

## 4,100-ft HDD Completed - Design by Brierley Associates, Anne Arundel County, MD

Nick Strater, PG

The Mayo Water Reclamation Facility operated by Anne Arundel County receives septic tank effluent via a pump station system from Mayo peninsula residents. Unfortunately, the service area has reached capacity and the County imposed a moratorium on future development.

GHD was selected by Anne Arundel County to assist with alternative analysis, project planning and design. GHD in-turn subcontracted with Brierley Associates to assist with trenchless concept development and design.

The approved selected alternative involves construction of approximately 28,000-ft of new force main to convey wastewater from the Mayo area northward to the existing Annapolis Water Reclamation Facility (WRF). Once the new force main is in service, the Mayo WRF will be converted into a regional sewer pumping station.

Due to the length of this project, construction has been divided into seven separate contracts. The first of these contracts (shown in bright green on the map below) is the 4,100-ft alignment beneath the South River. Given the sensitive ecosystem, Horizontal Directional Drilling (HDD) was selected as the mean to install this first section.



Brierley Associates led the HDD design team that was challenged by subsurface ground conditions consisting of deep, very soft soils. To mitigate the potential of inadvertent drill fluid losses, a bore depth of over 100-ft deep below river bottom, was chosen. Through our design analysis we selected 24-in diameter, DR-7 HDPE that was capable of withstanding the installation forces.

Carson Corporation of Lafayette, NJ was awarded this important project and commenced drilling on October 30, 2015 with the final pull completed on December 15, 2015. While completing the bore, Nick Strater and Tom Pullen of Brierley Associates provided on-site field services.

To minimize disturbance to adjacent residents, HDD will be deployed to install the majority of the remaining sections that range from about 1,100-ft to 3,000-ft in length. Given the variable subsurface conditions both DR-9 and DR-11 HDPE will be used.



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