ANNE ARUNDEL COUNTY DEPT OF PUBLIC WORKS, BUREAU OF ENGINEERING DIVISION,
WATERSHED PROTECTION AND RESTORATION PROGRAM

Cinnamon Lane Outfall Rehabilitation

Parole, Maryland

Initial conditions

Continued implementation of this creative approach to rehabilitating eroded outfalls results in incremental steps toward reaching TMDL and MS4 goals while protecting constituents' property and enhancing local ecology.

Unmanaged discharge from a network of stormwater outfalls was eroding residential property in a neighborhood located not far from the banks of the South River, which flows to the Chesapeake Bay. To treat the unmanaged stormwater and stabilize the erosion along the outfall drainage paths, in addition to protecting the community's infrastructure and property, Biohabitats developed a design to rehabilitate the outfall channels using a regenerative stormwater conveyance approach. The implementation of this project will result in credits for the County toward their Chesapeake Bay Total Maximum Daily Load (TMDL) goals and National Pollutant Discharge Elimination System (NPDES) municipal separate storm sewer system (MS4) permit requirements.

Biohabitats began by conducting hydrology and hydraulic modeling, environmental resources inventory, and a limited Environmental Assessment. Century Engineering provided topographic survey, performed a desktop property evaluation to determine property ownership and parcel and easement boundaries, and the prepared easements. Biohabitats evaluated the streambed profile, baseflow water surface and floodplain elevations, and prepared schematic design options for treatment of the unmanaged stormwater. The proposed schematic designs were developed to meet the project goals of providing treatment of the unmanaged stormwater along the ephemeral portions of these outfall channels, while designing stable conveyance along the entire length of both outfall channels. The selected schematic designs involved the abandonment and removal of failing drop structure infrastructure along the main outfall drainage path, minimized impacts to existing natural resources, and met all the design criteria for regenerative step-pool stormwater conveyance, thus allowing the County to gain credits toward their TDML and impervious area treatment goals.

As part of the final design process, Biohabitats conducted a field meeting with permitting agency staff, and prepared and submitted all permit applications. Project completion involves assistance with contractor procurement and working with the County's Arlington Echo Outdoor Education Center to create a planting list that incorporates appropriate native and endangered native species.

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