

APPLIED COASTAL

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Project: Analysis of Sediment Resuspension Potential at Four Select Locations in Long Island Sound

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Applied Coastal evaluated sediment transport potential at four locations within Long Island Sound in support of an Environmental Impact Statement (EIS) prepared for the Disposal Area Monitoring System (DAMOS) Program. The purpose of this study was to estimate sediment resuspension potential at each of the four locations due to combined wave-current forcing during extreme storm events. The four locations were (Figure II-1):

- Western Long Island Sound disposal site (WLIS)
- Bridgeport disposal site (Bridgeport)
- Milford disposal site (Milford)
- Central Long Island Sound disposal site (CLIS)

The general approach was to use a combination of wave and bottom current inputs to calculate sediment transport potential at each disposal site; sediment transport potential was represented as the smallest grain size that could be mobilized under specific wave/current conditions. Historical wind data were used to develop extremal wind criteria for Long Island Sound. Extremal wave conditions were then calculated for each wind event using the ACES numerical model to determine maximum wave heights and peak periods. Historical current data obtained near each site also were analyzed to estimate peak near-bottom currents. The combined peak bottom current estimates and extreme wave-induced bottom orbital velocities were input to the sediment transport model to calculate sediment mobility at each location.

