

Memorandum

Date: December 16, 2020

To: Mr. Jim Cornell

Company: City of Kalamazoo

From: Prein&Newhof

Project #: 2180207

Re: City of Kalamazoo SAW Grant: Summary of Stormwater Asset Management Plan

This memorandum provides the summary of the City of Kalamazoo stormwater asset management plan SAW grant activities required under Section 603 of Public Act 84 of 2015. Headings and italicized quotes are from EGLE guidance.

Grantee Information

Grantee:
 City of Kalamazoo
 241 West South Street
 Kalamazoo, MI 49007

<https://www.kalamazoocity.org/>

Contact: Mr. James Ritsema, City Manager
 Phone: (269) 337-8047

SAW Grant Project Number: 1462-01

Executive Summary

The City of Kalamazoo received a SAW Grant in December 2017 to prepare Wastewater and Stormwater Asset Management Plans. The Grant agreement indicated the following amounts:

Project Total	Grant Amount	Local Match
\$2,000,000	\$2,000,000	\$0
Project Total	Wastewater Costs	Stormwater Costs
\$2,000,000	\$1,358,936	\$641,064

The Key components in the Asset Management Plan include:

1. Asset Inventory and Condition Assessment
2. Criticality of Assets
3. Level of Service
4. Operation and Maintenance Strategies/Revenue Structure
5. Long-term Funding/Capital Improvement Plan

Asset Inventory

“Describe the system components included in the AMP. Discuss how they were located and identified, if applicable. Describe the platform used to develop and maintain the inventory of assets.”

All assets that are functionally or financially significant to the stormwater system have been inventoried. Manhole, catch basin, sewer pipe and leaching basins locations were plotted in a Geographic Information System (GIS) using record drawings, aerial imagery, and land contours. Locations were field verified and locations adjusted with survey grade Global Positioning System (GPS) coordinates.

Asset inventory data for storm sewers, including year of installation, material, sizes, pipe inverts and manhole rim elevations were cataloged from record drawing and visually verified where needed. Asset inventory data is managed using GIS databases.

Condition Assessment

Discuss the condition assessment process, including what methods were used. Summarize the results of the assessment for each asset category.

Storm Sewer Pipes: Inspections were made using either a pole mounted zoom camera (looking up or down each pipe from the manholes) or with in-line closed circuit television (CCTV) cameras. Pipes inspected with zoom camera methods were rated considering any observable roots, deposits, joint conditions, pipe wall condition, or other defect observations. Pipes inspected with CCTV were rated using the Pipeline Assessment Certification Program (PACP) system condition grading system. Composite Risk of Failure ratings of 1-5 were derived for each pipe.

Percentage of gravity sewer pipes in each rating category

1	2	3	4	5
48%	42%	10%	0%	0.1%

Manholes and Catch Basins: Manholes and catch basins were visually inspected and rated on a scale of 1-5 based on factors related to the condition of castings, steps, structures, and sediment.

Percentage of structures in each rating category

1	2	3	4	5
73%	9%	16%	2%	0%

Criticality of Assets

“A summary of the method used to assess the criticality of assets considering the likelihood and consequence of failure. Discussion may include the method used to assess the criticality of assets considering the likelihood and consequence of failure and based on the condition of the assets and the determined risk tolerance, how were the assets ranked.”

Assets were given a Risk of Failure (RoF) rating of 1-5 (5 being the worst) based on factors related to both physical and functional conditions as determined through condition assessments. Assets were given a Consequence of Failure (CoF) rating of 1-5 (5 being the worst) based on potential damage to adjacent utilities, transportation network, and the surrounding property/environment.

Criticality ratings were calculated as the product of an asset’s RoF and CoF, producing criticality ratings ranging from 1-25 (25 being the most critical).

Level of Service Determination

“A summary of the level of service goals the municipality has determined that it wants to provide its customers based on the municipality’s ability to provide the service and customer expectations. Discussion may include the procedures used to involve stakeholders in the level of service discussion. The trade-offs for the service to be provided. This could include any technical, managerial, health standard, safety, or financial restraints, as long as all regulatory requirements are met. How the level of service goals were determined”

The City recognizes that the people served by the system are more than customers, they are the system owners. City staff acts as stewards of the system. The City has held workshops with the City staff. At these meetings, the results of the condition assessments were discussed, the costs for various operations, maintenance and replacement strategies affecting the levels of service were reviewed along with potential costs. Based on the input received during these meetings, the following Level of Service Goals has been established:

1. Meet Regulatory Requirements
2. Minimize Flood Risk

3. Minimize Public Hazards
4. Manage Stormwater Discharges into the Wastewater System
5. Support Community Growth and Development
6. Maintain Water Quality
7. Minimize Life Cycle Costs

Revenue Structure

“A summary of the funding structure and rate methodology that provides sufficient resources to implement the asset management program. Discussion may include the rates, charges, or other means of revenue were reviewed to determine if there will be sufficient funds to cover system operation, maintenance, replacement, capital improvement projects, and debt costs, identified in the AMP. If the current rate structure was not sufficient, discuss what increases were needed to ensure the desired level of service is sustainable and if any changes were made.”

Stormwater system improvements are funded with street improvements through the City’s general fund. Project costs were estimated for capital improvements within the first 10 years. Future costs beyond the 10 year capital improvement plan were projected using inventory and condition assessment data.

Capital Improvement Plan

“A summary or the long-term Capital Improvement Plan that was developed to address system needs identified in the AMP.”

A capital improvement plan showing project descriptions, cost estimates, and project timelines, was developed for the capital improvements needed within a ten year planning period. The stormwater system projects identified in the CIP are:

- Remove utility penetrations from 10 pipes
- Reconstruct storm sewer on Pitcher St.
- Complete 6 point repairs at various locations
- Rehab Vandersalm Dewatering Lift Station
- Continue detailed review of the Paterson Ave. Area storm sewer capacity and improvement options

List of Major Assets

“Provide a general list of the major assets identified in the AMP.”

Kalamazoo’s major assets include:

- 1,214,767 feet of 4” to 120” diameter storm sewer
- 17,507 feet of culverts ranging from 12” diameter to 264” width box
- 16,185 storm structures
- 419 outfalls
- 7 retention basins