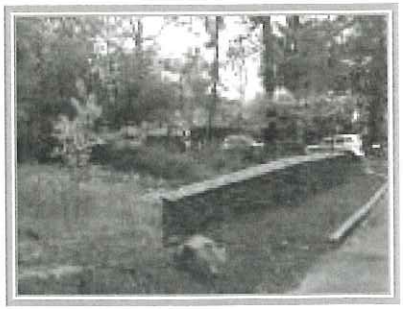
CONSTRUCTION ACHIEVEMENT PROJECT OF THE YEAR AWARD

In recognition of excellence and the unique application of civil engineering principles



Project
Annadale Road Storm & Sanitary Sewers and Stream Restoration BMP

Contractor
DiFazio Industries, Inc.

Owner
New York City
Department of Design and Construction

New York City Department of
Environmental Protection

Resident Engineers
AECOM USA
NYCDDC

The New York City Department of Design and Construction (NYCDDC) partnered with the New York City Department of Environmental Protection (NYCDEP) on a $14 million capital construction/improvement project on Annadale Road, Arden Avenue and adjacent streets in Staten Island, New York.

The primary purpose of the project was to improve the overall quality of water in two ways. The first was to permit homes in the project area to connect to the city's sewer system via newly installed sanitary sewers, breaking away from their reliance on septic tanks, which often fail and seep into the groundwater, degrading the overall groundwater quality. The second was to prevent the frequent flooding that occurred in the streets after rain events by directing storm water from a newly constructed conventional storm water system into a newly constructed Best Management Practice Area (BMP), BMP-SB5, in the Sweet Brook watershed area.

A total of 136 homes were connected to the new sanitary sewer line that was installed as part of this project. This was achieved by installing 7,275 feet of ESVP sanitary sewers on piles, which ran under the center of most streets, and extending lateral house services from the sewers to homes under the sidewalk of each property. The house services were placed where homeowners would incur the lowest costs when connecting to the City's sewer system following a detailed survey of each property. A total of 3,100 feet of lateral connections were made.

Storm water is now directed into the natural drainage corridor via conventional methods (catch basins, connections, manholes, chambers and various diameter ESVP, RCP, FTRC and HERC storm sewers on piles) at relatively high velocities. In order to accommodate and slow this water down so it can be properly filtered through sedimentation and biological processing, the project included the restoration of 600 linear feet of stream channels, the installation of larger culverts along Grantwood

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Avenue, and the grading and stabilization of a 3-acre adjacent floodplain with native and new plant species. The new channel and floodplain will temporarily retain storm water during heavy rain, and combined with the culvert, will reduce downstream street flooding. The BMP has the capacity to remove up to 90% of the Total Suspended Solids (TSS) in the storm water before it is released into Sweet Brook. Headwalls and retaining walls were also constructed.

The goal was to create a more functional natural drainage system to convey, store, and filter storm water by combining conventional storm sewers and BMPs, creating an integrated storm water management system.

Additional project work included the installation of 4,600 linear feet of storm sewers on piles, some via microtunneling, 67 catch basins and connections, replacement of 3,850 linear feet of water mains, 23 fire hydrants, and 28,025 square yards of new roadway.