

Sediment Management Strategies for the Long Island Replacement Cable Project:  
Mapping the Plume of Planning and Implementation Strategies.

Mark D. Driscoll<sup>1</sup>, Susan M. Herz<sup>1</sup>

<sup>1</sup>ESS Group, Inc. 888 Worcester Street, Suite 240, Wellesley, MA 02482

The Long Island Replacement Cable (LIRC) Project, a collaboration between the Long Island Power Authority (LIPA) and the Connecticut Light & Power Company (CL&P), replaced seven fluid filled submarine electric cables with three solid core cables in the seabed of Long Island Sound from Norwalk, CT to Northport, New York. This program resulted in the removal of approximately 70 miles of old cables, and the subsequent installation of approximately 33 miles of new cables. As can be expected, in water sediment management during these construction activities was a serious consideration for regulatory authorities in both New York and Connecticut. Varying substrate conditions and ecological constraints in Long Island Sound and Norwalk Harbor resulted in the need for a variety of sediment management protocols including *in-situ* real-time total suspended solids (TSS) monitoring, radio-isotope analysis, and physical containment. Results show that although approximately 70 miles of submarine cables were removed across Long Island Sound, sediment suspension was minimal and dispersed quickly during both ebb and flood tidal conditions. During the jet plow embedment of the three new cables (approximately 33 miles), several plumes of various size and nature were produced. While these plumes were larger than those witnessed during removal activities, they similarly dispersed quickly. Not surprisingly, factors such as sediment grain size, the equipment used and embedment techniques are believed to have affected the initial size and nature of the plumes, while water depth and tidal currents affected the extent of suspended sediment transport. Based on the results of this comprehensive monitoring program, we believe that the removal and embedment of submarine electric cables in many areas of Long Island Sound can be done with relatively little or no impact to water quality.