EPA Consent Decree – Taming the Condition Monster

Summary Abstract
The San Antonio Water System (SAWS) is under a federal consent decree to reduce sewer overflows. This paper will describe how SAWSs infrastructure was inspected, rated, and rehabbed. It will also describe the tools created for SAWS to quickly rate their pipes and assign a rehab method.

Abstract
The San Antonio Water System (SAWS) serves more than 1.6 million people and over 411,000 wastewater customers in the greater San Antonio area within Bexar County, and parts of Medina and Atascosa Counties. In July 2013, the Environmental Protection Agency mandated a Consent Decree (CD) to be lodged between SAWS, the United States of America and the State of Texas. Thru this CD SAWS has committed to perform system wide condition and capacity assessments of their Wastewater Collection System (WCS).

As part of the consent decree, SAWS was responsible for inspecting all concrete and clay assets that were installed prior to 1972 and developing a plan for the assets in need rehabilitation. This included 1,870 miles of small diameter pipe and 350 miles of large diameter pipe. The plan included methods to rate, sort, assign and package these assets. Assets were given a condition score based on defects present during CCTV inspection. Pipes in poor condition were assigned to Basin Planning Consultants (BPC). Freese and Nichols (FNI) is the BPC for the Central Basin and was tasked with developing a remedial measure (i.e. replace in place, pipeburst, slipline, etc.) for 139 miles of small diameter and 25 miles of large diameter assets.

SAWS and the BPCs developed a Risk Based Assessment (RBA) methodology to assign a risk score to each asset. The RBA methodology was incorporated into the Innovzye InfoMaster asset management software by the BPCs. FNI loaded the CCTV inspection data of the assigned assets into InfoMaster and developed condition, criticality, and risk matrix parameters within the software. The InfoMaster software risk scores to be quickly assigned to assets.

In addition, FNI utilized the Rehabilitation Decision Tree module to quickly assign a remedial measure to each asset based on factors such as depth, diameter, and condition defects. This served as a first pass in the 10% design phase. The asset was then assigned a remedial measure based on engineering/professional judgement. Assets will be packaged for design and construction based on risk, size, location, and proposed rehab method.

This paper will focus on the monumental task of inspecting so many miles of pipe, the difficulties in assigning condition scores, and utilizing InfoMaster to assign risk scores and
remedial measures to each asset. FNI and SAWS are working together to ensure the integrity of
the WCS.

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