Collection System Assessment, Renewal & Replacement

CRW received ownership and operational responsibility of the City of Harrisburg's Sewer (combined and separate) Collection System in late 2013. While record drawings were provided with the transfer, there was no documentation of system operation and maintenance, condition information or operations staff. At the time, the system was experiencing frequent catastrophic failures creating sinkholes throughout the City. In addition to addressing the emergencies, CRW contracted a system wide manhole inspection program that included zoom camera inspection of all pipes in each manhole. The program was necessary for overall risk assessment as well as development of geographic information system (GIS) mapping of system connectivity for H/H model development. All supporting information has been shared with EPA and PADEP. The overall assessment of the cost associated with rehabilitation needs of the system based on that rapid assessment was approximately $100MM over the initial 20-year planning horizon.

On a parallel track, CRW developed internal assessment capacity. We acquired robotic closed circuit televising (CCTV) camera equipment and qualified staff to respond to service requests (sewer back-ups, sinkholes, etc.) and systematically assess the system. Internal assessment has been supplemented with contracted services, and present estimate is 60% (Jess/Claire to correct value) of the system has been televised. CCTV findings have supported the initial system assessment.

All inspected pipes are coded according to the industry standard NASSCO Pipeline Assessment & Certification Program (PACP) to document structural and O&M defects. Applying uniform Conditional Assessment criteria, business risk exposure (BRE) scores are assigned to each of the inspected pipes based on a variety of PoF (Probability of Failure) and CoF (Consequence of Failure) factors. All condition information is logged and maintained in CRW's Cityworks system and appropriate child work orders are generated (also within Cityworks). Pipes are then grouped into projects based on urgency, location and other practical matters (i.e., coordination with complementary City of Harrisburg Streets projects), followed by engineering design and construction of the recommended improvements. (Spreadsheets capturing current project work orders is attached). As discussed, CRW is also sharing the bid tabulation for our most recent PENNVEST funded sewer rehabilitation project (2021Sewer System Improvements Project, bids received 7/8/2021).

CRW is in the process of formalizing a comprehensive Collection System Asset Management Program, anticipated completion by the end of 2022.