

Office of the City Engineer

John C. Rooney, P.E.

Assistant Commissioner of Public Works/
City Engineer



City Hall
730 Washington Avenue
Racine, WI 53403
262-636-9191
Fax: 262-636-9545

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To: Alderman McCarthy, Chairman
Public Works & Services Committee

From: John C. Rooney, Asst. Commissioner of Public Works/City Engineer *JCR*

RE: 0890-16
2016 Sanitary & Storm Sewer Management System Summary Report

This item pertains to the Storm & Sanitary Asset Management System Summary Report through 12/31/2015 submitted to the City of Racine. AECOM Technical Services was hired by the City of Racine to assist the City Engineer's Office in inspection and assessment of this annual work. The City of Racine uses Pipeline Assessment and Certification Program (PACP), the US industry standard system for coding sewer defects. This is done via Closed Circuit Televising (CCTV) to visually inspect assets and inventory defects. In late 2015 and early 2016 the City Engineer's Office utilized Electro-Scan technology to assess and identify Inflow/Infiltration reductions in the Sanitary Sewer system. The City owns and operates a sanitary sewer collection system comprised of over 4,200 manholes/structures and over 1 million feet of sewers. This collection system does not include assets owned by the Racine Wastewater Utility such as lift stations, force mains, and interceptor sewers. The City's storm sewer collection system includes 6,700 catch basins/inlets, over 4,200 manholes and nearly 1.2 million feet of sewers and inlet leads.

Today, in 2016 dollars, the City of Racine sanitary and storm sewer network has an approximate initial investment value (or replacement value) of almost \$225 million and \$380 million, respectively. The PACP coding is used to determine which types of rehabilitation strategies (relining, spot repair, total replacement, etc.) provides the most cost effective way to extend the useful life of sewer networks. With the 10 year program complete in 2013, the City Engineer's Office has started another 10 year program to re-CCTV all sewer assets in concentrated areas that did not require rehabilitation or replacement. Much like pavement management, sewer inspection will be an ongoing effort to prioritize work and perform capital planning. In the 12th year (ending in 2015) of the inspection program, over 120% of the sanitary sewer system and 115% of the storm sewer system has been inspected via CCTV. This includes the inspection of sanitary & storm manholes, as well as catch basin/inlets. On average, 117% of the entire sewer system has been inspected resulting in a backlog of nearly \$42 million (\$15 million sanitary & \$26.4 million storm) of necessary rehabilitation or replacement. Adding to that cost, engineering & construction management, the backlog is closer to \$59 million. To address this backlog, the City should be investing \$4.2 million annually in capital improvement (\$2.1 million in sanitary over 10 years & \$2.1 million in storm over 18 years). In the 2017 proposed budget, the sanitary and storm capital investment is \$2.02 million and \$1.98 million, respectively.

The Storm Water Utility also must fully fund all operations such as street sweeping, leaf collection, catch basin cleaning, storm retention, engineering, administration; as well as capital for equipment & projects for Best Management Practice devices and stream bank restoration. In addition, the Sanitary Sewer Maintenance Fund pays for maintenance and repair of over 28,000 laterals and tri-annual cleaning of nearly 54 miles of sanitary sewer mains.

The report becomes a useful budgeting tool in managing the City of Racine's sewer assets. The City of Racine's overall story based on sewer asset management is the following:

- Updated, complete, accurate inventory of assets
 - GIS data and mapping
 - Easily accessible to users (engineers, public via CUI)
- Timely application of appropriate CIP actions
- Reducing the backlog of required improvements
 - Structural problems
 - Inflow/Infiltration problems
- Coordinated planning with street paving
 - Reduces open cuts of new streets
 - Effective operation of collection system
 - Regular cleaning
 - Optimizes flow conditions
 - Reduces backup potential
 - Proactively addressing problem areas

This result provides sound budgeting consistent with good asset management practices. It is my recommendation that the committee receives and file the report.