

## APPLIED COASTAL

RESEARCH AND ENGINEERING, INC.



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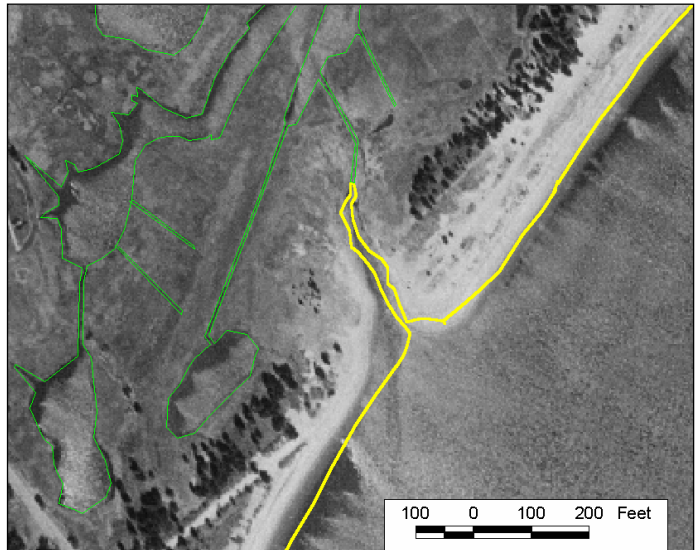
**Project:** Consulting Engineering Service for Massachusetts Coastal Zone Management

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Massachusetts Coastal Zone Management (MCZM) is often tasked with review of complex projects involving coastal resources. Due to the aging infrastructure along the coastline, components of which predate formalized coastal design procedures, many existing and proposed projects do not conform to modern engineering philosophies and guidelines. To meet today's standards, the engineering of shore protection projects must blend aspects of physical estuarine and coastal processes, with an understanding of potential ecological impacts. To handle these complex and difficult tasks, MCZM has augmented their in-house expertise with engineering services from Applied Coastal Research and Engineering, Inc.

Engineering services for MCZM have required various levels of review. Examples include:

- Bluff erosion problems along cobble beaches at Fourth Cliff;
- Development of beach nourishment guidelines for the State of Massachusetts;
- Development of cobble beach and dune guidelines for the State of Massachusetts;
- Dredging in South River, Scituate;
- Sheet pile wall design along the coast of Beverly;
- Teaching workshops on modern engineering philosophies and guidelines to engineers and scientists around the state.
- Evaluation of FEMA flood zone limits in Provincetown;
- Groin design and mitigation strategies for White Cliffs;
- Coastal engineering design for the Knob (Falmouth, MA) and Wollaston Beach (Quincy, MA)
- Evaluation of inlet stability and its potential impacts on an existing sewer line at Eel Pond, Mattapoisett;
- Evaluation of culvert design for marsh restoration at the Cowyard, Dartmouth; and,
- Design of breakwaters to protect a marina in Hull.



Detail of 1997 aerial photograph of the western inlet to Eel Pond, Mattapoisett, with overlaid 1971 shoreline and western inlet channel shown in yellow.