DC Clean Rivers Project

Owner:
DC Water
Washington, DC

Client:
Greeley and Hansen

Role:
Program Management
Contract Procurement
Preliminary and Final Design
Design Management
Construction Management

Key Characteristics:
- $2.7B Program to significantly reduce CSOs
- 18-miles of 15 to 23-ft dia.100 to 170-ft deep CSO tunnels
- Over 20 Drop Shafts ranging from 35 to 55-ft dia.
- Pumping Station and Screening Shafts with diameters of 70-ft and 132-ft
- Design-Build, Design-Bid-Build and CMAR Project Delivery Methods

Professional Services:
From: January 2016
To: Present
(personnel involvement since 2008)

The DC Clean Rivers project is being constructed to reduce combined sewer overflows (CSOs) into the Anacostia and Potomac Rivers, and Rock Creek. Additionally, components of the project target the reduction of flooding in certain District of Columbia northeast boundary neighborhoods. The DC Clean Rivers project includes combined sewerage storage tunnels as well as green infrastructure solutions to reduce total CSOs.

Assembly of the Blue Plains Tunnel TBM

The project comprises approximately 18 miles of soft ground, mixed face, and rock tunnels between 100 to 170 feet in depth. Tunnels range from 15 to 23 feet in diameter and traverse beneath the Potomac and Anacostia Rivers as well as beneath federal, district and private properties. Drop shafts to take combined sewer and storm water flows to the tunnel level are 35 to 55 feet in diameter. At the project's tunnel terminus are two larger diameter shafts of 70 and 132 feet in diameter which house the Grit and Screening Removal Shaft and Tunnel Dewatering Pump Station, respectively. Near-surface facilities designed to divert flows from the combined sewers to the drop shafts are in postage-stamp sized sites throughout the District of Columbia. The DC Clean Rivers project possesses some of the nation's most challenging tunneling work, with an aggressive schedule, in an unrelenting urban environment.

The DC Clean Rivers Project comprises multiple contract delivery methods, including design-bid-build, design-build, and Construction Management at Risk (CMAR) delivery. Four of the Program's five major tunneling projects have been successfully procured using design-build delivery. The Program's five tunnel projects include the following:

- Blue Plains Tunnel $330M Completed in 2015
- First Street Tunnel $158M Completed in 2016
- Anacostia River Tunnel $254M Completed in 2017
- Northeast Boundary Tunnel $579M Completion in 2023
- Potomac River Tunnel Prelim. Design Completion 2030

As part of the Program Consultants Organization, JCK Underground is assisting DC Water to implement and execute the DC Clean Rivers project. Currently, JCK Underground provides a wide range of services for the project including: design management and construction management for the Northeast Boundary Tunnel; structural and geotechnical design reviews; preliminary and final design for the Potomac Tunnel; and program-wide tunneling, deep excavation and trenchless expertise. Previously, JCK Underground's personnel functioned to: develop novel procurement strategies; plan and manage geotechnical investigations; establish program-wide protocols for protecting third party structures, mitigate risk through design and contracting strategies, and formulate bid documents for construction contracts for the Blue Plains Tunnel, Anacostia River Tunnel, First Street Tunnel and Tingey Street Microtunnel Projects.

The DC Clean Rivers Project has won over a dozen national and international awards, such as:

- Engineering News Record (ENR) Global Best Award of Merit for Water/Wastewater Project 2018: Anacostia River Tunnel
- International Tunneling Association and Underground Space (ITA) Sustainability Award 2017: Anacostia River Tunnel
- American Concrete Institute Award of Excellence for First Street Tunnel Project 2017
- Breakthroughs in Tunneling 2017 Tunnel Achievement Award 2017: Blue Plains Tunnel
- American Council of Engineering Companies National Recognition Award 2016: Tingey Street Diversion Sewer
- Engineering News Record (ENR) Best of the Best Project of the Year 2016: Blue Plains Tunnel
- Engineering News Record (ENR) Best of the Best Water/Environment Project of the Year 2016: Blue Plains Tunnel

"JCK Underground is a very professional and reliable firm that never hesitated to go the extra mile for the good of our program."

Carlton Ray, DCCR Program Director

First Street Tunnel – V Street Drop Shaft and Diversion Facilities