



Massachusetts Bays Comprehensive Conservation & Management Plan

AN ENVOLVING PLAN FOR ACTION

MASSACHUSETTS BAYS PROGRAM
U.S. ENVIRONMENTAL PROTECTION AGENCY
MASSACHUSETTS EXECUTIVE OFFICE OF
ENVIRONMENTAL AFFAIRS

2003 REVISIONS TO THE CCMP

The Massachusetts Bays Program

The Massachusetts Bays Program is a joint effort of local, state, and federal governments, as well as citizens, scientists, educators, and businesses, to develop regional solutions to pollution problems in the Bays and their adjacent watersheds. The Program is funded under the Clean Water Act through the U.S. Environmental Protection Agency, and is administered by the Massachusetts Executive Office of Environmental Affairs' Coastal Zone Management Office.

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Towns of the Massachusetts and Cape Cod Bays

Amesbury (U)	Eastham (C)	Milton (B)	Rowley (U)
Barnstable (C)	Essex (U)	Nahant (B)	Salem (S)
Beverly (S)	Everett (B)	Newbury (U)	Salisbury (U)
Boston (B)	Gloucester (U)	Newburyport (U)	Sandwich (C)
Bourne (C)	Hanover (SO)	Norwell (SO)	Saugus (B)
Braintree (B)	Hingham (B)	Orleans (C)	Scituate (SO)
Brewster (C)	Hull (B)	Peabody (S)	Swampscott (B)
Chelsea (B)	Ipswich	Pembroke (SO)	Truro (C)
Cohasset (SO)	Kingston (SO)	Plymouth (SO)	Wellfleet (C)
Danvers (S)	Lynn (B)	Provincetown (C)	Weymouth (B)
Dennis (C)	Manchester (S)	Quincy (B)	Winthrop (B)
Duxbury (SO)	Marblehead (S)	Revere (B)	Yarmouth (C)
	Marshfield (SO)	Rockport (U)	

Regions: U = Upper North Shore, S = Salem Sound, B = Metro Boston, SO = South Shore, C = Cape Cod



MASSACHUSETTS BAYS PROGRAM

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Dear Partner,

Few would argue that protecting the coast and conserving the environment are great ideas. But how do we turn these ideas into actions? For a region as wide and diverse as the Massachusetts and Cape Cod Bays, it takes teamwork, endurance, and commitment. In 1988, the Massachusetts Bays Program was founded on these ideals. Two years later, we drew together over three hundred individuals, including citizens and municipal officials from the fifty coastal towns and over forty different environmental organizations, to put our ideas into action by developing the *Comprehensive Conservation Management Plan for Massachusetts and Cape Cod Bays*.

In 2000, the Massachusetts Bays Program and its partners took a long hard look at the Plan and the progress that had been made since its release. We found that many of the goals and work that had been proposed had either been completed or were well underway, and that some new challenges had emerged. It was time to refine our goals. Building on the existing Plan, we created a companion piece that could be added to the original Plan. The Revised Plan before you includes seventeen new Action Items and two new Action Plans, along with electronic versions of the original management plan and the first *Biennial Review and Report to the Environmental Protection Agency*.

Thank you for working with us to care for the Bays. If you are new to the region or unfamiliar with our program, we encourage you to get involved. You can start here and now by reviewing the Revised CCMP. Then, give us a call or visit our website to learn more about what you can do to preserve our bays!

Sincerely,

A handwritten signature in cursive script that reads "Jan Smith".

Jan Smith

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Cover photo of Skaket Beach, Orleans taken by Shannon Weigle

2003 Revisions to the CCMP edited by Shannon Weigle and the staff of the Massachusetts Bays Program

2003 Revisions to the
Massachusetts Bays
Comprehensive Conservation Management Plan

The CCMP: An Evolving Plan

The Massachusetts Bays Program (MBP) was launched in 1988 by a diverse group of concerned citizens. Two years later, the MBP was officially accepted into the EPA's National Estuary Program (NEP). As an NEP, the MBP was charged with the task of developing a Comprehensive Conservation and Management Plan (CCMP) for the Massachusetts and Cape Cod Bays. Over 300 representatives from various local, state, and federal agencies, non-governmental organizations, educational institutions, and citizen groups came together to participate in the MBP Management Conference, which worked together to craft the CCMP. The CCMP, completed in 1996, contained over seventy Action Items aimed at restoring the ecological integrity of the bays.

The 1996 CCMP was intuitively titled "An Evolving Plan for Action." Over the past ten years, a remarkable amount of progress has been made towards CCMP implementation and overall estuarine protection. In 2001, a visioning workshop was held with the goal of revising and updating the CCMP. During this workshop, working groups were established to review each of the five priority Action Plans and determine the need for any new Action Plans. The Revised CCMP includes seventeen new Action Items in addition to two new Action Plans:

- 16. Preventing Marine Invasive Species
- 17. Monitoring the Marine Environment

The Revised CCMP also includes six new Action Items where the MBP is identified as the lead partner, thus reflecting the new role of the MBP in CCMP implementation.

Turning A Plan Into Action

The 1996 CCMP reflected the vision of a diverse group of stakeholders, many of whom were identified as Action Item leads. Since then, new partners have entered the

picture and former partners have shifted their focus and roles.

In the early years of the program, the MBP staff primarily worked as coordinators of the Management Committee and directors of the CCMP development process. Once the CCMP was completed, the Management Committee thought it was vital that the staff members play an active part in CCMP implementation. So today, the MBP staff serve as stewards of the CCMP and to the extent possible, oversee projects that are in concert with the goals described in the CCMP. This dual role is most evident at the regional level, where MBP regional coordinators lead by example, working as both active participants in CCMP related projects and motivators of new CCMP actions.

Since 1996, all of the original CCMP Action Plans have been initiated, some with minimal oversight from the MBP. Realizing that it was beyond the abilities of the program staff to routinely monitor the progress of each Action Plan, the MBP held a visioning workshop in 1998 to prioritize the CCMP Action Plans and revisit the CCMP implementation strategy. Workshop participants, including MBP staff and Management Committee members, agreed that the MBP staff should focus on the five Action Plans that contained the majority of the "urgent" Action Items. These priority Action Plans included Action Plans #2 (Shellfish), #3 (Habitat), #4 (Stormwater), #7 (Wastewater), and #14 (Land Use).

At this workshop, the MBP's mission statement was also re-crafted to better reflect the new implementation role of the Massachusetts Bays Program. The new mission statement is as follows:

"The Massachusetts Bays Program is a partnership of citizens, communities, and government that strives to protect and enhance the coastal health and heritage of Massachusetts and Cape Cod Bays."

CCMP implementation could not be possible without the dedication of the Commonwealth's citizens and local government officials. Since most of the local officials who signed the 1996 CCMP have since left office, it is likely that many of the new representatives are unfamiliar with their predecessor's involvement with the CCMP. Through the Revised CCMP, the Massachusetts Bays Program will work to spark a renewed interest in coastal environmental protection among this group.

The Revised CCMP includes a variety of new actions for municipalities, especially in the Land Use and Stormwater Action Plans. In the coming years, the Massachusetts Bays Program will also work to engage other user groups of the bays that have not yet participated in MBP deliberations or activities.

The MBP continues to be hosted by the Massachusetts Office of Coastal Zone Management (CZM), a federally funded program housed within the state's Executive Office of Environmental Affairs (EOEA). This close affiliation with CZM, both physically and administratively, has allowed for networking and partnership development that has greatly facilitated CCMP implementation.

Virtually all of the environmental departments within EOEA play a part in the CCMP. Outside of EOEA, the MBP has successfully developed, and continues to cultivate, working relationships with state agencies such as the Department of Public Health, the Department of Education, and the Massachusetts Highway Department. Federal agencies such as the U.S. Environmental Protection Agency (EPA) and the National Marine Fisheries Service have also directly participated in CCMP implementation efforts especially those related to habitat restoration.

CCMP Progress and Change

In the early years of the Massachusetts Bays Program, the staff worked with approximately 300 individuals representing numerous agencies, organizations, and municipalities to develop the Comprehensive Conservation and Management Plan for improving the ecology of the Massachusetts Bays. After four years in development, the CCMP was completed in 1996. It contained approximately 400 pages organized into eleven chapters. Chapter Five, the centerpiece of the Management Plan, described seventy-two Action Items categorized into fifteen major Action Plans. The Action Plans articulated a number of recommended steps that should be taken to restore and protect the Massachusetts Bays ecosystem.

At the beginning of each Action Plan, you will find a brief description of the progress that has been made in regard to that Plan since the publication of the CCMP. For more information on the remarkable progress that has been made in our state, please refer to the *1998 Biennial Review and Report to the Environmental Protection Agency*. An electronic version of the Biennial Review can be found in the back cover of this booklet.

Please note that several state agencies were reorganized and renamed in late 2003, specifically the Department of Conservation and Recreation which incorporates the former Department of Environmental Management, and the Department of Fish and Game formerly known as the Department of Fisheries, Wildlife and Environmental Law Enforcement.

Tracking CCMP Progress

Monitoring CCMP progress is essential for measuring its success and establishing future priorities. The Massachusetts Bays Program is developing a project database and tracking system aimed at measuring the progress of

CCMP Action Plans. The database will serve both as a resource and educational tool for a diverse group of audiences including the MBP regional staff, state and federal managers, researchers, teachers, the general public, citizen volunteers, municipalities, and legislators.

A web-based version of the database will be available to give outside users the opportunity to search the database by a variety of parameters such as CCMP Action Plan, environmental issue, location of project, and project lead. In addition to these parameters, each database entry will provide a brief description of the project, the current status of the project (ongoing, completed, pending), a contact person and information, and other useful information.

This database will also serve as a tracking system, allowing the MBP staff and others to efficiently monitor CCMP progress and to continue to identify specific implementation priorities and strategies for the program. The MBP will begin by including project information from its local partners and will ultimately expand the database to include information on other organizations and agencies that are working on projects relative to the CCMP. This tracking system will also serve to facilitate the MBP's periodic reporting on CCMP progress and implementation to the Environmental Protection Agency.

Looking Ahead

Coastal ecosystem protection in Massachusetts is a coordinated effort that requires active participation from numerous entities including state and federal agencies, environmental advocacy groups, educational institutions, municipalities, neighborhood organizations, and citizens. For the past fifteen years, the Massachusetts Bays Program has proudly served as a coordinator of these groups and a witness to the environmental progress that has been made.

The challenges facing the Bays are interrelated, just as the solutions depend on cooperation between all who live, work, and play in and along these priceless waters. Please join us as we continue to protect and restore the health and heritage of the Massachusetts Bays.

Revised CCMP Matrix

Lead Partner	Action Item	Progress*
<i>ACTION PLAN # 1 PROTECTING PUBLIC HEALTH</i>		
Department of Public Health (DPH)	1.1 Establish a central clearinghouse program for all beach testing and closure information generated for Massachusetts' coastal public beaches.	Substantial
<i>ACTION PLAN # 2 PROTECTING AND ENHANCING SHELLFISH RESOURCES</i>		
Division of Marine Fisheries (DMF)	2.1 Conduct three (3) Sanitary Survey Training Sessions annually -- one each on the North Shore, Metro Boston/South Shore, and Cape Cod -- to educate local shellfish constables and health officers on the proper techniques for identifying and evaluating pathogen inputs into shellfish harvesting areas.	Full
Division of Marine Fisheries (DMF)	2.2 Develop and administer a local Shellfish Management Grants Program to help communities finance the development and implementation of effective local shellfish management plans.	Substantial
Shellfish Bed Restoration Program (SBRP)	2.3 Continue and expand the Shellfish Bed Restoration Program to restore and protect shellfish beds impacted by nonpoint source pollution.	Moderate
Office of Coastal Zone Management (CZM)	2.4 Through the Shellfish Clean Water Initiative (SCWI), complete an Interagency Agreement to define agency roles and contributions to protect shellfish resources from pollution sources.	New
<i>ACTION PLAN # 3 PROTECTING AND ENHANCING COASTAL HABITAT</i>		
Municipalities	3.1 Prepare and implement an EOE A - approved Open Space Plan to preserve and protect key wetlands, floodplains, fish and wildlife habitat, and other ecologically- and recreationally-important natural resource areas.	Substantial
Municipalities	3.2 Adopt and implement a local Riverfront District Bylaw to maintain river water quality, preserve fish and wildlife habitat, and protect downstream nursery and shellfish resources.	Substantial
Municipalities	3.3 Work cooperatively with neighboring communities, EOE A agencies, and other interested parties to develop proactive, long-term ACEC Management Plans to preserve and protect these vital resource areas.	Some
Municipalities	3.4 Adopt and implement a local Wetlands Protection Bylaw to supplement the state Wetlands Protection Act Regulations.	Substantial
Municipalities	3.5 Prepare and implement ecosystem-based Barrier Beach Management Plans to promote responsible use and protection of these critical coastal resources.	Moderate
Municipalities	3.6 Employ full-time, professionally-trained conservation staff to provide ongoing technical and administrative support to local Conservation Commissions.	Moderate
Department of Conservation and Recreation (DCR)	3.7 Continue to develop Resource Management Plans for all DCR-owned coastal properties.	Substantial
Department of Conservation and Recreation (DCR)	3.8 Develop and promote the use of river basin planning reports to facilitate responsible water resources planning and management at the local and regional levels.	Some
Department of Conservation and Recreation (DCR)	3.9 Acquire and restore undeveloped coastal properties that offer outstanding living resources habitat and public recreation opportunities.	Some
Department of Environmental Protection (DEP)	3.10 Complete the statewide inventorying and mapping of coastal and inland wetlands, and provide local Conservation Commissions with: 1) accurate base maps depicting wetland boundaries, and 2) instruction on proper wetland map interpretation and use.	Substantial
Department of Fish and Game (DFG)	3.11 In collaboration with the Riverways Program, prepare an up-to-date inventory of anadromous fish runs in the Massachusetts Bays region and develop a strategy to prioritize, restore, and maintain these runs.	Substantial

Lead Partner	Action Item	Progress*
Department of Fish and Game (DFG)	3.12 In collaboration with the Riverways Program, develop and implement a citizen-based Fishway Stewardship Program to restore and maintain anadromous fish runs along the Massachusetts Bays coast.	Substantial
Executive Office of Environmental Affairs (EOEA)	3.13 Continue the Wetlands Restoration Program to restore and protect degraded coastal and inland wetlands.	Substantial
Environmental Protection Agency (EPA), National Marine Fisheries Service (NMFS), and U.S. Army Corps of Engineers (ACOE)	3.14 Continue and expand current efforts to support eelgrass habitat protection and restoration in Massachusetts and Cape Cod Bays.	Substantial
Massachusetts Bays Program (MBP)	3.15 Work with CZM to develop scientific methods for assessing the ecological integrity of coastal wetlands and to train volunteers in data collection.	New
<i>ACTION PLAN # 4 REDUCING AND PREVENTING STORMWATER POLLUTION</i>		
Municipalities	4.1 Adopt subdivision regulations that require the incorporation of stormwater runoff best management practices (BMPs) into all new development plans.	Some
Municipalities	4.2 Implement best management practices to mitigate existing stormwater discharges that are causing or contributing to the closure of shellfish harvesting areas and swimming beaches.	Moderate
Department of Environmental Protection (DEP)	4.3 In collaboration with Regional Planning Agencies, Natural Resources Conservation Service/MassCAP (formerly U.S. Soil Conservation Service), and Massachusetts Coastal Zone Management Office, should: 1) disseminate its Nonpoint Source Management Manual and Urban Best Management Practices for Massachusetts, and 2) sponsor public workshops to educate local officials about best management practices and performance standards for controlling stormwater runoff.	Substantial
Department of Environmental Protection (DEP)	4.4 Develop a coordinated and streamlined regulatory system within DEP to assure effective implementation of the stormwater components of the Massachusetts Clean Water Act, Wetlands Protection Act, and Federal Stormwater Program (Federal Clean Water Act, Sections 401 and 402).	Substantial
Environmental Protection Agency (EPA)	4.5 Reduce stormwater pollution in the Massachusetts Bays watersheds through: (a) technical assistance to communities in developing comprehensive stormwater management programs; and (b) National Pollutant Discharge Elimination System (NPDES) compliance for industrial stormwater dischargers. Targeted areas are the lower Charles River for the stormwater management programs and the Neponset River for the industrial stormwater dischargers.	Substantial
Massachusetts Highway Department (MHD)	4.6 Prepare an Environmental Manual to complement the Highway Design Manual and provide for the integration of environmental concerns (including stormwater management) into all phases of highway project planning, design, construction, and maintenance.	Some
Massachusetts Highway Department (MHD)	4.7 As part of its forthcoming pollution prevention plan, develop a Storm-water Pollution Mitigation Program to identify, prioritize, and correct existing stormwater pollution problems associated with state highway drainage facilities.	Moderate
Massachusetts Highway Department (MHD) and Metropolitan District Commission (MDC)	4.8 Sponsor annual workshops to train local public works personnel on the proper use of stormwater runoff best management practices.	Substantial
Massachusetts Highway Department (MHD)	4.9 Require the use of on-site stormwater best management practices as a precondition to the permitting of private property tie-ins to state drainage facilities.	Some
Municipalities	4.10 Develop and implement stormwater management plans for compliance with Phase II NPDES regulations.	New
Massachusetts Bays Program (MBP)	4.11 Provide technical assistance for developing and implementing non-structural Best Management Practices, support efforts to create local stormwater utilities, provide grant writing support to municipalities for implementing the stormwater policy, Phase II requirements, and resource protection efforts, and support the efforts of DEP and CZM to revise and update the stormwater policy.	New

Lead Partner	Action Item	Progress*
<i>ACTION PLAN # 5 REDUCING AND PREVENTING TOXIC POLLUTION</i>		
Municipalities	5.1 Adopt and implement the following set of regulations to ensure the safe use, storage, and disposal of toxic and hazardous materials: 1) Toxic and Hazardous Materials Regulation, 2) Underground Storage Tank Regulation, 3) Commercial/Industrial Floor Drain Regulation.	Substantial
Municipalities	5.2 Establish Household Hazardous Waste Collection Programs for difficult-to-manage hazardous products to ensure their proper disposal on a regular basis.	Substantial
Department of Education (DOE)	5.3 In collaboration with the Department of Environmental Protection, develop and offer continuing education courses on hazardous materials management to create a pool of trained "HazMat Specialists" at the local level.	Some
Executive Office of Environmental Affairs (EOEA), Municipalities, & Private Sector Partnership	5.4 Form partnerships to facilitate the safe management of hazardous products, emphasizing reduced products use and recycling wherever possible.	Substantial
Environmental Protection Agency (EPA)	5.5 Reduce and prevent toxic pollution through targeted National Pollutant Discharge Elimination System (NPDES) permitting of significant discharges in the Massachusetts Bays; in particular, oil tank farms on Chelsea Creek and the Island End River.	Full
EOEA Office of Technical Assistance for Toxics Use Reduction (OTA)	5.6 Continue to perform on-site assessments and provide instructional materials to help businesses and industries in the Massachusetts Bays region reduce the use of toxic sub-stances.	Substantial
<i>ACTION PLAN # 6 REDUCING AND PREVENTING OIL POLLUTION</i>		
Municipalities	6.1 Establish and promote the use of Used Motor Oil Collection Facilities to ensure the proper collection and disposal of used motor oil from do-it-yourself oil changes.	Substantial
Department of Environmental Protection (DEP)	6.2 In collaboration with the U.S. Coast Guard, EPA, and NOAA, implement the Policy on the Use of Oil Spill Chemical Countermeasures (Dispersants) to protect coastal resources from the adverse effects of oil spills.	Full
US Coast Guard (USCG)	6.3 In collaboration with other federal, state, and local agencies, continue to update and implement the Massachusetts coast-wide Area Contingency Plans to assure a rapid and effective response to discharges of oil and other hazardous substances into the marine environment.	Substantial
<i>ACTION PLAN # 7 MANAGING MUNICIPAL WASTEWATER</i>		
Department of Conservation and Recreation (DCR)	7A.1 In collaboration with other state and federal agencies, continue to implement the Ocean Sanctuaries Act by closely monitoring all facilities plans which propose increased waste-water treatment plant dis-charges into an ocean sanctuary.	Substantial
Environmental Protection Agency (EPA)	7A.2 Support the control of combined sewer overflows in the Massachusetts Bays watersheds, especially the lower Charles River, and target National Pollutant Discharge Elimination Systems (NPDES) permitting to implement technology and water quality-based requirements in the Merrimack River watershed.	Full
Environmental Protection Agency (EPA), EOEA, DEP and CZM	7A.3 Work collaboratively to develop and implement an effective program for monitoring and enforcing point source discharges from waste-water treatment plants and energy-producing facilities.	Moderate
Department of Environmental Protection (DEP)	7A.4 In cooperation with UMass, EOEA, CZM, and MBP, analyze and determine the Total Maximum Daily Loads (TMDLs) of nitrogen for coastal embayments and develop management plans for wastewater treatment facilities to adapt to these new standards.	New
Municipalities	7B.1 Identify resource areas sensitive to wastewater and develop management plans appropriate to these areas, focusing on the capacities of natural systems to assimilate wastewater.	Substantial

Lead Partner	Action Item	Progress*
Municipalities	7B.2 In cooperation with DEP, develop and implement regular inspection and maintenance (I/M) programs for on-site wastewater systems.	Substantial
Municipalities	7B.3 Employ full-time, professionally-trained public health staff to provide ongoing technical and administrative support to the local Boards of Health.	Substantial
Coastal Regional Planning Agencies	7B.4 Establish a Title 5 and alternative systems technical assistance program directed to local Boards of Health and health agents, systems engineers/installers, and home-owners.	Substantial
Department of Environmental Protection	7B.5 Evaluate and build upon the centralized statewide repository for testing information on alternative technologies, to be established as part of the Buzzards Bay Project's two-year Environmental Technology Initiative Project.	Full
Multiple	7C Plan for decentralized wastewater management and treatment.	Full
<i>ACTION PLAN # 8 MANAGING BOAT WASTES AND MARINE POLLUTION</i>		
Municipalities	8.1 Work cooperatively with neighboring communities, private boatyards and marinas, and state agencies (DFG and CZM) to establish, promote, and maintain Boat Pumpout Programs in targeted embayment areas.	Full
Municipalities	8.2 With assistance from CZM and DEP, require private boatyards and marinas to implement effective storm-water runoff control strategies which include the use of pollution prevention measures and the proper design and maintenance of hull servicing areas.	Some
<i>ACTION PLAN # 9 MANAGING DREDGING AND DREDGED MATERIALS DISPOSAL</i>		
Army Corps of Engineers (ACOE)	9.1 Continue to monitor dredged material disposal sites in the Massachusetts Bays region and initiate the planning necessary to begin a capping demonstration project at the Massachusetts Bay Disposal Site.	Substantial
Executive Office of Environmental Affairs (EOEA)	9.2 Coordinate the development of a comprehensive Dredging and Dredged Materials Disposal Plan to improve and maintain access to the Commonwealth's ports, harbors, and channels, and to minimize adverse impacts to the marine environment.	Substantial
<i>ACTION PLAN # 10 REDUCING BEACH DEBRIS AND MARINE FLOATABLES</i>		
Municipalities	10.1 Work cooperatively with the Massachusetts Coastal Zone Management Office (CZM), neighboring communities, and waterfront users to design and implement Beach and Marine Debris Reduction Programs.	Some
<i>ACTION PLAN # 11 PROTECTING NITROGEN SENSITIVE EMBAYMENTS</i>		
Department of Environmental Protection (DEP)	11.1 Strengthen Massachusetts Water Quality Standards to enhance and protect nitrogen-sensitive coastal embayments.	Some
<i>ACTION PLAN # 12 ENHANCING PUBLIC ACCESS AND THE WORKING WATERFRONT</i>		
Regional Planning Agencies (RPAs), Department of Environmental Protection (DEP), and Municipalities	11.2 Work collaboratively to expand upon current Massachusetts Bays Program efforts to identify nitrogen-sensitive embayments, determine critical loading rates, and recommend actions to manage nitrogen so as to prevent or reduce excessive nitrogen loading to coastal waters and ground-water.	Some
Municipalities	12.1 Develop and implement Municipal Harbor Plans which: 1) promote marine-dependent waterfront uses, 2) enhance public access to the water, and 3) protect habitat of shellfish and other living resources.	Substantial
Office of Coastal Zone Management (CZM)	12.2 Enhance the Designated Port Area (DPA) program with new planning and promotional initiatives.	Substantial
Office of Coastal Zone Management (CZM)	12.3 Establish a new technical assistance program to accelerate municipal efforts to identify and legally reclaim historic rights-of-way to the sea.	Full
Office of Coastal Zone Management (CZM)	12.4 In collaboration with the Department of Conservation and Recreation and MassGIS, prepare and distribute a statewide Coastal Access Guide to facilitate public access to the shoreline.	Some

Lead Partner	Action Item	Progress*
Executive Office of Environmental Affairs (EOEA)	12.5 In collaboration with coastal municipalities, develop and implement an Access-Via-Trails program to enhance public access along the coast.	Some
<i>ACTION PLAN # 13 PLANNING FOR A SHIFTING SHORELINE</i>		
Municipalities	13.1 Adopt and implement strict development/ redevelopment standards within FEMA A and V flood hazard zones and other areas subject to coastal flooding, erosion, and relative sea level rise.	Moderate
Department of Conservation and Recreation (DCR)	13.2 Continue to assist communities in the development of effective Floodplain Management Regulations.	Moderate
<i>ACTION PLAN # 14 MANAGING LOCAL LAND USE AND GROWTH</i>		
Municipalities	14.1 Develop and implement Local Comprehensive Plans (LSPS) which: 1) direct development into areas in the community capable of absorbing the impacts of growth and its associated facilities, and 2) preserve and protect the community's important natural resources.	Substantial
Municipalities	14.2 Adopt local bylaws and ordinances that promote open space preservation and natural resource protection.	New
Regional Planning Agencies (RPAs)	14.3 Work with the Massachusetts Highway Department and other transportation agencies to ensure that facilities and infrastructure do not endanger sensitive resource areas.	New
Regional Planning Agencies (RPAs)	14.4 Work with EOEA and the Massachusetts Bays Program to assist communities in creating Community Development Plans.	New
Massachusetts Bays Program (MBP)	14.5 Work with EOEA to provide local support and expertise to communities on the Community Preservation Act and facilitate regional links and networking among neighboring communities.	New
Massachusetts Bays Program (MBP)	14.6 Provide technical assistance to municipalities to adopt and implement plans and bylaws that promote open space preservation and natural resource protection.	New
Office of Coastal Zone Management (CZM)	14.7 Support Conservation Commission Networks (Con Com Networks) in the coastal region by providing technical and management assistance.	New
<i>ACTION PLAN # 15 ENHANCING PUBLIC EDUCATION AND PARTICIPATION</i>		
Department of Education (DOE)	15A.1 In collaboration with the Executive Office of Environmental Affairs, continue to develop and integrate environmental education as an important component of the curriculum in the public schools of the Commonwealth, making broad use of the Benchmarks for Environmental Education developed by the Secretaries' Advisory Group on Education (SAGEE).	Substantial
Executive Office of Environmental Affairs (EOEA)	15A.2 Continue to work closely with the Department of Education through the Secretaries' Advisory Group on Environmental Education (SAGEE) in order to develop a strategy for the implementation of the "Bench-marks for Environmental Education". Further, EOEA should continue to place a priority on the role of environmental education and provide adequate staffing to insure that appropriate state leadership is maintained.	Substantial
Executive Office of Environmental Affairs (EOEA)	15A.3 In cooperation with the Department of Education, continue to develop a grant relationship with the National Science Foundation and other funding agencies in order to provide technological outreach aimed at enhancing environmental literacy. The goal is to make resource and curriculum materials widely accessible and to provide ongoing coordination among the various members of the education community. The Massachusetts Bays Program represents an important aspect of the total environmental picture and should play a key role in this effort, helping to establish a unified voice to speak for environmental education concerning the Bays region.	Moderate

Lead Partner	Action Item	Progress*
Exec. Office of Environmental Affairs (EOEA) and the Department of Education (DOE)	15A.4 Empower exemplary teachers, administrators, and/or schools, who demonstrate the competence, to carry out formal and non-formal environmental education initiatives that complement the Commonwealth's environmental education programs.	Substantial
Massachusetts Bays Education Alliance (MBEA)	15A.5 Continue and expand its current efforts to build a community of educators who can ably teach about and promote the protection of the Massachusetts Bays, their shores, and watersheds.	Substantial
Coastal Advocacy Net-work (CAN)	15A.6 Continue to serve as a vehicle for bringing information to and from the government on environmental issues affecting the Bays, with a particular emphasis on proposed projects or regulatory changes.	Moderate
Massachusetts Bays Business and Users Group (BUG)	15A.7 Continue to provide a public forum for the exchange of information and ideas on CCMP development and implementation among the Bays' business community and resource users.	None
Marine Studies Consortium	15A.8 Continue to offer undergraduate marine science and policy courses; and, through the bi-annual Massachusetts Marine Environment Symposium, bring together diverse marine interests to promote a better understanding of marine policy issues.	Substantial
Executive Office of Environmental Affairs (EOEA)	15B.1 Develop and maintain a clearinghouse of NPS education, information, and technical assistance materials, as well as a database of avail-able state NPS materials and programs.	Moderate
Executive Office of Environmental Affairs (EOEA)	15B.2 Develop and maintain a matrix, by to-pic, of NPS education, information, and technical assistance materials produced by state agencies and associated or-ganizations.	Substantial
Executive Office of Environmental Affairs (EOEA)	15B.3 Expand upon Massachusetts Bays Program efforts and develop a strategy for NPS outreach and technical assistance state-wide that would coordinate the development and production of NPS education, information, and technical assistance materials, and provide technical assistance in order to implement NPS pollution con-trols.	Moderate
<i>ACTION PLAN # 16 PREVENTING MARINE INVASIVE SPECIES</i>		
Office of Coastal Zone Management (CZM)	16.1 In collaboration with the MBP, work with other state agencies and partners to develop a public education program on marine invasive species.	New
Massachusetts Bays Program (MBP)	16.2 Coordinate with managers and scientists to develop a monitoring strategy for marine invasive species and periodically conduct rapid assessment surveys in coastal resource areas for the presence of marine invasive species.	New
Massachusetts Bays Program (MBP)	16.3 Work with CZM, MIT Sea Grant, and other parties to develop a monitoring and industry education strategy for pathways for marine invasive species.	New
<i>ACTION PLAN # 17 MONITORING THE MARINE ENVIRONMENT</i>		
Office of Coastal Zone Management (CZM)	17.1 In coordination with the MBP, DMF, DEP, BBP, and university scientists, coordinate on the design and implementation of a marine monitoring plan.	New
Office of Coastal Zone Management (CZM)	17.2 Work with the MBP and the BBP to develop and produce a State of the Coast report.	New
Department of Public Health (DPH)	17.3 Coordinate with the CZM and the MBP on the implementation of the state and federal Beaches Bills.	New

* From the 1998 Biennial Review and Report to the Environmental Protection Agency

Action Plan # 2
Protecting and Enhancing Shellfish Resources

Progress on Action Plan # 2

Over the past seven years, a number of significant accomplishments have been made in regard to shellfish protection. In the 1996 CCMP, Action Plan #2 consisted of three Action Items. The Action Plan called for training workshops for shellfish constables and health officials, a grants program for communities, and an interagency task force. Between 1996-1998, numerous workshops were held by the Division of Marine Fisheries (DMF), Woods Hole Oceanographic Institute, Sea Grant, and the Massachusetts Maritime Academy. DMF and the state legislature provided partial funds for the local Shellfish Management Grants Program. Unfortunately, due to a recent decrease in state funding, this Program has been temporarily halted.

Over the past few years, the MBP has also worked with numerous towns and other stakeholders to develop shellfish bed restoration strategies. MBP regional technical staff will continue to work with communities to identify and pursue opportunities for shellfish bed restoration, both for priority sites as well as for other sites where there is strong local support.

Revisions to Action Plan # 2

The revised CCMP includes one additional Action Item calling for an interagency partnership to address shellfish resources.

Action Item # 2.1	Sanitary Survey Training Sessions
Action Item # 2.2	Shellfish Management Grants Program
Action Item # 2.3	Shellfish Bed Restoration Program
Action Item # 2.4 <i>NEW</i>	Interagency Agreement

CZM ACTION #2.4

The Office of Coastal Zone Management, through the Shellfish Clean Waters Initiative (SCWI), should complete an Interagency Agreement (see Responsible Agents below) to define agency roles and contributions to protect shellfish resources from pollution sources.

RATIONALE:

In 1994, the Massachusetts Bays Program in conjunction with the Secretary of Environmental Affairs spearheaded an interagency approach to shellfish bed restoration. The Shellfish Bed Restoration Program (SBRP) was developed to dovetail the regulatory and enforcement efforts of the DMF and local boards of health with pollution source identification, remediation, fundraising, and coordination skills of various federal and state agencies. The SBRP focused on restoring and protecting thirteen shellfish beds along Massachusetts and Cape Cod Bays.

Early in 1995, EOEA and the Office of Coastal Zone Management produced the Aquaculture White Paper and Strategic Plan. The Strategic Plan included sixty-eight specific recommendations for state action to expand aquaculture potential in the coastal and inland waters in an environmentally conscious manner. In 1998, the Office of Coastal Zone Management hired a coordinator for the new program, which was renamed the Shellfish Clean Waters Initiative (SCWI). Since the release of the Plan, many of the recommendations have been implemented including the designation of a lead agency (Department of Food and Agriculture), and appointment of an Aquaculture Coordinator, formation of an industry advisory group, establishment of a grants program, and regulatory streamlining. CZM continues to work with the Department of Food and Agriculture in implementing the recommendations of the Plan.

Unlike the SBRP, the SCWI encompasses the entire coastal region of Massachusetts. Similar to the SBRP, it is important that the SCWI represent the viewpoints of numerous stakeholders within Massachusetts.

For this reason, a new interagency agreement is needed that mirrors the former agreement signed for the SBRP but applies to the entire coastal region of Massachusetts.

RESPONSIBLE AGENT(s):

The responsible parties should be the agency members of the initiative as signatories to the Interagency Agreement (including but not limited to MBP, CZM, DEP, DMF, NRCS, and EPA) and should also include the Massachusetts Department of Food and Agriculture and the Buzzards Bay Project.

IMPLEMENTATION STRATEGY:

Members of the Interagency Agreement should form an Interagency Task Force. The Interagency Task Force should meet regularly to address issues related to shellfish area protection.

In 2003, the funding for the SCWI was discontinued. Before this Action Item can be completed, the SCWI funding needs to be restored.

LEGISLATION REQUIRED:

New legislation is not required at this time.

ESTIMATED COST(s):

Coordinator for the SCWI.

POTENTIAL FUNDING SOURCES:

Annual CZM grant from NOAA.

TARGET DATE(s):

Completion of the Interagency Agreement:
December 2004.

Efforts to implement the priority site strategies will be ongoing and will be evaluated annually.

FURTHER INFORMATION:

For further information and assistance,
contact:

Office of Coastal Zone Management
(617) 626-1200

Action Plan # 3.
Protecting and Enhancing Coastal Habitat

Progress on Action Plan # 3

A lot of attention has been paid to habitat protection and restoration in recent years. The 1996 CCMP included 14 Action Items on protecting and enhancing coastal habitat. The Action Plan called for municipalities to develop plans for Open Space, Areas of Critical Environmental Concern (ACEC) Management, and Barrier Beach Management. It was also recommended that municipalities adopt habitat protection bylaws and employ conservation staff to help with these efforts. It called for assistance from DCR, DEP, DFG, EOE, EPA, and NMFS in developing resource management plans, acquiring conservation land, and providing technical assistance to municipalities.

Since 1996, ninety percent of the Massachusetts Bays communities have completed Open Space Plans. Many of these Plans have since expired, so it is imperative that towns work towards renewing their plans. There are currently fifteen ACECs within the Massachusetts Bays watershed. Each town is at a different stage in the development of their ACEC Management Plans. The towns surrounding the Neponset River Estuary have completed a management plan for their ACEC and many other towns that border ACECs have initiated projects such as salt marsh restoration plans, resource inventories, and assessments of management strategies that will eventually lead to the development of ACEC Management Plans. Several towns, including Barnstable, have completed Barrier Beach Management Plans.

Newly developed management tools have shed light on the need to alter previously conceived implementation strategies. For example, the atlases of tidally restricted wetlands, developed for the Upper North Shore and Cape Cod, show that many tidal marshes in Massachusetts are restricted by roads and highways. Because of this, the MBP and the EOE's Wetland Restoration Program (WRP) have attempted to coordinate with the Massachusetts Highway Department on their construction and maintenance operations in coastal areas. Initially, these efforts seemed promising, however, they have recently lagged; perhaps due to high staff changeover in the various departments. In the coming years, the MBP will strive to reconstitute this effort. One approach may be to support the RPAs involvement in the MHD's Transportation Improvement Program (TIP). The goal of TIP is to mitigate the negative impacts of transportation projects. The MBP and WRP will work with the RPAs and MHD to find additional ways to include wetlands restoration efforts as a component of these projects.

State and federal regulatory and permitting requirements continue to present considerable hurdles to wetlands restoration in Massachusetts. To better encourage pro-active wetlands restoration, the current regulations and objectives need to be revised. In 2001, the Massachusetts Riverways Program formed a committee to address wetland regulations. The committee formed an interagency group that analyzed the current regulations and assessed the need for new regulations that better reflect the modern understanding of how wetland habitats function. A formal restoration policy was issued but never implemented.

Revisions to Action Plan # 3

An additional Action Item has been added to this Action Plan; the Wetland Health Assessment Toolbox (WHAT) is a scientific protocol, developed by the MBP, CZM and UMASS, which uses volunteers to collect habitat data on recently restored salt marshes.

Action Item # 3.1	Open Space Plans
Action Item # 3.2	Riverfront District Bylaws
Action Item # 3.3	ACEC Management Plans
Action Item # 3.4	Wetlands Protection Bylaws
Action Item # 3.5	Barrier Beach Management Plans
Action Item # 3.6	Professional Conservation Staff
Action Item # 3.7	Resource Management Plans for DCR Coastal Properties
Action Item # 3.8	River Basin Planning Reports
Action Item # 3.9	Undeveloped Coastal Properties
Action Item # 3.10	Mapping of Coastal and Inland Wetlands
Action Item # 3.11	Anadromous Fish Run Inventories
Action Item # 3.12	Fishway Stewardship Program
Action Item # 3.13	Wetlands Restoration Program
Action Item # 3.14	Eelgrass Habitat Restoration
Action Item # 3.15 <i>NEW</i>	Wetland Health Assessment Program

MBP ACTION # 3.15:

The Massachusetts Bays Program will work with the Office of Coastal Zone Management to develop scientific methods for assessing the ecological integrity of coastal wetlands and to train volunteers in data collection.

RATIONALE:

For many years, the number of acres of wetlands preserved has taken precedence over the quality of the wetlands being preserved or created. Wetlands created through the mitigation process often do not replicate the functions of wetlands that have been destroyed. Due to limited funding and resource restraints, wetland protection and restoration efforts are often implemented with minimal monitoring to track habitat quality and improvement. Long-term monitoring of sites is imperative to demonstrate that remediation efforts are in fact bettering wetland health. Volunteers can play a significant role in monitoring and can serve as stewards of these precious habitats.

In 1997, the Wetland Health Assessment Toolbox (WHAT) multi-metric protocol was developed in order to estimate the overall quality of wetland habitat. The WHAT technique is a comprehensive evaluation of wetland health before and after constructed improvements take place. The data collected is used to track changes in ecological health and aid in local wetland preservation and conservation efforts. Professional wetland scientists have used this method to evaluate wetland sites on Cape Cod and the North Shore of Massachusetts.

In 1999, the WHAT program was expanded to include citizen volunteers as long-term monitors of the newly restored habitats. Volunteers are trained in the same techniques as professionals and are at the forefront of current wetland research. In the program, WHAT volunteers work alongside

scientists from the Massachusetts Bays Program, the Office of Coastal Zone Management, and the University of Massachusetts and learn to assess the condition of area salt marshes using seven wetland

indicators: water chemistry, adjacent land use, tidal influence, vegetation, aquatic macroinvertebrates, avifauna, and fish. The data collected is then synthesized by the research team to produce an overall health rating for each salt marsh site. The WHAT findings have been used to support state water quality monitoring and wetland restoration programs. In the coming years, the WHAT program will be used as a model for the development of similar monitoring strategies for other coastal habitats, such as tide pools and freshwater wetlands.

RESPONSIBLE AGENT(s):

MBP and CZM.

IMPLEMENTATION STRATEGY:

MBP and CZM are conducting research on evaluating and measuring wetland condition in coastal wetlands on Cape Cod.

MBP and CZM will continue to organize volunteer training programs using the WHAT approach. MBP and CZM have recently completed a volunteer training manual to complement the WHAT program. Distribution of this manual will be ongoing.

MBP is also working with regional partners like Salem Sound Coastwatch and the Massachusetts Audubon Society to develop

a citizen volunteer monitoring program on tide pools.

LEGISLATION REQUIRED:

New legislation is not required.

ESTIMATED COST:

The annual estimated costs associated with the wetland health assessment program are:

Research efforts	\$30-40,000
Volunteer training programs (per region)	\$30-40,000
Data analysis document	\$5,000

POTENTIAL FUNDING SOURCES:

EPA
Massachusetts 104(b) funding
Private foundations

TARGET DATE:

Ongoing, on an annual basis.

FURTHER INFORMATION:

For further information and assistance, contact:

The Massachusetts Bays Program
(617) 626-1230

Office of Coastal Zone Management
(617) 626-1212

Action Plan # 4.
Reducing and Preventing Stormwater Pollution

Progress on Action Plan # 4

The 1996 Action Plan #4 Reducing and Preventing Stormwater Pollution included nine Action Items. The Action Plan called for municipalities to adopt regulations that would require stormwater best management practices (BMPs). DEP and EPA would provide technical assistance to municipalities through stormwater workshops and guidance materials such as a Nonpoint Source Management Manual. It was also recommended that MHD and the former Metropolitan District Commission (MDC) incorporate BMPs into their construction projects and correct existing stormwater pollution problems associated with state highway drainage facilities.

In 1993, the DEP completed the Nonpoint Source Management Manual -- a Guidance Document for Local Officials (the "Mega-manual") to serve as a blueprint for local actions to protect and manage water resources and related land use. This Action Item also called for the completion and distribution of the document, Urban Best Management Practices for Massachusetts, as a guide on technical details and design recommendations for acceptable stormwater practices. Although the Mega-manual contained some essential information, agency representatives concluded that to be most useful, guidance documents for local officials needed to be streamlined. Thus, the Mega-manual was not utilized, and the Urban Best Management Practices manual was replaced with Volumes I and II of the stormwater publications described below.

In November 1996, the DEP issued a Stormwater Policy containing nine performance standards to be implemented by local Conservation Commissions for managing stormwater. In March 1997, two documents to support the Policy were prepared jointly by MCZM and DEP: Volume I-The Stormwater Policy Handbook, and Volume II-The Stormwater Technical Handbook. Volume I provides a detailed discussion of regulatory authority, as well as the performance standards and how to apply them. Volume II provides a basic discussion of hydrology, site planning, and non-structural approaches to managing stormwater, as well as information regarding BMP selection and sizing. Specifically, this document details the advantages, disadvantages, applicability, effectiveness, planning considerations, design, and maintenance for eleven types of BMPs.

To support the issuance of the policy, DEP and CZM ran a series of seven workshops during January and February 1997 for state agency staff. The Stormwater Advisory Committee that helped develop the standards and handbooks assisted with presentations for another series of eleven workshops. These workshops, held in April, May, and June of 1997, were timed with the release of the handbooks and targeted to Conservation Commissions, engineering and technical consultants, and the interested public.

DEP has established a stormwater technical expert in each of its regional offices to assist local Conservation Commissions with stormwater issues. DEP wetlands staff review all Notices of Intent developed by local Conservation Commissions as they implement and enforce the stormwater standards, and pay particular attention to large projects that have already triggered review under the Massachusetts Environmental Policy Act (MEPA).

Since the initiation of DEP's Stormwater Policy, MHD has ensured compliance by incorporating stormwater BMPs in the design of reconstruction and new construction projects. All projects that require environmental permits have stormwater controls implemented to the extent practicable or required. The 1994 Transportation Bond Bill also included a \$4 million grant program to improve stormwater drainage facilities along roads, highways, and bridges located within the coastal watersheds.

Revisions to Action Plan # 4

At the time that the CCMP was written, the federal NPDES Phase I permitting program was just getting underway. Permit applications for NPDES Phase II were due in March 2003. To help potential permit receivers prepare for these applications, several groups including DEP and MBP, held educational workshops for local officials. Two new Action Items have been added to Action Plan #4, both of which specifically address NPDES Phase II.

Action Item # 4.1	Subdivision Regulations
Action Item # 4.2	Municipal Best Management Practices
Action Item # 4.3	Nonpoint Source Management Manual
Action Item # 4.4	Streamlined Regulatory System
Action Item # 4.5	EPA Technical Assistance
Action Item # 4.6	MHD Environmental Manual
Action Item # 4.7	Stormwater Pollution Mitigation Program
Action Item # 4.8	Public Works Training Program
Action Item # 4.9	BMP Requirements for Property Tie-ins
Action Item # 4.10 <i>NEW</i>	Phase II NPDES Stormwater Management Plans
Action Item # 4.11 <i>NEW</i>	MBP Technical Assistance

MUNICIPAL ACTION # 4.10

Municipalities should develop and implement stormwater management plans for compliance with Phase II NPDES regulations.

RATIONALE:

As described in the 1996 CCMP, stormwater is a major source of pollution to the Massachusetts Bays. In Action Item #4.1, it was recommended that municipalities adopt subdivision regulations that require the incorporation of stormwater runoff best management practices into all new development plans. The Stormwater Management Policy, drafted by DEP, CZM, and the EPA and issued by DEP in 1996 supports these recommendations and establishes nine performance standards for stormwater management in new subdivision developments and redevelopments. Within each municipality, the Conservation Commissions have the legal authority to protect wetlands and thus have been charged with the responsibility of enforcing the Stormwater Management Policy.

Municipalities must also comply with EPA's two-phase NPDES Program. NPDES Phase I was directed towards eleven types of industrial activity and municipalities with populations of greater than 100,000. NPDES Phase II extends the requirements to small (one to five acres) construction sites and municipalities that are defined as "Urbanized Areas." The list of communities required to develop and implement stormwater management plans under the Phase II regulations includes thirty-two communities within the Massachusetts Bays region.

Municipalities that fall below the NPDES Phase II threshold should work towards incorporating stormwater BMPs into new development and redevelopment plans and to mitigate stormwater impacts at priority

resource areas (as described in Action Item #4.1)

RESPONSIBLE AGENT(s):

Local municipal governments are required to develop and implement plans if they are included on the list of Urbanized Areas. The individual communities should partition responsibility among local boards and municipal departments.

IMPLEMENTATION STRATEGY:

Communities should use model plans to develop or upgrade their stormwater management plan to comply with the NPDES requirements.

LEGISLATION REQUIRED:

The establishment of stormwater utilities by municipalities requires enabling legislation.

ESTIMATED COST:

Costs will vary from community to community depending on size, volume of stormwater, and other locally specific factors.

POTENTIAL FUNDING SOURCES:

Section 319 grant funds can be used for Phase II implementation efforts. Low interest loans may also be available through the Clean Water State Revolving Loan Fund (SRF), administered by the DEP, for planning or if there is a significant discharge of bacteria to be corrected. Stormwater utilities could provide a new approach to generate funding for stormwater

management. Just like electric or water utilities, stormwater utilities collect fees from residents to pay for the 'product' of stormwater management.

TARGET DATE:

In order to comply with EPA requirements, designated municipalities must have submitted plans and timelines for implementation by March 10, 2003. The implementation schedule may be spread over the five-year life of the permit and must have measurable goals.

FURTHER INFORMATION:

For further information and assistance, contact:

US EPA-Headquarters
Office of Wastewater Management
(202) 260-5816

US EPA-Region I
(617) 918-1615

Massachusetts DEP
Phase II Coordinator
(508) 767-2797

The Massachusetts Bays Program
(617) 626-1230

Office of Coastal Zone Management
(617) 626-1212

MBP ACTION # 4.11

The Massachusetts Bays Program should 1) provide technical assistance for developing and implementing non-structural Best Management Practices, 2) support efforts to create local stormwater utilities, 3) provide grant writing assistance to municipalities for implementing the Stormwater Policy, Phase II requirements, and resource protection efforts, and 4) support the efforts of DEP and CZM to revise and update the Stormwater Policy.

RATIONALE:

The MBP provides a range of technical assistance and support to local communities as they work towards implementing their stormwater management programs. In December 1999, the MBP conducted two workshops to assist communities with meeting the requirements of EPA's NPDES Phase II Stormwater Regulations. In 2003, the MBP's South Shore regional partner ran another workshop for local officials and representatives in the south shore region. At the workshop, local experts spoke about the new requirements and implications of NPDES Phase II, provided tips on developing a stormwater management plan, and gave examples of stormwater BMPs and new technologies. For those towns that developed a management plan and for those that are still planning to, it is likely that continued technical assistance through workshops and consultation will be needed.

The MBP staff have also assisted communities in the development of non-structural Best Management Practices. Examples have included developing watershed management plans, improving site planning bylaws, encouraging preventive construction and maintenance techniques, and delivering stormwater and watershed management outreach and educational programs.

The MBP regional partners have assisted communities with grant applications for stormwater projects. For example, in 1999, a regional partner of the MBP secured an \$80,000 grant from CZM's Coastal

Pollution Remediation Program for a novel stormwater treatment system on the North Shore.

In addition, the MBP will continue to support DEP and CZM's efforts to revise and update the stormwater policy. By keeping abreast of stormwater policy development and technical advancements, MBP will contribute to discussion and efforts on the Stormwater Policy. The MBP will relay this information to municipal governments and foster needed information exchange between the local and state interests.

MBP has also supported funding "stormwater utilities" programs. Stormwater utilities are a funding mechanism whereby property owners are charged a fee for using the storm drain network, and the fees collected are used to finance capital and operating expenses needed for local stormwater management. Communities need a local bylaw to enable them to set up a stormwater utility or management fee. The MBP is working with those communities that are interested in pursuing this tool.

RESPONSIBLE AGENT(s):

MBP staff

IMPLEMENTATION STRATEGY:

The MBP regional partners will continue to provide grant writing support to municipalities in implementing the stormwater policy, Phase II requirements,

and resource protection efforts. The MBP will continue to encourage funding efforts for municipal stormwater program development and implementation, such as “stormwater utilities.”

LEGISLATION REQUIRED:

The establishment of stormwater utilities by municipalities requires enabling legislation.

ESTIMATED COST:

Costs are dependent upon the amount of staff time needed and educational materials developed.

POTENTIAL FUNDING SOURCES:

In 1999, EPA provided financial assistance and speakers for the stormwater workshops, which were free of charge to the communities. Funding sources for on-the-ground projects include the Office of Coastal Zone Management’s Coastal Pollution Remediation program (CPR) and Section 319 Grants.

The Clean Water State Revolving Loan Fund (SRF), administered by the DEP, may be available to provide low-interest loans for stormwater planning.

TARGET DATE:

Ongoing

FURTHER INFORMATION:

For further information and assistance, contact:

The Massachusetts Bays Program
(617) 626-1230

Action Plan # 7
Managing Municipal
Wastewater Treatment Facilities

Progress on Action Plan # 7

Action Plan #7 addressed centralized wastewater treatment facilities and onsite sewage disposal systems. Over the past decade, substantial progress has been made on this Action Plan, especially in regards to centralized wastewater systems.

The Ocean Sanctuaries Act (OSA) was passed in 1970 to protect a significant portion of the waters within Massachusetts and Cape Cod Bays from activities that would severely alter the ecology and aesthetics of these areas. Among other activities, the OSA prohibits new or increased wastewater discharges. Though the OSA was amended in 1989 to establish a variance procedure for communities to increase the volume of wastewater discharge from pre-existent facilities if a finding of “public necessity and convenience” was deemed necessary, only one sewer district in the Massachusetts Bays region received a variance. The town has since upgraded its facility to better handle the increased level of discharge.

In the past ten years, the Massachusetts Water Resources Authority (MWRA) has made significant sewer system improvements to reduce inadequately treated sewage discharges in the Massachusetts Bays. This has included the improvement of wastewater treatment facilities at Deer Island, the extension of the Boston Harbor outfall pipe into greater Massachusetts Bay, and reduction and treatment of combined sewer overflows. In conjunction with these system modifications, the MWRA developed a marine monitoring program in which it routinely tests the quality of wastewater discharges and the habitat conditions of the surrounding marine environment. The new outfall was opened in 2000 and immediate water quality improvements were observed in Boston Harbor. As yet, minimal impact has been observed from the new outfall; its long-term effects on the greater Massachusetts Bays are the subject of ongoing monitoring.

Another area that has seen a lot of change has been the lower Charles River. The MWRA and a local non-profit organization, the Charles River Watershed Association, have each played a key role in overseeing the efforts aimed at improving water quality conditions in this water body. The EPA has also been especially active in water quality initiatives for the lower Charles and Merrimack Rivers.

State and federal agencies have undertaken an interagency approach to develop and implement an effective program for monitoring and enforcing point source discharge permits for the thirty-two municipal wastewater treatment plants and six energy producing facilities that discharge into Massachusetts and Cape Cod Bays. The Massachusetts Watershed Initiative (MWI) was designed to use Watershed Teams to evaluate the impacts of discharges to the watersheds. Since the MWI was disbanded in 2003, it will be necessary to identify other agencies to take on this role. CZM and the MBP will continue to coordinate the development of a marine monitoring program and other agencies are working on a freshwater program. Even if other agencies are able to add these monitoring efforts to their already overburdened commitments, the waterways of the Commonwealth will be inadequately monitored until funding is restored to the MWI or a comparable program.

Since the completion of the CCMP, a framework for evaluating decentralized systems has also been developed. The Massachusetts Bays Marine Studies Consortium coordinated a task force, including representatives from all levels of government, local interest groups, academia, advocates, scientists, consultants, and manufacturers, to address this vital issue. From 1995 – 97, the task force published a series of documents addressing both facilities planning and management in a decentralized context. In 1997, the task force also sponsored a day-long workshop for communities entitled, "New Tools for Community Wastewater Management - Balancing Cost, Development and Resource Protection."

In March 1995, the Title 5 regulations of the State Environmental Code were revised to better protect public health and the marine environment from on-site sewage disposal systems. However, in order to effectively mitigate the impact of on-site sewage systems, municipalities and individual homeowners need to work more closely together to correct existing problems and prevent future ones. Municipalities can continue to minimize adverse impacts of wastewater on groundwater and surface water quality through tools such as sub-area management plans, zoning changes, restrictions on land use, land acquisition, and, comprehensive planning for wastewater management.

The regular inspection and maintenance of septic systems has been critical to ensure proper long-term operation of these on-site wastewater treatment systems. The 1995 revisions to the Title 5 regulations required that all septic systems be inspected and upgraded to meet current code requirements at the time of property transfer. Based on an 8% real estate turnover rate, most septic systems will have been inspected by 2010, especially with the additional provision that systems with potential impacts to critical resources or that have been identified as failing should also be inspected. Several communities have also established local wastewater management districts in order to better manage clusters of on-site systems.

Since the completion of the CCMP, DEP has embarked on an aggressive campaign to provide training, technical assistance, and education to Boards of Health. Individual DEP staff now work out of each regional DEP office to provide technical assistance to communities. Extensive outreach materials have been developed for homeowners, as well as local officials, and workshops have provided hands-on experience for local boards and private contractors. The RPAs have also continued to provide watershed-based analyses to identify pollution sources to localized, small watersheds and to identify those areas where septic systems are a contributing source. The communities are then referred to DEP for additional technical assistance on managing septic system wastes.

Revisions to Action Item # 7

One new action item has been added, #7A.4, to determine the Total Maximum Daily Load (TMDL) of nitrogen for coastal embayments and develop management plans for wastewater treatment facilities to adapt to these new standards.

Action Item # 7A.1	Ocean Sanctuaries Act
Action Item # 7A.2	NPDES Permitting in the Charles and Merrimack Rivers
Action Item # 7A.3	Monitoring Source Discharges
Action Item # 7A.4 <i>NEW</i>	Nitrogen Total Maximum Daily Loads
Action Item # 7B.1	Sensitive Resource Areas
Action Item # 7B.2	Maintenance Programs for On-site Wastewater Systems
Action Item # 7B.3	Full-time Professional Public Health Staff
Action Item # 7B.4	Title 5 and Alternative Systems Technical Assistance
Action Item # 7B.5	Alternative Technologies
Action Item # 7C	Decentralized Wastewater Management

DEP ACTION ITEM #7A.4

The Department of Environmental Protection, in cooperation with UMass, EOEA, CZM, and MBP, should analyze and determine the Total Maximum Daily Loads (TMDLs) of nitrogen for coastal embayments and develop management plans for wastewater treatment facilities to adapt to these new standards.

RATIONALE:

There is increasing evidence that shallow, low-flushing embayments in Massachusetts are becoming stressed by nutrient enrichment. DEP, under EPA requirement to develop TMDLs for stressed waters, has identified the waters of Cape Cod, the lower South Shore, and Buzzards Bay as areas where excessive loadings of nutrients may be occurring and causing detrimental impacts to the marine environment. DEP has embarked on an effort, named "The Estuaries Project," in southeastern Massachusetts to develop models which incorporate land use and wastewater discharges, mostly from septic systems and other groundwater discharges, as sources of nutrient loading.

RESPONSIBLE AGENTS:

DEP will be the lead agency, with technical support from the MBP, BBP, CZM, EOEA, and UMass.

IMPLEMENTATION STRATEGY:

DEP will assist communities in applying the nitrogen loading model to their embayments. The model will be useful in developing local nitrogen loading control strategies. These strategies may ultimately include replacing septic systems with small regional wastewater treatment facilities.

DEP will respond to requests for assistance from communities with a cost-sharing agreement. CZM, MBP, BBP, and EOEA will provide support through a technical advisory committee. Because the tidal flushing in the Buzzards Bay region and

Nantucket Sound is much lower than it is in Massachusetts Bay, the expectation is that these regions will be prioritized in the project.

LEGISLATION REQUIRED:

Uncertain. An analysis of the existing Title 5 septic system requirements may reveal a need for additional legislation.

ESTIMATED COST:

DEP anticipates that the costs will be shared between DEP and the individual towns. DEP has already invested more than \$1 million in the development of this effort and is committed to continue, as communities request.

The cost for the technical advisory teams will require staff time but few additional other costs.

POTENTIAL FUNDING SOURCES:

DEP will obtain funds from legislative appropriations. Cities and towns will need to appropriate funds locally.

TARGET DATE:

Ongoing

FURTHER INFORMATION:

For further information and assistance, contact:

DEP
(617) 292-5695

Action Plan # 14
Managing Local Land Use and Growth

Progress on Action Item # 14

The 1996 CCMP had only one action item related to managing local land use and growth. Since then, the number of activities related to better planning for growth has increased dramatically. The Smart Growth Movement, which promotes development that is environmentally, economically, and socially sound, has encouraged communities to adopt bylaws and ordinances that protect community character. New state programs and initiatives such as the Community Preservation Act, Open Space Residential design (OSRD), and Community Development Plans (CDPs) provide useful tools and methods for municipalities to address land use, but they also require technical assistance for communities to effectively adopt them. The MBP and its partners have thus become increasingly involved in assisting communities with planning for growth.

In the years following the completion of the original CCMP there has been a remarkable increase in government programs and local initiatives targeted towards better planning for growth. There has also been a dramatic increase in citizen awareness regarding the importance of land use decisions on our quality of life, be it for environmental, economic, or social reasons. State programs initiated since 1996 include:

- Executive Order 385 titled “Planning for Growth” outlines the need for balance between environmental quality and economic activity, and directs agencies to minimize unnecessary loss of environmental quality through their siting, designing, funding, constructing, and permitting activities.
- Executive Order 418, enacted in 2000, provides \$30,000 in planning services to municipalities to create Community Development Plans highlighting future land use objectives in four core areas: housing, economic development, open space and resource protection, and transportation.
- The Community Preservation Act enables cities and town to fund open space, historic preservation, and low to moderate-income housing.
- The Open Space Residential Design initiative provides model bylaws for municipalities that wish to incorporate land and water resource protection with subdivision planning.

The Massachusetts Bays Program has also adopted the Smart Growth Principles, a series of ten guidelines developed by the EPA’s Smart Growth Network, which aim to direct development away from sensitive areas and toward areas with adequate infrastructure, reduce impacts from pollution, and maintain community character.

Revisions to Action Item # 14

The revised CCMP includes six new Action Items on land use designating the municipalities, RPAs, MBP, and CZM as Action Item leads. The new Action Items call for municipalities to adopt local bylaws and ordinances which would strengthen their ability to protect conservation land; enhanced partnerships between the RPAs and the MHD; and municipal technical assistance from the RPAs, the MBP, and CZM.

Action Item # 14.1		Local Comprehensive Plans
Action Item # 14.2	<i>NEW</i>	Local Open Space Bylaws
Action Item # 14.3	<i>NEW</i>	Sensitive Resource Areas Near Transportation
Action Item # 14.4	<i>NEW</i>	Community Development Plans
Action Item # 14.5	<i>NEW</i>	Community Preservation Act
Action Item # 14.6	<i>NEW</i>	MBP Technical Assistance
Action Item # 14.7	<i>NEW</i>	Conservation Commission Networks

MUNICIPAL ACTION # 14.2

Municipalities should adopt local bylaws and ordinances that promote open space preservation and natural resource protection.

RATIONALE:

As more residents are drawn to coastal communities, more homes and subdivisions are being built to accommodate them, and more open space is being lost. Local regulations requiring new homes to be built on lots of one acre or more were originally intended to combat sprawl and reduce density, but are now actually contributing to sprawl by consuming large tracts of land.

To protect land and more wisely plan for growth, communities need a host of diverse and effective tools. One such tool is a bylaw that promotes open space protection and conservation to help create desirable neighborhoods and maximize the amount of preserved open space without reducing the number of homes built. For example, the Open Space Residential Design (OSRD) initiative, created by the Green Neighborhood Alliance, provides model bylaws for municipalities that wish to incorporate land and water resource protection with subdivision planning. With OSRD, priority conservation areas are identified for protection before houses are sited and lot lines are drawn. The benefits are many: the site plan review process is streamlined; infrastructure and maintenance costs are reduced; conservation values are included in the planning process; and the local community character is preserved. Several Massachusetts Bays Program communities have passed model OSRD bylaws or ordinances developed by the Green Neighborhood Alliance while others have passed cluster bylaws or ordinances similar to OSRD.

Another tool for preserving open space is the Community Preservation Act (CPA).

Signed into law in September 2000, the CPA enables communities to establish a local Community Preservation Fund (through a ballot referendum) dedicated to open space, historic preservation, and low and moderate income housing. Revenue for local CPA funds are generated through a surcharge of up to 3% of the local property tax. In addition, the state has created an incentive to pass the Act by offering matching funds made possible through surcharges raised through the state Registry of Deeds. Passing the CPA offers municipalities the opportunity to generate funds to acquire open space and implement Open Space Plans while maintaining community character.

On Cape Cod, the Land Acquisition Fund (or Cape Cod Land Bank) was created in 1998 for the purpose of acquiring land for open space and the protection of drinking water supplies. The Land Bank is funded by a 3% surcharge on the property tax in each of the 15 Cape Cod towns.

As of May 2003, thirteen of the forty-nine MBP municipalities passed the CPA (Rowley, Rockport, Newburyport, Peabody, Braintree, Hingham, Cohasset, Norwell, Scituate, Marshfield, Duxbury, Plymouth, Chatham), and eleven more attempted to pass it (Hull, Kingston, Orleans, Winthrop, Beverly, Saugus, Boston, Gloucester, Marblehead, Essex, Manchester).

RESPONSIBLE AGENT(s):

Municipalities

IMPLEMENTATION STRATEGY:

Communities can adopt OSRD bylaws and ordinances as well as adopt the CPA to meet their goals of land protection and better planning for growth. Model bylaws are available at the Green Neighborhoods Alliance website (www.greenneighborhoods.org).

State matching funds are available through the Registry of Deeds, and are divided among communities that have passed the CPA. Municipalities will receive a higher proportion of state funds in the early years of the program when competition is less.

The MBP is ready to assist communities interested in pursuing these and other land protection tools.

LEGISLATION REQUIRED:

The Community Preservation Act was signed into law on September 14, 2000. In order to pass locally, a community must vote to accept the provisions of the Community Preservation Act through a majority vote in a regular election.

ESTIMATED COST:

Campaign to adopt CPA: \$2,000+

POTENTIAL FUNDING SOURCES:

For local campaigns, donations from municipal residents interested in CPA adoption.

TARGET DATE:

Ongoing

FURTHER INFORMATION:

For further information and assistance, contact:

The Massachusetts Bays Program
(617) 626-1230

EOEA Planning for Growth Office
(617) 626-1154

Department of Housing and Community
Development
(617) 727-7001

North and South Rivers Watershed
Association
(781) 659-8168

Metropolitan Area Planning Council
(617) 451-2770

Merrimack Valley Planning Commission
(978) 374-0519

Cape Cod Commission
(508) 362-3828

Old Colony Planning Council
(508) 583-1833

Trust for Public Lands
www.tpl.org

www.greenneighborhoods.org

www.communitypreservation.org

RPA ACTION # 14.3

RPA's should work with the MHD and the MBTA to ensure that facilities and infrastructure do not endanger sensitive resource areas.

RATIONALE:

The 1996 Governor's Executive Order 385 entitled "Planning for Growth" outlines the need for balance between environmental quality and economic activity. Section 7 of the order states;

"All agencies responsible for siting, designing, funding, constructing or permitting of infrastructure projects, public facilities or private development shall seek to minimize unnecessary loss or depletion of environmental quality and resources that might result from such activity and shall, as part of each final funding or permitting decision, make an express finding as to the consistency of such decision with the provisions of this Order."

E.O. 385 also requires that the Executive Office of Environmental Affairs consider the consistency of state agency actions with the Order in its review of any development project requiring the filing of an Environmental Notification Form (through the Massachusetts Environmental Policy Act).

The proposed Greenbush project is an example of a large-scale transportation project that has undergone extensive environmental reviews by EOE. Once completed, the 17-mile Greenbush commuter line will re-establish the rail connection between downtown Boston and Braintree, Weymouth, Hingham, Cohasset, Scituate, and Marshfield. The Metropolitan Area Planning Council (MAPC) has been extensively involved in ensuring that the new line complies with the ecological sustainability of the region. In 1999, MAPC produced a document titled, "Region at Risk: Development Scenarios and Designs

Guidebook For Scituate, Massachusetts" that, among other things, described the potential impact that the Greenbush line would have on Scituate.

In the coming years, the four RPA's in the Massachusetts Bays Region should work with the MBTA to develop a Land Use Task Force aimed at protecting vital natural resources with future transportation projects. This approach, if initiated early on in the planning process for transportation projects, may be more cost effective than the current approach and may enable projects to progress at a more efficient pace.

The RPA's also work with the MHD in the annual development of a list of regional priority transportation projects called the Transportation Improvement Program (TIP). Through TIP, the RPA's provide input to the MHD on local needs and conditions to aid in preventing negative impacts to sensitive resource areas. RPA's provide assistance in developing regional transportation priorities and are the MHD's partners in the development of solutions to regional transportation problems.

RPA's are not direct arms of the federal or state governments, instead, they are a consortia of local governments that coordinate to address problems and opportunities regionally. RPA's help communities plan and implement both short-term and long-range improvements for transportation, public transit, economic development, environmental, land use, and community development needs.

RESPONSIBLE AGENT(s):

Cape Cod Commission
(508) 362-3828

MBP, RPAs, EOEAs, and EPA Region 01
Smart Growth Committee.

IMPLEMENTATION STRATEGY:

When feasible, the RPAs should work with partner groups to incorporate smart growth principles into policies and programs.

LEGISLATION REQUIRED:

New legislation is not required.

ESTIMATED COST:

N/A

POTENTIAL FUNDING SOURCES:

N/A

TARGET DATE:

Ongoing

FURTHER INFORMATION:

For further information and assistance,
contact:

The Massachusetts Bays Program
(617) 626-1230

Metropolitan Area Planning Council
(617) 451-2770

Old Colony Planning Council
(508) 583-1833

Merrimack Valley Planning Commission
(978) 374-0519

RPA ACTION #14.4

Regional Planning Agencies (RPA's) should work with EOEA and the Massachusetts Bays Program to assist communities in creating their Community Development Plans.

RATIONALE:

Executive Order 418, enacted in 2000, provides funds for planning services to municipalities to complete a Community Development Plan (CDP). As part of this plan, towns need to identify regional resource management issues and prioritize critical areas for action. Each CDP includes maps outlining new housing units, open space, commercial and economic development, and improvements to transportation. In order to map their open space, towns must complete a local environmental assessment. Over the past few years, the RPAs and staff of the Massachusetts Bays Program have worked together to provide consulting services to towns on the completion of their Community Development Plans.

The terms CDPs and Local Comprehensive Plans (LCPs) are similar, however there are important differences. CDPs are developed for one or more communities and include a series of GIS-based maps indicating future land use objectives in four core areas (housing; economic development; open space and resource protection; and transportation). An LCP is a more comprehensive, text-based document developed for one community and addresses issues beyond the four core areas detailed in a CDP. A CDP is intended to provide a baseline for communities to examine how the four core areas interrelate, and to identify areas for further planning. LCPs may be more specific to one topic, such as an LCP for housing.

CDPs provide a visual record of a town's plans. Map layers produced for each community typically include 1) Absolute

constraints to development; 2) Developable land and partial constraints; 3) A composite of No.'s 1 & 2; 4) Orthophotograph aerial map; and 5) Zoning.

The process for a community to develop a CDP is: 1) The community and RPA sign an agreement to develop the plan, 2) A Planning Committee is formed, 3) GIS maps, buildout analysis, and community data profile are developed, 4) A community assets and liabilities inventory is created, 5) A Community Vision Statement is drafted, 6) A scope of services is developed with the RPA to facilitate community input and complete the CD Plan, 7) The plan is created. It is estimated that communities will need 12-14 months to complete their CDP, the final product being a strong set of recommendations for the community's planning board.

As of March 2003, the following nine towns in the Massachusetts Bays region had approved CDP scopes: Cohasset, Essex, Hingham, Ipswich, Pembroke, Provincetown, Rowley, Weymouth, Winthrop. Twenty additional Massachusetts Bays towns have submitted scopes and are waiting approval. In 2000, the Cape Cod Commission developed build-out maps for their communities. For this reason, many of the Cape Cod towns chose not to participate in the Community Development Plan program, however eight of the Cape Cod towns had an equivalent plan submitted.

In the coming years, the RPAs and the staff of the Massachusetts Bays Program will work with these towns to ensure that they consider the environmental integrity of their coastal ecosystems in the development of their Community Development Plans.

RESPONSIBLE AGENT(s):

Metropolitan Area Planning Council
Merrimack Valley Planning Commission
Cape Cod Commission
Old Colony Planning Council
EOEA
The Massachusetts Bays Program

For further information and assistance,
contact:

The Massachusetts Bays Program
(617) 626-1230

EOEA Planning for Growth Office
(617) 626-1154

IMPLEMENTATION STRATEGY:

Once a municipality has received the EOEA build-out analysis and presentation, it is eligible for tapping EO 418 funds. A municipality must contact its RPA, which is the responsible agent for grant administration.

Department of Housing and Community
Development
(617) 727-7001

LEGISLATION REQUIRED:

EO 418 was signed by Governor Cellucci in January 2000. No further legislation is needed at this time.

ESTIMATED COST:

N/A

POTENTIAL FUNDING SOURCES:

EO 418 funds provide \$30,000 to a community for the development of a CDP.

TARGET DATE:

Ongoing

FURTHER INFORMATION:

MBP ACTION # 14.5

The Massachusetts Bays Program will work with EOEA to provide local support and expertise to communities on the Community Preservation Act and facilitate regional links and networking among neighboring communities.

RATIONALE:

Signed into law in September 2000, the Community Preservation Act (CPA) enables municipalities to establish local Community Preservation Funds. The Community Preservation Fund is enacted through a ballot referendum and is to be used for open space protection, low and moderate income housing, and historic preservation. Revenue for the fund is generated through a surcharge of up to 3% of the local property tax.

There are a variety of organizations and agencies including EOEA, the Department of Housing and Community Development, the Trust for Public Land, the Community Preservation Coalition, and the Community Preservation Institute that provide a wealth of resources and assistance to towns in developing CPA campaigns and implementing the Act once it has been passed. However, few of these groups are available to provide the one-on-one assistance that many towns need to implement the CPA.

In 1999, the MBP (through the EPA Futures Program) held a workshop series for municipal officials on land use tools. These workshops presented a menu of tools and case studies to help municipalities learn how to apply a variety of techniques, including the CPA, to better plan for their growth. These workshops resulted in a network of CPA committee members (called the Community Preservation Committee Network) in several towns to discuss ideas and concerns about CPA implementation. The Massachusetts Bays Program also arranged for speakers from the aforementioned groups to attend the

workshop and provide advice on how towns could best use the available resources.

As of 2003, twenty-four MBP towns had the CPA on their election ballot. Twelve of these towns passed the CPA. They include:

<u>MBP Subregion</u>	<u>Towns</u>
Upper North Shore	Newburyport, Rockport, Rowley
Salem Sound	Peabody
Metro-Boston	Braintree, Hingham
South Shore	Cohasset, Duxbury, Marshfield, Norwell, Plymouth, Scituate

In the coming years, the MBP will work closely with those towns that have not yet passed the CPA to plan new community preservation strategies.

RESPONSIBLE AGENT(s):

MBP
EOEA
RPAs

IMPLEMENTATION STRATEGY:

The MBP will continue its partnership with EOEA, the Trust for Public Lands, and other interested partners to provide information, guidance, and assistance to municipalities pursuing the CPA program, as well as to facilitate continued information sharing among municipalities.

LEGISLATION REQUIRED:

The Community Preservation Act was signed into law on September 14, 2000. In order to pass the CPA locally, a community must vote to accept the provisions of the CPA through a majority vote in a regular election.

ESTIMATED COST:

N/A

POTENTIAL FUNDING SOURCES:

EPA

TARGET DATE:

Ongoing

FURTHER INFORMATION:

For further information and assistance, contact:

The Massachusetts Bays Program
(617) 626-1230

EOEA Planning for Growth Office
(617) 626-1154

North and South Rivers Watershed
Association
(781) 659-8168

Metropolitan Area Planning Council
(617) 451-2770

Merrimack Valley Planning Commission
(978) 374-0519

Cape Cod Commission
(508) 362-3828

Trust for Public Lands
www.tpl.org

www.communitypreservation.org

MBP ACTION # 14.6

The Massachusetts Bays Program will provide technical assistance to municipalities to adopt and implement plans and bylaws that promote open space preservation and natural resource protection.

RATIONAL

E:

Bylaws that promote open space protection and conservation can build desirable neighborhoods and maximize the amount of preserved open space without reducing the number of homes built. MBP can assist municipalities with the bylaw process, but municipalities must act to adopt the bylaws.

Examples of tools in current use by municipalities include:

- The Open Space Residential Design (OSRD) initiative provides model bylaws for municipalities that wish to incorporate land and water resource protection with subdivision planning.
- Community Development Plans (CDPs) allow municipalities to develop future land use objectives in four core areas (housing, economic development, open space and resource protection, and transportation). The CDP is intended to provide a baseline and to examine how the four core areas interrelate and to identify areas for further planning.

The MBP will continue to assist communities in adopting and implementing these and other tools to preserve and protect the community’s important natural resources.

RESPONSIBLE AGENT(s):

The MBP, RPAs, and other groups such as the Green Neighborhoods Alliance (GNA). The GNA is a partnership developed on the North Shore consisting of CZM, Mass

Audubon, MAPC, realtors, developers, the MBP, and others to create a model OSRD bylaw.

IMPLEMENTATION STRATEGY:

MBP staff are available to assist municipalities with the bylaw process, although municipalities must act to adopt those bylaws.

LEGISLATION REQUIRED:

No new legislation is required.

ESTIMATED COST:

N/A

POTENTIAL FUNDING SOURCES:

Executive Order 418 provides \$30,000 in planning services to municipalities to create Community Development Plans. If a municipality already has an existing Master Plan, it may submit it to EOEA for approval in whole or part of a Community Development Plan. If the state grants approval, funds may be used instead for Plan implementation.

TARGET DATE:

Ongoing.

FURTHER INFORMATION:

For further information and assistance, contact:

Metropolitan Area Planning Council
(617) 451-2770

Merrimack Valley Planning Commission
(978) 374-0519

Cape Cod Commission
(508) 362-3828

Old Colony Planning Council
(508) 583-1833

The Massachusetts Bays Program
(617) 626-1230

CZM ACTION #14.7

The Office of Coastal Zone Management and the Massachusetts Bays Program should support Conservation Commission Networks (Con Com Networks) in the coastal region by providing technical and management assistance.

RATIONALE:

Strapped with limited resources, Conservation Commissioners and town Conservation Agents have used the Con Com Networks as an opportunity to share resources and information with their neighboring communities. So far, three Networks exist in the Massachusetts Bays region: the North Shore, Urban, and Cape Cod Networks, and plans are currently underway to develop a South Shore Network. The Networks meet individually on a regularly scheduled basis and often have presentations by outside speakers to provide guidance on common problems and issues. CZM and the MBP assist the Networks with meeting logistics and in identifying technical experts.

RESPONSIBLE AGENT(s):

CZM with support from MBP

IMPLEMENTATION STRATEGY:

MBP staff will work with CZM staff to maintain the existing Con Com Networks in the North Shore (including Salem Sound), Metro Boston, and Cape Cod regions, and will also work to expand into the South Shore.

LEGISLATION REQUIRED:

No new legislation is required

ESTIMATED COST:

N/A

POTENTIAL FUNDING SOURCES:

N/A

TARGET DATE:

Ongoing

FURTHER INFORMATION:

For further information and assistance, contact:

Office of Coastal Zone Management
North Shore Office
(North Shore Network)
(978) 281-3972

Office of Coastal Zone Management
Boston Office
(Urban Network)
(617) 626-1200

Metropolitan Area Planning Council
(Urban Network)
(617) 451-2770

North and South Rivers Watershed
Association
(South Shore Network)
(781) 659-8168

Cape Cod Commission
(Cape Cod Network)
(508) 362-3828

Massachusetts Bays Program
(617) 626-1230

Action Plan #16
Preventing Marine Invasive Species

Introduction to Action Plan # 16

Biodiversity is a key indicator of estuarine health. Though environmental managers have often fought to protect endangered and threatened species, little attention had been paid to aquatic invasions until the costly invasion of the zebra mussel in the Great Lakes. Marine invasive species still receive minimal attention even though at least 400 exotic marine and estuarine species have become established in the United States since colonial times. While irresponsible development and habitat displacement may be the leading cause of species decline, introduced exotic species also pose a major threat to biodiversity.

The majority of marine invasive species are introduced accidentally. Species arrive as hitchhikers in the ballast water of commercial ships while others are imported as live seafood or bait, as aquatic pets, or as research or museum specimens. Some plants and animals are then held in onsite water tanks, ultimately making their way into the local waterway via the facility's discharge pipe. A few are even intentionally introduced with the hope of starting a new aquaculture product. As the rate of global trade increases, so does the risk for additional introductions of invasive species. Unless current trade practices are modified to manage intentional introductions and to limit unintentional ones, increased trade activity will undoubtedly result in a greater number of invasions.

As the commercial, research, and educational hub of New England, Massachusetts has a long history of invasions. Its waters are home to numerous exotic species and many of these have arrived in the last ten to twenty years. Compared to other ports in the United States, Boston receives relatively little ballast water, suggesting that non-shipping pathways may be a significant source of new species.

Invasive species have caused significant economic impacts to industries that are dependent upon shellfish, groundfish, and coastal recreation. Public concern over these impacts has led to legislative actions, including the 1996 passage of the National Invasive Species Act. In 1999, CZM, with assistance from DCR and MBP, organized the Aquatic Invasive Species Working Group. The Working Group is made up of numerous partners and has been instrumental in identifying priority actions aimed at reducing the risk of and responding to further introductions. These tasks were incorporated into the Massachusetts Aquatic Invasive Species Management Plan, which received federal approval in December 2002.

The complexity and broad geographic extent of this problem continues to require considerable cooperation and coordination among various state agencies and partners. The diffuse nature of the problem also requires significant public involvement. The Management Plan organizes responsibilities among the various parties and identifies the tasks needed to accomplish the goals. The Plan identifies current and potential financial resources for invasive species management, as well as specific additional needs for the next five years. The Working Group continues to meet regularly to document accomplishments and share information.

Many of the Working Group members, including MBP, CZM, DCR, and MIT Sea Grant, also participate in the Northeast Regional Panel of the Aquatic Nuisance Species Task Force (the NEANS Panel). The NEANS Panel, formed in 2001, also includes environmental managers, scientists, educators, and industry representatives from New York to the Canadian Maritimes. The Panel meets biannually to address issues of concern related to invasive species in the northeast region.

Recent activities related to marine invasive species have included surveys of marine habitats and pathways for invasive species, public awareness campaigns, analyses of regional legislation pertinent to invasive species, and workshops on response strategies for aquatic invasive species. Action Plan #16 identifies three Action Items related to this vital issue.

Action Item # 16.1 *NEW* **Public Education Program**

Action Item # 16.2 *NEW* **Habitat Monitoring**

Action Item # 16.3 *NEW* **Industry Education Program**

CZM ACTION # 16.1

CZM and MBP should work with other state agencies and partners to develop and implement a public education program on marine invasive species.

RATIONALE:

Locating and identifying invasive species, as well as controlling their transport, cannot be accomplished without widespread public knowledge and involvement. Invasive species have been found by fishermen, citizen volunteers, beachcombers, and school children. The general public needs to be on watch for the arrival of new species and to assist in monitoring the spread of exotics that are already present in the region. In order to be able to recognize new species, citizens need taxonomic training on the diversity of native species, as well as the new invaders. In order to monitor the spread of new arrivals, environmental managers need to keep abreast of new invaders to the region and share this information with the general public.

In 2001, MIT Sea Grant developed a watch card that highlights fourteen exotic species in the region. This card has been used by citizen monitoring groups to follow the spread of exotic species in Massachusetts. Environmental managers hope that the general public will continue to use this card and other similar educational materials that provide information on the whereabouts of these species. The data provided by monitoring groups can be used to better understand invasive species and the vectors that transport them into the area.

In 2002, CZM created an online information center and database (Marine ID). The intention of this database was to provide a repository for data collected by environmental managers and monitoring groups on the distribution of marine invasives in the region. Similar to the watch card, this database will be used both as an

educational tool for the general public and as a monitoring tool for managers.

The general public also needs to know what they can do to prevent the introduction of exotic species into the region. There are numerous pathways through which exotics can be introduced. One way is through the intentional release of aquatic pets. In 2003, the MBP worked with Massachusetts' pet stores to develop an educational brochure on proper aquatic pet care that discourages the intentional release of aquatic pets, plants, and tank water into the local aquatic environment. The flyer is being distributed by pet stores throughout the region.

RESPONSIBLE AGENT(s):

CZM and MBP should work with EOE agencies, MIT Sea Grant, the Massachusetts Audubon Society, and others to develop and distribute information on marine invasive species to the public. CZM should identify appropriate partners to assist in the development and management of the online database.

IMPLEMENTATION STRATEGY:

CZM and the MBP should continue to create and distribute educational materials and identification tools for new invasive species. Information on species characteristics and potential locations for introductions can help to focus public attention. This information should include details on species impacts, identification characteristics of new invasive species, and possible transport means that should be controlled. CZM will work with other agencies and organizations to develop and distribute these materials. When feasible, this information, along with taxonomic training, should also be

incorporated into pre-existent marine monitoring programs.

In the coming year, the MBP will continue to work with local pet stores to distribute the aquatic pet brochure to the general public. MBP should continue to develop educational materials for the general public on transport pathways for marine invasive species.

CZM should continue to expand upon its online database. The database should be managed by an environmental agency and the entries should be verified by a scientific panel. The database can be used to track the spread of invasive species in the region and to provide current information on population expansions.

LEGISLATION REQUIRED:

No new legislation is required at this time.

ESTIMATED COST:

Development, printing, and distribution costs of additional educational materials	\$10,000 per publication
Taxonomic training workshop	\$2,000 per workshop
Online database maintenance	\$4,000 per year

POTENTIAL FUNDING SOURCES:

Existing outreach budgets of agencies involved.

Federal sources: NOAA, Sea Grant, EPA

TARGET DATE:

A suite of new products should be developed by 2006.

FURTHER INFORMATION:

For further information and assistance, contact:

Office of Coastal Zone Management
(617) 626-1212

The Massachusetts Bays Program
(617) 626-1230

MIT Sea Grant
(617) 252-1241

MBP ACTION # 16.2

The Massachusetts Bays Program will coordinate with managers and scientists to develop a monitoring strategy for marine invasive species and will periodically conduct rapid assessment surveys in coastal resource areas for the presence of marine invasive species.

RATIONALE:

Periodic surveys of aquatic habitats are essential for detecting the presence and range expansions of aquatic invasive species. The first survey for invasive species was conducted in August 2000 and was modeled after the rapid assessment surveys conducted in San Francisco Bay and Puget Sound. During this survey, a team of marine environmental managers and scientists searched for invasive species attached to standing docks and piers. In the coming years, other habitats, such as the benthos and salt marshes, need to be surveyed. Since invasive species can easily traverse state boundary lines, groups such as the northeast National Estuary Programs should work together to conduct region wide surveys. Regional rapid assessment surveys for each habitat type should be repeated periodically.

Rapid assessment surveys require the participation of taxonomic specialists to assist with organism detection and identification. CZM and MBP, in coordination with other organizations such as MIT Sea Grant, Massachusetts Audubon, and Salem Sound Coastwatch are well positioned to identify and solicit participation from qualified individuals, as well as to organize partnerships with local universities for equipment and laboratory space.

RESPONSIBLE AGENT(s):

MBP, in cooperation with CZM and MIT Sea Grant, should be responsible for organizing the rapid assessments.

Cooperation from state universities and other partners should be sought.

IMPLEMENTATION STRATEGY:

The MBP will use the first two rapid assessment surveys as guides for future similar studies.

The MBP will use the data from these studies and a GIS database to track the occurrence and spread of new invasive species in the marine and estuarine environments of Massachusetts.

LEGISLATION REQUIRED:

No new legislation is required at this time.

ESTIMATED COST:

Rapid assessment survey (including in-kind contributions)	\$30–50,000
GIS database design	\$15,000
Intern to input data into database	\$5,000

POTENTIAL FUNDING SOURCES:

In kind contributions from state agencies and other state partners such as the state universities.

Federal sources: NOAA, Sea Grant, EPA

TARGET DATE:

The report from the first survey of docks and piers was made available in 2001.

In 2003, the MBP and MIT Sea Grant conducted a second survey. EPA funded the survey. The report will be made available in 2004.

Survey sites should be revisited every three to five years.

FURTHER INFORMATION:

For further information and assistance, contact:

The Massachusetts Bays Program
(617) 626-1230

MIT Sea Grant
(617) 252-1241

Office of Coastal Zone Management
(617) 626-1212

MBP ACTION # 16.3

The Massachusetts Bays Program should work with CZM, MIT Sea Grant, and other parties to develop a monitoring and industry education strategy for pathways for marine invasive species.

RATIONALE:

Studies on shipping and other marine-based industries have shown that there are likely opportunities for invasive species to be released into the coastal waters of Massachusetts. The vast majority of marine invasions have resulted from unintentional introductions. Many of these introductions have been attributed to ballast water transport and hull transfers from commercial ships. MIT Sea Grant has led numerous efforts aimed at controlling the spread of invasives via commercial shipping. Most recently, MIT Sea grant held a workshop for industry representatives, environmental managers, and local scientists on identifying areas along the Northwestern Atlantic that may be suitable for ballast water exchange for vessels traveling along the coast.

Though ballast water has received the most attention, it is not the only pathway for aquatic introductions. In 1999, a team of scientists from Northeastern University, MIT Sea Grant, and Williams College-Mystic Seaport conducted a study on non-shipping pathways for marine invasive species in Massachusetts. The team surveyed over 800 organizations that work with live exotic marine species including seafood companies, aquaculture facilities, bait shops, pet stores, marine research laboratories, public aquariums, and those involved in wetland restoration projects (nurseries, govt. organizations, etc.) to see if handling practices being used by these organizations could possibly lead to the introduction of exotic marine species into local waterbodies. The study was later expanded to encompass the entire New England coastal region. It was found that

the pathways varied greatly and that a pathway-specific approach to management was needed. The findings from this study have been used to guide pathway management strategies in the northeast.

Since the survey was only available in English, it was not distributed to multi-lingual markets. This group, however, may be at risk of introducing exotic marine species. In 2003, the Northeast Regional Panel of the Aquatic Nuisance Species Task Force (NEANS Panel) received a grant from National Sea Grant to develop outreach materials on invasive species that will be translated into multiple languages. MBP staff, as members of the NEANS Panel, will lead this effort along with numerous multi-cultural organizations in the region.

RESPONSIBLE AGENT(s):

MBP, MIT Sea Grant, CZM, and other parties

IMPLEMENTATION STRATEGY:

MBP will continue to work with MIT Sea Grant on preventing marine invasions via the shipping industry.

MBP will use the New England Transport Vector Study to develop similar studies in the future.

Based on the survey findings, the MBP will create targeted outreach materials for industries at risk of introducing invasive species into the local marine environment.

MBP and CZM will incorporate the data from these studies into a GIS database to

track the occurrence of pathways for marine invasive species in Massachusetts.

LEGISLATION REQUIRED:

If it is found that certain pathways are at risk of introducing invasive species into the marine and estuarine environments of Massachusetts, it may be necessary to modify current regulations. The NEANS Panel's Policy Committee has recently compiled a list of legislation pertinent to controlling and preventing aquatic invasive species in the northeast. The committee plans to analyze this list and develop a set of recommendations for the Panel on additional legislation, regulations, or political action that is needed on aquatic invasive species in the region. The MBP is an active member of this committee.

MIT Sea Grant is in the process of developing a Ballast Water Management Plan for the region. The NEANS Panel recently created a Ballast Water Committee that will assist MIT Sea Grant in this effort.

ESTIMATED COST:

Periodic transport vector studies	\$50,000
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POTENTIAL FUNDING SOURCES:

In kind contributions from state agencies and other partners such as local universities.

Federal sources: NOAA, Sea Grant, and EPA

TARGET DATE:

The report from the New England Transport Vector Study was made available in 2002.

Investigation into new vectors and pathways should commence immediately.

Vectors and pathways should be reviewed every three to five years.

FURTHER INFORMATION:

For further information and assistance, contact:

The Massachusetts Bays Program
(617) 626-1230

MIT Sea Grant
(617) 252-1241

Office of Coastal Zone Management
(617) 626-1212

Action Plan #17
Monitoring the Marine Environment

Introduction to Action Plan # 17

Monitoring is a necessary element to sound management of the resources of the Massachusetts Bays. More specifically, monitoring is needed to help address such fundamental questions as: Are our waters safe for swimming? Are the fish safe to eat? Is the ecosystem healthy? Are the natural resources being protected? Are our coastal waters cleaner today than 20 yrs ago, 5 yrs ago? How effective are our pollution prevention measures?

Monitoring is the practice of measuring ambient conditions. If conducted over the long term, monitoring can lend itself towards trend analysis. In order to monitor a large geographic area, like Massachusetts and Cape Cod Bays, it is often necessary to collect data from a variety of groups. These groups generally have different reasons for collecting data and the coordinating organization must take into account these varying objectives when interpreting the data. Most monitoring programs in Massachusetts are associated with permit requirements, site-specific discharge issues, or marine resource health assessments – making it difficult to draw conclusions about the state of our marine waters as a whole.

A monitoring effort in Massachusetts Bays that has received a significant amount of attention has been that related to the extension of the metro-Boston municipal wastewater outfall pipe. In 2000, the Massachusetts Water Resources Authority (MWRA) extended the outfall pipe from the confines of Boston Harbor into the open waters of Massachusetts Bay. In order to measure any environmental changes that might occur after the new outfall was brought on line, scientists and managers began monitoring the background conditions of Massachusetts Bay nine years prior to the pipe extension. Today, MWRA continues to monitor the bay and is able to use the near-decade's worth of data to determine if water quality conditions are changing.

By proactively monitoring water quality, coastal habitats, and sources of contamination, scientists can also create models that can be used to predict future impacts. These models can then be used by local environmental managers to design and implement sound and forward-thinking solutions to a variety of problems, such as how to manage wastewater, how to treat stormwater before it is released to the sea, and how to restore important coastal wetlands. With these new technologies and management practices in mind, organizations like the MBP, can assist local communities in taking action towards improving their local water quality.

The Massachusetts Bays Program has been involved in the Massachusetts Marine Monitoring Initiative (MMMI). The MMMI is designing a comprehensive system for information gathering, assimilation, and dissemination of state marine monitoring efforts. The MMMI got its start at the 1996 Coastal Caucus, sponsored by CZM, the MBP, and the Buzzards Bay Project (BBP). Over twenty-five state legislators attended the Caucus that focused on marine monitoring, shellfish bed restoration, and aquaculture. The year after the Caucus, funds were appropriated to the Executive Office of Environmental Affairs (EOEA) for marine monitoring efforts. Up until 2003, the Massachusetts

legislature had provided level funding for marine monitoring and research in Massachusetts. By investing in marine monitoring we are investing in a healthy coast where clams can be harvested, children can swim, and people can fish in local bays and harbors without health concerns. Through this investment, we are also helping to build a healthy economy where fishing, tourism, recreation, and shipping industries thrive.

The coordination of state monitoring efforts is necessary in order to effectively manage our coastal resources, whether it be maintaining recreational and commercial fisheries, developing aquaculture, restoring shellfish beds, or improving local water quality for its recreational and aesthetic value. This Action Plan contains three Action Items that recommend the development of a state Marine Monitoring Plan, a State of the Coast report, and implementing legislation on marine monitoring such as the Beaches Bills.

- Action Item # 17.1** *NEW* **Marine Monitoring Plan**
- Action Item # 17.2** *NEW* **State of the Coast Report**
- Action Item # 17.3** *NEW* **Beaches Bill**

CZM ACTION # 17.1

The Office of Coastal Zone Management (CZM), in coordination with the MBP, DMF, DEP, the Buzzards Bay Project (BBP), and university scientists, should coordinate the design and implementation of a marine monitoring plan.

RATIONALE:

Over seventy-five percent of the citizens in Massachusetts live within coastal counties. The coastal resources in this region are being threatened by significant residential, commercial, and industrial activities. In order to identify adverse effects to coastal waters, it is necessary to routinely track nutrient enrichment, habitat conditions, invasive species, pathogens, toxic contaminants, and the status of living resources.

Since 2000, the MMRP has sponsored an annual Marine Monitoring Symposium designed to identify regional, state, and local monitoring initiatives to aid in the development of a more comprehensive state wide monitoring program. The first Marine Monitoring Symposium provided an overview of local, state, and federal marine monitoring initiatives. In May 2003, the annual symposium focused on beach monitoring and issues associated with implementing the new Massachusetts Beaches Act.

Also beginning in 2000, Massachusetts entered into a cooperative agreement with EPA to assess the ecological health of the state's estuaries and embayments. This initiative is part of the National Coastal Assessment Program (NCA), coordinated by EPA's Office of Research and Development. The first year of this effort has also been known nationally as Coastal 2000. The MBP is coordinating Massachusetts's participation in the NCA. This program also involves state partners from the University of Massachusetts and the Massachusetts Division of Marine Fisheries. Annual work

plans are developed and submitted to EPA for approval.

In addition to state monitoring coordination, the MBP is actively pursuing the development of meaningful environmental indicators of ecosystem health. To that end, the MBP participates in two regional monitoring initiatives: Gulfwatch and the Northwest Atlantic Monitoring Network (NAMN). Gulfwatch is a Gulf of Maine-wide monitoring program that uses the blue mussel, *Mytillus edulis*, as an indicator of habitat exposure to organic and inorganic contamination. Massachusetts' coastal waters form the lower southern reaches of the Gulf of Maine.

The NAMN began out of a need to coordinate among the state partners participating in the National Coastal Assessment. Massachusetts led the charge and engaged many potential partners and the regional interest expanded from the Gulf of Maine to include Canadian partners (from New Brunswick and Nova Scotia) all the way to Long Island Sound. Several workshops have taken place, which have led to the development of a Regional Monitoring Strategic Plan and environmental indicators for reporting on the condition of the region's coastal waters. It is necessary therefore to understand the role of the Gulf of Maine on environmental coastal water quality since the waters of the gulf are essentially in our backyard.

RESPONSIBLE AGENT(s):

CZM, MBP, UMass Boston, and the EPA will work together to coordinate the design and implementation of the Monitoring Plan.

IMPLEMENTATION STRATEGY:

In 2000, EPA’s Office of Research and Development, through the National Coastal Assessment Program, began working closely with each state, through their associated NEPs, to develop coastal monitoring programs. EPA provided significant financial resources to design and initiate statewide coastal monitoring programs, with emphasis on near coastal waters and estuaries. In Massachusetts, a cooperative partnership was created between CZM, DMF, MBP, and BBP to develop this program. In the summer of 2000, after several coordination meetings, the monitoring program (known as the Massachusetts Ecosystem Assessment Program) began an extensive data collection. Since then, EPA has evaluated the program and has committed to fund the marine monitoring efforts in five year increments.

Office of Coastal Zone Management
(617) 626-1212

The Massachusetts Bays Program
(617) 626-1230

The Buzzards Bay Project
(508) 291-3625

Gulf of Maine Council on the Environment
www.gulfofmaine.org

LEGISLATION REQUIRED:

None required.

ESTIMATED COST:

Variable, but expected to be at least \$200,000/year.

POTENTIAL FUNDING SOURCES:

EPA through their Office of Research and Development (National Coastal Assessment Program) and through state funding for marine monitoring.

TARGET DATE:

Marine Monitoring will be ongoing, and annual work plan and reports updates will be provided.

FURTHER INFORMATION:

For further information and assistance, contact:

CZM ACTION # 17.2

The Office of Coastal Zone Management should work with the Massachusetts Bays Program and the Buzzards Bay Project to develop and produce a State of the Coast Report.

RATIONALE:

A State of the Coast Report will be prepared to interpret and synthesize the data collected on the condition of Massachusetts' coastal resources. It is important to have this information in order to assess conditions, identify gaps in information, prioritize areas for remediation or additional protection, and provide guidance for resource management. This report will also be used to document baseline conditions, as well as improvement or deterioration over time. Finally, the State of the Coast Report will also serve as an information source for the public and elected officials.

RESPONSIBLE AGENT(s):

CZM, MBP, and the BBP will lead this effort. Coordination with several state programs and with area scientists is needed.

IMPLEMENTATION STRATEGY:

Development of the Massachusetts State of the Coast report will be closely coordinated with development of Massachusetts Bays' State of the Bays Report, as well as with the recently completed Buzzards Bay State of the Bay report. In addition, the Gulf of Maine Council is developing a State of the Gulf report to be completed by October 2004. Staff responsible for their respective program's report will work together to produce a comprehensive overview of the status and trends of Massachusetts' coastal waters and relate this effort to the larger regional initiatives (e.g., State of the Gulf report).

Conferences highlighting each of the reports are being planned to reach a wide audience

of managers, researchers, public and elected officials, and the general public.

LEGISLATION REQUIRED:

None required.

ESTIMATED COST:

Participating agency staff time, printing costs, and conference organization costs are in preliminary planning stages.

POTENTIAL FUNDING SOURCES:

Marine Monitoring Program at CZM, other CZM and EOEPA sources, EPA's National Coastal Assessment Program, and the two NEPs.

TARGET DATE:

The State of the Bays Report and conference are planned for May 2004. The State of the Coast and Gulf of Maine Report and associated conferences are planned for October of 2004. The Buzzards Bay State of the Coast conference was held in 2003.

FURTHER INFORMATION:

For further information and assistance, contact:

Office of Coastal Zone Management
(617) 626-1212

The Massachusetts Bays Program
(617) 626-1230

The Buzzards Bay Project
(508) 291-3625

DPH ACTION #17.3

The Department of Public Health should coordinate with the Office of Coastal Zone Management and the Massachusetts Bays Program to implement the state and federal Beaches Bills.

RATIONALE:

Recreational beach use has tremendous economic value in Massachusetts, yet the coastal waters continue to be inefficiently monitored for water quality. Despite numerous recent advances in sewage treatment, the Massachusetts Water Resources Authority estimates that over 1 billion gallons of inadequately treated sewage are still discharged every year into coastal waters.

In 2000, the U.S. Congress enacted the Beaches Environmental Assessment and Coastal Health (BEACH) Act to improve the quality of coastal recreational waters. Also in 2000, the Massachusetts Beaches Act (Chapter 248 of the Acts of 2000) was passed. The act requires that beaches be tested at least weekly during the bathing season using standardized protocols with improved indicators, and the results of these efforts to be posted in a timely manner. Water-quality standards and monitoring procedures have not yet been fully implemented because of a lack of funding for municipalities and a lack of adequate infrastructure, such as certified laboratories.

RESPONSIBLE AGENT(s):

The Massachusetts Department of Public Health (DPH) together with local Boards of Health have primary responsibility over the implementation of beach monitoring requirements. Local boards of health from cities and towns that have public and semi-public bathing beaches are required to submit to DPH beach field data and lab results for bathing beaches under their jurisdiction. Sample collection and testing were required to be in compliance with the *Standard Methods for the Examination of*

Water and Waste Water of the American Public Health Association or as approved by the EPA.

IMPLEMENTATION STRATEGY:

Since current water quality testing methods used in many locations are outdated, inaccurate, or inconsistent among municipalities, new water testing methods must be developed and put into action. Beaches also need to be consistently monitored for contamination by pathogens from stormwater runoff and combined sewer overflows. Most importantly, it is imperative that public officials post warnings for the public when contamination is detected.

LEGISLATION REQUIRED:

None required.

ESTIMATED COST:

Costs to local communities and DPH are estimated to be several hundred thousand dollars per year.

POTENTIAL FUNDING SOURCES:

In late 2001, the DPH was awarded funding from the EPA to partially support the development of a bathing beaches inventory and communicate results of beach monitoring to the general public.

Private funding sources, and existing agency budgets could supply funds for outreach and education. Funds to support DPH and local implementation will be needed from the state legislature and from EPA.

TARGET DATE:

The DPH electronic reporting system will improve data completeness for the 2003 beach season. An electronic data reporting and posting system on the world wide web, as well a GIS inventory of beaches in Massachusetts is being developed for marine beaches.

FURTHER INFORMATION:

For further information and assistance, contact:

Massachusetts Department of Public Health
(617) 983-6761

Office of Coastal Zone Management
(617) 626-1212

The Massachusetts Bays Program
(617) 626-1230

Notes...

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