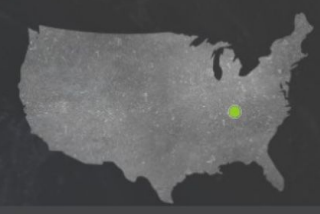
SECOND CREEK TRUNKLINE REHABILITATION

WARREN'S EPOXY COATING SAVES KNOXVILLE UTILITIES BOARD 157 MILLION GALLONS OF EXTRANEOUS WATER TO TREAT EACH YEAR

CLIENT TYPE
MUNICIPAL

MARKET
WASTEWATER

LOCATION
KNOXVILLE, TN



AT A GLANCE
HIGH-TRAFFIC AREA
I&I
MITIGATED RISK
STRUCTURAL REINFORCEMENT
TRUNKLINE REHABILITATION

PRODUCTS USED
301-14 HIGH PERFORMANCE EPOXY
151-HG HYDROPHOBIC GROUT

PUBLICATIONS
EPOXY COATING PROVIDES LESS IMPACTS, RISK FOR SECOND CREEK TRUNKLINE REHABILITATION

The Knoxville Utilities Board's (KUB) identified the Second Creek Trunkline as needing extensive rehabilitation and replacement work. Inspection revealed significant structural defects and a massive 'gusher' that was allowing 300 gallons of water per minute to enter the trunkline. This calculates to 432,000 gallons per day or 157 million gallons per year of extraneous water to convey and treat. The 1,350 LF trunkline is located along the flow path of Second Creek near its mouth to the Tennessee River. The team believed that either Second Creek or spring was the source of the gusher.

The trunkline generally follows the city of Knoxville's Second Creek Greenway as it bisects the University of Tennessee (UT) campus. Additionally, the trunkline is located between two heavily traveled state routes near downtown Knoxville. UT's Neyland Stadium hovers over the project site. Its events could not be disrupted in any way. All work had to consider UT, the city of Knoxville, and TDOT.

KUB and their consulting engineer worked to identify solutions that would address the leaking and structurally deficient trunkline. They developed a matrix and weighted scoring system to analyze the alternatives based on cost; public impacts; lifecycle (operations and maintenance requirements as well as product life expectancy); schedule for easement acquisition, permitting and construction; and constructability.

A spray-on lining system served as the best solution for meeting the project needs, and the team selected Warren Environmental's non-hazardous, high-build, single-coat epoxy system for the project. This recommended alternative set itself apart with less risk during construction, less public impacts, and fewer schedule impacts.

Challenges the team overcame during construction included partially collapsed sections and severely deteriorated inverts in the conveyance system as well as the steps required to stop infiltration before application. The project required point repair of the trunkline with Warren's 151-HG hydrophobic injection grout. Our injection grout is well suited for filling large cavernous spaces and cutting off gushing water of high pressure and speed.

PHOTOS

BACK TO CASE STUDIES

WARREN ENVIRONMENTAL

ISO 9001:2015

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