

SAW Grant – Third Public Open House

“Infrastructure Funding”

August 22, 2017 – 6 PM to 8 PM – City of St. Joseph Commission Chambers

In December 2013, the City of St. Joseph applied for a Stormwater, 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 Program¹. 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 drinking water 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
- 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, maintain and manage City infrastructure in the Right-of-Way.

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 29, 2017.² The City’s application was approved for \$1,110,830 with a City match of 10%, the anticipated SAW Grant funding summary 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

The meeting tonight is the third in a three-part open house meeting series. The first meeting was held at the Public Works facility on April 22nd. The purpose of the first meeting was to explain how the City’s infrastructure works and provided an introduction to the SAW Grant activities. The Second Public Meeting was held on May 24th in City Commission Chambers and focused on managing infrastructure and introduced the capital

¹ The City, unlike many communities, had taken advantage of the S2 Grant Program three times to help fund the combined sewer overflow (CSO) elimination program effort between 2007 and 2013.

² Three years may sound like a long time, but there seems to be consensus amongst SAW Grant communities that AMP development requires more time. In truth, an AMP is a dynamic plan that continuously improves over time and therefore is never complete.

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 purpose of the CMMS is to more effectively manage day-to-day road, sewer and water operations and maintenance activities. The predominant focus of the third open house is to provide information on the rate and tax structure being consider to address the City's infrastructure needs.

Inventory Phase

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 other projects. A geographical information systems (GIS) file had been developed for the stormwater system as part of a 2010 total maximum daily loading (TMDL) grant, the water distribution system valves and hydrant information was 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. Over the 2015 summer, sanitary sewer information was collected in the field by the Assistant City Engineer and Engineering Department Summer intern.

A general overview of inventory results follows. The City owns includes 43 miles of road, 34 miles of storm sewer gravity mains, 48 miles of sanitary sewer gravity mains, 3 miles of wastewater forcemains, 10 wastewater lift stations, 62 miles of water mains and 460 fire hydrants. The City also owns a 1.5 million water tank and a Water Treatment Plant (WTP) rated to treat up to 16 million gallons of water per day. The water tank and WTP were not included in the scope of the AMP which focused predominantly on infrastructure in the Right-of-Way.

Assessment Phase

The assessment of City infrastructure varied dependent upon the type of asset. The following list provides the factors considered in the evaluation process.

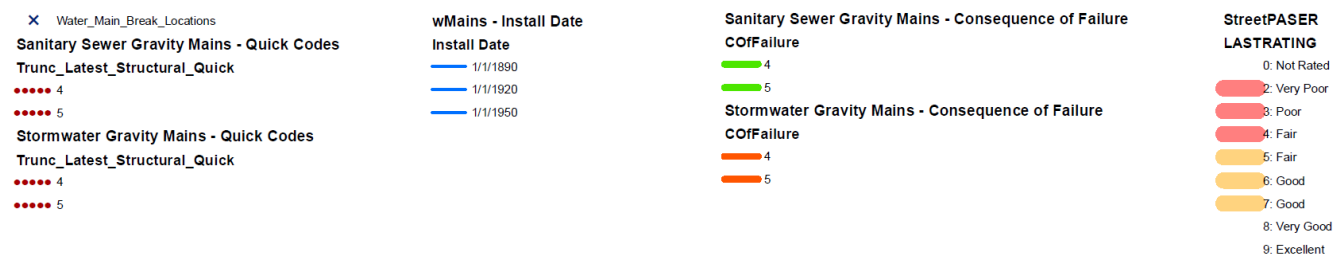
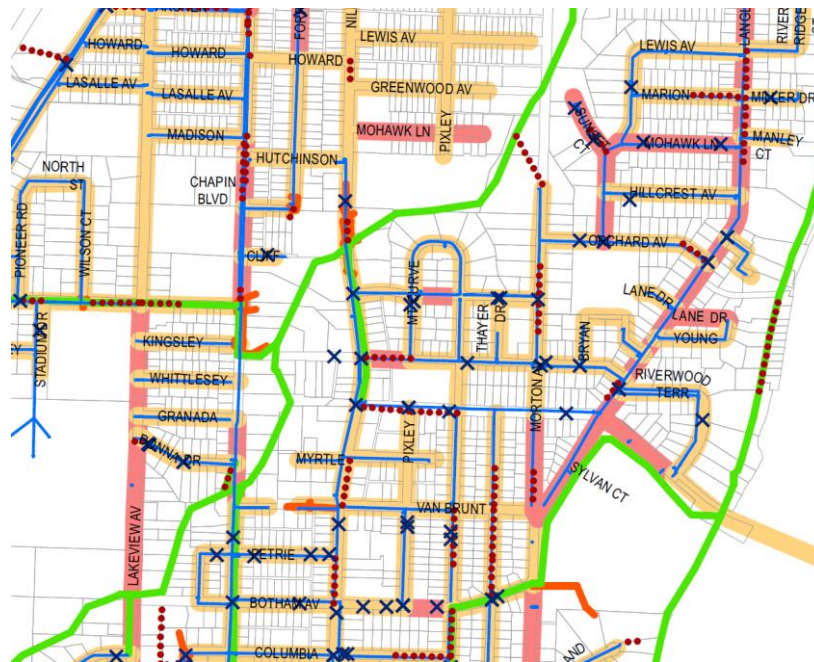
- Water main
 - Water main break history (190 breaks have been mapped since 2009)
 - Age of pipes (nearly 70% of the water system is over 60 years old)
 - Water system reliability study/system hydraulics
- Road System
 - Pavement Surface Evaluation and Rating (PASER) system (12 miles rated poor, 26 miles rated fair, 4 miles rated good)
 - Age of pavement
- Storm Sewer System
 - Sewer televising – SAW Grant activity (completed by Redzone Robotics under subcontract with Wade Trim)
 - Manhole Assessments – SAW Grant activity (Redzone Robotics under subcontract)
 - Drainage problem history
 - Age of pipes (~42% of the storm sewer system was built prior to 1950)
- Wastewater Collection/Sanitary Sewer System
 - Sewer televising – SAW Grant activity (Redzone Robotics under subcontract)
 - Manhole Assessments – SAW Grant activity (Redzone Robotics under subcontract)
 - Sewer call history
 - Age of pipes (~60% of the sanitary sewer system was built prior to 1950)
- Wastewater Lift Stations
 - Lift Station Site Visit/Evaluation – SAW Grant activity (Wade Trim – 4 of the City's 10 lift stations are rated to be in poor condition)
 - Lift station experience/reliability history

Capital Improvement Plan (CIP) Development

In an effort to keep this summary brief, this overview will move on to the capital improvement plan (CIP) development phase. However, there was a significant amount of effort needed to gather and compile data in order to generate the initial CIP project list. In order to prioritize the CIP projects, the condition of the assets (aka probability of failure) as well as the consequence of failure needed to be evaluated. The consequence of the failure of an asset is somewhat self-explanatory, as additional explanation it considers such things as the population served, and environmental, social and legal costs related to a failure. In terms of asset management, the formula for criticality follows.

$$\text{Criticality} = \text{Probability of Failure} \times \text{Consequence of Failure}$$

Wade Trim and City staff held multiple working sessions during the CIP development phase. Graphics such as the example that follows were used to consider the multiple inputs involved in project selection and prioritization.



Once projects were selected and prioritized, the future work was schedule in increments of three-year bins. Following that, estimated costs were estimated and assigned to the projects. This led into the next step of the process, the financial analysis phase.

Current Budget/Financial Analysis/Level of Service Phase

The budget and financial phase of the work also involved considerable effort. A new asset management term was considered at this time: level of service. *Level of service (LOS) defines the way in which the utility stakeholders want the utility to perform over the long term. The LOS can include any technical, managerial, or financial*

*components the utility wishes, as long as all regulatory requirements are met*³ Perhaps better put, the desired level of service directly impacts the CIP schedule because the speed that projects are undertaken needs to be balanced against the rates and taxes required to fund them.

The City hired H. J. Umbaugh and Associates to perform the financial analysis work required for the SAW Grant. Umbaugh reviewed the three major budget areas from which the CIP will draw funds. The three areas are described below.

Sewer Funding (590 Fund, FY 16-17)

- Revenue: ~\$1.8 Million/year
- Expenditures (unless noted otherwise):
 - ~\$700,000/year to City Operations & Maintenance
 - ~\$800,000/year JWWTP for Wastewater Treatment
 - ~\$50,000 Annual CSO Debt Service Payment
 - Lift Station/Sewer Projects/Street Reconstruction Projects: ~\$1.4 Million Requested in 17/18
 - Significant Expenditures include: Harrison Sewer Replacement, Dunham Lift Station Replacement and Wallace Ave Reconstruction Project
 - Includes transfer to CSO Fund (450): 2017 CSO Project, CSO Compliance

Water Funds: (FY 16-17)

Water System Funding (591 Fund) – this is the system fund and predominantly pays for water treatment.

- Revenue: \$4.7 million/year system-wide revenue (includes the Lincoln, St. Joseph & Royalton Townships)
- 2017 Anticipated Expenditures:
 - \$1.66 million/year to Water Treatment Plant
 - \$1.47 million/year to Distribution System Operations & Maintenance
 - \$838,000/year to Administration
 - \$490,000/year to Capital Improvement
 - \$546,500/year Drinking Water Treatment Plant Debt Service

City Water Improvement Funding (592 Fund) – this fund pays for City water distribution system improvements.

- Revenue: \$675,000/year generated from System Improvement Fee
 - \$170,000/year Operating & Maintenance
 - \$300,000/year to City capital improvements (often transferred to 204 municipal street fund),
 - \$200,000/year Debt Service (Water Tower)

Street & Stormwater/Drainage Project Funding (FY 16-17)

Act 51 Funding: ~ \$600,000 for both major (202 Fund) and local streets (203 Fund) – all Act 51 funding is currently spent on operations & maintenance/public works activities.

City General Fund:

- \$125,000 to \$175,000 from General Fund for local road operations and maintenance
- \$160,000 to alleys, parking lots and PW facility – operations and maintenance

Street Improvement Fund (204 Fund): Currently 1 Mill or \$440,000/year is directed for reconstruction and preventative maintenance projects, includes the biennial sidewalk replacement project (\$50,000+/year), the City's match for projects like the upcoming Wallace Avenue Reconstruction Project, crack sealing, asphalt mill & overlay projects and the like.

³ MDEQ "Asset Management Guidance for Water System."

TIP Funding⁴: Average ~\$400,000 to \$500,000 every 3-year TIP (~\$150,000 annual average)

A summary of three categories of road and pavement maintenance activities and associated annual expenditures follows.

1. Operations and Maintenance: \$885,000 to \$935,000/year
2. Preventative Maintenance Projects: Draws from the Municipal Street Fund \$440,000/year
3. Reconstruction Projects: Draws from the Municipal Street Fund/year of \$440,000/year

A significant amount of effort goes into roadway operations and maintenance. A brief description of those activities along with preventative maintenance and reconstruction actions are listed below.

Road Activities:

1. Operations & Maintenance: Street sweeping, plowing, salting, sand removal, catch basin cleaning, pothole patching, tree removals within Right-of-Way, pavement markings, signs, traffic signal electricity, MDOT billings, unplanned drain projects and equipment used to perform these tasks.⁵
2. Preventative Maintenance: Crack sealing, planned drain repairs, biennial sidewalk, spot concrete replacement and resurfacing projects. **We plan to add more, lower cost treatments.**
3. Reconstruction Projects: Full roadway reconstruction such as Botham Avenue Reconstruction and upcoming Wallace Avenue Reconstruction Projects. These projects generally include full utility reconstruction too.

The general conclusion of the roadway budget review was that preventative maintenance and reconstruction projects were underfunded.

In order to find the balance between level of service (the CIP schedule) and rates and taxes, the City went through an iterative process involving multiple meetings.

- ✓ April 20, 2017 – Sewer Fund Financial Working/Admin Meeting*
- ✓ April 22, 2017 – 1st Public Meeting – “How Your Infrastructure Works”
- ✓ May 9, 2017 – Street Fund & Water Fund Working/Admin Meeting*
- ✓ May 24, 2017 – 2nd Public Meeting – “Managing Infrastructure” (Asset Management)
- ✓ June 19, 2017 – Infrastructure Funding Study Session with City Commission
- ✓ July 31, 2017 – 2nd Infrastructure Funding Study Session
- ☐ August 22, 2017 – 3rd Public Meeting – “Infrastructure Funding” (Impact to Taxes and Rates)
- ☐ October 29, 2017 – SAW Grant deadline for eligible activities

*Working Session/Admin Meetings at Staff level with Wade Trim & Umbaugh & Associates, the desired CIP schedule required the following annual rate increases.

The conclusion of this process led us to where we are today. Based upon the cash flow analysis performed by Umbaugh, the following annual rate increases were deemed to be necessary to fund the water and sewer projects through a combination of pay-as-you go and debt issuance.

- 3.5% water system improvement fee for water distribution projects.
- 7% annual rate increase for sanitary sewer and wastewater projects.

⁴ TIP Funding comes from the Federal government and there are strings attached with accepting the dollars. The program is also very competitive.

⁵ The new CMMS system is being used to track this but it will take some time to fully implement this and develop historical data to help better define the cost per activity.

Revenue was also needed to fix the roads that the utilities run under. The proposed millage increases for these improvements are as follows.

- Option 1 – 2 mill increase requiring two bonds with a total and debt issuance cost of \$1.5 M.
- Option 2 – 2.55 mill increase requiring no debt on the roadway funding side of the equation.

This logically leads to the question of how does this impact my rates? The following table provides a summary of the projected rate increases and the impact to a monthly budget for the median⁶ home value in the City of St. Joseph.

Water & Sewer: Typical Quarterly Homeowner's Bill*						
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Water Distribution	\$ 27.89	\$ 27.89	\$ 28.87	\$ 29.88	\$ 30.92	\$ 32.00
Water Treatment	\$ 53.41	\$ 55.28	\$ 57.21	\$ 59.22	\$ 61.29	\$ 63.43
Total Water	\$ 81.30	\$ 83.17	\$ 86.08	\$ 89.09	\$ 92.21	\$ 95.44
Sewer: Treatment & Collection	\$ 61.06	\$ 65.44	\$ 70.02	\$ 74.92	\$ 80.17	\$ 85.78
Total: Water & Sewer Bill	\$ 142.36	\$ 148.61	\$ 156.10	\$ 164.02	\$ 172.38	\$ 181.22
Increase/Quarter		\$ 6.25	\$ 7.49	\$ 7.91	\$ 8.36	\$ 8.84

Annual Tax Increase - Median True Cash Home Value**	
Mill Increase/Year	Amount Increase/Year
2 Mill	\$ 142.60
2.55 Mill	\$ 181.82

Total Monthly Budget Impact (compared to 17/18)						
Increase	2016/17	2017/18	2018/19**	2019/20	2020/21	2021/22
Water, Sewer & 2 Mill			\$ 14.38	\$ 17.02	\$ 19.81	\$ 22.75
Water, Sewer & 2.55 Mill			\$ 17.65	\$ 20.29	\$ 23.07	\$ 26.02

* 5/8" Meter with 1,800 cubic feet use/quarter

** The Median True Cash Value of a home in the City of St. Joseph is \$142,600 (Taxable Value \$71,300)

*** A millage increase would not go into effect until FY 18/19

Past Projects

Since 1999, the City of St. Joseph has been making steady progress on infrastructure improvement projects. Many of the projects were fueled by the State Revolving Fund (SRF)⁷ low interest loan program in order to meet CSO compliance requirements. In the past, projects have been prioritized by CSO compliance requirements, the need to improve fire flows and where City staff was able to find grant dollars. Examples of grant funding that has helped improve City infrastructure is Transportation Improvement Program (TIP) funding, American Recovery and Reinvestment Act (ARRA/aka economic stimulus) and Local Safety Program and Local Bridge Program funding. City

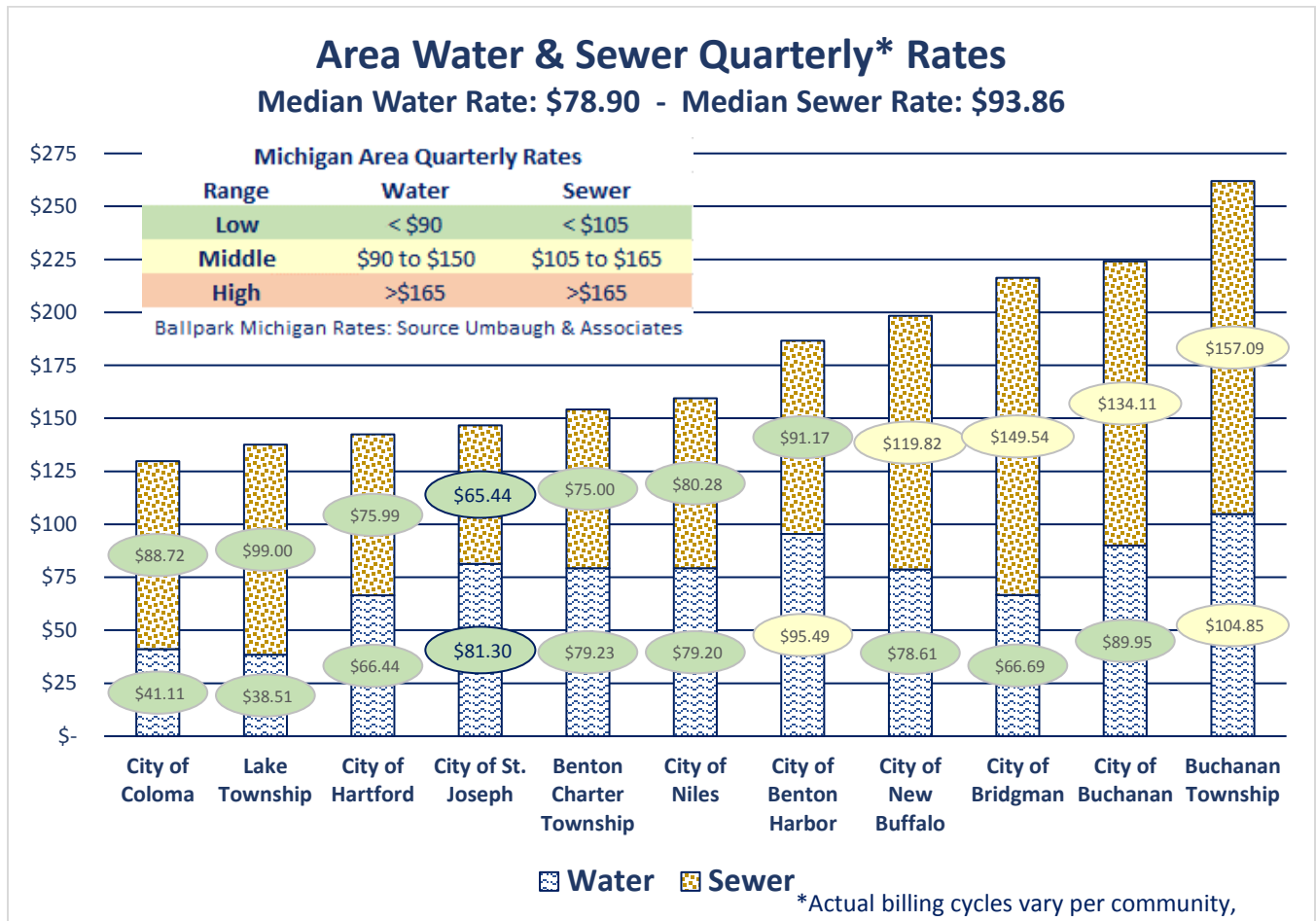
⁶ The median is the value lying at the midpoint of a frequency distribution of observed values.

⁷ The SRF Loan Program is competitive and requires the completion of an SRF Project Plan which is followed by scoring of the projects based upon criteria established by MDEQ. CSO compliance requirements have helped City projects to score well.

staff will continue to pursue similar sources of funding but it is unlikely that we will see grants that will address the needs at our local street level.

If there is one message to take from this meeting, it is that the City has made steady progress on infrastructure improvement over nearly two decades, but the pace needs to be increased to meet the level of service expected by our residents, businesses and visitors.

The next two figures illustrate how City rates and taxes compare to those in our area.



City Mills

