



North American Society for Trenchless Technology  
2007 No-Dig Conference & Exhibition



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San Diego, California  
April 15-20, 2007

Paper A-3-04

## DESIGN AND RISK MANAGEMENT FOR A PROJECT INVOLVING MULTIPLE HDD CROSSINGS

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**ABSTRACT:** The Neptune Regional Transmission project involves the installation of approximately 47 miles of high voltage, direct and alternating current electronic transmission cables between Long Island, New Jersey, and Sayreville, New York. To-date, the project has included twenty-six successful trenchless crossings completed through Horizontal Directional Drilling (HDD). The majority of these drills have been land-based, enabling cable placement beneath wetland areas, and within confined easements adjacent to the heavily trafficked Wantagh Parkway. In addition, three HDD crossings have been completed beneath inlets of Long Island Sound, and two HDD shore landings have enabled trenchless cable installation beneath Jones Beach, and a portion of the Raritan River.

The HDD construction required significant planning and coordination to move the large drilling equipment, and to manage the permit conditions in the restrictive urban areas. Movement of equipment, including transport of water and cuttings disposal, required vehicle escorts, and involved schedule and weight restrictions that routinely threatened to delay drilling operations. NYDOT mandated that all HDD designs and proposed methodologies be reviewed and approved prior to starting each drill, which required timely submittals, and numerous design adjustments. This paper discusses the issues encountered, and the methods used by the general contractor, driller, and design engineer for the successful planning and coordination of this project.