

GOOD EVENING....



Welcome to
Public Information Meeting #2

SAW Grant &
Asset Management

Stormwater, Asset Management & Wastewater Grant (SAW) – Status through May 2017

Summary of the Ten Tasks Identified in the SAW Grant Scope of Work:

- 1) Asset Management Policy Development – Underway
- 2) Initial Collection of Existing Data/Base Plan Development (GIS) – Complete
- 3) GPS Structure (GIS) – Sanitary Sewer Complete, Storm Sewer Underway
- 4) Condition Assessment (eg. Sewer Televising) – Near Completion
- 5) Build the GIS System (GIS) – Near Completion
- 6) GIS Implementation – Near Completion
- 7) Asset Management Evaluation – Underway
- 8) Develop Capital Improvement Plan (CIP) – Underway**
- 9) Rate and Fund Management – Underway**
- 10) Selection and Implementation of CMMS Software – Complete**

The Asset Management Plan is a dynamic program that will evolve over time. The SAW Grant activities focus on infrastructure in Right-of-Way. Items listed as complete are from the perspective of the SAW Grant, in reality they should be ongoing items that continue and improve over time.



SAW Grant – CIP/Public Input Schedule Overview

- 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)
- Mid June – Infrastructure Funding Study Session with City Commission
- Late June or early July – 2nd Infrastructure Funding Study Session (if needed)
- Mid July 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



URBAN WATER CYCLE



SAW Grant – 1st Public Meeting – Funding Sources

Street & Stormwater/Drainage Project Funding:

Act 51 Funding: ~ \$600,000 for both local and major streets – 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



Street Improvement Fund: ONLY 1 Mill or \$440,000/year is directed for reconstruction and preventative maintenance projects, includes the biennial sidewalk replacement project (\$50,000+/year)

TIP Funding: Average ~\$400,000 to \$500,000 every 3 year TIP cycle (more strings and more competitive)

Act 51 Funding - Anticipated Increase

FY 15	FY 17	FY 18	FY 19	FY 20	FY 21
\$ 566,526	\$ 700,159	\$ 742,686	\$ 794,526	\$ 854,748	\$ 948,805



The City of St. Joseph owns 43 miles of roads and 34 miles of storm sewer gravity mains. This does not include MDOT roads (Main Street, Niles Rd, etc.)

SAW Grant – 1st Public Meeting – Funding Sources

Sewer Funding (590 Fund):

- FY 16-17 Revenue: ~\$1.8 Million/year
- FY-16-17 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
- ~\$715,000 of CSO Storage Reserve is available (relies on elimination of a significant volume of inflow and infiltration with the 2017 CSO Project for ~7% annual rate increase for the collection system funding to work)



The City of St. Joseph wastewater collection system includes 48 miles of gravity sewer, 3 miles of forcemain and 10 wastewater lift stations

SAW Grant – 1st Public Meeting – Funding Sources

Water Funds: (FY 16-17)

Water System Funding (591 Fund)

- Revenue: \$4.7 million/year system-wide revenue.
- 2017 Anticipated Expenditures:
 - \$1.66 million/year to Water Treatment Plant
 - \$1.47 million/year to Distribution System and O&M
 - \$838,000/year to Administration
 - \$490,000/year to Capital Improvement
 - \$546,500/year Drinking Water Treatment Plant Debt Service

The City of St. Joseph water distribution system includes 62 miles of water main, 460 fire hydrants and a 1.5 Million Gallon Water Tower. The City's Water Plant can treat ~16 million gallons of water per day and serves St. Joseph Charter Township, Lincoln Charter Township, Royalton Township, and the Villages of Shoreham and Stevensville

City Water Improvement Funding (592 Fund)

- 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)



SAW Grant – 1st Public Meeting: PW Equipment



Front End Loader
New: \$162,900
Hourly Rate: \$58.13/Hour
Operator: \$21.83/Hour+Benefits

Information on boards next to equipment



Dump Truck
New: \$108,000
Hourly Rate: \$42.61/Hour
Operator: \$21.12/Hour+Benefits

SAW Grant – 1st Public Meeting: O&M and CIP

Operations & Maintenance – Day to Day Activities

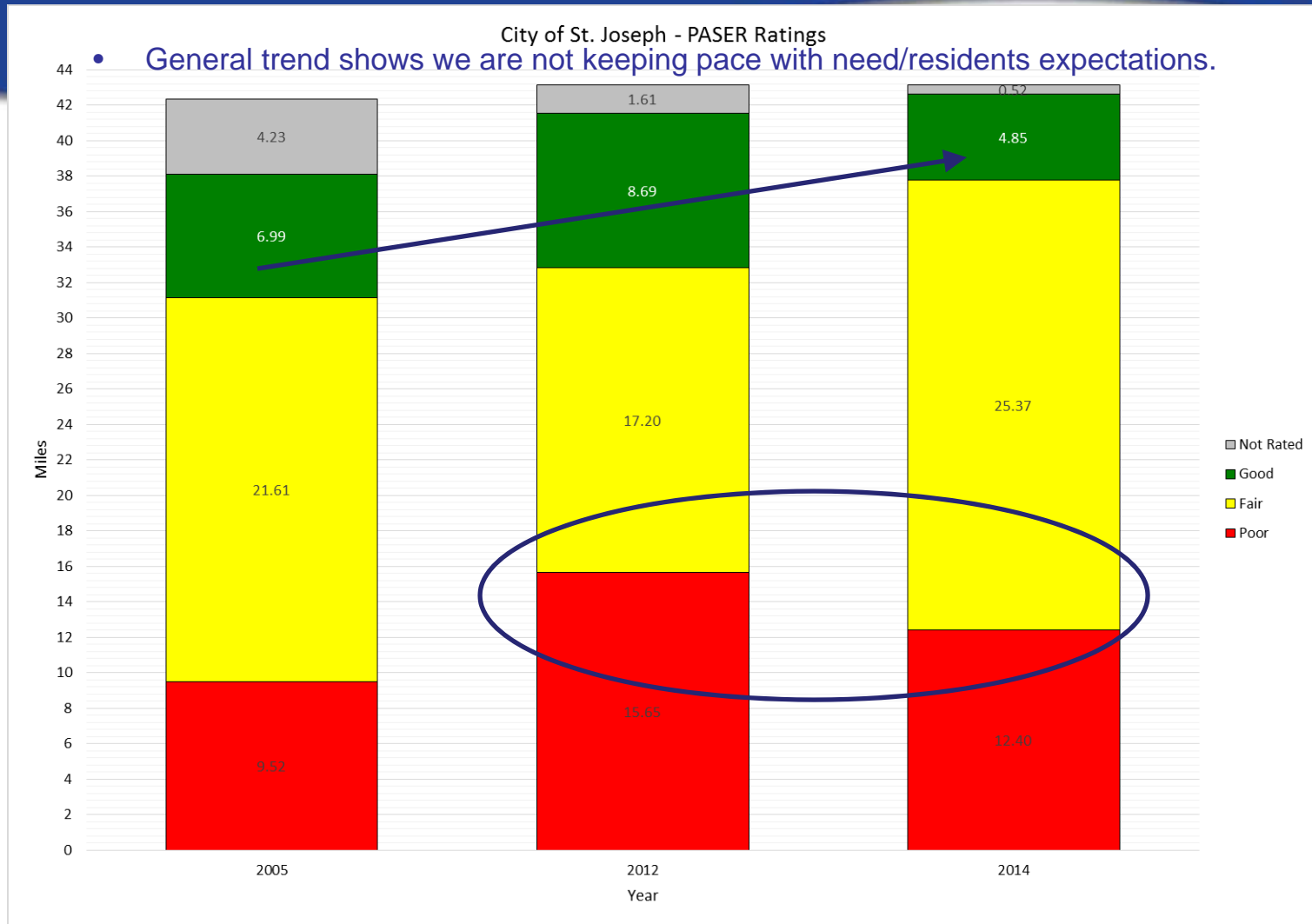
- Roads: Street sweeping, snow plowing, pothole patching, pavement striping, sand removal, sign replacement
- Alleys and Parking Lots: Pothole patching, seal coating, pavement markings
- Storm Sewer: Catch basin cleaning, cleaning (jetting, root cutting, etc.) sewers, culverts/ravine stream crossings
- Sanitary Sewer: Cleaning (jetting, root cutting, root chemical treatment, etc.) sewers, cleaning manholes
- Sanitary Lift Stations: Lift station inspections, generator tests, alarm testing
- Water Main: Water main break repair, hydrant flushing

Preventative Maintenance and Capital Improvements

- Roads: Crack sealing, asphalt resurfacing, concrete spot replacement, concrete joint repair, reconstruction
- Storm Sewer: Repairing failures, replacement, meeting current MS4 storm water requirements
- Sanitary Sewer: CSO Projects, open cut replacement, trenchless repairs
- Sanitary Lift Stations: Rehabilitation and replacement projects
- Water Main: Valve turning, hydrant assessment and comprehensive flushing programs



Road Condition – PASER Rating Trends



- Improvement in the fair rating is more due to subjectivity of PASER Rating System than actual pavement condition.

Infrastructure Water main Age/Break History Map

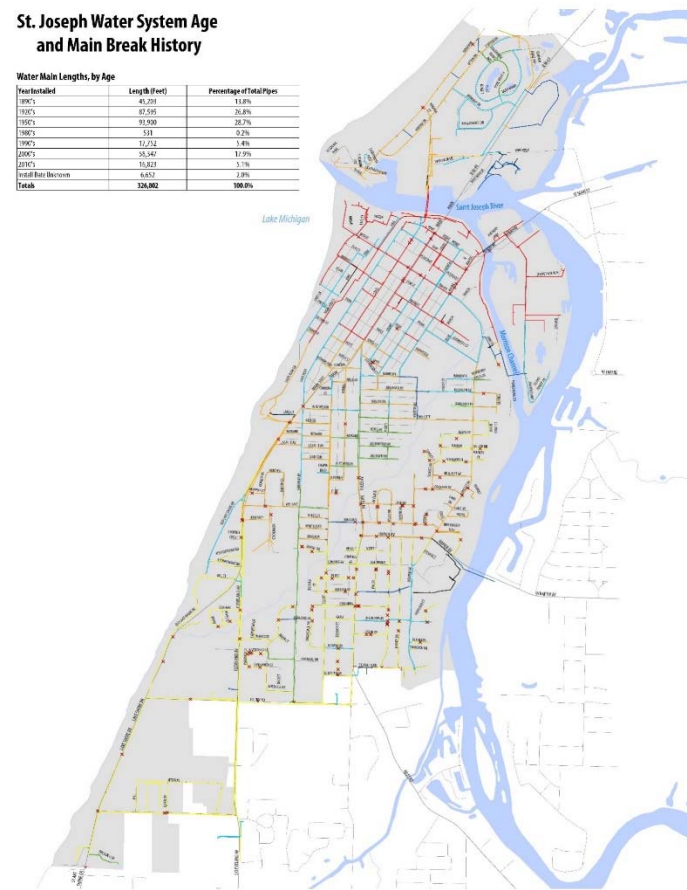
Nearly 70% of the City's Public Water System is over 60 years old.

Nearly 40% of the system dates back to the 1920's or older.

Nearly 190 Water Main Breaks have been mapped since 2009.

St. Joseph Water System Age and Main Break History

Year Installed	Length (Feet)	Percentage of Total Pipes
1900's	41,291	11.8%
1910's	87,595	26.4%
1920's	91,500	28.7%
1930's	531	0.2%
1940's	12,732	3.8%
1950's	38,547	11.5%
1960's	10,823	3.1%
Total Main Breaks	6,657	2.0%
Total	326,902	100.0%

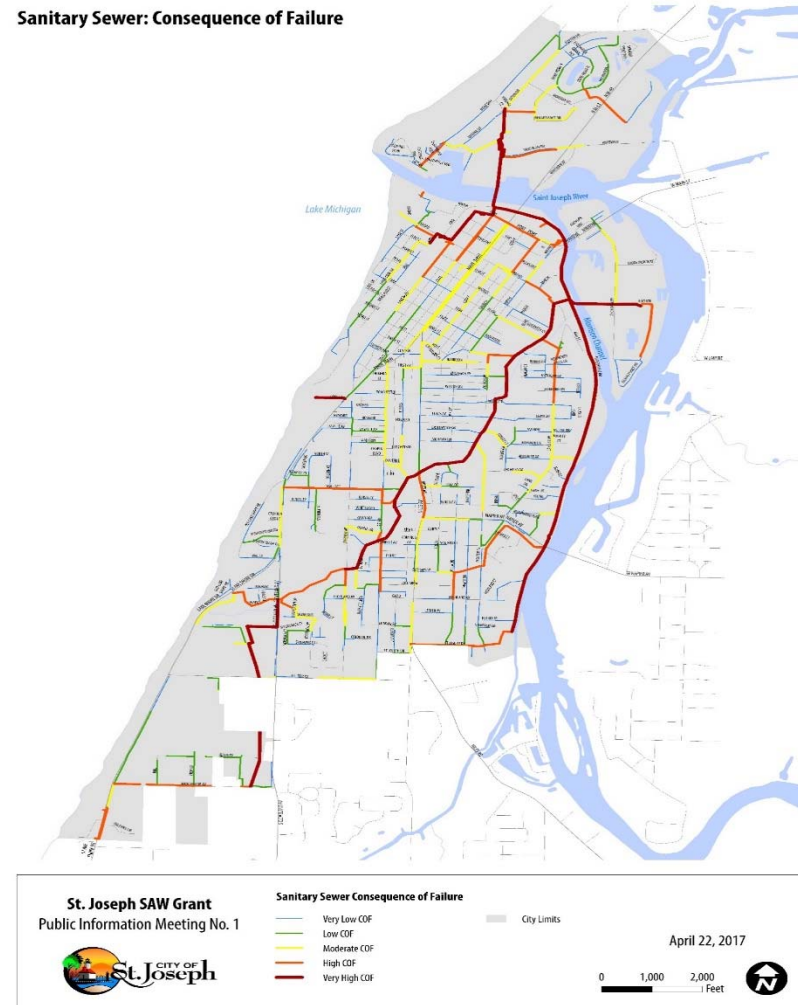


Infrastructure Consequence of Failure Map

Some Assets have a higher consequence of failure than others.

It is important to know which Assets are most Critical to your system

Sanitary Sewer: Consequence of Failure



SAW Grant – 2nd Public Meeting: Managing Infrastructure – Asset Management

SAW Grant Overview – Cover the purpose of the Stormwater, **Asset Management** and Wastewater (SAW) Grant

- Focusing on the Asset Management portion of the SAW grant
- Includes all Infrastructure in the Right-of-Way, not just grant eligible stormwater and wastewater infrastructure
- One of the most significant goals: Develop a comprehensive Capital Improvement Program (CIP)
- Improving how we manage our infrastructure with a Computerized Maintenance Management System (CMMS) – another significant goal and undertaking



SAW Grant – 2nd Public Meeting

Capital Improvement Program

CIP Process:

- 1) Project prioritization determined by **criticality** of project
- 2) **Criticality** of a project determined by the **condition of the asset** and **consequence of failure**
- 3) Timing - how quickly we undertake the projects - is a function of the desired **level of service** which needs to be balanced against **rates and taxes** of the schedule proposed

No Action Alternative:

- Streets: Condition continues to deteriorate, roads fail, vehicle damage, accidents, injuries
- Storm Sewer: Flooding, erosion, surface water quality issues, property damage, injuries
- Sanitary Sewer: Backups (SSOs), Combined Sewer Overflows (CSOs), property damage, health hazards and NPDES Permit violations with fines up to \$25,000/day per violation
- Drinking Water: Water main breaks & reliability issues, inadequate fire flows, treatment violations, safety and public health concerns

Simply put, lack of action leads to public health, welfare and safety issues and **costs more to fix when in an emergency status.**



SAW Grant – 2nd Public Meeting

The Cost of the No Action Alternative

Contractor Hired to Fix Fraser, Michigan, Sinkhole

The massive sinkhole that opened up in Fraser, Michigan, on Christmas Eve due to a collapsed sewer interceptor is scheduled to be fixed by the end of September.

According to a report by the *Detroit Free Press*, officials recently awarded a \$32.7 million contract to Dan's Excavating. The emergency contractor that had headed up the temporary repairs and installation of a bypass is moving off the project. In total, including both permanent and temporary repairs, the project is estimated to cost about \$75 million.

That could balloon to as much as \$150 million depending on what work, such as relining, is required on the rest of the interceptor beyond the sinkhole location. About 17 miles of pipe will be inspected this summer.

Source: *Detroit Free Press*



News Brief from
March 23, 2017
Municipal Water & Sewer
e-news magazine



Wall Street Journal
March 10, 2017



THE WALL STREET JOURNAL. 3/10/17

U.S. NEWS

When it comes to your infrastructure, you should be worried, says the president of the American Society of Civil Engineers.

Infrastructure Grade: D+

Engineers group says trillions more needed to repair roads, ports, bridges and schools

By Cameron McWhirter

American infrastructure has barely maintained a below-standard grade of "D+" over the past four years, according to the American Society of Civil Engineers.

In its "Infrastructure Report Card" issued every four years, the engineering group forecast that it would cost about \$4.590 trillion over the next decade to bring the country's roads, bridges, public schools and ports up to a safe, functioning level, about \$2,064 trillion more than what governments and the private sector are ready to spend.

The association, based in Reston, Va., called for infrastructure investment to increase from the current level of about 2.5% of U.S. gross domestic product to 3.5% by 2025.

"When it comes to your infrastructure, you should be worried," said Norma Jean Mattel, 2017 president of ASCE. "President Trump is

Source: American Society of Civil Engineers

Construction Speed Limit

An engineering group forecast that it would cost nearly \$4.6 trillion over a decade to bring the country's infrastructure up to a safe, functioning level.

Cumulative infrastructure needs by system based on current trends, 2016-25, in billions

Surface transportation	\$2,042
Electricity	\$934
Schools	\$757
Seismic	\$672
Airports	\$157
Dams	\$115
Water/wastewater	\$105
Public parks and recreation	\$55
Levees	\$20
Bridges	\$10
Highways	\$5
Inland	\$1
Coastal	\$2

■ Total needs
■ Estimated funding

The association's infrastructure team looked at 16 infrastructure categories and found some areas grew worse in the past four years while other areas improved slightly.

The transit sector was given the worst grade in the 2017 report with a "D-".

All sectors will require a substantial increase in funding in the coming decade to receive a "B" grade, defined by the association as "safe and reliable, with minimal capacity issues and minimal risk," according to the report.

The only infrastructure sector to receive a B in this year's report was rail, where private companies have increasingly—\$21 billion in 2016—improved service.

Rail received a C+ grade in 2012.

No sector in either year received an A grade.

—David Harrison contributed to this article.



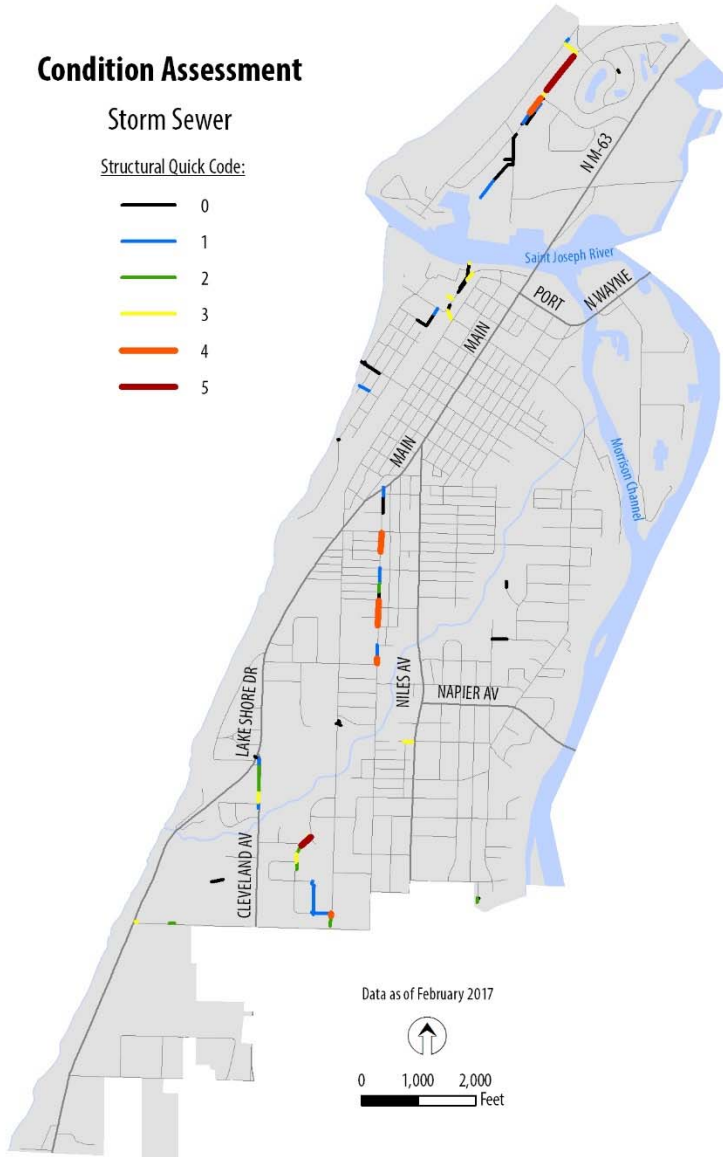
SAW Grant – 2nd Public Meeting: Condition Maps

Condition Assessment

Storm Sewer

Structural Quick Code:

- 0
- 1
- 2
- 3
- 4
- 5

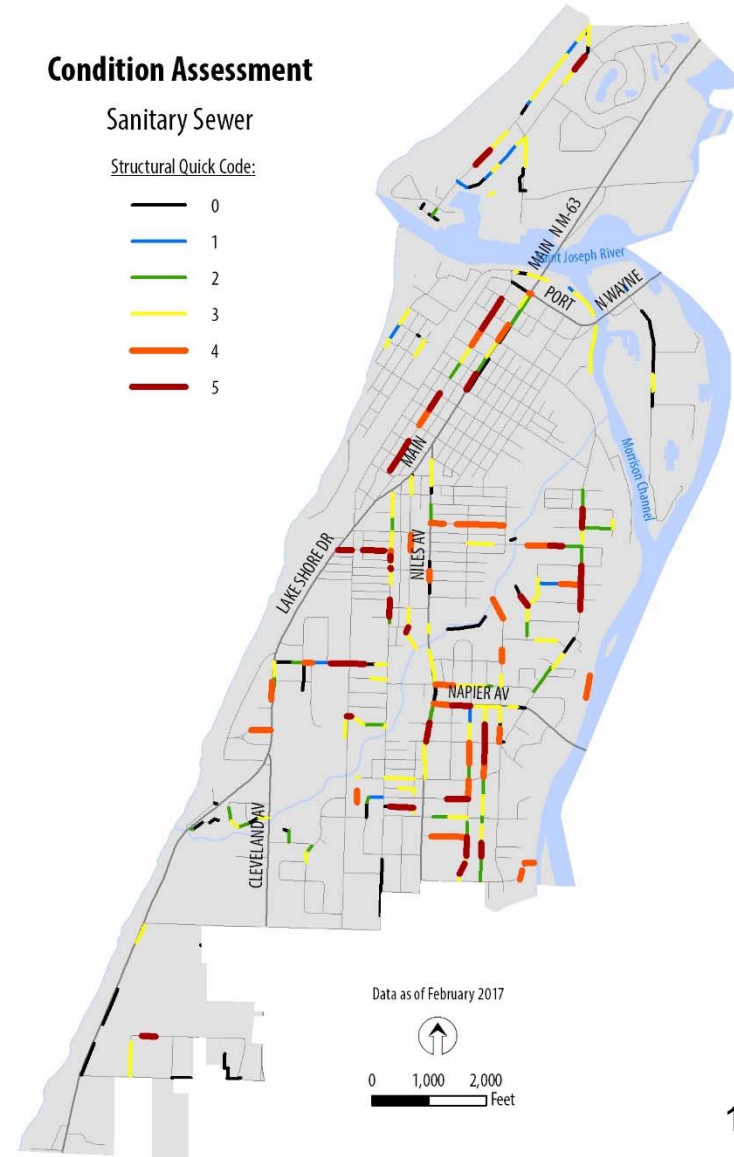


Condition Assessment

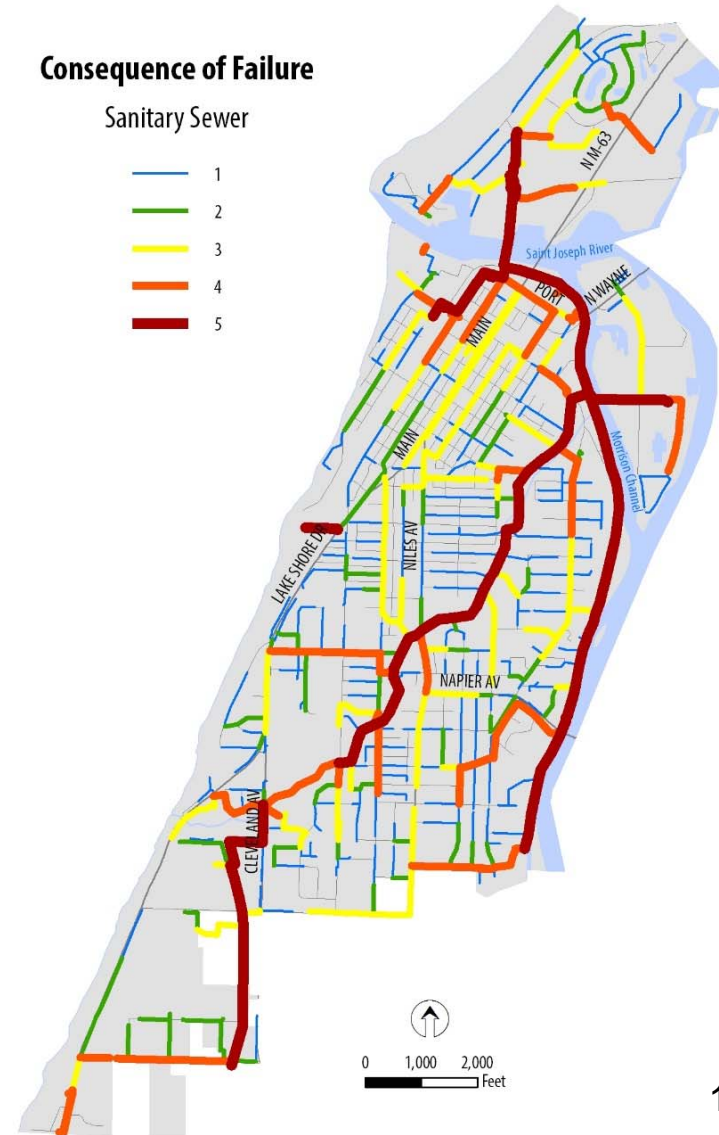
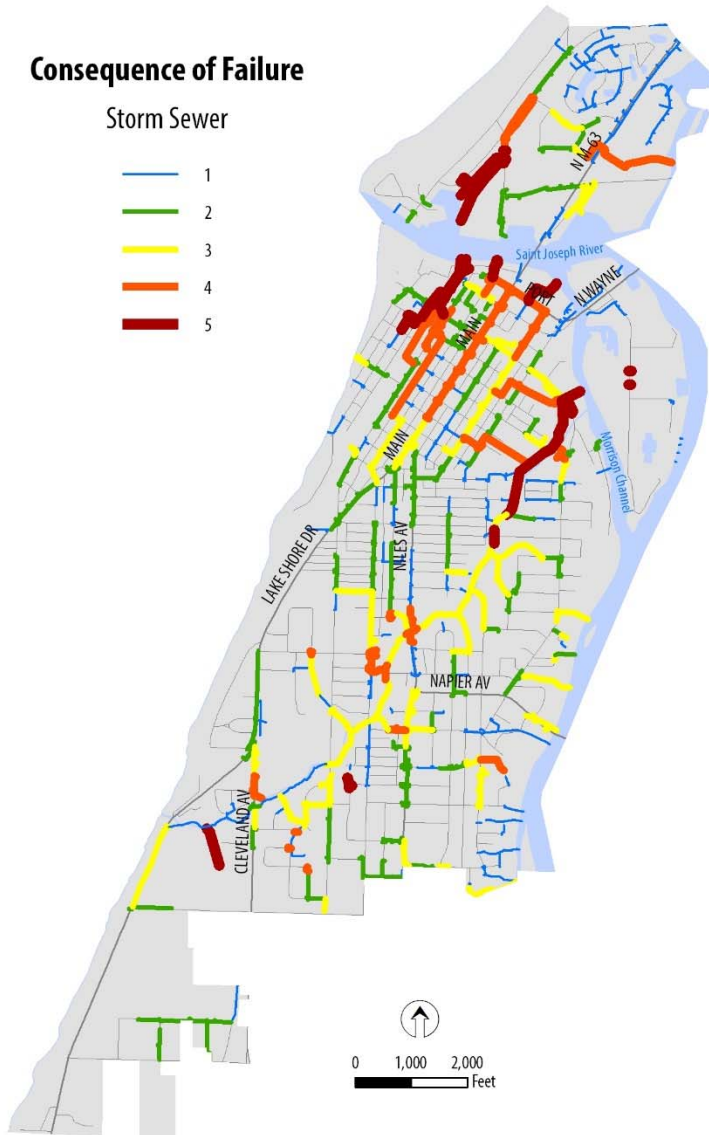
Sanitary Sewer

Structural Quick Code:

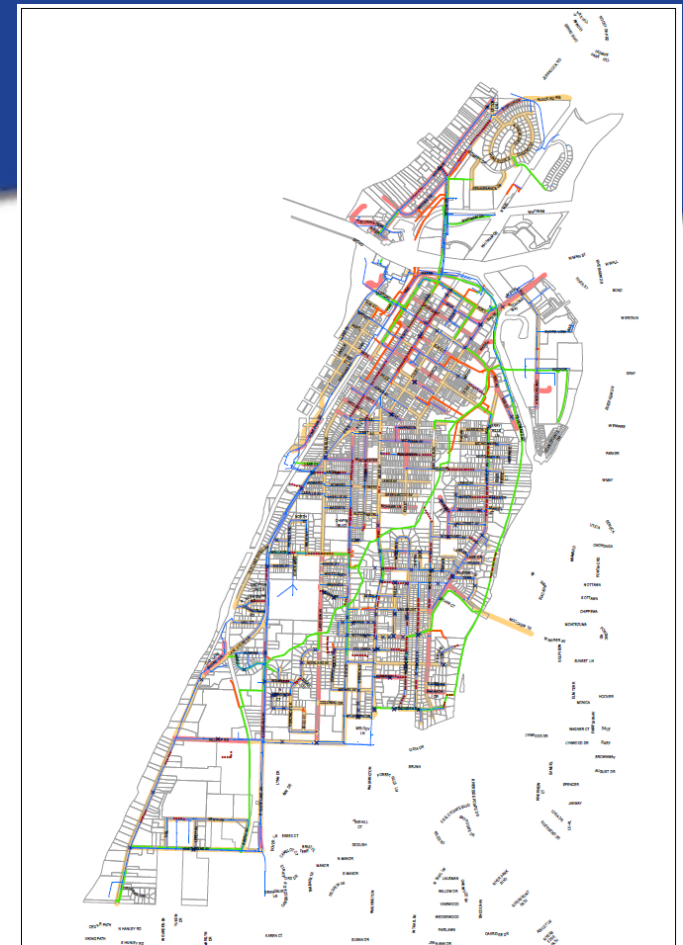
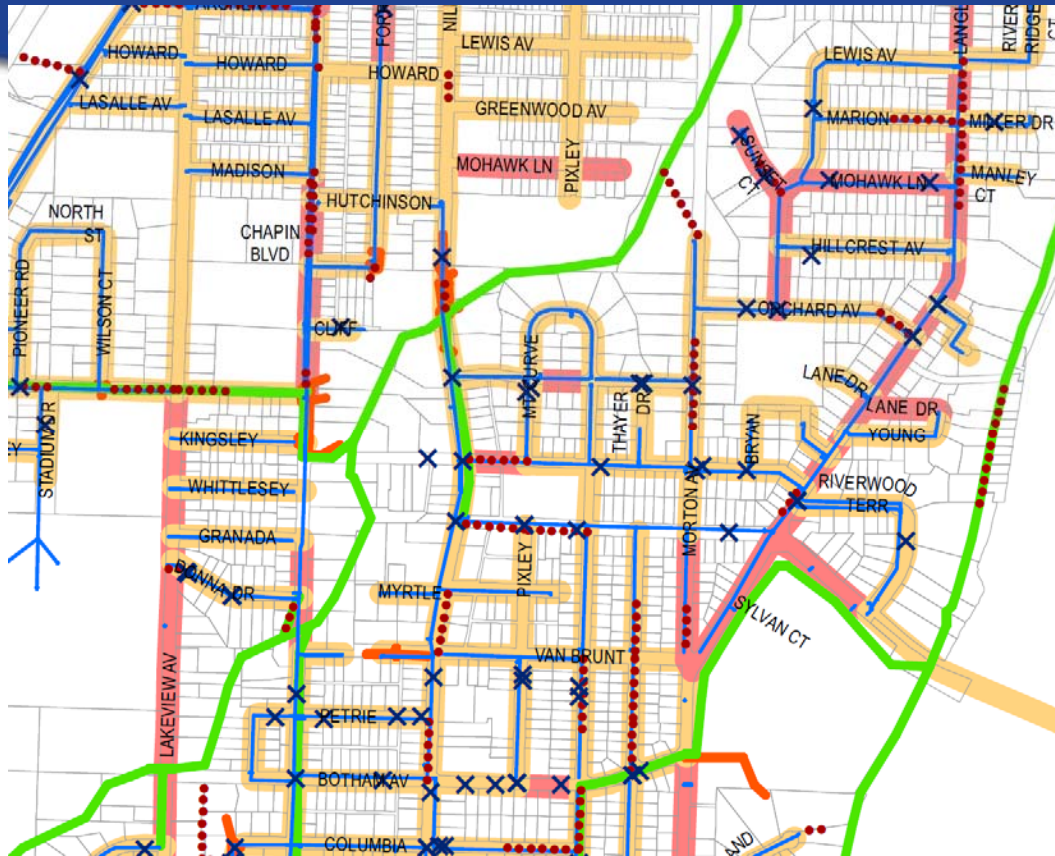
- 0
- 1
- 2
- 3
- 4
- 5



SAW Grant – 2nd Public Meeting: Consequence of Failure Maps



SAW Grant – 2nd Public Meeting: Criticality Maps



X Water_Main_Break_Locations

Sanitary Sewer Gravity Mains - Quick Codes

Trunc_Latest_Structural_Quick

..... 4

..... 5

Stormwater Gravity Mains - Quick Codes

Trunc_Latest_Structural_Quick

..... 4

..... 5

wMains - Install Date

Install Date

..... 1/1/1890

..... 1/1/1920

..... 1/1/1950

Sanitary Sewer Gravity Mains - Consequence of Failure

CofFailure

..... 4

..... 5

Stormwater Gravity Mains - Consequence of Failure

CofFailure

..... 4

..... 5

StreetPASER

LASTRATING

0: Not Rated

2: Very Poor

3: Poor

4: Fair

5: Fair

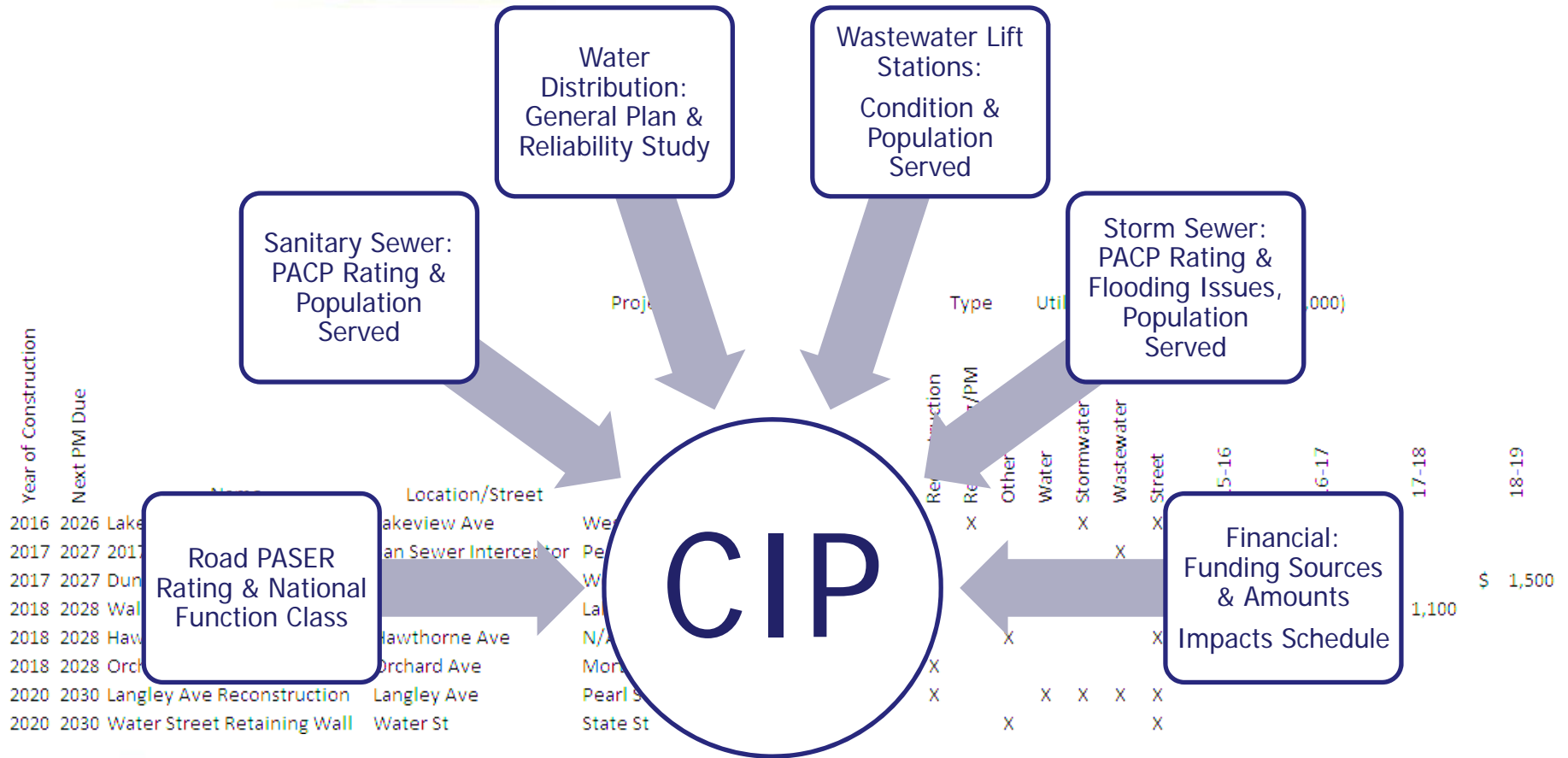
6: Good

7: Good

8: Very Good

9: Excellent

SAW Grant – 2nd Public Meeting Capital Improvement Program



SAW Grant – 2nd Public Meeting

Computerized Maintenance Management System (CMMS)

The screenshot displays the Cityworks web application interface. The main content area is divided into several panels:

- Work Order Panel:** Shows details for work order number 87, titled "New Install Water System Valve". Key information includes:
 - Description: New Install Water System Valve
 - Number: 87
 - Entity Type: WSYSTEMVALVE
 - Category: Water
 - Initiated By: MACDONALD, TOM (Date: 08/18/2016 2:38 PM)
 - Status: Open
 - Priority: Medium
 - Requested By: MACDONALD, TOM
 - Supervisor: GUESS, JIMMY
 - Submitted To: GUESS, JIMMY (Date: 08/18/2016 2:38 PM)
 - Projected Start: 09/12/2016 12:00 PM
 - Projected Finish: 09/14/2016 12:00 PM
 - Opened By: GUESS, JIMMY (Date: 8/25/2016 7:51:33 AM)
 - Actual Start: 09/12/2016 12:00 PM
 - Actual Finish: 09/14/2016 12:00 PM
 - Stage: Actual
 - Expense Type: Maintenance
- Location Information Panel:** Shows the work order address as "Wayne between Port & Ship" and location details: "In the road approximately 50 yds south of Port." It also includes Shop, Title Number, X Location (12,550,983.51), and Y Location (229,051.52).
- Assets Panel:** Lists assets for this work order. One asset is shown: WSYSTEMVALVE with Asset Id 0 and Asset Uid 0. A note indicates that pink rows indicate inventory still under warranty.
- Map Layer Fields Panel:** Includes a "Reset" button.
- Work Cycle Panel:** Shows repeat settings: Repeat: Never, Interval: 6 Months, From: Actual Finish Date, and Next Print Date: 9/12/2016.
- Details Panel:** Contains project, contract, and billing information, including a project tree and various checkboxes for legal billable, contractor billable, and update map.
- Related Work Activities Panel:** Includes sections for Service Requests, Inspections, Work Orders, and Permits, each with an "Add" button.
- Attachments Panel:** Features buttons for "Add attachments..." and "Remove all attachments".

On the left side, a "New User Panel" displays a list of work orders with columns for "Wo", "Description", and "Status". Work order 2190 is highlighted in yellow.



SAW Grant – 2nd Public Meeting Capital Improvement Program (CIP)

89 Projects identified so far, divided into bins of Years 1-3, Years 4-6 and Years 7 & beyond...there is more work to do.

Estimated Construction Start (Years)	Proposed Year of Construction		Project				Utilities/Scope			16-17			17-18			18-19			
			Name	Location/Street	From	To	Water	Stormwater	Wastewater	204 Street Improvement Fund			204 Street Improvement Fund			204 Street Improvement Fund			
										590 Sewer Fund (Incl. 460)	592 City Water Fund	TOTAL	590 Sewer Fund (Incl. 460)	592 City Water Fund	TOTAL	590 Sewer Fund (Incl. 460)	592 City Water Fund	TOTAL	
1-3	2017	N/A	2017 CSO Project	San Sewer Interceptor	Pearl St	DPW Entrance								\$ 825	\$ 38	\$ 863		\$ 589	\$ 589
1-3	2017	N/A	Guernsey Court Drainage Project	Guernsey Court	Mid-block	Dead End		X											
1-3	2017	N/A	Dunham LS Relocation	Dunham Ave	West of RR Tracks	East of RR Tracks			X			\$ 5	\$ 5	\$ 530	\$ 20	\$ 550		\$ 55	\$ 55
1-3	2017	5280	Hilltop Road Rehab	Hilltop Road	Lakeshore Dr	RR		X			\$ 103	\$ 440	\$ 543						
1-3	2018	N/A	Harrison Avenue Sewer Replacement	Harrison, Church, Jones, & Wayne St	Harrison & Church	Jones & Wayne			X		\$ 8	\$ 20	\$ 31	\$ 53	\$ 433	\$ 15	\$ 501		\$ -
1-3	2018	N/A	Telemetry at Lift Stations	All 10 Lift Stations	-	-			X				\$ -				\$ -		\$ -
1-3	2018	715	Wallace Avenue Resurfacing/Sewer Rehabilitation	Wallace Ave	Lakeview Ave	S State St.		X	X	X			\$ -				\$ -		\$ -
1-3	2018	1304	Wallace Reconstruction	Wallace Ave	Lakeshore Dr	Lakeview Ave		X	X	X	\$ 100	\$ 125	\$ 150	\$ 375	\$ 150	\$ 150	\$ 200	\$ 500	\$ -
1-3	2018	581	Water Street Retaining Wall Design	Water St	State St	Vine St							\$ -				\$ -		\$ -
1-3	2018	N/A	Morrison Channel Sanitary Crossing Redundancy Study	Sanitary System	-	-			X				\$ -				\$ -		\$ -
1-3	2019	N/A	2019 CSO Project - CSO storage	CSO 3 & 5	-	-			X				\$ -				\$ -	\$ 450	\$ 450
1-3	2019	1742	Anchors Way Drainage Project	Anchors Way	Harbor Isle Dr	Anchors Ct			X				\$ -				\$ -		\$ -
1-3	2019	1595	Slip Lining Project	Various Interceptor Connections	-	-			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			\$ -				\$ -		\$ -
1-3	2020	1162	Kingsley Ave Reconstruction	Kingsley Ave	Niles Ave	Morton Ave		X	X	X			\$ -				\$ -		\$ -
1-3	2020	1214	Morton Ave Reconstruction	Morton Ave	Orchard Ave	Kingsley Ave		X	X	X			\$ -				\$ -		\$ -
1-3	2018	N/A	CSO Compliance	N/A	-	-			X				\$ -				\$ -	\$ 56	\$ 56
1-3	2018	N/A	State Street Sanitary Sewer Retirement	State St	Elm St	Ship St			X				\$ -	\$ 8	\$ 8	\$ 16	\$ 150	\$ 115	\$ 265
1-3	2018	N/A	Alco Lift Station Renovation	Alco Lift Station	-	-			X				\$ -		\$ 25	\$ 25		\$ 335	\$ 335
4-6	2021	N/A	Lakeview Ave Drainage Project	Lakeview Ave	Lakeview Ave	Ravine			X										
4-6	2021	2500	Langley Ave Reconstruction	Langley Ave	Napier Ave	Marion Ave		X	X	X									
4-6	2021	2100	Langley Ave Reconstruction - 2	Langley Ave	Marion Ave	Pearl St		X	X	X									
4-6	2022	N/A	Hawthorne LS Renovation	Hawthorne Ave	N/A	N/A			X										
4-6	2022	790	Lester Ave Reconstruction	Lester Ave	Niles Ave	Willia Drive		X	X	X									
4-6	2022	1109	Willia Dr Reconstruction	Willia Dr	St. Joseph Dr	Highland Ave		X	X	X									
4-6	2022	686	Willia Dr Reconstruction - 2	Willia Dr	Highland Ave	Van Brunt Ave		X	X	X									
4-6	2022		Willia Dr Sanitary Sewer Replacement	Willia Dr	Columbia Ave	Botham Ave		X	X	X									
4-6	2022	710	Donna Drive Project	Donna Drive	Lakeview Ave	S State St.		X	X	X									
4-6	2023	686	Botham Ave Water Main Replacement	Botham Ave	S State	Niles		X	X	X									
4-6	2023	950	Morton Ave Reconstruction	Morton Ave	Kingsley Ave	Van Brunt Ave		X	X	X									
4-6	2023	581	Water Street Retaining Wall Renovation	Water St	State St	Vine St													
7 & Beyond	2024	333	Willia Dr Water Main Installation - 3	Willia Dr	Napier Ave	Kingsley Ave		X	X	X									
7 & Beyond	2024	2006	Wolcott Ave Reconstruction	Wolcott Ave	Pixel Ave	Langley Ave		X	X	X									
7 & Beyond			Anchors Court Drainage Project	Anchors Ct	Anchors Way	End			X										
7 & Beyond		1320	Division St. Reconstruction	Division St.	St. Joseph Dr	Gard Ave		X	X	X									



SAW Grant – 2nd Public Meeting Capital Improvement Program (CIP)

- Over the coming days, the CIP projects will be further refined into Years 1-3, Years 4-6, Years 7-9, Years 10-14 and Years 15-20
- This information will be used to prepare financial scenarios to fund the projects.
- Intent is to have the full Capital Improvement Plan with potential impacts to rates and taxes for the third and final public meeting in mid July.



Public Information Meeting #2 – SAW Grant

Thank you for attending today!

Public Information Meeting #3 will likely be
in mid July 2017

