

# WEST DENNIS BEACH AND SWAN POND RIVER DUNE CONSTRUCTION

Town of West Dennis, MA

Town of Dennis hired Coastal Engineering Co. to consult on the problematic town site where Swan Pond River inlet meets West Dennis Beach. The bulkhead at West Dennis beach was failing, which caused the parking lot to flood, while the sediment in Swan Pond River was blocking the flow, which caused high levels of nitrogen and an increase in algae blooms. Following marine engineering evaluation, Coastal proposed dredging the inlet and then using the dredge material to create a dune. This proved to be a sustainable and cost-effective alternative to the town-proposed bulkhead replacement project, ultimately saving the town over \$900,000 in construction costs. Approximately 30,000 cubic yards of material dredged from the inlet of Swan Pond River was used for used to create a dune at West Dennis beach, which now serves as a buffer instead of the failing bulkhead. The material was piped via hydraulic dredge pipeline to the beach located at the town parking lot at the end of Lighthouse Road. A dewatering trench was excavated on the water side of the existing wood bulkhead and the dredged slurry was pumped into the trench allowing the material to dewater. After the material was dewatered, a front end loader was used to push the material up into a dune shape. The process took place in sections moving down the beach along the face of the existing wood. Following the formation of the dune, native beach grass and beach plum were planted on it for stabilization. Coastal Engineering provided marine engineering services to the Town by way of dredging and dune construction plan preparation; managing the NOI, permitting and licensing plans; and as a consultant with regulatory agencies.

## SERVICES

- Hydrographic and topographic survey
- Resource area delineation and preparation of existing conditions plan
- Engineering analysis and plan preparation for proposed dredging working areas
- Preparation of Notice of Intent, Ch91, and AEOE permitting and licensing plans
- Consultation and meetings with regulatory agencies and scoping session, MEPA filing

