

SAWS SSO REDUCTION PROGRAM REMEDIAL MEASURES

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1. Background/History

- Water & Wastewater for the 7th largest city in the nation
- 350 miles Large Diameter & 4,850 miles of Small Diameter
- 100,000 manholes, 300 siphons and 80 miles of force mains
- 156 Lift Stations & 3 Treatment Plants

2. Consent Decree

- Consent Decree (CD) lodged in 2013 with TCEQ, EPA & Department of Justice
- 4 Major Phases of the CD:
 1. Assess: High Risk Pipe and capacity constraints (2013-2016)
 2. Plan: Alternative analysis to determine remedial measures (2017 & 2018)
 3. Report: Submit Remedial Measures Plan identifying the CIP projects (2019)
 4. Rehab: Complete construction of projects by 2023 (ongoing)

3. Assess

In the first 4 years of the CD, SAWS was required to perform both a Capacity and a Condition Assessment to help identify areas within the system that have caused or significantly contributed to previous SSOs, and/or likely to cause or significantly contribute to the future occurrence of SSOs.

SAWS utilized closed circuit television (CCTV) and Pole Camera to complete the Condition Assessment of the “High Risk Pipe”. Each pipe was assessed and rated “A-E” with “E” being very poor. The CD requires SAWS to address all “E” rated pipe in the Remedial Measures Plan. The Capacity Assessment was completed using data obtained from flow meters, field verifications and evaluation of the hydraulic model of our system. All confirmed capacity constraints (where the pipe is not large enough to carry flows without surcharging) must be addressed in the Remedial Measures Plan.

4. Plan

The Planning Phase includes Alternative Analysis to identify the best option to remediate the structural defect or capacity constraint. SAWS will select the most practical solution to resolve, considering both long-term performance and the life-cycle cost. Projects will be prioritized and scheduled to include cost forecasting.

SAWS has 3 major basins and hired 2 Basin Planning Consultants (BPCs) to evaluate and plan projects using a basin-wide, holistic view. There are two phases to the BPC Project: 1) 10% Design: Evaluate alternatives and complete a preliminary design. Provide a recommendation to SAWS on the “best” alternative, and 2) 30% Design: Conduct field verification and evaluation and complete 30% Design on the SAWS selected alternative.

The goal of the BPC is to complete all work within 18 months, identify the best alternative and ensure all projects are buildable, operable and maintainable (no fatal flaws, hydraulics work, etc.). The BPCs will evaluate how we fix the problems identified (repair, replace, rehab, reroute or store).

During the Planning Phase, SAWS implemented an aggressive Inflow and Infiltration Reduction Program. The purpose of this Program is to address a major issue adversely affecting our system during heavy rains. The program is comprised of 3 components: 1) Flood Plain Analysis, 2) Windshield Survey, and 3) Manhole Lid & Frame Leakage Testing. This Program is significant as the BPC are designing project based on a 30% inflow reduction.

5. Report

SAWS must be completed with the Assessment Phase by July of this Year. We are required to submit the results in a Condition and a Capacity Assessment Report to EPA on January 22, 2018. One year later, SAWS is required to submit the Remedial Measures Plans for both Condition and Capacity. The Plans will include a listing of all assets included in each Project, the remedial measure selected and the timeframe to complete the project. These Plans will commit SAWS to build the projects identified, without changes, by 2023.

6. Rehab

SAWS is required to rehab all condition defects in very poor condition and all confirmed capacity constraints. All projects must be completed by 2023, or 2025 if it is a Large Diameter pipe with an easement issue.

Currently, SAWS has the following Projects:

- 7,500 LF upsize 12-inch thru 36-inch project along Apache Creek \$5.8M
- 4,400 LF of 60-inch rehab along Broadway: \$7.6M
- 3 miles of 48-inch (2 segments) upsize to a 78-inch along Salado Creek \$41M

7. Program Effectiveness

SAWS started 2016 well, then the rains hit and we experienced the highest recorded rainfall for the month of May, conversely, when we did not have elevated rainfall, in October and November we had a new monthly low. Our Operations & Maintenance programs are successful as confirmed by the downward trend of SSOs caused by grease, debris and roots.

The rainfall in the last 2 years has increased considerably and with it SSOs associated with rain events. These are known capacity constraint areas and either have a current CIP project or it is being reviewed by the BPCs to perform Alternative Analysis and design through 30% the remedial measures selected by SAWS. We are confident that SSOs caused by rain events will significantly be reduced after the projects are completed.