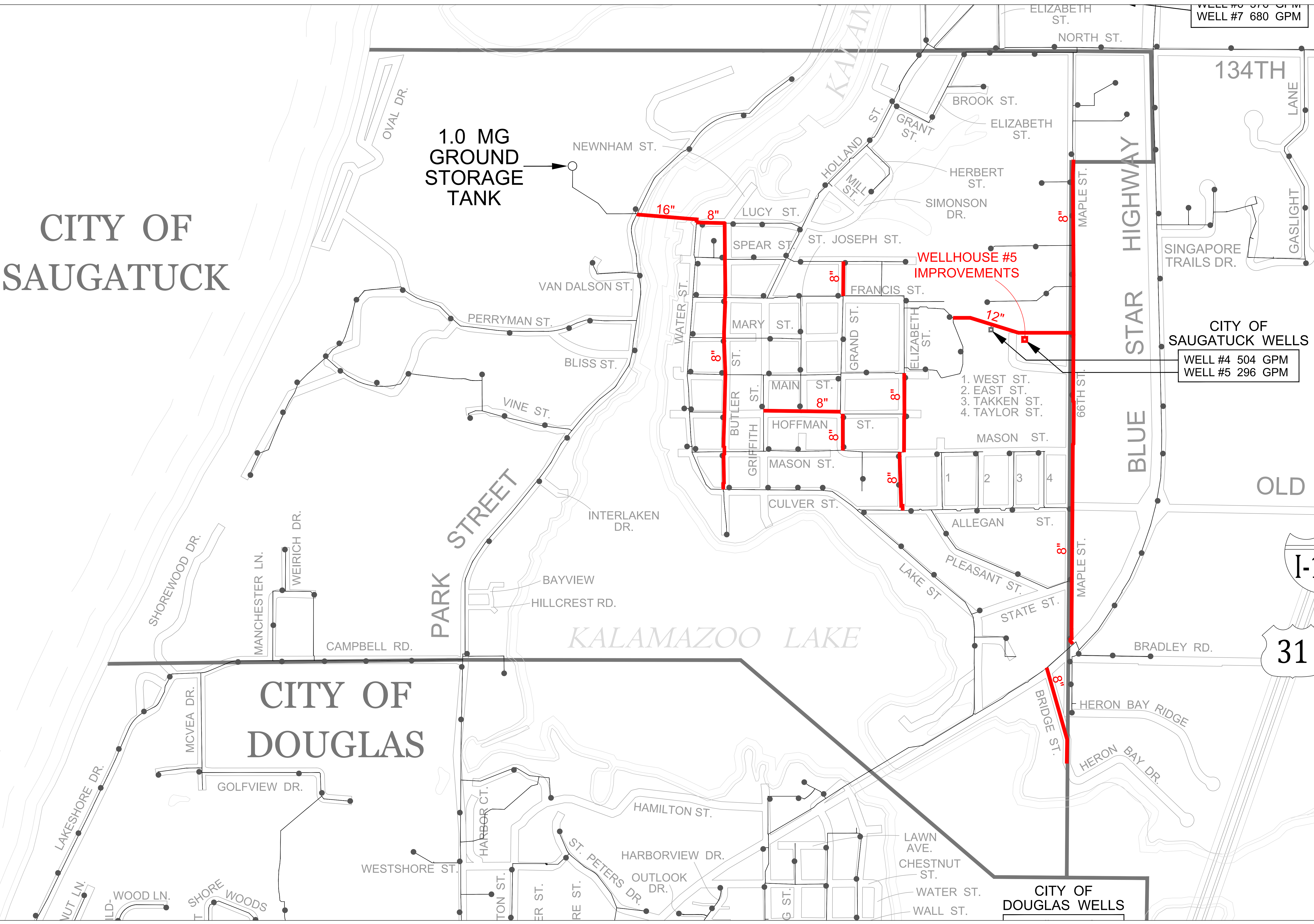
- 4" WATER MAIN
- 6" WATER MAIN
- 8" WATER MAIN
- 10" WATER MAIN
- 12" WATER MAIN
- 16" WATER MAIN
- FIRE HYDRANT



NORTH

112

CITY OF SAUGATUCK



APPENDIX B:

ASSET INVENTORY

Source Assets												
Source Assets	Year Installed (Year Overhauled)	Location	Latitude	Longitude	Manufacturer/Model	Replacement Cost	Estimated Useful Life in Years	Remaining Useful Life in Years	Percent of Useful Life Remaining	Probability of Failure	Consequence of Failure	Criticality Factor
Well #4 (12" diameter; 205' deep)	1966	Well #4	42.658722	-86.195667		\$ 150,000	90	33	37%	1	2	2
Well #5 (12" diameter; 157' deep)	1974	Well #5	42.658500	-86.194611		\$ 150,000	90	41	46%	1	2	2
Well #4 Wellhouse	1966	Well #4	42.658722	-86.195667		\$ 150,000	90	33	37%	1	1	1
Well #5 Wellhouse	1974	Well #5	42.658500	-86.194611		\$ 150,000	90	41	46%	4	1	4
Well #4 Pump (Rated 500 gpm @ 258 ft TDH)	1966 (2006)	Well #4	42.658722	-86.195667	Peerless	\$ 12,000	20	3	15%	3	2	6
Well #5 Pump (Rated 300 gpm @ 261 ft TDH)	1974 (2008)	Well #5	42.658500	-86.194611	Peerless	\$ 10,000	20	5	25%	3	2	6

Treatment Assets												
Treatment Assets	Year Installed	Location	Latitude	Longitude	Manufacturer/Model	Replacement Cost	Estimated Useful Life in Years	Remaining Useful Life in Years	Percent of Useful Life Remaining	Probability of Failure	Consequence of Failure	Criticality Factor
Chemical feed pump - chlorine	2015	Well #4	42.658722	-86.195667	Grundfos DDC 6-10	\$ 2,000	15	7	47%	2	4	8
Chemical feed pump - chlorine	2015	Well #5	42.658500	-86.194611	Grundfos DDC 6-10	\$ 2,000	15	7	47%	2	4	8
Chemical feed pump - phosphate	2015	Well #4	42.658722	-86.195667	Grundfos DDC 6-10	\$ 2,000	15	7	47%	2	4	8
Chemical feed pump - phosphate	2015	Well #5	42.658500	-86.194611	Grundfos DDC 6-10	\$ 2,000	15	7	47%	2	4	8

Storage Assets												
Storage Assets	Year Installed	Location	Material	Capacity (gal)	Manufacturer	Replacement Cost	Estimated Useful Life in Years	Remaining Useful Life in Years	Percent of Useful Life Remaining	Probability of Failure	Consequence of Failure	Criticality Factor
Ground storage tank (shared ownership w/ Douglas)	1984	Park St	concrete	1,000,000	Natgun	\$ 3,000,000	90	51	57%	2	4	8

Distribution Assets												
Distribution Assets	Year Installed	Material	Diameter (in)	Total Length (ft)	Manufacturer	Replacement Cost	Estimated Useful Life in Years	Remaining Useful Life in Years	Percent of Useful Life Remaining	Probability of Failure	Consequence of Failure	Criticality Factor
Water Mains	Unknown	Ductile Iron	6	385		\$ 108,000	110	Unknown	Unknown	2	1	2
Replacement Cost*:	Unknown	Ductile Iron	8	1,038		\$ 291,000	110	Unknown	Unknown	2	2	4
8" @ \$280 per foot	Unknown	Ductile Iron	10	344		\$ 104,000	110	Unknown	Unknown	2	2	4
12" @ \$300 per foot	Pre-1927	Cast Iron	4	2,355		\$ 660,000	125	Unknown	Unknown	5	1	5
16" @ \$320 per foot	Pre-1927	Cast Iron	6	1,791		\$ 502,000	125	Unknown	Unknown	5	1	5
	Post-1927	Cast Iron	4	198		\$ 56,000	125	Unknown	Unknown	4	1	4
*Assumes all water main less than 8" will be replaced with 8" water main	Pre-1979	Cast Iron	4	1,102		\$ 309,000	125	Unknown	Unknown	3	1	3
	Pre-1979	Cast Iron	6	4,274		\$ 1,197,000	125	Unknown	Unknown	3	1	3
*Assumes all 10" water main will be replaced with 12" water main	Post-1979	Ductile Iron	6	1,140		\$ 320,000	110	Unknown	Unknown	2	1	2
	Pre-1983	Ductile Iron	6	228		\$ 64,000	110	Unknown	Unknown	2	1	2
	Pre-1983	Ductile Iron	8	1,245		\$ 349,000	110	Unknown	Unknown	2	2	4
	Post-1984	Ductile Iron	6	303		\$ 85,000	110	Unknown	Unknown	2	1	2
	Pre-2000	Ductile Iron	6	327		\$ 92,000	110	Unknown	Unknown	2	1	2
	Pre-2000	Ductile Iron	8	618		\$ 174,000	110	Unknown	Unknown	2	2	4
	Pre-2005	Ductile Iron	8	784		\$ 220,000	110	Unknown	Unknown	1	2	2
	Pre-2010	Ductile Iron	8	260		\$ 73,000	110	Unknown	Unknown	1	2	2
	1966	Cast Iron	6	1,119		\$ 314,000	125	68	54%	3	1	3
	1979	Ductile Iron	6	104		\$ 30,000	110	66	60%	2	1	2
	1979	Ductile Iron	10	5,099		\$ 1,530,000	110	66	60%	2	2	4
	1980	Ductile Iron	6	1,033		\$ 290,000	110	67	61%	2	1	2
	1980	Ductile Iron	8	1,509		\$ 423,000	110	67	61%	2	2	4
	1984	Ductile Iron	6	455		\$ 128,000	110	71	65%	2	1	2
	1984	Ductile Iron	8	566		\$ 159,000	110	71	65%	2	2	4
	1984	Ductile Iron	12	8,186		\$ 2,456,000	110	71	65%	2	3	6
	1984	Ductile Iron	16	1,324		\$ 424,000	110	71	65%	2	3	6
	1987	Ductile Iron	6	3,248		\$ 910,000	110	74	67%	2	1	2
	1988	Ductile Iron	6	878		\$ 246,000	110	75	68%	2	1	2
	1988	Ductile Iron	8	736		\$ 207,000	110	75	68%	2	2	4
	1989	Ductile Iron	6	18		\$ 6,000	110	76	69%	2	1	2
	1989	Ductile Iron	8	966		\$ 271,000	110	76	69%	2	2	4
	1992	Ductile Iron	8	489		\$ 137,000	110	79	72%	2	2	4
	1994	Ductile Iron	6	412		\$ 116,000	110	81	74%	2	1	2
	1994	Ductile Iron	8	456		\$ 128,000	110	81	74%	2	2	4
	1996	Ductile Iron	6	753		\$ 211,000	110	83	75%	2	1	2
	1996	Ductile Iron	8	1,689		\$ 473,000	110	83	75%	2	2	4
	2000	Ductile Iron	6	85		\$ 24,000	110	87	79%	2	1	2
	2000	Ductile Iron	8	3,520		\$ 986,000	110	87	79%	2	2	4
	2003	Ductile Iron	8	651		\$ 183,000	110	90	82%	1	2	2
	2005	Ductile Iron	8	1,211		\$ 340,000	110	92	84%	1	2	2
	2007	Ductile Iron	8	730		\$ 205,000	110	94	85%	1	2	2
	2008	Ductile Iron	8	59		\$ 17,000	110	95	86%	1	2	2
	2008	Ductile Iron	12	1,063		\$ 319,000	110	95	86%	1	3	3
	2009	Ductile Iron	6	30		\$ 9,000	110	96	87%	1	1	1
	2009	Ductile Iron	8	1,456		\$ 408,000	110	96	87%	1	2	2
	2010	Ductile Iron	6	296		\$ 83,000	110	97	88%	1	1	1
	2010	Ductile Iron	8	2,980		\$ 835,000	110	97	88%	1	2	2
	2010	Ductile Iron	12	2,652		\$ 796,000	110	97	88%	1	3	3
	2010	HDPE	8	916		\$ 257,000	55	42	76%	2	2	4
	2011	Ductile Iron	6	74		\$ 21,000	110	98	89%	1	1	1
	2014	Ductile Iron	6	31		\$ 9,000	110	101	92%	1	1	1
	2014	Ductile Iron	8	513		\$ 144,000	110	101	92%	1	2	2
	2015	Ductile Iron	6	175		\$ 49,000	110	102	93%	1	1	1
	2015	HDPE	8	4,540		\$ 1,272,000	55	47	85%	1	2	2
	2015	HDPE	10	1,238		\$ 372,000	55	47	85%	1	2	2
	2018	Ductile Iron	8	394		\$ 111,000	110	105	95%	1	2	2
	2022	Ductile Iron	6	32		\$ 9,000	110	109	99%	1	1	1
	2022	Ductile Iron	8	1,072		\$ 301,000	110	109	99%	1	2	2

Distribution Assets												
Distribution Assets	Year Installed	Material	Diameter (in)	Quantity	Manufacturer	Replacement Cost	Estimated Useful Life in Years	Remaining Useful Life in Years	Percent of Useful Life Remaining	Probability of Failure	Consequence of Failure	Criticality Factor
Hydrants	Unknown			4		\$ 12,000	90	Unknown	Unknown	2	2	4
Replacement Cost: \$3,000 each	Pre-1927			6		\$ 18,000	90	Unknown	Unknown	3	2	6
	Pre-1979			7		\$ 21,000	90	Unknown	Unknown	3	2	6
	Post-1979			2		\$ 6,000	90	Unknown	Unknown	3	2	6
	Pre-1983			2		\$ 6,000	90	Unknown	Unknown	3	2	6
	Post-1984			1		\$ 3,000	90	Unknown	Unknown	2	2	4
	Pre-2005			2		\$ 6,000	90	Unknown	Unknown	1	2	2
	Pre-2010			1		\$ 3,000	90	Unknown	Unknown	1	2	2
	1979			7		\$ 21,000	90	46	51%	3	2	6
	1980			5		\$ 15,000	90	47	52%	3	2	6
	1984			23		\$ 69,000	90	51	57%	3	2	6
	1987			2		\$ 6,000	90	54	60%	2	2	4
	1988			7		\$ 21,000	90	55	61%	2	2	4
	1989			2		\$ 6,000	90	56	62%	2	2	4
	1994			2		\$ 6,000	90	61	68%	2	2	4
	1996			7		\$ 21,000	90	63	70%	2	2	4
	2000			9		\$ 27,000	90	67	74%	2	2	4
	2003			1		\$ 3,000	90	70	78%	2	2	4
	2005			2		\$ 6,000	90	72	80%	1	2	2
	2007			1		\$ 3,000	90	74	82%	1	2	2
	2008			1		\$ 3,000	90	75	83%	1	2	2
	2009			4		\$ 12,000	90	76	84%	1	2	2
	2010			14		\$ 42,000	90	77	86%	1	2	2
	2011			1		\$ 3,000	90	78	87%	1	2	2
	2014			3		\$ 9,000	90	81	90%	1	2	2
	2015			15		\$ 45,000	90	82	91%	1	2	2
	2022			3		\$ 9,000	90	89	99%	1	2	2

Distribution Assets												
Distribution Assets	Year Installed	Material	Diameter (in)	Quantity	Manufacturer	Replacement Cost	Estimated Useful Life in Years	Remaining Useful Life in Years	Percent of Useful Life Remaining	Probability of Failure	Consequence of Failure	Criticality Factor
Valves	Unknown		8	3		\$ 6,000	70	Unknown	Unknown	2	2	4
Replacement Cost*:	Pre-1927		4	1		\$ 2,000	70	Unknown	Unknown	3	2	6
8" @ \$2,000 each	Pre-1927		6	1		\$ 2,000	70	Unknown	Unknown	3	2	6
12" @ \$3,000 each	Pre-1979		4	3		\$ 6,000	70	Unknown	Unknown	3	2	6
	Pre-1979		6	4		\$ 8,000	70	Unknown	Unknown	3	2	6
*Assumes all valves less than 8" will be replaced with 8" valves	Post-1979		6	2		\$ 4,000	70	Unknown	Unknown	3	2	6
*Assumes all 10" valves will be replaced with 12" valves	Pre-1983		6	1		\$ 2,000	70	Unknown	Unknown	3	2	6
	Pre-1983		8	3		\$ 6,000	70	Unknown	Unknown	3	2	6
	Post-1984		6	1		\$ 2,000	70	Unknown	Unknown	2	2	4
	Pre-2000		6	1		\$ 2,000	70	Unknown	Unknown	2	2	4
	Pre-2000		8	2		\$ 4,000	70	Unknown	Unknown	2	2	4
	Pre-2005		8	1		\$ 2,000	70	Unknown	Unknown	2	2	4
	Pre-2010		8	2		\$ 4,000	70	Unknown	Unknown	2	2	4
	1966		6	3		\$ 6,000	70	13	19%	5	2	10
	1979		10	8		\$ 24,000	70	26	37%	4	2	8
	1980		6	4		\$ 8,000	70	27	39%	4	2	8
	1980		8	4		\$ 8,000	70	27	39%	4	2	8
	1984		8	8		\$ 16,000	70	31	44%	3	2	6
	1984		12	9		\$ 27,000	70	31	44%	3	2	6
	1984		16	4		\$ 12,000	70	31	44%	3	2	6
	1987		6	10		\$ 20,000	70	34	49%	3	2	6
	1988		6	2		\$ 4,000	70	35	50%	3	2	6
	1988		8	1		\$ 2,000	70	35	50%	3	2	6
	1989		8	4		\$ 8,000	70	36	51%	3	2	6
	1992		8	1		\$ 2,000	70	39	56%	3	2	6
	1994		6	2		\$ 4,000	70	41	59%	3	2	6
	1994		8	1		\$ 2,000	70	41	59%	3	2	6
	1996		6	1		\$ 2,000	70	43	61%	2	2	4
	1996		8	5		\$ 10,000	70	43	61%	2	2	4
	2000		8	9		\$ 18,000	70	47	67%	2	2	4
	2003		8	5		\$ 10,000	70	50	71%	2	2	4
	2005		8	5		\$ 10,000	70	52	74%	2	2	4
	2007		8	3		\$ 6,000	70	54	77%	2	2	4
	2008		12	1		\$ 3,000	70	55	79%	2	2	4
	2009		8	5		\$ 10,000	70	56	80%	1	2	2
	2010		6	2		\$ 4,000	70	57	81%	1	2	2
	2010		8	18		\$ 36,000	70	57	81%	1	2	2
	2010		12	5		\$ 15,000	70	57	81%	1	2	2
	2011		6	1		\$ 2,000	70	58	83%	1	2	2
	2014		8	2		\$ 4,000	70	61	87%	1	2	2
	2015		8	10		\$ 20,000	70	62	89%	1	2	2
	2015		10	2		\$ 6,000	70	62	89%	1	2	2
	2018		8	1		\$ 2,000	70	65	93%	1	2	2
	2022		8	1		\$ 2,000	70	69	99%	1	2	2

APPENDIX C:

CAPITAL IMPROVEMENTS PLAN

City of Saugatuck
Water System Capital Improvements Plan 2024-2028

Project	Anticipated Funding Source(s)	Anticipated Project Cost By Year					Total	Notes
		2024	2025	2026	2027	2028		
Water System								
Complete Distribution System Materials Inventory	Local/General	\$ 150,000					\$ 150,000	Due to State January 1, 2025
Lead Service Line Replacement - Systemwide	Potentially EGLE/DWSRF	\$ 500,000	\$ 5,000,000				\$ 5,500,000	Locations and final count TBD. Contingent on EGLE funding.
Wellhouse #5 Improvements	Potentially EGLE/DWSRF	\$ 20,000	\$ 200,000				\$ 220,000	Contingent on EGLE funding.
Install Permanent Generator for Wells #4 & #5	Potentially EGLE/DWSRF	\$ 10,000	\$ 100,000				\$ 110,000	Contingent on EGLE funding.
Maple Street Water Service Separation (720/Olde Mill)	Local/General		\$ 30,000				\$ 30,000	Concurrent with Maple St WM replacement
Maple Street Water Main Replacement - Blue Star to S of North Street	Potentially EGLE/DWSRF	\$ 115,000	\$ 1,150,000				\$ 1,265,000	Contingent on EGLE funding.
Elizabeth Street Water Main Replacement - Allegan to Main	Potentially EGLE/DWSRF	\$ 35,000	\$ 350,000				\$ 385,000	Contingent on EGLE funding.
Lucy Street Water Main Replacement - Water to Butler	Potentially EGLE/DWSRF	\$ 15,000	\$ 150,000				\$ 165,000	Contingent on EGLE funding.
Hoffman Street Water Main Replacement - Griffith to Grand	Potentially EGLE/DWSRF	\$ 20,000	\$ 200,000				\$ 220,000	Contingent on EGLE funding.
Butler Street Water Main Replacement - Culver to Lucy	Potentially EGLE/DWSRF	\$ 100,000	\$ 1,000,000				\$ 1,100,000	Contingent on EGLE funding.
Grand Street Water Main Replacement - Mason to Hoffman & Francis to St. Joseph	Potentially EGLE/DWSRF	\$ 20,000	\$ 200,000				\$ 220,000	Contingent on EGLE funding.
Well Field Loop Water Main Replacement - Maple to High School	Potentially EGLE/DWSRF	\$ 35,000	\$ 350,000				\$ 385,000	Contingent on EGLE funding.
River Crossing Water Main Replacement - Park to Water	Potentially EGLE/DWSRF	\$ 85,000	\$ 850,000				\$ 935,000	Contingent on EGLE funding.
Bridge Street Water Main Extension	Local/General				\$ 600,000		\$ 600,000	
	Subtotal Water System	\$ 1,105,000	\$ 9,580,000	\$ -	\$ 600,000	\$ -	\$ 11,285,000	

Note: Projects shaded blue/gray denote those that would be partially funded by EGLE and are thus contingent on EGLE funding.

APPENDIX D:

WATER SYSTEM BUDGET

APPENDIX E:

BILLING RATE STRUCTURE



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