

# Nantasket Beach Master Plan and Seawall Repair Hull, Massachusetts

## Project Characteristics

- *Bathymetric Survey*
- *Numerical Wave Modeling*
- *Sediment Transport Modeling*
- *Alternatives Analysis*
- *Beach Nourishment Design and Performance*

The Nantasket Beach Reservation is located in the Town of Hull, Massachusetts, on Boston's South Shore. The Reservation has been used as a recreational beach by Greater Boston residents since the 1800s and was officially established as a public beach in 1899. The Reservation is currently owned and operated by the Massachusetts Department of Conservation and Recreation (DCR). The Reservation includes an oceanfront promenade, parking lots, three bathhouses, and an open pavilion. The beach consists of a sandy barrier beach exposed to the open Massachusetts Bay and Atlantic Ocean. Nantasket Beach serves as a valuable resource from both a commercial and recreational standpoint. The beach and the associated waterfront amenities serve as the defining feature for the Town of Hull and represent a significant draw for visitors and summer residents.

Nantasket Beach has experienced ongoing erosion over the past 150 years, especially the public beach at the southern end of the system. Woods Hole Group conducted a detailed coastal processes study focused on determining potential alternatives to address the ongoing coastal erosion. The barrier beach system was simulated using state-of-the-art wave and sediment transport models to understand existing conditions, and assess potential alternatives. The project evaluated the performance of the existing seawall, as well as determined potential structural alternatives to enhance the beach and improve beach nourishment performance. The performance and lifetime of the beach nourishment were assessed in order to provide guidance on potential long-term solutions and future nourishment requirements.



The project also consisted of identification of potential sand sources and determination of the most compatible and economically feasible source. The project consisted of development of an overall master plan for Nantasket Beach, including redevelopment of upland infrastructure, parking, and recreational areas. The project required a high-level of communication with project consultants, local citizens groups, DCR, and local politicians.