

“Lesson Learned 20 Leagues Under the Lake”

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Underwater exploration rarely includes locating sewer pipes to facilitate placement of submerged maintenance holes for future cleaning and rehabilitation options. Eight miles of mainline and central trunk sewer collects flows from service collection manholes circling Lake St. Louis in Missouri. Abandonment options were financially unacceptable so the Utility initiated a locating and CCTV condition assessment program to better establish the system reliability. IPI from Tumwater (Seattle) Washington was selected as the contractor to find, inspect, and report on the condition of the ductile iron sewer pipe placed before the lake was created.

Inuktun provided an 8 inch (200mm) diameter articulated crawler to CCTV the lines into the lake. A new portable CCTV crawler by Deep Trekker allowed pipe access from the waterfront yards of over 40 homeowners.

Extremely long pipe lengths required the Utility to install maintenance structures to minimize risk of catastrophic failures causing significant environmental and social damage. Because no historic as-built records existed, various locating systems were deployed to map the pipe under 20 feet of water and 15 feet of lakebed. Significant engineering design enabled the dive contractor to anchor the buoyant structure to bedrock and utilize temporary watertight access shafts to reach the lakebed level access structures.

This presentation reveals the locating systems and results and engineering aspects of this unique project as well as the many “firsts” achieved by IPI.