

Inter-municipal Watershed Planning and TMDL Implementation to Restore Embayment Water Quality on Cape Cod:

Three Case Studies of Towns Sharing Coastal Watersheds



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Disclaimer

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Front Cover: A view of Shoestring Bay, Mashpee, Massachusetts
Photograph by George Zoto

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Preface

This report presents the findings and recommendations from three Pilot Projects on Cape Cod; each addressing the watershed nitrogen load conditions affecting water quality impairment for three estuaries: Popponesset Bay (Mashpee, Barnstable, and Sandwich, MA); Three Bays (Barnstable, Sandwich, and Mashpee, MA), and Pleasant Bay (Chatham, Orleans, Brewster, and Harwich, MA). The outcome of these case studies, including what was learned, and the actions taken and/or recommended for follow-up, represent several years of dialogue among the towns sharing land use jurisdiction of the affected watersheds.

Each estuary had been designated by the Commonwealth as a nitrogen impaired estuary - in violation of the state water quality numerical standards and its designated uses (recreational fishing, swimming and boating and as habitat for sustaining eelgrass meadows as a breeding and nursery ground for important commercial marine fisheries and shellfish).

Past wastewater planning elsewhere in the US and in New England are typically focused on end of pipe point (NPDES) discharges to receiving surface waters. These case studies on Cape Cod address the fact that wastewater impacts to coastal embayments are not from typical NPDES discharges but from nonpoint source discharges to the ground from septic systems, stormwater runoff, large and small wastewater treatment plants, and use of fertilizers by the towns sharing the watershed. These case studies utilized a holistic, scientific approach by evaluating all nitrogen sources in the watershed for use in integrating a broad range of infrastructure and management solutions into existing state permitting programs.

For an electronic version, please visit: < <http://www.mass.gov/dep/water/resources/coastalr.htm>>. The digital copy includes numerous hyperlinks to websites.

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MassDEP does not necessarily agree with all the recommendations expressed in this document by persons or groups that have participated in the project. Nor is MassDEP committing at this time to implement any of the recommendations made by others.