Appendices

Appendix A.

The Management Framework

APPENDIX A.
THE MANAGEMENT FRAMEWORK IN MASSACHUSETTS BAYS

The wise management and use of the resources in Massachusetts Bays come under the purview of a variety of legislative mandates and regulatory agencies at the federal, state, regional, and local levels. In addition, there are a number of nonregulatory programs carried out by governmental entities, including regional planning agencies, that play a role in restoring and protecting Massachusetts Bays. This appendix provides both an overview of the existing governmental framework and a context for many of the recommendations described in the CCMP Action Plans. It also supports Appendix E, the Management Characterization for the Massachusetts Bays.

Federal Agencies

US Environmental Protection Agency

The US Environmental Protection Agency (EPA) operates under several important pieces of federal legislation of concern in Massachusetts Bays. These include: the Clean Water Act (CWA); the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the National Environmental Policy Act (NEPA); and the Marine Protection, Research, and Sanctuaries Act (MPRSA).

The CWA regulates "discharges" of "pollutants" from point sources into waters of the United States. Its coverage includes, among other things, effluent discharges from sewage treatment plants and industrial facilities, and discharges of dredged and fill material into wetlands, estuaries, and other waters.

Under the Clean Water Act, as amended by the Water Quality Act of 1987, EPA is responsible for:

- Coordinating the National Estuary Program, of which Massachusetts Bays is one of 28 "estuaries of national significance." EPA-New England has direct responsibility for the administration of the Massachusetts Bays Program.
- Regulating industrial discharges and publicly owned sewage treatment facilities under the National Pollutant Discharge Elimination System, which governs point source pollution.
- Reviewing and approving state surface water quality standards to ensure their consistency with federal law.
- Overseeing the states' primary responsibility for controlling nonpoint source pollution, such as agricultural and stormwater runoff.
- Protecting wetlands and other waters by co-administrating, with the US Army Corps of Engineers, a permitting program that regulates the discharge of dredged or fill material into waters of the United States.
- Administering the Construction Grants Program and the State Revolving Loan Funds.

Under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, and the amendment SARA, better known as Superfund, EPA provides emergency response and cleanup capabilities for chemical spills and releases from hazardous waste treatment, storage, and disposal facilities.

The National Environmental Policy Act of 1970 requires that an Environment Impact Statement (EIS) be prepared for all proposed legislation and all major federal activities that could significantly affect the quality of the human environment.

EPA's responsibilities under the Marine Protection, Research, and Sanctuaries Act include the development and implementation of regulatory programs to ensure that ocean disposal (e.g., of dredged material) will not adversely affect human health and the marine environment, among other considerations. In particular, EPA oversees the review and issuance of dredged material disposal permits, monitors the environmental effects of dredged material disposal jointly with the U.S. Army Corps of Engineers, and designates sites suitable for ocean disposal.

US Army Corps of Engineers

The U.S. Army Corps of Engineers (ACOE) provides engineering services and construction support for a wide variety of military and civilian projects. The ACOE's primary civil role is to develop and manage the country's waterways and wetlands. Its projects include reducing flood damage, improving harbors and navigation channels, protecting stream banks and shorelines, and other activities aimed at preserving and safeguarding the environment.

The ACOE issues permits (under the CWA and MPRSA) for discharges of dredged or fill material to wetlands and other waters, including ocean waters. In addition, under the Rivers and Harbors Act, the placement of structures (such as piers, docks, and ramps) or any dredging activities (including dredging and the discharge of dredged material) in or

affecting traditionally navigable waters may also require an ACOE permit.

As part of its navigational responsibilities, the ACOE develops, maintains, and improves harbors and waterways to meet commercial and recreational needs. For example, operating and maintaining the 17.5-mile-long Cape Cod Canal is under the jurisdiction of the ACOE. The ACOE also helps to protect and restore shores and beaches from erosion damage.

National Oceanic and Atmospheric Administration

The National Oceanic and Atmospheric Administration (NOAA) is part of the Department of Commerce. As the nation's lead marine science agency, NOAA's mission includes research, data collection and assessment, and management of the nation's marine, estuarine, and coastal resources. While many of NOAA's programs have some linkage to and support research and management activities in Massachusetts and Cape Cod Bays (e.g., the National Weather Service, the Coast and Geodetic Survey, the NOAA Fleet, the National Undersea Research Centers, the National Sea Grant Programs, and the many environmental research and monitoring programs supported by NOAA), the three NOAA programs that have the greatest connection to the Bays are the Northeast Regional Office of the National Marine Fisheries Service, the Stellwagen Bank National Marine Sanctuary, and the funding provided by NOAA for the Massachusetts Office of Coastal Zone Management.

The mission of the National Marine Fisheries Service (NMFS) is to "achieve a continued optimum utilization of living resources for the benefit of the nation." The Northeast Regional Office, located in Gloucester, and the NMFS Northeast Fishery Science Center, in Woods Hole, play a pivotal role in providing a better understanding of, and thereby better managing, the living marine resources of the Bays. The Northeast Regional Office reviews coastal development projects of regional significance and oversees the management of critical fisheries resources and protected species. The Northeast Fishery Science Center monitors the status of fish stocks and conducts critical research on fish and marine mammals that are the livelihood of many in the region.

The Stellwagen Bank National Marine Sanctuary is a 638 square nautical mile area located at the seaward edge of the Bays between Cape Cod and Cape Ann. It was designated by Congress in 1992 to protect the rich biological productivity and diversity of this important offshore bank in the Gulf of Maine. The Sanctuary oversees and helps to coordinate all federal activities that may affect Sanctuary resources, and conducts education and outreach, research, and management programs to assist the Sanctuary staff in this oversight role. Human activities that may affect Sanctuary resources are regulated both by the Sanctuary and by other federal agencies, in collaboration with the Sanctuary staff, that have regulatory authority over Sanctuary resources.

With respect to implementation of any CCMP Action Plans and recommendations which could affect a federally listed threatened or endangered species (or the designated critical habitat of a listed species), a federal agency which authorizes, funds, or otherwise carries out an implementation activity must consult with USFWS and/or NMFS to ensure that appropriate protections are in place, pursuant to Section 7 of the Endangered Species Act (ESA). In addition, federal agencies must "conference" with USFWS and NMFS, as appropriate under Section 7, to ensure that federal activities consider potential jeopardy to species which have been proposed for ESA listing but whose listing has not yet been finalized.

The Coastal Zone Management Act of 1972, administered by NOAA, provides funds, policy guidance, and technical assistance to coastal states to help them establish and maintain coastal zone management programs. Such programs are designed to promote the wise use and protection of coastal land and water resources. The Massachusetts Coastal Zone Management Program was the first state effort on the east coast and the fourth in the nation to receive federal approval in 1978.

As required by the Coastal Zone Management Act, the state program reviews all federally conducted or supported activities that directly affect the coastal zone. The purpose of the review is to ensure that these activities are in compliance with approved state environmental programs. This Federal Consistency review process is a powerful implementation tool to protect and manage the coastal zone in Massachusetts Bays.

The Massachusetts Bays Program is administered by the Massachusetts Office of Coastal Zone Management in conjunction with EPA-New England.

USDA Natural Resources Conservation Service

Formerly the Soil Conservation Service, NRCS is part of the US Department of Agriculture (USDA). NRCS supports local communities in the areas of agricultural waste and stormwater runoff management, which are two nonpoint pollution sources in Massachusetts Bays. In the past, NRCS focused primarily on agricultural practices. Recently, NRCS has redirected its efforts to provide technical assistance to communities experiencing impacts from development.

In addition, USDA is in the process of implementing a new program, the hydrographic unit initiative, in response to Presidential concern for the declining quality of the nation's

ground and surface water. Under this initiative, NRCS has begun a three-year program to provide education and technical assistance to reduce nonpoint source pollution from agricultural operations and stormwater.

US Fish and Wildlife Service

The US Fish and Wildlife Service has the principal federal responsibility for conserving the nation's fish and wildlife, including their related habitats. The Service operates under a variety of federal conservation statutes in implementing this mission; administers the National Wildlife Refuge System, a national system of fish hatcheries and research centers; and operates several hundred field offices involved in all aspects of wetlands protection, fish and wildlife surveys, contaminants cleanup, and endangered species protection.

Although the Service has no direct regulatory control concerning discharges of pollutants into waters of the United States or discharge of dredged or fill materials, the agency plays a direct advisory role in these regulatory practices. Under the Fish and Wildlife Coordination Act, the Service must assess the impacts on fish and wildlife of all water and water-related development projects that are funded by the federal government or constructed under a federal permit or license. The Service provides information to federal construction or regulatory agencies and to permit applicants. Such involvement includes analyzing and reporting on construction proposals and applications for dredge and fill permits issued by the ACOE, ocean dumping permits issued by the EPA, bridge and causeway permits issued by the Coast Guard, license applications submitted to the Federal Energy Regulatory Commission, and any proposed federal construction affecting fish and wildlife resources.

Actions authorized, funded, or carried out by federal agencies which may affect a federally-listed threatened or endangered species require the Service's review under the Endangered Species Act. All such federal or federally-authorized projects are reviewed to ensure that their activities do not jeopardize the existence of a threatened or endangered species or result in the destruction or modification of their critical habitat.

The Service is also a coastal landowner via its acquisition of significant migratory bird habitat (under the Migratory Bird Conservation Act), habitat for endangered species (under the Endangered Species Act), and recreation and wilderness areas (under the Land and Water Conservation Fund Act). All acquisitions become part of the National Wildlife Refuge System.

The Fish and Wildlife Service also exercises other conservation activities pursuant to the Oil Pollution Act; the Comprehensive Environmental Response, Compensation and Liability Act; the Coastal Barrier Resources Act; and the Coastal Wetlands Planning, Conservation and Restoration Act.

US Coast Guard

The U.S. Coast Guard ensures that vessels and marine transportation related facilities are in compliance with numerous federal regulations promulgated to reduce environmental impacts in the coastal zone. Pollution prevention and safety are critical to the safety of the marine environment. When accidents happen, the Coast Guard has responsibility under the Federal Water Pollution Control Act (FWPCA), as amended, and the Comprehensive Environmental Response, Compensation, and Liability Act to monitor and direct the removal of oil or hazardous substances from the coastal zone. The Coast Guard, under authority of amendments to the FWPCA, also ensures compliance with Marine Sanitation Device regulations. Certain vessel waste disposal policies set by the International Convention for Prevention of Pollution from Ships (MARPOL) are implemented in the U.S. through both the Act to Prevent Pollution from Ships and the Ports and Waterways Safety Act. The Coast Guard ensures that vessels and facilities meet the standards of the regulations through inspections, boardings, routine patrols, and investigations. Other Coast Guard missions, such as maintaining navigational aids, support marine environmental protection by ensuring the safety of life and property on the nation's navigable waters. Additionally, the Coast Guard enforces regulations promulgated by other agencies, such as the National Marine Fisheries Service, that ensure appropriate use of our marine resources.

US Food and Drug Administration

The US Food and Drug Administration is responsible for the safety of the nation's foods, including seafood. The FDA has authority to prescribe the level of contaminant that will render a food adulterated by establishing an **action level** (an informal judgment about the level of a food contaminant to which consumers may be safely exposed) or a **tolerance** (a regulation having the force of law).

The FDA also develops methods for detecting, quantifying, and identifying contaminants in shellfish and estuarine waters. The FDA supports the National Shellfish Sanitation Program (NSSP), a cooperative state/federal/industry program for the sanitary control of the shellfish industry. As part of the NSSP, FDA provides technical assistance to states, such as Massachusetts, in studying specific pollution problems, by providing data to establish closure levels for shellfish harvesting, by conducting applied research in various contaminants to assist in developing standards and criteria, and by evaluating the effectiveness of state shellfish sanitary control programs.

Advisory Council on Historic Preservation

The Advisory Council on Historic Preservation (ACHP) is an independent federal agency established by the National Historic Preservation Act of 1966. The ACHP reviews federally-assisted projects that affect historic properties and works with other federal agencies and the State Historic Preservation Officers (see state MHC) to avoid or reduce harm to those properties under 36 CFR 800, which are the regulations implementing Section 106 of the National Historic Preservation Act of 1966 as amended (16 USC 470f, 1992). The ACHP has published several guides to the federal historic preservation review process.

State Agencies

Executive Office of Environmental Affairs

The Executive Office of Environmental Affairs (EOEA) is a cabinet-level secretariat whose principal authority is to implement and oversee state policies that preserve, protect, and regulate natural resources and the environmental integrity of the Commonwealth of Massachusetts. Of the departments and units within EOEA, the following are most involved with management issues for Massachusetts Bays:

- Massachusetts Coastal Zone Management Office (CZM);
- Massachusetts Environmental Policy Act Unit (MEPA);
- Department of Environmental Protection (DEP);
- Department of Environmental Management (DEM);
- Department of Fisheries, Wildlife, and Environmental Law Enforcement (DFWELE); and
- Office of Technical Assistance for Toxics Use Reduction (OTA).

The responsibilities and activities of these agencies are described below.

Massachusetts Coastal Zone Management

The Massachusetts Coastal Zone Management Office (CZM) develops state policy to protect resources and manage development in the coastal zone. As officially defined, the Massachusetts Coastal Zone extends landward to 100 feet beyond specified major roads, rail lines or other visible rights-of-way and seaward to the edge of the territorial sea; it includes all of Cape Cod, Martha's Vineyard, Nantucket and Gosnold.

Developed under the authority of the federal Coastal Zone Management Act of 1972, the Massachusetts Coastal Zone Management Plan was approved in 1978 and established twenty-seven policies to protect and manage the Commonwealth's coastal zone and its valuable resources.

CZM is a planning and policy agency. To carry out its responsibilities, the agency relies upon existing state regulatory authority and the federal consistency review process. CZM also administers a number of local financial assistance grant programs and provides technical assistance to local communities. The primary areas of CZM concern include coastal hazards, marine environmental protection, energy, waterfront development and harbor planning, and recreation. CZM also supports scientific studies, mapping projects, and other activities that add to the knowledge of coastal resources and enhance planning and decision-making in Massachusetts. The Coastal Resources Advisory Board (CRAB) and various Citizens Advisory Committees add an essential citizen perspective to CZM's work.

Through the federal Coastal Zone Management Act, CZM is empowered to review all federal activities in Massachusetts which may affect the coastal zone to ensure they are consistent with state coastal policy. Any large coastal project requiring a federal license or permit, implemented by a federal agency, or carried out with federal funds must undergo this CZM consistency review.

The Coastal Facilities Improvement Program is administered by CZM to assist eligible coastal communities in the construction, reconstruction, repair, or maintenance of coastal facilities, as well as the preparation of municipal harbor plans.

Massachusetts Environmental Policy Act Unit

The Massachusetts Environmental Policy Act (MEPA) Unit directs state agencies, in their permitting and licensing of proposed development, to review, evaluate, and determine the impact on the natural environment of these works, projects, or activities and to use all practicable measures to mitigate their impacts and minimize damage to the environment. Regulations under Title 301 of the Code of Massachusetts Regulations (CMR) Chapter 11.00 define which projects are subject to MEPA review. Projects below thresholds are exempt, although larger projects or projects in sensitive areas are likely to trigger MEPA review.

Department of Environmental Protection

The Department of Environmental Protection (DEP) administers most of the Commonwealth's environmental regulatory programs. These programs address a variety of concerns including air and water quality, solid and hazardous waste disposal, and development of wetlands and waterways. The following discussion describes the divisions most closely related to the CCMP.

Division of Wetlands and Waterways

The Division of Wetlands and Waterways administers three programs -- the Coastal Wetlands Restoration Program (Massachusetts General Laws, Chapter 130, Section 105), Wetlands Protection Program (Massachusetts General Laws, Chapter 131, Section 40), and the Waterways Act (Massachusetts General Laws, Chapter 91).

- *Wetlands Protection* -- Conservation Commissions are the first line of defense in wetlands protection under the Massachusetts Wetlands Protection Act. They have primary authority to review projects proposed in or near wetlands, and issue Orders of Condition, which are written statements that control the impact of activities in wetlands by stating the conditions under which the activities must take place. Regulations and policies to guide the conditioning process are developed by the Division of Wetlands and Waterways. The division reviews local Conservation Commission decisions which have been appealed. All decisions by DEP may be appealed to an adjudicatory hearing.

- *Chapter 91 (Waterways) Licensing* -- Massachusetts General Law Chapter 91 requires that DEP review and license activity in state waterways. Activities which require Chapter 91 licenses include the placement of piers, wharves, and other structures or fill; changes in use of existing structures and fill; and dredging. Before a Chapter 91 license is issued, Wetlands and Waterways must determine that the proposed project will not interfere with navigation or the operation of public facilities; is structurally sound; promotes public access and will not diminish public rights or the rights of adjacent shoreline property owners; and finally, will not adversely impact environmental resources such as wetlands, fish runs, shellfish beds, and fish spawning and nursery areas.

Division of Water Pollution Control

The Division of Water Pollution Control (DWPC) is the lead unit for improved water quality and waterpollution prevention in accordance with the provisions of the Massachusetts Clean Water Act. Section 401 of the Federal Clean Water Act gives the State the authority to deny, grant, or condition certification of any federal license for an activity that involves a discharge, to ensure that the activity satisfies the water quality requirements of state law. The DEP's authority to issue, condition, or deny the water quality certification extends to, for example, NPDES permits issued by EPA; Rivers and Harbors Act s.10 permits issued by the Corps of Engineers for dredging activities; and CWA s.404 permits issued by the Corps for discharges of dredged of fill material. (The authority to issue s.401 certifications for s.404 permits resides with the DEP Division of Wetlands and Waterways.) NPDES permits are jointly issued by DEP and EPA, who develop discharge limits to ensure compliance with technology-based requirements and water quality standards. Groundwater permits are required for discharges greater than 10,000 gallons of sewage and for any industrial waste. In addition, the DWPC administers the Massachusetts Nonpoint Source Management Program.

Bureau of Municipal Facility Grants and Loans

The Bureau of Municipal Facility Grants and Loans administers the state/federal construction grants program which evolved from a previous federal and state combined grant program that once provided both state grants for planning, and federal and state grants for the construction of municipal sewage treatment plants. This program is now principally a loan program under a state revolving fund. A construction grants program is also available. This program is directed at wastewater projects that are not funded by the federal program or have lower priority in the federal system.

Division of Hazardous Waste

The Division of Hazardous Waste regulates transportation, storage, and disposal of waste materials within the Commonwealth, and monitors the environmental impact of these materials with regard to public health and safety. The Division licenses haulers of hazardous waste, uses computers to track waste disposal, and penalizes offenders of state and federal hazardous waste regulations. The Division also works to clean up existing hazardous waste sites, and assists communities in cleaning up oil and chemical spills.

Division of Solid Waste Management

The Division of Solid Waste Management regulates solid waste generated by municipalities, industry, commercial sources, and consumers. The Division assesses waste sites and waste facilities, and enforces all provisions of the Massachusetts Solid Waste Act. The Division also develops and manages programs for recycling, composting, and other technologies for waste minimization and source reduction.

Department of Environmental Management

The Department of Environmental Management (DEM) is responsible for preserving and protecting the natural resources of the Commonwealth and for managing state lands and waters. The programs of the following offices are most closely related to the CCMP:

Office of Natural Resources

The Office of Natural Resources provides for the long-term protection, and the public use and enjoyment, of natural resources. Activities include land acquisition, resource management planning for parks and trails, critical resource identification and protection, and municipal technical assistance and greenway grant programs. The Resource

Management Planning Program develops long range resource management plans ("GOALS" plans) for Massachusetts State Forests and Parks and identifies significant "Wildlands" areas of Forests and Parks for designation and protection. The Area of Critical Environmental Concern (ACEC) Program identifies critical resource areas for designation as ACECs, facilitates state agency actions and coordination to protect ACECs, and supports local and regional actions for long-term ACEC management and preservation. The Coastal Access - Sea Path Program coordinates, promotes, and implements the establishment of community shoreline pathways or "Sea Paths" along the intertidal zone for use of walkers or hikers. The Bikeways and Rail Trails Program acquires, plans for, and implements conversion of former railroad rights-of-way into long distance recreation trails.

Office of Water Resources

The Office of Water Resources has three priorities: to collect, refine, and update basic water resources data for dissemination to state, federal, and local agencies and the general public; to prevent loss of life and damage to property through flood control; and to facilitate the development of a comprehensive water resources management plan for Massachusetts.

The Office acts as state coordinator for the National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA).

Also, the State's Ocean Sanctuaries Program is located in this Office. The Ocean Sanctuaries Act (Massachusetts General Laws Chapter 132A, Section 13-16 and 18) established sanctuary areas that must receive a special level of protection from "...any exploitation, development, or activity that would seriously alter or otherwise endanger the ecology or the appearance of the ocean, the seabed, or subsoil."

Office of Waterways

The Office of Waterways improves, develops, maintains, and protects the Commonwealth's inland and coastal waterways. Specific programs include the Rivers and Harbors Program, which identifies the need for renovations and improvement to the state's inland and coastal waterways; waterways projects, which include dredging to maintain navigable channels, beach nourishment, and the construction and rehabilitation of piers and other coastal facilities; the State Piers in Gloucester, New Bedford, and Fall River, which are administered by the Office of Waterways and leased to private operators and managers; recreational facilities projects, including capital improvements to existing state recreational facilities (beaches, etc) and construction of new ones; and public access projects, including the design and construction of marinas, boat ramps, and Public Access Board projects funded by the Department of Fisheries, Wildlife and Environmental Law Enforcement, but administered by the Office of Waterways as the contracting agent.

Department of Fisheries, Wildlife and Environmental Law Enforcement

The Department of Fisheries, Wildlife, and Environmental Law Enforcement (DFWELE) is responsible for the management and conservation of the Commonwealth's fresh and saltwater fisheries and its wildlife, including rare and endangered species. The Department enforces the state's wildlife laws and regulations, and conducts research on wildlife and the environmental factors that influence them. The Department also has jurisdiction over registration and operation of motorboats and off-road vehicles, and operates 140 public access sites statewide.

Division of Marine Fisheries

The Division of Marine Fisheries protects and enhances the state's living marine resources, especially commercially and recreationally caught shellfish, lobster, and finfish. As part of its management responsibilities, the Division issues permits for the taking, harvesting, and landing of fish for commercial purposes as well as permits for the recreational harvest of lobsters. A unique feature of the Massachusetts fisheries laws provides local control of shellfish, eels, sea worms, and alewives.

The Division administers the Shellfish Sanitation Program and determines the classification of shellfish areas within the state. It also works to promote and develop Massachusetts' commercial and recreational fisheries and to implement strategies that will maintain the integrity and future availability of the Commonwealth's valuable marine resources.

Riverways Program

The mission of the Riverways Program is to promote the restoration and protection of the ecological integrity of the Commonwealth's watersheds: rivers, streams, and adjacent lands. The Riverways Program was established within DFWELE in 1987 in recognition that river and stream corridors are a crucial component of the state's ecological infrastructure and that protection of these watershed resources could not be accomplished through land acquisition alone. The Riverways Program was created to encourage and support local river protection initiatives as a vital complement to state action.

The primary activity of the Riverways Program is to provide technical assistance and outreach to communities, citizens groups, and others on various aspects of river, stream, and watershed protection, restoration, and stewardship, including the following:

- assisting the formation/strengthening of watershed associations, "Adopt-a-Stream" groups, Stream Teams, and other citizen initiatives for the protection of specific rivers/streams;

- preparing and distributing a newsletter, workbooks, brochures, and other "how to" publications for river and watershed protection and maintaining a resource library of similar publications gleaned from across the U.S. and Canada;

- conducting training sessions for citizens on specific river conservation tools such as shoreline surveys, formulating action plans, and effective advocacy techniques;

- disseminating notices of permit reviews and other pending government actions affecting rivers to citizens groups and providing guidance on how to evaluate environmental impact and participate in government decisionmaking; and

- assisting communities in drafting and adopting river protection bylaws, ordinances, and other local regulatory techniques.

In addition, the Riverways Program serves as the primary advocate for rivers on a statewide basis and seeks to protect their natural integrity through a variety of means, such as:

- formulating and promoting statewide policies and legislation for river protection;

- encouraging increased recognition of the importance and necessity for river and watershed protection within other state and federal agencies and programs; and

- encouraging the establishment of public/private partnership and other joint ventures for river/watersheds protection in coordination with the Executive Office of Environmental Affairs.

Since its establishment eight years ago, the Riverways Program has helped to generate and/or sustain a number of successful river protection initiatives at the local and statewide level. Local efforts include:

- supporting watershed associations in each of the state's 28 major river basins and over 140 Adopt-a-Stream groups in the preparation of educational curricula, riparian land mapping, shoreline surveys, water quality monitoring, and other resource protection tools;

- negotiating the donation of land and conservation restrictions protecting several miles of river frontage in conjunction with watershed associations and land trusts, enhancing their ability to attract additional land gifts;

- providing planning and organizational support for Federal Wild and Scenic River studies and designations on the Farmington, Westfield, and Sudbury/Assabet/ Concord rivers; and

- providing staff support and serving as repository for all documents relating to the Merrimack River Initiative.

Office of Technical Assistance for Toxics Use Reduction

The Office of Technical Assistance for Toxics Use Reduction (OTA) is responsible for planning and facilitating the safe and efficient management of hazardous waste in Massachusetts. The OTA formerly sponsored the Household Hazardous Waste Program, which funded community collections of household hazardous waste. OTA works to increase public awareness of the larger problem of hazardous waste disposal statewide. It conducts projects on source reduction and recycling within industry. This program employs technical audit teams -- a free multi-media, nonregulatory service provided to businesses with industrial discharges.

Department of Public Health

The Massachusetts Department of Public Health, which is housed within the Executive Office of Human Services, is the state agency responsible for disease prevention. This administrative mandate encompasses a broad spectrum of public health issues relating to environmental health, communicable disease control, community health, health care quality, and health education. The divisions within the Department whose activities most closely relate to the goals and objectives of the CCMP are highlighted below.

Division of Communicable Disease Control

The Division of Communicable Disease Control conducts epidemiological investigations of foodborne illnesses to determine their source, and implements disease prevention strategies to minimize further transmission of disease.

Division of Food and Drugs

The Division of Food and Drugs is the regulatory branch of the Department. The Division enforces state and federal regulations regarding the wholesomeness of food products, performs inspections of food establishments for compliance with hygienic standards, and conducts field investigations of foodborne illnesses.

State Laboratory Institute

The State Laboratory Institute analyzes fish, shellfish, and biological fluids for bacterial contamination and marine biotoxins. The laboratory data are useful for determining the

cause of an acute foodborne illness and for ensuring compliance with existing regulatory limits. In the past, the laboratory also tested food, environmental, and biological samples for a variety of chemical contaminants of chronic health concern.

Division of Environmental Epidemiology and Toxicology

The Division of Environmental Epidemiology and Toxicology evaluates the risk of exposure to chemical contaminants by performing quantitative risk assessments, health assessments, and epidemiological studies. The Division may recommend a variety of exposure reduction strategies including regulatory action and public health advisories.

Massachusetts Historical Commission

The Massachusetts Historical Commission (MHC) was established in 1963 to assist in protecting and preserving the state's significant historic and archaeological resources. The passage of the National Historic Preservation Act in 1966 created a broad, national historic preservation program, and directed each state to appoint a State Historic Preservation Officer (SHPO), who is responsible for implementing the provisions of the NHPA at the state level; for coordinating local, state, and federal preservation efforts; and for developing comprehensive, statewide historic preservation planning. In Massachusetts, the SHPO is the Executive Director of the MHC. In carrying out its mandates under both state and federal law, the MHC has developed a number of historic preservation programs, including: compiling and maintaining a statewide inventory of historic and archaeological resources; nomination of significant properties to the National Register of Historic Places; technical assistance to municipalities, state and federal agencies, and the public; involvement in environmental review and historic preservation planning for state and federally-assisted projects; grants-in-aid programs for historic preservation activities; and a broad public information program.

MHC reviews projects that require federal or state funding, licenses, permits, and approvals under Sections 106 and 110 of the National Historic Preservation Act of 1966 as amended (16 USC 470f & 470h-2, 1992), and its implementing regulations (36 CFR 800), and MGL c.9, ss. 26-27C (950 CMR 71). This review process identifies historic and archaeological resources that may be affected by new construction, demolition, and rehabilitation, and provides a formal consultation process that seeks alternatives to avoid, minimize, or mitigate impacts to significant cultural resources.

The MHC is also the Office of the Massachusetts State Archaeologist, who issues permits for archaeological investigations on public lands and projects under review by municipalities, counties, and state and federal agencies, under the provisions of MGL c.9, ss. 26A and 27C (950 CMR 70). The permit process ensures the conservation of archaeological resources and the highest quality of archaeological research. The State Archaeologist reviews permit applications for archaeological investigations to evaluate the qualifications of archaeological research teams and the soundness of archaeological research programs.

MHC has developed a revised *Massachusetts State Historic Preservation Plan* (1995), and has published regional overviews of the historic and archaeological resources that are relevant to the coastal regions. These include: *Historic and Archaeological Resources of the Boston Area, Historic and Archaeological Resources of Southeast Massachusetts,* and *Historic and Archaeological Resources of Cape Cod and the Islands.*

Regional Planning Agencies

Regional planning in Massachusetts is carried out by 13 Regional Planning Agencies (RPAs) formed under Chapter 40B of Massachusetts General Laws. The RPAs represent the participating cities and towns in each region and employ professional staff that carry out planning activities. The RPAs compile data, conduct research, and prepare comprehensive plans for their area's physical, social, and economic development.

Four RPAs represent the 49 coastal communities of the Massachusetts Bays area. These are: Merrimack Valley Planning Commission (MVPC), Metropolitan Area Planning Council (MAPC), Old Colony Planning Council, and Cape Cod Commission (CCC). Planning staff from each of these RPAs provide a broad range of technical assistance to their respective communities and produce regional plans in the areas of environmental protection, housing, and transportation.

A significant new approach toward regional planning may be on the horizon for Massachusetts. Beginning in 1986, the then Cape Cod Planning and Economic Development Commission (CCPEDC), predecessor to the Cape Cod Commission, embarked on an innovative approach to planning for the future of Cape Cod. Through a process of consensus-building, citizens of the Cape identified a need to have more effective land use planning, and to have greater authority to regulate land use, control urbanization, and better manage shared resources. The result was a proposal to create a Cape Cod Commission with certain regulatory and regional powers. In November 1988, 76% of Cape Cod

voters supported a non-binding referendum to establish the Cape Cod Commission. In January 1990, state legislation was passed to create the Cape Cod Commission. This legislation was ratified by the voters of Cape Cod in a special countywide election on March 27, 1990.

Through grants from the Massachusetts Bays Program, the four coastal RPAs in the Bays region have established a highly effective water quality technical assistance program. RPA staff provide support for the regional local governance committees, guide demonstration projects, and assist in obtaining funds for local implementation of the CCMP. Continuation of this technical assistance program is a key part of the long-term implementation strategy for the CCMP.

Local Agencies

The Commonwealth of Massachusetts has a long-standing tradition of local self-determination or home rule. But it was not until 1966, with the adoption of the Home Rule Amendment to the state's constitution, that this philosophy changed the thinking and actions of legislation and court decisions in Massachusetts. Generally, municipalities are authorized to exercise through the "adoption, amendment, or repeal of local ordinances or by-laws...any power or function...not denied" by the State. This is one of the strongest declarations in this country of the right to local control. The legislature, while it has the authority, has rarely used its power to preempt local initiative.

Home rule authority is highly valued and strongly defended in Massachusetts communities. Land use controls, in particular, are viewed as a local prerogative. In the Massachusetts Bays region, attention to land use issues is of vital importance to environmental quality and conservation of resources. However, towns and cities must follow ground rules for local governments as stipulated in state law. Legal decisions that strike down local controls are most likely to be based on procedural problems than on the substance of what the community is attempting to accomplish.

Boards of Health

Towns elect a Board of Health (most have three members), or the selectmen can act in this capacity. A Board of Health has far-reaching authority in exercising its responsibility to protect the health, safety and welfare of the community. Their broad regulatory authority has thrust them into the forefront of environmental protection on the local level. Boards of Health can adopt regulations for any activity that might endanger public health or contaminate surface or groundwater. In many communities, the chief duties of Boards of Health have become the regulation of landfills and approval of septic system installations. Under Title 5 (State Sanitary Code), health boards issue permits for any septic system receiving up to 10,000 gallons per day (e.g., a large condominium project); larger systems must be approved by DEP. In granting or denying a permit, the Board relies primarily on two tests: a percolation test to see if the soil will pass liquid through at a reasonable rate, and a deep-hole test to determine the level of groundwater.

Boards of Health have a major role in subdivision review. They have special authority over drainage and waste disposal in proposed subdivisions. Every definitive subdivision plan must be submitted to the board for its recommendations to the Planning Board. If the Board of Health rejects a plan, providing specific reasons why areas are not suited for building, the Planning Board cannot override the decision. However, there must be evidence that a serious pollution problem is likely to occur if the development goes forward.

Conservation Commissions

The Conservation Commission Act of 1957 enabled local towns to establish a special commission to protect natural resources, serve as an advisor in municipal decision-making, accept gifts of money and land, and regulate local wetland use. When the DEP developed its regulations for the Wetlands Protection Act in 1978 and 1983, most municipalities that had not yet established a Conservation Commission found it necessary to do so in order to administer new and relatively stringent state wetland regulations. Commissions consist of three to seven members appointed by the selectmen.

Conservation Commissions determine if a proposed project will alter wetland resources and what conditions are required to protect statutory wetland interests such as protection of water supplies, prevention of storm drainage, prevention of pollution, and protection of fisheries and wildlife habitat. Commissions have the authority to order modifications of a proposed project if they determine that it will damage or destroy a wetland resource. Conservation Commissions have authority to regulate activities within 100 feet of inland and coastal wetlands, and land under water bodies and waterways.

Home rule allows the municipalities to expand state regulations by adopting local wetland bylaws. These bylaws may give Conservation Commissions the authority to adopt regulations, tighten permit requirements, and add wetland values to be protected. Conservation Commissions also have the authority to accept and hold permanent or temporary conservation restrictions. These restrictions authorize and enable the Commission to prevent landowners from using their land in a way that damages natural resources. Conservation Commissions can also acquire outright conservation lands that are valuable for habitat protection, aquifer protection, open space, or any other environmental value.

Harbormasters

Harbormasters have broad powers to regulate uses and activities of waterways. The Harbormaster is typically appointed by the Selectmen to oversee harbor activities and enforce Massachusetts General Laws Chapter 90B Section 15B. These regulations authorize towns, through their Harbormasters, to regulate vessels in municipal waterways. The regulations address the safe operation of boats, boat speed limits, channel obstructions, boat seaworthiness, fishing, swimming, diving, and refueling. Some municipalities have harbor regulations that limit the number of moorings to avoid crowding and boat pollution in certain areas. Harbor regulations may also prohibit the discharge of trash, oil, and untreated sewage into town waters.

Planning Boards

Planning Boards are authorized by Massachusetts General Laws Chapter 41 (containing the municipal planning and subdivision control acts) to plan for the "resources, possibilities, and needs" of their communities, including the protection of natural resources. Planning Boards contain from five to nine members. Towns have the option of deciding by town meeting vote whether the Board shall be appointed by the Selectmen or elected by the voters.

Planning Boards are generally responsible for community development through the adoption and implementation of zoning and subdivision ordinances or bylaws. Zoning is one of the basic powers conferred on local government under home rule. Zoning in Massachusetts is employed to guide the physical development of a community by dividing the municipality into zones and specifying the permissible land use (e.g., residential, commercial, industrial).

Subdivision regulations govern the process of dividing a parcel of land into two or more lots. Under these regulations, Planning Boards generally require each developer to submit a subdivision plan for approval prior to the start of any construction. Approval or nonapproval is based on compliance of the proposed development with standards as provided in the local subdivision regulations.

Zoning Boards of Appeals

Boards of Appeals were established by Massachusetts General Laws Chapter 40A to authorize zoning variances to alleviate individual hardship from subdivision control and zoning by-laws or ordinances. In addition, decisions may also be appealed to the Superior Court. The Mayor (subject to confirmation of the City Council) or Board of Selectmen appoint the three or five-member Zoning Board of Appeals. Under the law, no variances can be granted unless three circumstances existing on a property create a hardship for the owner and entitle that owner to a variance: soil conditions, shape of lot, and topography. The other major duty assigned to Boards of Appeals is to hear and decide applications for special permits. Often this involves permits in special zoning areas, such as an overlay protection district. The Boards of Appeals also are empowered to issue comprehensive permits under the affordable housing provisions of Chapter 40B.

Local Historical Commissions

Local historical commissions are public agencies within municipal government established pursuant to GL c. 40 ss. 8D or special legislation. They are responsible for community-wide historic preservation planning. Their duties include compiling a comprehensive inventory of historic and cultural resources, developing recommendations to protect these resources, and advising the city or town on historic preservation matters.

Local Historic District Commissions

Local historic district commissions are public agencies within municipal government established under GL c. 40C or special legislation. They administer local historic districts or local landmarks through regulatory design review authority over alterations, demolitions, and new construction affecting designated local historic districts or landmarks.

Appendix B.

Acronyms

APPENDIX B. ACRONYMS

A

ACEC	Area of Critical Environmental Concern
ACOE	Army Corps of Engineers
ACP	Area Contingency Plan
ASP	Amnesic Shellfish Poisoning

C

CAC	Citizens Advisory Committee of the MBP
CA/T	Central Artery/Tunnel Project
CCC	Cape Cod Commission
CCMP	Comprehensive Conservation and Management Plan
CDC	Centers for Disease Control
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
cfs	cubic feet per second
CSO	Combined Sewer Overflow
CZM	Coastal Zone Management Office

D

DEM	Department of Environmental Management
DEP	Department of Environmental Protection
DFWELE	Department of Fisheries, Wildlife and Environmental Law Enforcement
DMF	Division of Marine Fisheries
DPA	Designated Port Area
DPH	Department of Public Health
DSP	Diarrhetic Shellfish Poisoning
DWPC	Division of Water Pollution Control

E

EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EOEA	Executive Office of Environmental Affairs
EPA	Environmental Protection Agency

F

FDA	Food and Drug Administration

M

MAPC	Metropolitan Area Planning Council
MassGIS	Massachusetts Geographic Information System
MBDS	Massachusetts Bay Disposal Site
MBP	Massachusetts Bays Program
MDC	Metropolitan District Commission
MEPA	Massachusetts Environmental Policy Act
MESA	Massachusetts Endangered Species Act
mgd	million gallons per day
MSD	Marine Sanitation Device
MVPC	Merrimack Valley Planning Commission
MWRA	Massachusetts Water Resources Authority

N

NAS	National Academy of Sciences
NETSU	Northeast Technical Services Unit
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSSP	National Shellfish Sanitation Program
NWR	National Wildlife Refuge

O

OCPC	Old Colony Planning Council
ODES	Ocean Data Evaluation System
ODMDS	Ocean Dredged Material Disposal Site
OWOW	Office of Wetlands, Oceans and Waterways

P

PAC	Port Area Committee
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PSP	Paralytic Shellfish Poisoning

R

RDOA	Request for Determination of Applicability
RPA	Regional Planning Agency

S

SESD	South Essex Sewage District

T

TAC	Technical Advisory Committee of the MBP

U

USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

W

WBNERR	Waquoit Bay National Estuary Research Reserve
WPA	Wetlands Protection Act

Appendix C.

Glossary

APPENDIX C. GLOSSARY

Action Plan. A compilation of agreed-upon goals and objectives, and a list of specific strategies or actions indicating who, what, where, and when the objectives will be achieved.

Aerobic. Living, active, or occurring only in the presence of oxygen.

Algae. Aquatic, non-flowering plants that lack roots and use light energy to convert carbon dioxide and inorganic nutrients such as nitrogen and phosphorus into organic matter by photosynthesis. Common algae include dinoflagellates, diatoms, seaweeds, and kelp.

Algal Bloom. A condition resulting from nutrient levels or other physical and chemical conditions that enable algae to reproduce rapidly.

Amnesic Shellfish Poisoning (ASP). An illness associated with the consumption of shellfish contaminated with domoic acid (an amino acid produced by a diatom). Symptoms of ASP usually develop within 24 hours of eating contaminated shellfish. The acute illness is characterized by gastrointestinal symptoms of vomiting, abdominal cramp, and diarrhea. Within 48 hours, neurological symptoms such as confusion, disorientation, or memory loss may develop. There may be chronic effects associates with ASP which include permanent loss of short-term memory and central nervous system dysfunction.

Anadromous Fish. A species, such as salmon, alewives, or river herring, that is born in fresh water, spends a large part of its life in the sea, and returns to freshwater rivers and streams to reproduce.

Anaerobic. A process occurring in the absence of free oxygen.

Anoxic. A condition in which oxygen is absent.

Antidegradation provision. A provision in the State Water Quality Standards, required by the federal Clean Water Act, which forbids the degradation of existing water quality except in very narrow circumstances.

Aquaculture. The controlled cultivation and harvest of aquatic plants or animals (e.g., edible marine algae, clams, oysters, and salmon).

Area of Critical Environmental Concern (ACEC). An area encompassing land and water resources of regional, statewide, or national importance, designated by the Secretary of the Executive Office of Environmental Affairs (in accordance with 301 CMR[1] 12:6.40-6.55), to receive additional protection and management.

Aromatic Hydrocarbons. Compounds that contain at least one 6-carbon ring; often important components of oils.

Attenuation. The process by which a compound is reduced in concentration over time or distance through absorption, degradation, or transformation.

Barrier Beach. A narrow, low-lying strip of land generally consisting of coastal beaches and coastal dunes extending roughly parallel to the trend of the coast. It is separated from the mainland by a narrow body of fresh, brackish, or saline water, or by a marsh system.

Beneficial Uses. Water uses designated in Massachusetts Surface Water Quality Standards -- for public water supply, for protection and propagation of fish and other wildlife, and for primary and secondary contact recreation -- and any other uses that do not impair these designated uses.

Best Management Practice (BMP). Practices used to prevent or reduce adverse water quality impacts resulting from an activity, such as soil erosion and sediment movement from a construction site. The term originated from rules and regulations in Section 208 of the Federal Clean Water Act. Specific BMPs are defined for each pollution source.

Bioaccumulation. The process by which a contaminant accumulates in the tissues of an individual organism. For example, certain chemicals in food eaten by a fish tend to accumulate in its liver and other tissues.

Biochemical Oxygen Demand (BOD). The quantity of oxygen-demanding materials present in a sample as measured by a specific test. A major objective of conventional wastewater treatment is to reduce the biochemical oxygen demand so that the oxygen content of the receiving water body will not be significantly reduced. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Board of Health. A municipal authority, elected or appointed, responsible for administering bylaws addressing health, safety, and welfare issues covered in the State Environmental Code, including Title 5.

[1] CMR=Commonwealth of Massachusetts Regulation

Bordering Vegetated Wetlands (BVW). As defined in 310 CMR 10.55, the Wetlands Protection Act Regulations, freshwater wetlands that border on creeks, rivers, streams, ponds, and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps, and bogs. They are areas where the topography is low and flat, and where the soils are saturated at least part of the year.

Buildout Analysis. A parcel-by-parcel analysis to estimate the total number of existing and developable units, based on current zoning and other land-use regulations. Such an analysis is essential for managing and limiting impacts of growth.

Carcinogen. A substance that causes cancer.

Carrying Capacity. The limit of a natural or man-made system to absorb perturbations, inputs, or population growth.

Cesspool. A covered pit with a perforated lining in the bottom into which raw sewage is discharged: the liquid portion of the sewage is disposed of by seeping or leaching into the surrounding porous soil; the solids, or sludge, are retained in the pit to undergo partial decomposition before occasional or intermittent removal. Cesspools are no longer permitted for waste disposal under Massachusetts Law.

Chlorinated Hydrocarbons (CHCs). All aromatic and nonaromatic hydrocarbons containing chlorine atoms. Includes certain pesticides, polychlorinated biphenyls, and solvents.

Coastal Bank. As defined in 310 CMR 10.30(2), the Wetlands Protection Act Regulations, the seaward face or side of any elevated landform, other than a costal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland. A typical working definition is "the first major break in slope above the 100-year flood elevation," but this definition may not apply in certain special circumstances.

Coastal Wetland. As defined in Massachusetts General Law Chapter 131, Section 40, the Wetlands Protection Act Regulations, any bank, marsh, swamp, meadow, flat, or other low land subject to tidal action or coastal storm flowage and such contiguous land as the Commissioner of the Department of Environmental Protection deems necessary.

Coastal Zone. As officially defined in 301 CMR 20.00, the zone that extends landward to 100 feet beyond specified major roads, rail lines, or other visible rights-of-way; includes all of Cape Cod, Martha's Vineyard, Nantucket, and Gosnold; and extends seaward to the edge of the state territorial sea (typically, 3 miles from shore).

Coastal Zone Management (CZM) Program. A federally-funded and approved state program under the Federal Coastal Zone Management Act of 1972. The program reviews federal permitting, licensing, funding, and development activities in the coastal zone for consistency with state policies.

Combined Sewer Overflow (CSO). Any intermittent overflow, bypass, or other discharge from a municipal combined sewer system which results from a flow in excess of the dry weather carrying capacity of the system.

Combined Sewer System. A sewer system which, by design, collects and conveys both wastewater and storm water runoff.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). A federal law administered by the Environmental Protection Agency, dealing with the assessment and remediation of hazardous material disposal sites. Superfund activities are performed under this Act.

Conservation Commission. An appointed municipal agency responsible for administering the Wetlands Protection Act at the local level.

Contaminant. A substance that is not naturally present in the environment or is present in unnatural concentrations that can, in sufficient concentration, adversely alter an environment. Federal regulations (40 CFR 230) for the discharge of dredged or fill material into navigable waters regulated by Section 404 of the federal Clean Water Act define a contaminant as a chemical or biological substance in a form that can be incorporated into, onto, or be ingested by and that harms aquatic organisms, consumers of aquatic organisms, or users of the aquatic environment.

Cumulative Effects. The combined environmental impacts that accrue over time and space from a series of similar or related individual actions, contaminants, or projects. Although each action may seem to have a negligible impact, the combined effect can be serious.

Department of Environmental Management (DEM). The state agency responsible for managing natural resources including, but not limited to, water resources. DEM administers the Massachusetts Ocean Sanctuaries Act.

Department of Environmental Protection (DEP). The state agency, formerly known as the Department of Environmental Quality Engineering, responsible for administering laws and regulations protecting air quality, water supply, and water resources, such as Chapter 91 and Title 5, and for administering programs such as the Wetlands Protection Program and Wetlands Restriction Program. It is also responsible for overseeing the cleanup of hazardous waste sites, and responding to hazardous waste emergencies and accidents.

Department of Public Health (DPH). The state agency responsible for disease prevention. Its administrative mandate encompasses a broad spectrum of public health issues relating to environmental health, communicable disease control, community health, health care quality, and health education. The State Laboratory Institute within the Department analyzes fish, shellfish, and biological fluids for bacterial contamination and marine biotoxins. The laboratory data are useful for determining the cause of an acute food-borne illness and for ensuring compliance with existing regulatory limits.

Designated Port Areas. As defined in Chapter 91 Regulation, that portion of certain urban harbors where maritime-dependent industrial uses are encouraged to locate. This concentration of uses maximizes public investments in dredging, bulkheads, piers, and other port facilities.

Diarrhetic Shellfish Poisoning (DSP). An illness caused by eating shellfish contaminated with okadoic acid (which is produced by several species of dinoflagellates of the genus *Dinophysis*). The symptoms of DSP are diarrhea, nausea, vomiting, abdominal cramp, and chills.

Diatom. Minute unicellular or colonial algae with silicaceous cell walls consisting of two overlapping symmetrical parts.

Dinoflagellate. Minute marine algae which move by whipping a thread-like projection; some forms are luminescent, others form toxic "red tides."

Dissolved Oxygen. Oxygen that is present (dissolved) in water and therefore available for fish and other aquatic animals to use. If the amount of dissolved oxygen in the water is too low, then aquatic animals may die. Wastewater and naturally-occurring organic matter contain oxygen-demanding substances that consume dissolved oxygen.

Division of Marine Fisheries (DMF). The agency within the Massachusetts Executive Office of Environmental Affairs responsible for managing the Shellfish Sanitation Program, overseeing shellfish relays, depuration plants, commercial fishing licenses, and management and stock assessment of Massachusetts fisheries.

Drainage Basin. The land that surrounds a body of water and contributes fresh water, either from streams, groundwater, or surface runoff, to that body of water.

Dredging. Any physical digging into the bottom sediment of a water body. Dredging can be done with mechanical or hydraulic machines, and it changes the shape and form of the bottom. Dredging is done in parts of Massachusetts Bays in order to maintain navigation channels that would otherwise fill with sediment and block ship passage.

Ecosystem. A community of living organisms interacting with one another and with their physical environment, such as a salt marsh, an embayment, or an estuary. A system such as Massachusetts Bays is considered a sum of these interconnected ecosystems.

Eelgrass (*Zostera marina*). A marine flowering plant that grows subtidally in sand and mud. Eelgrass beds are an important habitat and nursery for fish, shellfish, and waterfowl.

Effluent. The outflow of water, with or without pollutants, usually from a pipe.

Embayments. A small bay or any small semi-enclosed coastal waterbody whose opening to a larger body of water is restricted.

Enterococcus. A group of bacteria found in the feces of warm-blooded animals indicative of the presence of sewage.

Environmental Protection Agency (EPA). The federal agency principally responsible for administering the Clean Water Act, National Estuary Program, CERCLA, Superfund, and other major federal environmental programs.

Estuary. A semi-enclosed coastal body of water having a free connection with the open sea and within which seawater is measurably diluted with fresh water.

Eutrophication. The process of nutrient enrichment in aquatic ecosystems. In marine systems, eutrophication results principally from nitrogen inputs from human activities such as sewage disposal and fertilizer use. The addition of nitrogen to coastal waters stimulates algal blooms and growth of bacteria, and can cause broad shifts in ecological communities present and contribute to anoxic events and fish kills. In freshwater systems and in parts of estuaries below 5 parts per thousand salinity, phosphorus is likely to be the limiting nutrient and the cause of eutrophic effects.

Executive Office of Environmental Affairs (EOEA). A cabinet-level secretariat whose principal authority is to implement and oversee state policies that preserve, protect, and regulate natural resources and the environmental integrity of the Commonwealth of Massachusetts. (For more information, see Appendix A.)

Fecal Coliform Bacteria. Fecal coliform bacteria are those coliform bacteria that are found in the intestinal tracts of mammals. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces. These organisms may also indicate the presence of pathogens that are harmful to humans. High numbers of fecal coliform bacteria therefore limit beneficial uses such as swimming and shellfish harvesting.

Floodplain. The area of shorelands extending inland from the normal yearly maximum stormwater level to the highest expected stormwater level in a given period of time (e.g., 5, 50, 100 years).

Flushing Time. The mean length of time for a pollutant entering a water body to be removed by natural forces such as tides and currents; also referred to as residence time or turnover time.

Food and Drug Administration (FDA). The federal agency that is responsible for, among other things, administering the National Shellfish Sanitation Program.

General Bylaws. Local laws that can be adopted with a simple majority vote at town meetings. Cities adopt ordinances by a simple majority vote of the city council.

Goal. A general statement describing what is to be achieved in the future. Goals reflect a consensual vision for a specific or general resource.

Grandfathering. A provision from Massachusetts General Law Chapter 40 that allows existing land uses or structures to remain without coming into compliance with upgraded zoning or building requirements.

Habitat. The specific area or environment in which a particular type of plant or animal lives. An organism's habitat must provide all of the basic requirements for life and should be free of harmful contaminants. Typical Massachusetts Bays habitats include beaches, marshes, rocky shores, bottom sediments, intertidal mudflats, and the water itself.

Holding Tank. An enclosed container used as part of a sewage disposal system on a boat. The tank is used to temporarily store sewage for later pumpout at a marina pumpout facility.

Hypoxia. A condition in which oxygen is deficient.

Impervious Material. With respect to Title 5 regulations, a material or soil having a percolation rate greater than 30 minutes per inch; including, but not limited to, bedrock, peat, loam, and organic matter.

Impervious Surface. A surface that cannot be easily penetrated. For instance, rain does not readily penetrate asphalt or concrete pavement.

Industrial Pretreatment. The removal or reduction of certain contaminants from industrial wastewater before it is discharged into a municipal sewer system. Reduced loading of contaminants from industries can reduce contaminant loads to the environment and allow beneficial reuse.

Infiltration. The penetration of water through the ground surface into subsurface soil. Some contaminants are removed by this process.

Leaching Facility. An approved structure used for the dispersion of septic-tank effluent into the soil. These include leaching pits, galleries, chambers, trenches, and fields as described in 310 CMR 15.11 through 15.15.

Loading. The total amount of material entering a system from all sources.

Marine Sanitation Device (MSD). A device installed on a boat to treat or hold sewage. Section 312 of the federal Clean Water Act requires all vessels with installed toilets to have approved MSDs. Federal regulations describe three types of MSDs: Type I and Type II MSDs are treatment devices, while Type III MSDs are holding tanks.

Massachusetts Environmental Policy Act (MEPA). Under Massachusetts General Laws Chapter 30, the state law, administered by the MEPA unit within the Executive Office of Environmental Affairs, establishing a uniform system of environmental impact review.

Massachusetts General Law Chapter 40. The state zoning law for which the municipal Planning Boards and the Zoning Boards of Appeal are responsible.

Massachusetts General Law Chapter 41. The state law governing subdivisions, administered by municipal Planning Boards and Zoning Boards of Appeal.

Massachusetts General Law Chapter 91. The Waterways Licensing Program governing waterfront development in Massachusetts, administered by the Department of Environmental Protection and the Office of Coastal Zone Management.

Massachusetts General Law Chapter 111. State law (Section 40) that vests municipal Boards of Health with the broad authority for maintaining the health, safety, and welfare of the public. Regulations are promulgated under this act through 310 CMR 10.0.

Massachusetts General Law Chapter 131, Section 40. The Wetlands Protection Act (WPA) administered by Conservation Commissions on the municipal level and by the Department of Environmental Protection on the state level.

Massachusetts Ocean Sanctuaries Act. Administered by the Department of Environmental Management, the state law governing activities and structures in the ocean, seabed, or subsoil that would have an adverse affect on the "ecology or appearance" of the ocean sanctuary.

Mean High Water. The average height of the high tides over a 19-year period.

Mean Low Water. The average height of the low tides over a 19-year period.

Metals. Elements found in rocks and minerals that are naturally released to the environment by erosion, as well as generated by human activities. Certain metals (such as mercury, lead, zinc, and cadmium) are of environmental concern because they are released to the environment in excessive amounts by human activity. They are generally toxic to life at certain concentrations. Since metals are elements, they do not break down in the environment over time, and can be incorporated into plant and animal tissue.

National Estuary Program (NEP). A state grant program within the U.S. Environmental Protection Agency established to designate estuaries of national significance and to incorporate scientific research into planning activities.

National Pollutant Discharge Elimination System (NPDES). A permit system established by the federal Clean Water Act, which regulates the discharges of pollutants (except for dredged and fill material) from point sources to water of the U.S. EPA and DEP are currently responsible for jointly administering this program in Massachusetts.

Natural Resources Conservation Services (NRCS). A branch of the U.S. Department of Agriculture that, among other things, provides technical assistance in resource management and planning and implementation of agricultural BMPs.

Neotropical Migrants. Birds that breed in North America and winter in Central and South America. These birds generally migrate through the Massachusetts Bays region.

Nonpoint Source Pollution. Pollution that is generated over a relatively wide area and dispersed rather than discharged from a pipe. Common forms of nonpoint source pollution include stormwater runoff, failed septic systems, and marinas.

Notice of Intent. A form submitted to the municipal Conservation Commission and DEP which serves as the application for an Order of Conditions under the Wetlands Protection Act. It includes information on the site's wetland resources and the proposed work.

Nutrients. Essential chemicals needed by plants and animals for growth. For example, excessive amounts of nutrients, nitrogen, and phosphorus can lead to degradation of water quality and growth of excessive amounts of algae. Some nutrients can be toxic at high concentrations.

Objective. A short term target that, as achieved, incrementally attains goals.

Order of Conditions. The document, issued by a Conservation Commission, containing conditions that regulate or prohibit an activity proposed in the resource area defined in MGL Chapter 131 Section 40.

Paralytic Shellfish Poisoning (PSP). An illness, sometimes fatal to humans and other mammals, caused by a neurotoxin produced by a type of plankton called *Alexandrium*. During certain times of the year and at certain locations, these organisms proliferate in "blooms" (sometimes called red tides) and can be concentrated by clams, mussels, and other bivalves. The nervous system of shellfish is unaffected. Consumption of the shellfish can cause paralysis in humans and other mammals.

Pathogen. An agent such as a virus, bacterium, or fungus that can cause diseases in humans. Pathogens can be present in municipal, industrial, and nonpoint source discharges into Massachusetts Bays.

Performance Standards. Federal, state, or local codified specification that condition development activities to limit the extent to which a structure or activity may affect the immediate environment.

Petroleum Hydrocarbons. The mixture of hydrocarbons normally found in petroleum; includes hundreds of chemical compounds.

Phytoplankton. Minute, floating aquatic plants.

Point Source Pollution. Pollution originating at a particular place, such as a sewage treatment plant, outfall, or other discharge pipe.

Polychlorinated Biphenyls (PCBs). A class of chlorinated aromatic compounds composed of two fused benzene rings and two or more chlorine atoms; used in heat exchange, insulating fluids, and other applications. There are 209 different PCBs.

Polycyclic or **Polynuclear Aromatic Hydrocarbons (PAHs).** A class of complex organic compounds, some of which are persistent and cancer-causing. These compounds are formed from combustion products and unburned fossil fuels, and are ubiquitous in the environment. Gasoline and other petroleum products are common sources. PAHs often reach the environment through atmospheric fallout and highway runoff.

Porous Pavement. A hard surface that can support some vehicular activities, such as parking and light traffic, and which can also allow significant amounts of water to pass through.

Primary Treatment. A wastewater treatment method that uses settling, skimming, and (usually) chlorination to remove

solids, floating materials, and pathogens from wastewater. Primary treatment typically removes about 35 percent of BOD and less than half of the metals and toxic organic substances.

Publicly Owned Treatment Works (POTW). Any sewage treatment system operated by a public agency.

Pumpout. The process through which septage is removed from a septic tank or boat holding tank, usually by a mobile tank attached to a truck, and taken to a wastewater treatment plant for disposal.

Request for Determination of Applicability. A written request made by any person to a Conservation Commission or to the Department of Environmental Protection for a determination as to whether a site or work on that site is subject to the Wetlands Protection Act.

Runoff. The part of precipitation that travels overland and appears in surface streams or other receiving water bodies.

Salt Marsh. A coastal wetland that extends landward up to the highest high tide line (i.e., the highest spring tide of the year), and is characterized by plants that are well adapted to living in saline soils.

Secondary Treatment. A wastewater treatment method that usually involves the addition of biological treatment to the settling, skimming, and disinfection provided by primary treatment. Secondary treatment may remove up to 90 percent of BOD and significantly more metals and toxic organics than primary treatment.

Septage. The semi-solid waste material removed from any part of an individual sewage disposal system.

Septic System. A facility used for the partial treatment and disposal of sanitary wastewater, generated by individual homes or small businesses, into the ground. The system includes both a septic tank and a leaching facility.

Septic Tank. A watertight receptacle that receives the discharge of sewage from a building sewer and is designed and constructed so as to permit the retention of scum and sludge, digestion of the organic matter, and discharge of the liquid portion to a leaching facility.

Sewage. The water-carried human or animal wastes from residences, buildings, industrial establishments or other places, together with such ground water infiltration and surface water as may be present.

Sewer System. Pipelines or conduits, pumping stations, force mains, and all other structures, devices, appurtenances, and facilities used for collecting and conveying wastes to a site or works for treatment or disposal.

Shellfish. An aquatic animal, such as a mollusc (clams and snails) or crustacean (crabs and shrimp), having a shell or shell-like exoskeleton.

Shellfish Bed. An area identified and designated by the Division of Marine Fisheries or Conservation Commissions as containing productive shellfish resources. Shellfish bed maps are based upon written documentation and field observations by the shellfish constable or other authoritative sources. In identifying such an area, the following factors are taken into account and documented: the density of all species of shellfish, the size of the area, and the historical and current importance of the area to recreational or commercial shellfishing. Protecting designated shellfish beds may be an important consideration when local boards and state agencies review projects.

Shellfish Resource Area. An area, designated by the Division of Marine Fisheries, that contains productive shellfish beds, and is used for establishing shellfish resource area closure boundaries.

Shellfish Resource Area Closures. Closure, due to potential health risks, of shellfish resource areas to shellfish harvesting. Closure decisions are made by the Division of Marine Fisheries, using a current standard that specifies that if the geometric mean of 15 samples equals or exceeds 14 fecal coliform per 100 milliliters of sample water or if 10% of the samples exceed 49 fecal coliform per 100 milliliters of sample water, the station can be closed. The five shellfish bed classifications are Approved, Conditionally Approved, Restricted, Conditionally Restricted, and Prohibited.

Sludge. Solid or semisolid material resulting from potable or industrial water supply treatment or sanitary or industrial wastewater treatment.

Spring Tides. Higher than normal high tides observed every two weeks when the earth and moon align.

Storm Drain. A system of gutters, pipes, or ditches used to carry stormwater from surrounding lands to streams, ponds, or Massachusetts Bays. In practice, storm drains carry a variety of substances such as oil and antifreeze which enter the system through runoff, deliberate dumping, or spills. This term also refers to the end of the pipe where the stormwater is discharged.

Stormwater. Precipitation that is often routed into drain systems in order to prevent flooding.

Subdivision. A means for dividing a large parcel of land into more than one buildable lot, administered under MGL Chapter 41.

Superseding Determination. A Determination of Applicability issued by the Department of Environmental Protection

deciding whether or not the area and activity are subject to the regulations under the Wetlands Protection Act.

Superseding Order of Conditions. A document issued by the regional office of the Department of Environmental Protection containing the conditions necessary for a project to proceed and still protect the interests and resource areas specified in the Wetlands Protection Act. These conditions supersede Orders of Conditions set by the local Conservation Commission unless the local order is also issued under the authorization of a local bylaw. These superseding orders can be requested by a number of people who may not be satisfied with the local Order of Conditions.

Suspended Solids. Organic or inorganic particles that are suspended in and carried by the water. The term includes sand, mud, and clay particles as well as organic solids in wastewater.

Swales. Vegetated areas used in place of curbs or paved gutters to transport stormwater runoff. They also can temporarily hold small quantities of runoff and allow it to infiltrate into the soil.

Tertiary Treatment (Advanced Waste Treatment). The wastewater treatment process that exceeds secondary treatment; may include nutrient and/or toxics removal.

Tidal Flat. Any nearly level part of the coastal beach, usually extending from the low water mark landward to the more steeply sloping seaward face of the coastal beach or separated from the beach by land under the ocean, as defined in 310 CMR 9:04.

Tidelands. All lands and waters between the high water mark and the seaward limit of the Commonwealth's jurisdiction, as defined in 310 CMR 9:04. Tidewaters are synonymous with tidelands.

Title 5. The state regulations (CMR 15) that establish minimum standards for the protection of public health and the environment when circumstances require the use of individual systems for the disposal of sanitary sewage. The local Board of Health is responsible for enforcement of these regulations.

Total Nitrogen. A measure of all forms of nitrogen (for example, nitrate, nitrite, ammonia-N, and organic forms) that are found in a water sample.

Toxic. Poisonous, carcinogenic, or otherwise directly harmful to life.

Wastewater. Water that has come into contact with pollutants as a result of human activities and is not used in a product, but is discharged as a waste stream.

Waterbirds. A group of birds that utilize wetland habitats during their life cycle, including waterfowl (ducks and geese), seabirds (terns and gulls), and wading birds (herons and egrets).

Water Column. The water in a lake, estuary, or ocean which extends from the bottom sediments to the water surface. The water column contains dissolved and particulate matter, and is the habitat for plankton, fish, and marine mammals.

Watercourse. Any natural or man-made stream, pond, lake, wetland, coastal wetland, swamp, or other body of water. This includes wet meadows, marshes, swamps, bogs, and areas where groundwater, flowing or standing surface water, or ice provide a significant part of the supporting substrate for a plant community for at least five months of the year, as defined in 310 CMR 15:01. Boards of Health can adopt the definition of wetlands in 310 CMR 10.0 or broader language in Title 5 as a "watercourse" in determining setbacks for wastewater permitting purposes.

Watershed. The total land area (including subsurface waters) that drains into a stream, river, estuary, bay, or other waterbody.

Wetlands. Habitats where the influence of surface water or groundwater has resulted in the development of plant or animal communities adapted to aquatic or intermittently wet conditions. Wetlands include tidal flats, shallow subtidal areas, swamps, marshes, wet meadows, bogs, and similar areas.

Wrack. Algae, plant and animal matter, and drift material (including solid wastes and other pollutants) that accumulate on beaches, usually at the high tide mark.

Zoning Bylaws. Local laws that designate areas of land for different uses at established densities. These bylaws require a two-thirds majority vote of town meeting or city council.

Appendix D.

Bibliography

APPENDIX D. BIBLIOGRAPHY

Alber, M. and A. Chan. 1994. *Sources of Contaminants to Boston Harbor: Revised Loadings Estimates.* MWRA Technical Report 94-1. Massachusetts Water Resources Authority, Boston, MA. 93 pp.

Alber, M., J. Hallam, and M.S. Connor. 1993. *The State of Boston Harbor 1992.* MWRA Technical Report #93-6. Massachusetts Water Resources Authority, Boston, MA.

Battelle Ocean Sciences. In progress. *Evaluating Costs to Communities of Management Measures to Reduce Loads to Sediments of Urban and Semi-Urban Harbors in Massachusetts Bay.* Massachusetts Bays Program, Boston, MA.

Bothner, M.H., M. Buchholtz ten Brink, C.M. Parmenter, W.M. D'Angelo, and M.W. Doughten. 1993. *The Distribution of Silver and Other Metals in Sediments From Massachusetts and Cape Cod Bays -- An Interim Compilation.* USGS Open File report 93-725. U.S. Geological Survey, Woods Hole, MA.

Bowen, R., J. Archer, D. Terkla, and J. Myers. 1993. *The Massachusetts Bays Management System: A Valuation of Bays Resources and Uses and an Analysis of its Regulatory and Management Structure.* MBP-93-01. Massachusetts Bays Program Office, Boston, MA.

Buchsbaum, R. 1992. *Turning the Tide: Toward a Livable Coast in Massachusetts.* Massachusetts Audubon Society, Lincoln, MA.

Buchsbaum, R., J. Pederson and W. Robinson (Eds). In progress. *The Role of Overfishing, Pollution, and Habitat Degradation on Marine Fish and Shellfish Populations of New England.* Massachusetts Bays Program, Boston, MA.

Buzzards Bay Project. August 1991. *Comprehensive Conservation and Management Plan.* Final Plan.

Buzzards Bay Project. 1994. *A Buzzards Bay Embayment Subwatershed Evaluation: Establishing Priorities for Nitrogen Management Action.* Buzzards Bay Project Office, Marion, MA.

Cahill, J. and K. Imbalzano. 1991. *An Inventory of Organic and Metal Contamination in Massachusetts Bay, Cape Cod Bay, and Boston Harbor Sediments and an Assessment of Regional Sediment Quality.* Massachusetts Bays Program, Boston, MA.

Cambareri, T.C., E.M. Eichner, and C.A. Griffeth. 1993. *Hydrogeologic Evaluation for the Waquoit Bay Land Ecosystem Research Project. Characterization of the Watershed and Submarine Groundwater Discharge.* Cape Cod Commission, Barnstable, MA.

Cape Cod Commission. March 1991. *Draft Regional Policy Plan.*

Capuzzo, J. McDowell, A. McElroy, and G. Wallace. 1987. *Fish and Shellfish Contamination in New England Waters: An Evaluation and Review of Available Data on the Distribution of Chemical Contaminants.*

Cavanaugh, E.F., and L.R. Lewis. 1990. *The State of Our Harbors: an Examination of Massachusetts Harbor Conditions and Related Economic Parameters.* Rivers and Harbors Program Report. Division of Waterways, Massachusetts Department of Environmental Management, Hingham, MA.

Center for Marine Conservation. May 1991. *Cleaning North America's Beaches -- 1990 Beach Cleanup Results.*

Center for Marine Conservation. May 1990. *National Beach Cleanup Report.*

Chase, B. 1994. Massachusetts Bay Smelt Spawning Habitat Monitoring Program. New England Estuarine Research Society meeting, June 2-4, 1994, Salem State College, MA.

Clendenning, B. and S. Dean. 1990. *Coastal Habitats of the Massachusetts Bay Region: Status, Threats, the Future.*

Coastal Zone Management Office. 1977. *Massachusetts Coastal Zone Management Program - Volume I.*

Coastal Zone Management Office. 1985. *The Way to the Sea - Methods for Massachusetts Communities to Provide Public Access to the Coast.*

Coastal Zone Management Office. 1991. Summary of Section 309 Assessment.

Cooper A., and R. Buchsbaum. 1994. *Plum Island Sound/ Rivers System Final Action Plan.* Massachusetts Audubon: North Shore, Massachusetts Bays Program Mini-bay Project. 23 pp., plus appendices.

Correia, S.J. 1992. *Flounder Population Declines: Overfishing or Pollution?* DMF News. MA DMF Publication #17020-12-7000-7/92. pp. 2-5. Massachusetts Division of Marine Fisheries, Boston, MA.

Costa, J.E. 1988a. *Distribution, Production, and Historical Changes in Abundance of Eelgrass (Zostera marina L.) in Southeastern Massachusetts*. Ph.D. Dissertation, Boston University, Boston, MA.

Costa, J.E. 1988b. *Eelgrass in Buzzards Bay: Distribution, Production and Historical Changes in Abundance*. U.S. EPA 503/4-88-002 and BBP-88-05. U.S. Environmental Protection Agency Region 1 and Buzzards Bays Program, Boston, MA.

Cura, J.J. 1991. *Review of Phytoplankton Data: Massachusetts Bay*. MWRA Technical Report No. 91-1. Massachusetts Water Resources Authority, Boston, MA.

Cura, J.J., and J. Freshman. 1992. *Nitrogen Loading to Massachusetts Bay*. New England Estuarine Research Society, Fall 1992 meeting, Wells, ME, November 5-7, 1992.

Daskalakis, K.D. and T.P. O'Connor. 1994. *Inventory of Chemical Concentrations in Coastal and Estuarine Sediments*. NOAA Technical Memorandum NOS ORCA 76. National Oceanic and Atmospheric Administration, Silver Spring, MD.

Dean, S. October 1991. *Prescription for Saving Our Coastal Waters*. New England Aquarium.

Executive Office of Environmental Affairs. 1990. *An Environment at Risk: The First Annual Report on the State of the Massachusetts Environment*. Commonwealth of Massachusetts. 129 pp.

Foulis, D.B. and R.W. Tiner. 1994. *Wetland Trends for Selected Areas of the Coast of Massachusetts, from Plum Island to Scituate (1977 to 1985-86)*. Ecological Services Report R5-94/2. U.S. Fish and Wildlife Service, 14 pp.

Gardner, G.B., T. Villareal, and T. Loder. In Progress. *Biological and Physical Processes Controlling Nutrient Dynamics and Primary Production in Cape Cod Bay*. Massachusetts Bays Program Office, Boston, MA.

Gardner, G.R., R.J. Pruell, and L.C. Folmar. 1989. *A Comparison of Both Neoplastic and Non-neoplastic Disorders in Winter Flounder (Pseudopleuronectes americanus) from Eight Areas in New England*. Marine Environmental Research. 28: 393-397.

Geyer, W.R., G. B. Gardner, W.S. Brown, J. Irish, B. Butman, T. Loder, and R. Signell. 1992. *Physical Oceanographic Investigation of Massachusetts and Cape Cod Bays*. MBP-92-03. Massachusetts Bays Program Office, Boston, MA.

Giese, G., D. Aubrey, and P. Zeeb. 1987. *Passive Retreat of Massachusetts Coastal Upland Due to Relative Sea Level Rise*.

Golomb, D., D. Ryan, N. Eby, J. Underhill, T. Wade, and S. Zemba. 1996. *Atmospheric Deposition of Trace Metals, Polynuclear Aromatic Hydrocarbons (PAH), and Nitrogen onto Massachusetts Bays*. MBP-96-01. Massachusetts Bays Program, Boston, MA.

Greenbaum, D. and A. O'Donnell. 1987. *Losing Ground: The Case for Land Conservation in Massachusetts*. Massachusetts Audubon Society.

Hall-Arber, M. 1991. *Water Pollution and Water Quality in Massachusetts Coastal Zone - A Municipal Official's Primer*. MBP-92-04. Massachusetts Bays Program, Boston, MA.

Hankin, Alan L., L. Constantine, and S. Bliven. January 1985. *Barrier Beaches, Salt Marshes, and Tidal Flats. An Inventory of the Coastal Resources of the Commonwealth of Massachusetts*. Lloyd Center for Environmental Studies and MCZM Program Publication 13899-27-600-1-85 C.R.

Heufelder, G. 1988. *Bacterial Monitoring in Buttermilk Bay*. EPA 503/4-88-001. U.S. EPA Region 1, Boston, MA.

Hickey, J.M. September 1989. "Massachusetts Shellfish Closures, Monitoring Programs, Regulations and the Concern Over the Bacterial Standard" in *Shellfish Closures in Massachusetts: Status and Options*. WHOI-89-35.

Horsley and Witten, Inc. In progress. *Geographic Analysis of Bacterial Contamination: Ipswich, Beverly and Provincetown Watershed Studies*. Massachusetts Bays Program, Boston, MA.

Hubbard, W., J. Penko, and T. Fleming. 1988. *Site Evaluation Studies of the Massachusetts Bay Disposal Site for Ocean Disposal of Dredged Material*. US Army Corps of Engineers, New England Division.

Hyland, J.L. and H. Costa. 1995. *Examining Linkages Between Contaminant Inputs and Their Impacts on Living Marine Resources of the Massachusetts Bay Ecosystem Through Application of the Sediment Quality Triad Method*. MBP 95-03. Massachusetts Bays Program Office, Boston, MA.

Institute of Medicine, National Academy of Science. 1991. *Seafood Safety*. National Academy Press. Washington, DC.

Ipswich Shellfish Advisory Board. 1991. *Shellfishing in Ipswish, 1991: Pollution and its Effect on Shellfishing*. Ipswich, MA. 28 pp.

Johnson, L.L., C.M. Stehr, O.P. Olson, M.S. Myers, S.M. Pierce, C.A. Wigern, B.B. McCain and U. Varanasi. 1993. *Chemical Contaminants and Hepatic Lesions in Winter Flounder (Pleuronectes americanus) from the Northeast Coast of the United States*. Environmental Science and Technology, 27:2759-2771.

Karp, C., C. Penniman, R. Zingarelli, and A. Dixon. 1990. *Sewage Contamination - Pathogens*. Briefing Paper prepared for the Narragansett Bay Project.

Kelly, J.R. 1991. Nutrients and Massachusetts Bay: *A Synthesis of Eutrophication Issues*. MWRA Technical Report No. 91-10. Massachusetts Water Resources Authority, Boston, MA. 66 pp.

Kelly, J. 1993. *Nutrients and Massachusetts Bay: An Update of Eutrophication Issues*. MWRA Technical Report #93-17. Massachusetts Water Resources Authority, Boston, MA. 119 pp.

Kelly, J., C. Albro, K. Foster, J. Hennessy, P. Doering, L. Reed, E. Requintina, J. Turner, and D. Borkman. 1993. *Water Quality Monitoring in Massachusetts and Cape Cod Bays: Annual Report for 1992*. MWRA Technical Report 93-16. Massachusetts Water Resources Authority, Boston, MA. 129 pp.

King, Dennis. In progress. *The Functions of Coastal Wetlands and the Economic Value of Coastal Wetland Restoration in Massachusetts*. Massachusetts Bays Program, Boston, MA.

Kipp, K. October 1990. *Health Risk from Chemically Contaminated Seafood*. Briefing Paper prepared for the Narragansett Bay Project.

Kipp, K. October 1990. *Seafood Contamination Issues*. Briefing Paper prepared for EPA Region I.

Klauber, A. Spring 1991. "Seafood Quality Assurance: Strategies for the 1990s" in *Nor'easter*.

Knebel, H., R. Rendings, and M. Bothner. Sept. 1991. Modern Sedimentary Environments in Boston Harbor, Massachusetts. *Journal of Sedimentary Petrology*, Vol. 61, No. 5. pp. 791-804.

Kurland, J. January 1991. *Habitat Mitigation Efforts in the Gulf of Maine: Stemming the Tide of Environmental Degradation*. National Oceanic and Atmospheric Administration/National Marine Fisheries Service.

Leo, W.S., M. Alber, M.S. Connor, K.E. Keay, and A.C. Rex. 1994. *Contaminated Sediments in Boston Harbor*. MWRA Technical Report #93-9. Massachusetts Water Resources Authority, Boston, MA.

Leonard, D., M. Broufman, and K. Hankness. March 1989. *The Quality of Shellfish Growing Waters on the East Coast of the United States*, U.S. Department of Commerce, NOAA.

MacDonald, D.A. 1991. *Status and Trends in Concentrations of Selected Contaminants in Boston Harbor Sediments and Biota*. NOAA Technical Memorandum NOS OMA 56, National Oceanic and Atmospheric Administration, Seattle, WA.

Massachusetts Audubon Society. Fall 1991. *Special Report: Wetlands Under Siege*.

Massachusetts Barrier Beach Task Force. February 1994. *Guidelines for Barrier Beach Management in Massachusetts*. Massachusetts Coastal Zone Management Office.

Massachusetts Bay Marine Studies Consortium. July 1990. *Coastal Zone Governance on Massachusetts Bay's North Shore*. Second Edition.

Massachusetts Bay Marine Studies Consortium. 1989a. *Maritime Resources of Massachusetts Bay: Guide to Identification and Preservation*.

Massachusetts Bay Marine Studies Consortium. 1989b. *Natural Resources of the Massachusetts Bay Area: Values, Status, and Threats*.

Massachusetts Coastal Zone Management Office. December 1982. *Coastal Zone Management Barrier Beach Inventory Project*.

Massachusetts Coastal Zone Management Office. 1992. *Final Guidance Document - The Development of Resource Management Plans for Coastal Areas of Critical Environmental Concern*.

Massachusetts Department of Environmental Protection. 1990 a. *Commonwealth of Massachusetts Summary of Water Quality*.

Massachusetts Department of Environmental Protection. 1990 b. *Massachusetts Water Quality Standards*.

Massachusetts Department of Environmental Protection, Division of Water Pollution Control and Office of Watershed Management. March 1995. *Summary of Water Quality 1995.*

Massachusetts Department of Environmental Protection. Division of Wetlands and Waterways. February 1991. *Wetlands White Paper: A Report on the Protection of Wetlands in Massachusetts.*

Massachusetts Department of Fisheries, Wildlife, and Environmental Law Enforcement, Riverways Program. 1993. *Riverways Community Guide - Strategies for Drafting and Passing Local River Protection Bylaws.*

Massachusetts Division of Marine Fisheries. 1985. *Assessment at Mid-Decade: Economic, Environmental, and Management Problems Facing Massachusetts' Commercial and Recreational Marine Fisheries.*

Massachusetts Division of Marine Fisheries. 1989. *Massachusetts Lobster Fishery Statistics.*

Massachusetts Division of Marine Fisheries. July 1990. *Metal Concentrations in Marine Fish and Shellfish from Boston and Salem Harbors, and Coastal Massachusetts.* Progress Report.

Massachusetts Division of Water Pollution Control. 1992. *Commonwealth of Massachusetts: Summary of Water Quality.* (305b Report). Department of Environmental Protection, Boston, MA.

Massachusetts Executive Office of Environmental Affairs. 1990. *An Environment at Risk: the First Annual Report on the State of the Massachusetts Environment.* Commonwealth of Massachusetts. 129 pp.

Massachusetts Executive Office of Environmental Affairs, Division of Conservation Services. 1990. *The Open Space Planner's Workbook.*

Massachusetts Executive Office of Environmental Affairs. June 1991. *Report of the Living Resources Committee of the Technical Advisory Group for Marine Issues.*

Massachusetts Offshore Groundfish Task Force. 1990. *New England Groundfish in Crisis - Again.*

Massachusetts Water Resources Authority. November 1990. *The State of Boston Harbor: 1990.*

Massport. 1995. *Port of Boston Economic Development Plan.* Massport Authority, Boston, MA.

McDowell, J.E., D.F. Leavitt and D. Shea. In Progress. *Population Processes of Mya Arenaria from Contaminated Habitats in Massachusetts Bay.* Massachusetts Bays Program, Boston, MA.

McElroy, A., M. Shiaris and J. McDowell. 1994. *Bioavailability and Biotransformation of Polycyclic Aromatic Hydrocarbons in Benthic Environments of Coastal Massachusetts.* Massachusetts Bays Program, Boston, MA.

Menzie-Cura and Associates. 1991. *Sources and Loadings of Pollutants to the Massachusetts Bays.* Report #MBP-91-01. Massachusetts Bays Program Office, Boston, MA.

Menzie-Cura and Associates. 1995a. *Organic Loadings from the Merrimack River to Massachusetts Bay.* MBP-95-04. Massachusetts Program Office, Boston, MA.

Menzie-Cura and Associates. 1995b. *Measurements and Loadings of Polycyclic Aromatic Hydrocarbons (PAHs) in Stormwater, Combined Sewer Overflows, Rivers, and Publicly Owned Treatment Works (POTWs) Discharging to Massachusetts Bays.* MBP-95-06. Massachusetts Bays Program, Boston, MA.

Metropolitan District Commission. October 1990. *Task Force Report on Algal Fouling in Broad Sound and Nahant Bay.*

Moore, M. J., B.R. Woodin, and J.R. Stegeman. 1992. *Liver Pathology of Winter Flounder: Boston Harbor, Massachusetts Bay, and Cape Cod Bay -- 1991.* MWRA Environmental Quality Department Technical Report No. 92-5. Massachusetts Water Resources Authority, Boston, MA.

Moore, M.J. and J.R. Stegeman. 1993. *Liver Pathology of Winter Flounder: Boston Harbor, Massachusetts Bay, and Cape Cod Bay -- 1992.* MWRA Environmental Quality Department Technical Report No. 93-7. Massachusetts Water Resources Authority, Boston, MA.

Moore, M.J., R.M. Smolowitz, D.F. and J.J. Stegeman. 1995. *Evaluation of Chemical Contaminant Effects in Coastal Habitats of the Massachusetts Bays.* MBP-95-05. Massachusetts Bays Program, Boston, MA.

Nassif, J. Massachusetts Marine Biotoxin Monitoring Project. State Laboratory Institute. FDA/PHS/HHS #223-89-4064. October 1991. *Interim Report.*

National Oceanic and Atmospheric Administration. 1988. *National Marine Pollution Program -- Federal Plan for Ocean Pollution, Research, Development, and Monitoring, Fiscal Years 1988-1992.*

National Oceanic and Atmospheric Administration. 1990. *Estuaries of the United States: Vital Statistics of a National Resource Base.* U.S. Department of Commerce, NOAA Strategic Assessment Branch, Rockville, MD.

National Oceanic and atmospheric Administration. 1990a. *50 Years of Population Change Along the Nation's Coasts, 1960-2010.* The second report of a coastal trends series. National Ocean Service, U.S. Department of Commerce, Rockville, MD.

National Oceanic and atmospheric Administration. 1990b. *Estuaries of the United States: Vital Statistics of a National Resource Base.* A special NOAA 20th anniversary report. National Ocean Service, U.S. Department of Commerce, Rockville, MD.

National Oceanic and atmospheric Administration. 1990c. *Coastal Environmental Quality in the United States, 1990: Chemical Contamination in Sediment and Tissues.* A special NOAA 20th anniversary report. National Ocean Service, U.S. Department of Commerce, Rockville, MD.

National Oceanic and Atmospheric Administration. 1991. *Stellwagen Bank National Marine Sanctuary: Draft Environmental Impact Statement/Management Plan.* NOAA Sanctuaries and Reserves Division, U.S. Department of Commerce, Washington, DC.

New England Aquarium. November 1990. *Massachusetts Awash in Plastics: Can We Turn the Tide?*

Northbridge Environmental Management Consultants. December 1994. *Financing the Massachusetts Bays Program Comprehensive Conservation and Management Plan: Federal, State, and Local Funding Sources and Mechanisms.* MBP-95-01. Massachusetts Bays Program Office, Boston, MA.

Orth, R.J., and K.A. Moore. 1983. *Chesapeake Bay: An Unprecedented Decline in Submerged Aquatic Vegetation.* Science 222:51-53.

Pennock, J.R. 1985. Chlorophyll Distributions in the Delaware Estuary: Regulation by Light-Limitation. *Est., Coast, and Shelf Sci.* 21:711-725.

Provincetown Beach Debris Task Force. 1994. *Strategies to Reduce Marine Debris - Provincetown, MA.* Provincetown Harbormaster's Office.

Reback, K.E., and J.S. DiCarlo. 1972. Final completion report. Anadromous fish project. MA DMF Publication #6496 (115-50-12-72-CR). MA Division of Marine Fisheries, Boston, MA.

Rex, A.C., K.E. Keay, W.M. Smith, J.J. Cura, C.A. Menzie, M.S. Steinhauer, and M.S. Connor. 1992. *The State of Boston Harbor: 1991.* MWRA Technical Report #92-3. Massachusetts Water Resources Authority, Boston, MA.

Ridley, N. May 1989. *Chemical and Microbiological Contamination of Seafood: A State Perspective.* Testimony before the Massachusetts Committee on Oversight and Investigations and Committee on Energy and Commerce.

Roach, D.A. 1992. *A Sanitary Survey of Essex Bay in Essex, Gloucester, and Ipswich, Massachusetts, Area N7.* MA Division of Marine Fisheries Shellfish Sanitation and Management Program. 36 pp. plus appendices.

Robinson, M. December 1989. *Non-Regulatory Methods of Habitat Protection.* Prepared for the Buzzards Bay Project.

Robinson, M. January 1990. *Strategy for a Town Conservation Restriction Program.* Prepared for the Buzzards Bay Project.

Robinson, W.E., T.J. Coffey, and P.A. Sullivan. 1990. *New England Aquarium's Ten-Year Boston Harbor Monitoring Program.* First Report (March 1987-July 1989). New England Aquarium, Boston, MA.

Schwartz, J., N. Duston, and C.A. Batdorf. 1991. *PCBs in Winter Flounder, American Lobster, and Bivalve Molluscs from Boston Harbor, Salem Harbor, and Coastal Massachusetts: 1984-1989.* MA DMF Publication #16, 966-63-250-10-91-C.R. Massachusetts Division of Marine Fisheries, Boston, MA.

Schwartz, J., N. Duston, C.A. Batdorf, W. Sullivan, and C.M. Hutcheson. 1993. *Metal Concentrations in Winter Flounder, American Lobster, and Bivalve Molluscs from Boston Harbor, Salem Harbor, and Coastal Massachusetts: A Summary of Data on Tissues Collected from 1991-1993.* MA DMF Publication #17670 04 200 2/95 1.25-C.R. Massachusetts Division of Marine Fisheries, Boston, MA.

Shea, D. In progress. *Accumulation, Inventory and Budget of Polycyclic Aromatic Hydrocarbons in Massachusetts Bays Sediments.* Massachusetts Bays Program, Boston, MA.

Shea, D., D. Lewis, B. Buxton, D. Rhoads, and J. Blake. 1991. *The Sedimentary Environment of Massachusetts Bay: Physical, Biological and Chemical Characteristics.* MWRA Technical Report 91-6. Massachusetts Water Resources Authority, Boston, MA. 139 pp.

Shea, D. and J.R. Kelly. 1992. *Transport and Fate of Toxic Contaminants Discharged by MWRA into Massachusetts Bay.* MWRA Technical Report #92-4. Massachusetts Water Resources Authority, Boston, MA.

Shea, D. and J. Seavey. In Progress. *Inventories and Concentration Profiles of Organic Contaminants in Sediment Cores from Massachusetts and Cape Cod Bays.* Massachusetts Bays Program, Boston, MA.

Short, F.T., D.M. Burdick, J.S. Wolf, and G.E. Jones. January 1993. *Eelgrass in Estuarine Research Reserves Along the East Coast, USA.* University of New Hampshire, Jackson Estuarine Research Laboratory.

Simon, A. and P. Hauce. June 1987. *Contamination of New England's Fish and Shellfish.* Coast Alliance.

Smith, J. April 1990. *The Status of Municipal Wastewater Systems with Discharges to Coastal Waters.* Coastal Zone Management Office, Boston, MA.

Sullivan, P.A., and W.E. Robinson. 1990. *The Health of Winter Flounder from Boston Harbor. A Summary of Results from Fish Day, May 13, 1989.* Edgerton Research Laboratory, New England Aquarium, Boston, MA.

The Boston Harbor Associates. March 1987. *Cleanup Action Network Report I – Review of the Swimmability Standard: Emphasis on Boston Harbor.*

The Boston Harbor Associates. June 1987. *Cleanup Action Network Report II - A Clamor for Safer Shellfish: Emphasis on Boston Harbor.*

Tiner, R.W. and W. Zinni. 1988. *Recent Wetland Trends in Southeastern Massachusetts.* National Wetlands Inventory Project, U.S. Fish and Wildlife Service, Newton Corner, MA.

Titus et al. July 1988. *Greenhouse Effect, Sea Level Rise and Coastal Wetlands.* USEPA doc. 230-05-86-013.

Townsend, D., L.M. Cammen, J.P. Christensen, S.G. Ackelson, M.D. Keller, E.M. Haugen, S. Corwin, W.J. Bellows, and J.F. Brown. 1990. *Seasonality of Oceanographic Conditions in Massachusetts Bay.* Bigelow Laboratory for Ocean Sciences Final Report to the Massachusetts Water Resources Authority, Boston, MA.

Uhler, A.D., D.E. West, and C.D. Hunt. 1994. *Deer Island Effluent Characterization, June - November, 1993.* MWRA Environmental Quality Department Technical Report No. 94-4. Massachusetts Water Resources Authority, Boston, MA.

Urban Harbors Institute. University of Massachusetts. 1990. *The Resources and Uses of Stellwagen Bank.*

US Army Corps of Engineers, New England Division. December 1989. *Saugus River and Tributaries Flood Damage Study. Final Environmental Impact Statement and Final Environmental Impact Report.*

US Congress, Office of Technology Assessment. April 1987. *Wastes in Marine Environments,* OTA-0-334.

US Department of Commerce, NOAA. 1990. *50 Years of Population Change Along the Nation's Coasts, 1960-2010.* The Second Report of a Coastal Trends Series. National Ocean Service, Rockville, MD.

US Department of Commerce, NOAA. 1994. *Gulf of Maine Point Source Inventory: A Summary by Watershed for 1991.* National Coastal Pollutant Discharge Inventory, National Oceanic and Atmospheric Administration. Silver Spring, MD.

US Environmental Protection Agency. December 1983. *Water Quality Standards Handbook.*

US Environmental Protection Agency. 1988a. *Analysis of Risks from Consumption of Quincy Bay Fish and Shellfish.* US EPA Region 1, Boston, MA.

US Environmental Protection Agency. 1988 b. *Assessment of Quincy Bay Contamination. Summary Report.* Prepared by Metcalf & Eddy. US EPA Region I, Boston, MA.

US Environmental Protection Agency. September 1989. *Evaluation of the Continued Use of the Massachusetts Bay Dredged Material Disposal Site.* Draft Environmental Impact Statement. US EPA Region I, Boston, MA.

US Environmental Protection Agency. 1990 a. *Study of Floatable Debris in U.S. Waters.* Prepared by the Battelle Memorial Institute.

US Environmental Protection Agency. 1990 b. *Supplemental Draft Environmental Impact Statement for the Designation of Dredged Material Disposal Site in Massachusetts Bay, Alternative Site Screening.*

US Environmental Protection Agency. 1992 a. *The National Estuary Program after Four Years: A Report to Congress.* EPA 503/9-92/007.

US Environmental Protection Agency. 1992 b. *National Estuary Program Guidance. Comprehensive Conservation and Management Plans: Content and Approval Requirements.* EPA-842-B-92-002.

US Environmental Protection Agency. 1993 a. *Assessment of Potential Impact of the MWRA Outfall on Endangered Species.* US EPA Region 1, Boston, MA.

US Environmental Protection Agency. 1993 b. *National Estuary Program: Guidance Compendium and Training Manual.* Volumes I and II.

US Environmental Protection Agency. 1994 a. *Deposition of Air Pollutants to the Great Waters.* First Report to Congress. EPA-453/R-93-055.

US Environmental Protection Agency. 1994 b. *National Estuary Program Guidance: Technical Characterization in the National Estuary Program.* EPA-842-B-94-006.

US Fish and Wildlife Service. June 1987. *Recovery Plan for the Peregrine Falcon*; March 1988. *Recovery Plan for the Roseate Tern*; January 1989. *Recovery Plan for the Piping Plover.*

US Fish and Wildlife Service. 1993. *US Fish and Wildlife Service Participation in the Massachusetts Bays National Estuary Program.* Gulf of Maine Coastal and Estuary Project. Portland, ME.

US Food and Drug Administration. 1982a. *FY 1979 Pesticides and Metals in Fish Programs. Compliance Program Report of Findings.*

US Food and Drug Administration. 1982b. *FY 1979 Total Diet Studies. Compliance Program Report of Findings.*

US General Accounting Office. August 1988. *Seafood Safety - Seriousness of Problems and Efforts to Protect Consumers.*

Valiela, I. and J.E. Costa. 1988. *Eutrophication of Buttermilk Bay, a Cape Cod Coastal Embayment: Concentrations of Nutrients and Watershed Nutrient Budgets.* Prepared for the Buzzards Bay Project.

Wallace, G, R.P. Eganhouse, L. Pitts, and B. Gould. 1988. *Analysis of Contaminants in Marine Resources.* Prepared for Massachusetts Department of Environmental Protection and the US Environmental Protection Agency.

Williams, F.P., and G.S. Fout. 1992. *Contamination of Shellfish by Stool-shed Viruses: Methods of Detection.* Environmental Science and Technology 26(4):689-696.

Witman, J.D. 1994. *Rocky Sub-tidal Communities in Massachusetts Bay: Lovell's Island to Nahant Transect.* Final Report on the 1992 - 1993 Sampling Period. MWRA Technical Report #94-16. Massachusetts Water Resources Authority, Boston, MA.

Appendix E.

Management Characterization/ Base Programs Analysis

Available Under Separate Cover

APPENDIX E. MANAGEMENT CHARACTERIZATION (BASE PROGRAMS ANALYSIS)

Appendix E has been issued as a separate companion document to the CCMP. For a copy, please contact the Massachusetts Bays Program Office.

Appendix F.

Federal Consistency Analysis

Available Under Separate Cover

APPENDIX F. FEDERAL CONSISTENCY ANALYSIS

Appendix F has been issued as a separate companion document to the CCMP. For a copy, please contact the Massachusetts Bays Program Office.

Appendix G.

Public Comments and MBP Responses

APPENDIX G.
PUBLIC COMMENTS AND MBP RESPONSES

The following pages are reproductions of the comments made on the Final Draft CCMP. These letters are noted where responses were generated, and are followed by the MBP's narrative response. Refer to Chapter XI for additional information regarding the review and comment process for the Final Draft CCMP.

Received from Army Corps of Engineers - Cathy Demos et al.

SPECIFIC COMMENTS

1 **Page II-7, 4th para., last sentence**: This sentence could easily mislead the reader. It implies that the Massachusetts Bay Disposal Site (MBDS) is highly contaminated because MBDS violates proposed EPA sediment criteria. The technical data used to make this statement is based on proposed sediment criteria and not the criteria currently used to evaluate dredged material for open water disposal. The Public Record of Decision for the Final Environmental Impact Statement for the designation for the MBDS indicated that "The MBDS has been previously used without any significant adverse effects to the marine ecosystem or human health and the proposed future use of the modified MBDS should have no such effects either."

A suggested statement would indicate that the MBDS is not a significant impact to the habitat of Massachusetts Bay, based on the findings of the MBDS EIS and Disposal Area Monitoring System (DAMOS) research.

2 **Page II-7, 5th para**: In addition to dredged material disposal projects, which do not add contaminants to the aquatic ecosystem (i.e. only moves sediment from one area to another), other contaminant sources should also be included, such as point (NPDES permits) and non-point sources (runoff, air pollution, etc.), to provide the reader with an overall picture of different contaminant sources.

3 **Page II-17, 4th para**: Typo "Cur-rently".

4 **Page II-17, "Recommended Actions"**: The Massport, U.S. Army Corps of Engineers (Corps), EPA, NMFS and the Massachusetts Executive Office of Environmental Affairs (EOEA) should all be responsible for the last "Recommended Action" - "begin planning now for disposal of contaminated maintenance material..."

MBP Response to Cathy Demos, U.S. Army Corps of Engineers

1 Please note the expanded discussion on the MBDS in the Chapter II subsection, "Concentrations of Toxic Pollutants in the Water Column and Sediments."

2 Contaminant sources other than dredged materials - e.g., wastewater, atmospheric deposition, stormwater runoff - are described in the Chapter II discussion, "Sources of Pollutants to Massachusetts Bays."

3 Spelling corrected as noted.

4 Please note the revised "Recommended Actions" section in the Chapter IV megaproject discussion, "Boston Harbor Navigation Improvement Project."

MASSPORT MARITIME DEPARTMENT, EAST BLDG. II, FISH PIER,
NORTHERN AVENUE, BOSTON, MA 02210 (617) 973-5354 FAX: (617) 973-5357

massport

January 26, 1996

Margaret M. Brady, Director
Office of Coastal Zone Management
Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

Dear Peg:

The Massachusetts Port Authority (Massport) has taken an active role in commenting on the Massachusetts Bays Program Comprehensive Conservation and Management Plan (CCMP). Over the past few months, Massport has evaluated the goals, objectives, and commitments outlined in the draft CCMP. Based on this review, we believe than many of the goals of the CCMP can be met by the cooperative relationship of Massport, state agencies, local environmental offices, and federal agencies such as the Corps of Engineers and EPA.

As you know, Massport is the local sponsor of the Corps of Engineers' Boston Harbor Navigation Improvement Project, known also as the Boston Harbor dredging project. As project partners, Massport and the Corps have moved the project in tandem, through the state and federal environmental review processes. The project, as currently proposed, reflects environmental, economic, and engineering concerns of both the project partners and many interested parties, including the state environmental agencies.

As a matter of federal law, the Corps will prepare the contract bid documents and issue the construction contracts necessary to complete all aspects of the Boston Harbor dredging project. The contracts will certainly require compliance with all environmental permits. In the development of the construction bid documents, Massport will continue to work with the Corps to encourage including other appropriate
1 environmental performance standards into the construction contracts. Massport will, in all likelihood, have no formal contractual relationship with the dredging contractor. Even in the privately-owned berths, it is expected that the Corps will maintain control over the dredging contractor. Consequently, it remains a Massport priority to have enforceable performance standards included in the dredging contract.

It is expected that the Corps will include specific monitoring requirements in the construction contract. In addition, Massport will work with the Corps to assure that adequate independent monitoring of the dredging and disposal work during construction and to assure periodic monitoring of the cap is conducted. Post-construction monitoring is the sole responsibility of the Corps of Engineers.

Massport will provide planning assistance to the Commonwealth for future disposal of contaminated maintenance material. In the Final Environmental Impact Report submitted to the Commonwealth in June 1995 Massport provided the results of a major information-gathering exercise in the area of alternative technologies. We will continue to work with the state in pursuit of long-term solutions.

Massport takes these commitments very seriously. I look forward to working together to make the Massachusetts Bays CCMP successful in protecting the important resources of the Bays.

Very truly yours,

Ralph F. Cox
Maritime Director

MBP Response to Ralph Cox, Massport

1 Please note the amended language on both the permitting process and agency responsibilities in the Chapter IV megaproject discussion "Boston Harbor Navigation Improvement Project." This updated material is based on recent conversations with, and information provided by, Janeen Hansen (Massport) and Cathy Demos (ACOE).

Also, please note the revisions to the "Recommended Actions" section in the same megaproject discussion.

Received from Scott R. Lundgren, Commander First Coast Guard District - Marine Safety Division

Alan-

1 I have taken a look at your letter and agree that the information on the Coast Guard could be improved. I found a fax that I sent to you (a while back) with updated information for several parts of the plan, which included a more accurate description of the Coast Guard's missions in the environmental arena, which I have included on the next page; please incorporate this into Appendix A.

I need to talk to you about paragraph 6 of the "Action Plan for Reducing and Preventing Oil Pollution", which is inaccurate. I supplied an accurate description of oil spill response in the fax mentioned above, but it referenced other sections from the 12/91 comprehensive plan. I'm sorry that I missed this when Dan and I came to UMass Boston - I think we were concentrating on the specific actions, which are accurate.

2 Below is some of the wording from my comments on the 91 plan which seems to fit here and accurately describes our response to oil spills:

The party responsible for an oil discharge that affects navigable waters is required to adequately respond under the Federal Water Pollution Control Act (FWPCA), as amended. The Coast Guard On-Scene Coordinator (OSC) and the State OSC from the Massachusetts Department of Environmental Protection will ensure that the responsible party adequately responds to such spills. If a response is not adequate, the Coast Guard and the State will direct response actions. The spiller is liable for money spent by the Coast Guard or State during a response. The Coast Guard owns oil spill containment and recovery equipment and can call upon a spill response Strike Team for additional assistance, but will primarily rely on contracted resources. A spiller is also required to provide compensation to restore or replace natural resources damaged by a spill.

3 While you are on that page, it is Exxon Valdez vice Valdeez

U.S. COAST GUARD - APPENDIX A "MANAGEMENT FRAMEWORK"

1a The U. S. Coast Guard ensures that vessels and marine transportation related facilities are in compliance with numerous federal regulations promulgated to reduce environmental impacts in the coastal zone. Pollution prevention and safety are critical to the safety of the marine environment. When accidents happen, the Coast Guard has responsibility under the Federal Water Pollution Control Act (FWPCA), as amended, and the Comprehensive Environmental Response, Compensation, and Liability Act, to monitor and direct the removal of oil or hazardous substances from the coastal zone. The Coast Guard under authority of amendments to the FWPCA ensures compliance with Marine Sanitation Device regulations. Certain vessel waste disposal policies set by the International Convention for Prevention of Pollution from Ships (MARPOL) are implemented in the U.S. through the Act to Prevent Pollution from Ships and the Ports and Waterways Safety Act. The Coast Guard ensures that vessels and facilities meet the standards of the regulations during inspections, boardings, routine patrols, and investigations.

Other Coast Guard missions, such as maintaining navigational aids, support marine environmental protection by ensuring the safety of life and property on the navigable waters. Additionally, the Coast Guard enforces regulations promulgated by other agencies, such as the National Marine Fisheries Service, that ensure appropriate use of our marine resources.

MBP Response to Scott Lundgren, First Coast Guard District

1 Please note expanded U.S. Coast Guard mission description in Appendix A - Management Framework.

2 Please note revised discussion on oil spill response in introduction to Action Plan #6 (*Reducing and Preventing Oil Pollution*).

3 Spelling corrected as noted.

When a diminishment of water quality has been noted, then it might be useful to analyze the sources of nitrogen and develop more detailed predictive nitrogen loading models than those utilized by the Waquoit Bay National Estuarine Research Reserve (on a site specific basis). We emphasize that the secchi depth test would serve as only a trigger to conduct more in-depth modeling studies.

14 • V-164: Executive Office of Environmental Affairs (EOEA) Action #12.5 on using the Sea Paths Program to gain public access to the intertidal areas of the Massachusetts coast that are in private hands is probably an endeavor that is doomed to failure. The Cape Cod Group-Sierra Club had representatives at a meeting in Brewster on the Sea Paths program and it generated much anger between the homeowners that owned beach front property and the general public which desired increased access. Many beach front property owners were concerned about the lack of a state enforcement effort for this program and damage to their land or liability for injuries suffered by hikers. Traditionally towns people have been able to walk along the intertidal areas in Brewster on an informal basis, but the Sea Paths program perceived threats has caused many shoreline owners to post their property. It is unlikely that enough property owners would agree to easements to allow a coastal hiking path to be developed. It is also likely that homeowners granting easements would be at war with neighbors that didn't desire to do so. Thus the Sea Paths Program appears to be exacerbating the lack of public access to the shoreline.

In closing, we commend Mass Bays for recommending not only educational programs within the schools, but for also exploring non-traditional means to educate non-coastal residents as to their role in coastal problems. Thank you for considering our comments on the CCMP.

Yours truly,

James McCaffrey

James McCaffrey, Director
Massachusetts Chapter-Sierra Club

encl: references

References

Auster, P.J. and R.J. Malatesta. 1995. Assessing the role of non-extractive reserves for enhancing harvested populations in temperate and boreal systems. pp.82-89 in *Marine Protected Areas and Sustainable Fisheries* ed.. by N. Shackell and J.H.M. Willison; Science and Management of Protected Areas Association; Wolfville, Nova Scotia.

Blaylock, B. and G. Waring. 1995. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments. NOAA/National Marine Fisheries Service Technical Memorandum.

Boesch, D.F. and E.R. Urban, Jr. 1995. Priorities for coastal ecosystem science--a review. Oceanography 8:97-99.

Christensen, J.P., D.B. Smith, and L.M. Mayer. 1992. The nitrogen budget of the Gulf of Maine and climate change. pp. 75-90 in *Proceedings of the Gulf of Maine Scientific Workshop, 8-10 January 1991*. ed.. by Jack Wiggin and Christopher N.K. Mooers; Univ. Massa.-Boston-Urban Harbors Insititute.

McIntyre, A.D. 1995. Human impact on the oceans: the 1990s and beyond. Mar. Pollut. Bull. 31: 147-151.

Pearce, J. and G. Wallace. 1995. The Health of the Gulf of Maine Ecosystem: Cumulative Impacts of Multiple Stressors Exectuive Summary. RARGOM report 95-1; Hanover, N.H.

MBP Response to James McCaffrey, Massachusetts Chapter Sierra Club

1 The CCMP discusses the issue of overfishing of major commercial finfish species in Massachusetts Bays and the resultant severe economic hardship on traditional fishing-dependant communities such as Gloucester. It states that "...overfishing is generally considered to be the primary cause of the current crisis in the fishing industry", but also recognizes that "...pollution and habitat loss are thought to play a role as well, especially among fish that spawn nearshore or are anadromous." In order to shed further light on this complex issue, the MBP has funded the development of a White Paper and will be hosting a workshop which will explore the factors impacting the region's declining offshore fish stocks. Please refer to the discussion on "fishing" in The Human Habitat section of Chapter II (The State of the Bays).

With respect to coordination of the various CCMP implementation actions, the CCMP describes a multi-agency implementation mechanism that is based on several highly successful Massachusetts models, including the MBP's innovative MBP / Regional Planning Agency / Local Governance Committee partnership. Please refer to Chapter VI (Implementing the CCMP Throughout the Bays Watershed) for a detailed discussion of the CCMP implementation strategy.

2 Based on the recommendations of a working group convened by the MBP in March of 1995, the MBP has funded a first-tier nitrogen analysis project which is determining nitrogen sources, estimating nitrogen loading based on land use categories, and calculating oceanic nitrogen loading for selected embayments. The results of this project will be a first approximation of the coastal embayments likely to be at risk of eutrophication. Once the major sources are identified, more refined loading estimates and appropriate reduction strategies will be developed. Please refer to RPA / DEP / Municipal Action #11.2 in Action Plan #11 (*Managing Nitrogen-sensitive Embayments*) of Chapter V.

3 The CCMP recommendation that DEP assume responsibility for administering the NPDES program was developed by DEP personnel in consultation with EOEA and CZM officials, and has the strong support of each of these agencies.

4 Please refer to Response #1 above regarding the fisheries over-harvesting issue. As demonstrated by the MBP's funding of the offshore fisheries White Paper and workshop, the MBP is concerned about threats to the ecological diversity and sustainability of the offshore waters and sediments of Massachusetts Bays, and will seek out opportunities to work cooperatively with other interested parties (e.g., Stellwagen Bank National Marine Sanctuary program, New England Fisheries Management Council, National Marine Fisheries Service, and Massachusetts Division of Marine Fisheries) to explore potential actions to alleviate these threats.

5 The CCMP has been revised to reflect the various flow directions of the multiple pollution plumes emanating from the Massachusetts Military Reservation (MMR) on Cape Cod. Please refer to the amended "Water Quality" discussion in the Cape Cod Region section of Chapter III.

6 The discussion on shellfish bed closures due to pathogen contamination has been expanded to include a brief description of the periodic problem of paralytic shellfish poisoning (PSP), a naturally-occurring biotoxin. Please refer to the "Shellfish Bed Contamination" discussion in Chapter II (The State of the Bays).

7 The CCMP has been revised to include a reference to vernal pools and seasonally variable ponds, as well as permanent wetland types. Please refer to Municipal Action #3.4 in Action Plan #3 (*Protecting and Enhancing Coastal Habitat*) of Chapter V.

8 The CCMP has been revised to include a discussion of the need for multi-jurisdictional coordination and implementation whenever stormwater

sources and impacts cross municipal boundaries. Please refer to Municipal Action #4.1 in Action Plan #4 (*Reducing and Preventing Stormwater Pollution*) of Chapter V.

9 The Massachusetts Highway Department's proposed comprehensive *Environmental Manual* will not be limited to addressing stormwater impacts only. Highway and bridge construction impacts to wetlands, water supplies, and other sensitive resource areas will be covered as well.

10 An approved capping demonstration project for the Massachusetts Bay Disposal Site (MBDS) would employ only sediments which meet EPA's established Ocean Dumping Criteria. In evaluating and approving the suitability of sediment for disposal at the MBDS, the U.S. Army Corps of Engineers (ACOE), the U.S. Environmental Protection Agency (EPA), and the Commonwealth of Massachusetts utilize the federal tiered testing protocol. This protocol requires testing for both sediment chemistry and biological effects (e.g., toxicity and bioaccumulation). Results from these tests are compared to similar tests performed on clean reference sediments near the MBDS according to the Ocean Dumping Criteria. In addition, the Commonwealth also compares project sediment chemistry concentrations to those of existing State guidelines. Finally, any capping demonstration project at the MBDS would utilize forthcoming guidance currently being developed under a EPA / ACOE national effort related to capping design and implementation.

With respect to sediment quality criteria, EPA has adopted five of these criteria for selected polycyclic aromatic hydrocarbons (PAHs) and pesticides, and is currently developing additional standards for a number of metals. At this time, EPA and ACOE have not determined how existing and future criteria will be used in the regulatory review process applicable to dredging projects.

11 Actions to be taken by the New England Fisheries Management Council (NEFMC) relative to abandoned fishing gear and other offshore fisheries management issues were beyond the scope of the current Massachusetts Bays Program.

12 The discussion on nitrogen inputs to Massachusetts has been amended to include a reference to ocean water inflow as a significant nitrogen contributor. Please refer to the introductory section of Action Plan #11 (*Managing Nitrogen-sensitive Embayments*) of Chapter V.

13 The coastal Regional Planning Agencies and DEP have competent technical staff with broad expertise in water quality, land use, and related environmental issues. Any specialized additional training that might be required to develop and apply nitrogen loading models to the region's watersheds and embayment areas can be arranged on an as-needed basis through the MBP and the interagency working group.

14 According to DEM's Coastal Access Planner, the comments regarding the Sea Path Program contain several factual errors - e.g., "Traditionally towns people have been able to walk along the intertidal areas in Brewster on an informal basis, but the Sea Paths program perceived threats has caused many shoreline landowners to post their property." In fact, according to both Brewster citizens and officials responsible for the coastal zone, there have been no additional postings since the issue was raised in the community. All agree that it would be difficult to post the intertidal zone at all. Furthermore, owners expressing their concerns at the Brewster public meeting did not refer publicly to liability, and did not express an interest in more state enforcement of Sea Paths. (In fact, misgivings were expressed about formal beach staff.)

The larger issue is how best to address the complex and emotionally charged issue of improving public coastal access. There is no question that many shoreline landowners react negatively to the idea of either formalizing existing public use or opening beaches to walkers. However, such reactions are not unusual. They are voiced in response to nearly any type of proposed trail, reflecting general fears of the impact of outsiders and government control of their land. Over the last few decades, the coastline in Massachusetts has experienced an enormous fragmentation of lots and ownership, huge increases in property values, expanding non-resident ownership, and a growing population. While some landowners say that they will continue to informally allow public use, they, and the subsequent owners of the land, are simply not bound to do so. The implication of this hits home when citizens are shocked to find areas closed to them that they traditionally enjoyed - in certain areas of Brewster (the focus of the Sierra Club's comment), in neighboring communities like

Dennis, in Island communities such as Edgartown, in north shore communities like Rockport, and many others.

The Sea Path Program cannot address these issues by itself. To be effective, such a program needs to be one of an assortment of planning, acquisition, and regulatory tools, integrated into a comprehensive approach that includes a variety of public and private project proponents. For its own part, the Sea Path Program is slowly building partnerships with nonprofits and municipalities regarding particular areas of concern. It may be slow to establish legal rights-of-way due to the significant barriers faced, but there is no evidence that the program is "exacerbating the lack of public access to the shoreline." The Department of Environmental Management has indicated that it is open to suggestions about how to address this complicated issue, and invites the Sierra Club and other groups to work with Department personnel to help achieve the goal of improved, secure, well-managed public coastal access.

The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

January 30, 1996

Peg Brady
Director
Coastal Zone Management
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

RE: Massachusetts Bays 1995 Comprehensive Conservation & Management Plan. MHC #16075.

Dear Ms. Brady:

Thank you for your letter of January 17, and a copy of the Draft Final Plan for the Massachusetts Bays Program. Staff of the Massachusetts Historical Commission have reviewed the information you submitted.

1 For MBP-funded or assisted projects, applicants might not be aware of the requirement for MHC review of projects with federal or state funding, licenses, permits, and approvals. As an alternative to the procedures you suggested, MHC recommends that CZM have its grant applicants submit to the MHC a Project Notification Form (PNF, 950 CMR 71, Appendix A), which would include a photocopy of the relevant section of a USGS quadrangle map that clearly shows the boundaries of the proposed project area, as well as larger scale plans. MHC would review this information to determine whether or not the project is likely to impact any significant historic or archaeological resources. CZM could include the submittal of the PNF on a checklist on its grant application materials, similar to that used by other agencies (e.g., Army Corps of Engineers, Division of Conservation Services, DEP, etc.).

In preparing the Final Plan, MHC recommends that additional information be provided. Feel free to use the text of this letter in preparing revisions to the sections indicated.

2 Chapter II, The State of the Bays, should include a section on Cultural Resources. This section could briefly summarize the human use of the bays first by Native American groups beginning approximately 12,000 years ago (when the continental shelf was exposed as a broad coastal plain), and continuing into the present. A recent survey of data at the MHC indicates that the coastal region has the highest density of ancient archaeological sites in the state. Marine resources have been a significant part of Native American subsistence strategies for millennia. European explorers were initially attracted to the bays for its fishing potential in the 15th century, and much of the early colonial settlement was oriented there. Important aspects of Massachusetts' history are related to its sea-faring industries, and dependence on the maritime trades and economies. Important historic and archaeological resources are present in the coastal areas and in the bays, including habitation areas (some now submerged), historic shipwrecks, marine-dependent structures (wharves, lighthouses, etc.), and archaeological sites located in the coastal areas, such as Native American habitation areas and villages, historical settlements, historical marine industries (historic ships, shipyards, saltworks, fish flakes, etc.). These resources define the character of the region's cultural heritage, and provide a better understanding of its historical development. Cultural resources are both finite and non-renewable, but sustainable.

220 Morrissey Boulevard, Boston, Massachusetts 02125 · (617) 727-8470
Fax: (617) 727-5128 · TDD: 1-800-392-6090

Fax: (617) 727-5128 · TDD: 1-800-392-6090

Implementation of projects that involve excavation, new construction, demolition, and rehabilitation have the potential to affect historic and archaeological resources, and need to be carefully planned to take into account their effects on the region's cultural resources.

Chapter V, Action Plans, should include a section on protecting and enhancing historic and archaeological resources in the bays. This could include a discussion of the need to locate and identify historic properties, evaluating their significance in terms of the local, regional, and statewide historical
3 contexts developed by the MHC, evaluating proposed project impacts to these resources, and planning new projects to avoid, minimize, or mitigate adverse impacts to cultural resources. Protecting and preserving the historical, character-defining elements of the bays adds to the state's aesthetic and cultural environment, encourages the traditional uses of the coast and bays for fishing, transportation, recreation, etc., and fosters an appreciation of coastal resources for residents and tourists. New projects proposed that will require federal or state funding, licenses, permits, and approvals, require review by the MHC.

Appendix A, The Management Framework in Massachusetts Bays, should include a short description of the Advisory Council on Historic Preservation under federal agencies; the MHC and the
4 Massachusetts Board of Underwater Archaeological Resources under state agencies; and, Local Historical Commissions and Local Historic District Commissions under local agencies.

For federal agencies, you should add the Advisory Council on Historic Preservation (ACHP). The ACHP is an independent federal agency established by the National Historic Preservation Act of 1966. The ACHP reviews federally-assisted projects that affect historic properties and works with other federal agencies and the State Historic Preservation Officers (see MHC) to avoid or reduce harm to those properties under 36 CFR 800, regulations implementing Section 106 of the National Historic Preservation Act of 1966 as amended (16 USC 470f, 1992). The ACHP, which has published several guides to the federal historic preservation review process, is headquartered at 1100 Pennsylvania Avenue NW, Suite 809, Washington, DC 20004, Tel. 202-606-8505.

For state agencies, add a section on the MHC. A brochure of MHC's programs is enclosed. The MHC was established in 1963 to assist in protecting and preserving the state's significant historic and archaeological resources. The passage of the National Historic Preservation Act in 1966 created a broad, national historic preservation program, and directed each state to appoint a State Historic Preservation Officer (SHPO), who is responsible for implementing the provisions of the NHPA at the state level, for coordinating local, state, and federal preservation efforts, and for developing comprehensive, statewide historic preservation planning. In Massachusetts, the SHPO is the Executive Director of the MHC. In carrying out its mandates under both state and federal law, the MHC has developed a number of historic preservation programs, including: compiling and maintaining a statewide inventory of historic and archaeological resources; nomination of significant properties to the National Register of Historic Places; technical preservation assistance to municipalities, to state and federal agencies, and to the public; involvement in environmental review and historic preservation planning for state and federally-assisted projects; grants-in-aid programs for historic preservation activities; and a broad public information program.

MHC reviews projects that require federal or state funding, licenses, permits, and approvals, under Section 106 and 110 of the National Historic Preservation Act of 1966 as amended (16 USC 470f & 470h-2, 1992) and its implementing regulations (36 CFR 800), and MGL c. 9, ss. 26-27C (950 CMR 71). This review process identifies historic and archaeological resources that may be affected by new construction, demolition, and rehabilitation, and provides a formal consultation process that seeks alternatives to avoid, minimize, or mitigate impacts to significant cultural resources.

The MHC is also the Office of the Massachusetts State Archaeologist, who issues permits for archaeological investigations on public lands, projects under review by municipalities, counties, and state and federal agencies, under the provisions of MGL c. 9, ss. 26A and 27C (950 CMR 70). The permit process ensures the conservation of archaeological resources and the highest quality of archaeological research. The State Archaeologist reviews permit applications for archaeological investigations to evaluate the qualifications of archaeological research teams and the soundness of archaeological research programs. The State Archaeologist also responds to the accidental discovery of human remains believed to be 100 years old or older under MGL c. 9, s. 27C and c. 38, s. 6B, and assists in the preservation of ancient burial places under MGL c. 7, s. 38 and c. 114, s. 17.

MHC has developed a revised Massachusetts State Historic Preservation Plan (1995), and has published regional overviews of the historic and archaeological resources that are relevant to the coastal regions. These include Historic and Archaeological Resources of the Boston Area, Historic and Archaeological Resources of Southeast Massachusetts, and Historic and Archaeological Resources of Cape Cod and the Islands.

Also under state agencies, you should add a section on the Massachusetts Board of Underwater Archaeological Resources (BUAR). I understand that you have sent the BUAR a copy of the draft plan for their review and comment. Information on the BUAR's legislative history, review authority, and programs of BUAR can be obtained from its Director, Victor Mastone at EOEA. Coordination under the Federal Abandoned Shipwreck Act (43 USC 2101-2106) and Guidelines (55 Fed. Reg. 50116-50145) might be included in this section.

For local agencies, you should add Local Historical Commissions (established under MGL c. 40, s. 8D) and Local Historic District Commissions (established under MGL c. 40, s. 40C). I am enclosing a broadsheet that explains the different roles and responsibilities for these two different kinds of commissions. Local historical commissions vary widely in the role they may have in reviewing and commenting on local projects, while local historic district commissions undertake regulatory design review within established local historic districts. Addresses for local historical commissions and historic district commissions can be provided by the MHC.

Thank you once again for the opportunity to review and comment on the draft plan. If you have any questions or need further assistance, please feel free to contact me.

Sincerely,

Edward L. Bell
Senior Archaeologist
Massachusetts Historical Commission

xc: Victor Mastone, EOEA/Board of Underwater Archaeological Resources
Susan Coin, EPA, Region 1

Enclosures (Program brochure, pub. list, SHPP, LHD/LHDC/LHS info)

MBP Response to Edward Bell, Massachusetts Historical Commission

1 For MBP-funded projects, MBP will require applicants to submit to MHC a Project Notification Form, as requested. In addition, when Massachusetts Bays Program project staff provide grant-writing assistance to community applicants seeking other sources of funding from the state or federal government, MBP will work with the applicants to ensure compliance with the requirement for MHC review. Please refer also to Appendix K, "National Historic Preservation Act."

2 Please note addition of "Cultural Resources" discussion to Chapter II.

3 The Action Plans in Chapter V address the specific priority issues identified by the MBP Management Conference at the outset of the Program. These issues relate primarily to water and sediment quality, habitat, and living marine resources protection. Nevertheless, to the extent that future CCMP implementation activities may involve or impact any of the region's historic and cultural resources, MBP will explore opportunities to work collaboratively with local and state preservation officials to help preserve and enhance these resources.

4 Please note addition of descriptions of the referenced federal, state, and local historic preservation entities to Appendix A - The Management Framework, including: the Advisory Council on Historic Preservation (ACHP), the Massachusetts Historical Commission (MHC), Local Historical Commissions, and Local Historic District Commissions.

The Commonwealth of Massachusetts

Division of Marine Fisheries
Leverett Saltonstall State Office Building
100 Cambridge Street
Boston, Massachusetts 02202

PHILIP G. COATES
DIRECTOR

727-3193

February 1, 1996

Ms. Diane Gould, Director
Mass Bays Program
Coastal Zone Management
100 Cambridge Street, 20th Floor
Boston, MA 02202

Dear Diane,

The Division has reviewed the revisions and excepts from the December 1995 draft CCMP for the Mass Bays Program. We have several comments on the revisions some of which are minor in nature. The comments are as follows:

1. On page Roman Numeral-V, paragraph 2 under "Estuaries as Fish and Waterfowl Habitat". It is noted that Massachusetts Bay and Boston Harbor support some of the largest anadromous runs of rainbow smelt in our coastal waters. In recent years most of the state's smelt fisheries have sharply declined. Presently Boston Harbor is one of the few regions where viable smelt fishery still exists. The three top rivers for smelt production in Massachusetts bay are the Neponset River, Back River and Fore River. The enclosed report is offered for your review and may provide a useful citation on anadromous fish in either this section or Section C of the chapter on the Metro Boston region.
2. On page Roman Numeral V-3, item 2.2. This appears to be a new recommended action for the Division of Marine Fisheries. While we agree that it would benefit the Commonwealth and cities and towns, we note that we are already assisting cities and towns in the development of shellfish management plans and that our current priority is to fully fund and staff our own shellfish management program before providing financial assistance to cities and towns. If new funds became available for a grant program we would certainly support that effort but only after full funding of our shellfish program.
3. On Page Roman Numeral V-4, action item 3.11. We support the item to provide an up-to-date inventory of anadromous fish runs in the Massachusetts Bays region but we point out that this should be a cooperative effort between the Division of Marine Fisheries and the Riverways Program within the

Department, since the management authority rests with the Division of Marine Fisheries under Chapter 130.

4. On page Roman Numeral V-65,V-85 and V-103, action numbers 4.5, 5.5, 7a.2. All of these action items involve the NPDES permit program which is jointly administered with EPA and DEP. We suggest that the action items also include DEP as a cooperator.

5. On page Roman Numeral V-126, paragraph 1, last sentence. It should be noted that proposals for funding have been solicited from coastal communities and approximately $1 million dollars has been released for project construction and implementation.

6. On page Roman Numeral V-149 and 150, action item 12.1. This action item discussed the need to enhance public access along the shoreline but includes no mention of recreational fishing access. The nearest reference is of the colonial ordinance and that reserves the public's rights of "fishing, fowling, and navigation" in the intertidal zone. We are concerned that the inference could be drawn that there is adequate recreational fishing access and opportunities in Massachusetts Bay when in fact fishing access has been greatly diminished in recent years especially for the metropolitan Boston area. The increasing population on the coast along with associated changes in waterfront development and use have severely limited the options of the average angler. Massachusetts Public Access Board has attempted to address the problem in recent years by construction and repairing of boat ramps in the Massachusetts bay region. These efforts should be applauded but greater support is needed to continue the program. The other part of the problem is that there is little access for those anglers who fish from shore. Little progress has been made to gain greater shorefront access for this type of activity. We strongly recommend that the topic of recreational fishing access be recognized in action plan 12.1 and that the construction of recreational fishing piers should be highlighted as a public access initiative.

If you need further information on our comments please contact either myself or Brad Chase at Cat Cove Marine Laboratory (telephone 617-727-3958) for assistance. We appreciate the opportunity to comment on the draft.

Sincerely,

W. Leigh Bridges
Assistant Director

cc: Jim Fair
Brad Chase
Mike Hickey
Ruth Kuykendall, MBP

MBP Response to W. Leigh Bridges, Division of Marine Fisheries

1 Please note expanded discussion on anadromous fish in "Estuaries as Fish and Wildlife Habitat" section of Chapter II.

2 DMF action item #2.2 (*The Division of Marine Fisheries should develop and administer a local Shellfish Management Grants program to help communities finance the development and implementation of effective local shellfish management plans*) was developed in collaboration with DMF personnel in 1994. Its continued strong support by DMF was reaffirmed by James Fair, DMF Assistant Director, in a recent conversation with MBP staff. .

3 Please note addition of Riverways Program as a cooperator in DMF action item #3.11 (*The Division of Marine Fisheries, in cooperation with the Riverways Program, should 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*).

4 Please note inclusion of DEP as a cooperator under the "Responsible Agents" listed for each of the action items referenced.

5 Please note addition of grant figure (approximately $1 million) to introductory section of Action Plan #8 (*Managing Boat Wastes and Marina Pollution*).

6 Please note expanded discussion on recreational fishing access in introductory section of Action Plan #12 (*Enhancing Public Access and the Working Waterfront*).

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OCEAN AND COASTAL RESOURCE MANAGEMENT
SANCTUARIES AND RESERVES DIVISION
Stellwagen Bank National Marine Sanctuary
14 Union Street
Plymouth, Massachusetts 02360
(508) 747-1691 (508) 747-1949 FAX

16 January, 1996

Diane Gould, Ph.D., Executive Director
Massachusetts Bays Program
100 Cambridge Street, Room 2006
Boston, Massachusetts 02202

Transmitted via FAX (617-727-2754)

Dear Diane:

I have reviewed a copy of the changes to the 1995 Draft Final CCMP and was disappointed to discover that none of my comments, provided to Tara Tracy via FAX on 28 September, 1995, appear to have been incorporated into the most recent draft. I recognize that the MBP seems to have made the determination to focus on nearshore environments and activities, but where the offshore resources are discussed, I believe it is important to be a thorough, complete, and correct.

I include a copy of the letter I FAX'd to Tara here in hopes that you will reconsider including them in the final CCMP. The substantive comments on page 2 of the letter are little more than clarifications and what we feel are necessary additions. While these do nothing to speak to the policy issues surrounding the neglect of the offshore environments in the CCMP, their addition would help to make the CCMP more complete and accurate.

1 While we may ultimately agree to disagree on whether the exclusion of some of the more critical offshore issues is appropriate for what is purported to be a *Comprehensive* Conservation and Management Plan for Massachusetts and Cape Cod Bays, one of the results of this coastal and watershed focus is that we lose the opportunity for Stellwagen Bank National Marine Sanctuary to be one of the principal implementing agencies for the CCMP, an outcome I view as unfortunate indeed. In the abstract, the linkage between the MBP and SBNMS would have been a logical one. In fact, our EIS/MP indicated that we were ready and willing to collaborate with the MBP. However, the appropriate nexus was never discovered, for whatever reason. We applaud the CCMP for helping to establish a firm foundation for enhancing the protection the coastal resources of the Bays, and the Sanctuary will surely benefit from the implementation of the CCMP as currently devised, but I can

only wonder how much better it could have been if we had found the means and the will to establish a successful partnership.

We remain ready to work with the MBP staff if you feel it appropriate. I greatly appreciate your continuing to send copies of the CCMP drafts for our comment, and hope you accept these comments as constructive input. It is, after all, in the Sanctuary's interest that any CCMP developed be a positive and significant contribution to the governance of the waters adjacent to the Sanctuary. If you have any comments or questions regarding the issues raised in either this of the previous letter, please give me a call.

Sincerely,

Bradley W. Barr
Sanctuary Manager

cc: Tara Tracy, EPA Coordinator/MBP (via FAX 617-565-4040)

Suggested Revisions to draft CCMP...BWB (22 Jan 96)

2 p. IV-20/¶1/2nd Sentence

"...with its own policies. Projects will also be reviewed by NOAA, under the Sanctuary Consultation provision of the National Marine Sanctuaries Act (to insure that the activity will not adversely affect the resources or qualities of the Sanctuary) as well as under Section 7 of the Endangered Species Act (for protected species issues). "

3 p. IV-20/"Issues of Concern"/"Impact on Marine Biota"

"endanger any protected species that may occur in the area."

4 p. IV-20/"Issues of Concern"/"Stellwagen Bank"

retitle "Stellwagen Bank National Marine Sanctuary"

"The Stellwagen Bank National Marine Sanctuary (SBNMS) is located only around 200 meters from the northeastern perimeter of the MBDS. The regulations of the National Marine Sanctuary both prohibit disposal of dredged material within the Sanctuary, and prohibit disposal outside the Sanctuary that is likely to enter the Sanctuary and harm a Sanctuary resource of quality. Given the proximity of the Sanctuary to the disposal site, it is therefore critical that barges disposing dredged material at MBDS be certain that were they are dumping material as close as possible to the permitted disposal location. Recent research conducted by the US Geological Survey and SBNMS has indicated that past disposal activities have been less than precise, and are working with the US Coast Guard to insure that disposal operations are more carefully monitored by enforcement personnel."

****

Appendix A/NOAA/¶1

5 "...lead marine science agency, NOAA mission includes research, data collection and assessment, and management of the nation's marine, estuarine, and coastal resources. While many of NOAA's programs have some linkage to and support research and management activities in Massachusetts and Cape Cod Bays, including the National Weather Service, the Coast and Geodetic Survey, The NOAA Fleet, the National Undersea Research Centers, the National Sea Grant Programs, and the many environmental research and monitoring programs supported by NOAA, the three NOAA programs that have the greatest connection to the Bays are the Northeast Regional Office National Marine Fisheries Service, the

Stellwagen Bank National Marine Sanctuary, and the funding provided by NOAA for the Massachusetts Office of Coastal Zone Management.

The mission of the National Marine Fisheries Service (NMFS) is to "achieve a continued optimum utilization of living resources for the benefit of the nation." The Northeast Regional Office, located in Gloucester, and the NMFS Northeast Fishery Science Center, in Woods Hole, play a pivotal role in providing a better understanding of, and thereby better managing the living marine resources of the Bays. The Northeast Regional Office reviews coastal development projects of regional significance, and oversees the management of critical fisheries resources and protected species. The Fishery Science Center monitors the status of fish stocks and conducts critical research on fish and marine mammals that are the livelihood of many in the region.

The Stellwagen Bank National Marine Sanctuary is a 638 sq. nmi. area located at the seaward edge of the Bays between Cape Cod and Cape Ann, designated by Congress in 1992 to protect the rich biological productivity and diversity of this important offshore bank in the Gulf of Maine. The Sanctuary oversees and helps to coordinate all federal activities that may affect Sanctuary resources, and conducts education and outreach, research, and management programs to assist the Sanctuary staff in this oversight role. Human activities that may affect Sanctuary resources are regulated by the Sanctuary, and by other Federal agencies, in collaboration with the Sanctuary staff, that have regulatory authority over Sanctuary resources.

The Coastal Zone Management Act of 1972,..."

6 Suggest that the CG section (p. A-3) be modified to reflect that they enforce all laws applicable to the use of the waters of the US, including (in addition to what you cite) the fisheries laws, the laws and regulations of the Stellwagen Bank National Marine Sanctuary, and the Marine Mammal Protection act and the Endangered Species Act. They play a larger role than the small section included in the CCMP implies. Might want to check with the CG for their input.

MBP Response to Brad Barr, Stellwagen Bank National Marine Estuary

1 The priority issues of the Massachusetts Bays Program and CCMP were established at the outset of the Program by the MBP Management Conference. It was agreed that the Program would focus principally on the multiple nearshore and landside threats to the Bays' water and sediment quality, habitat, and living marine resources. Toward this end, 15 separate action plans have been developed in the CCMP which prescribe a broad range of actions aimed at preventing and mitigating pollution, protecting and restoring degraded habitat, promoting responsible land use, and enhancing public access to and enjoyment of the coast. The enhancement of estuarine and sediment quality and habitat is expected to have a positive impact on the offshore marine environment and living resources of Massachusetts Bays.

The problem of declining offshore commercial fish species has not been overlooked. The CCMP discusses the issue of overfishing of major commercial finfish species in Massachusetts Bays and the resultant severe economic hardship on traditional fishing-dependant communities such as Gloucester. It states that "...overfishing is generally considered to be the primary cause of the current crisis in the fishing industry," but also recognizes that "...pollution and habitat loss are thought to play a role as well, especially among fish that spawn nearshore or are anadromous." In order to shed further light on this complex issue, the MBP has funded the development of a White Paper and will be hosting a workshop which will explore the factors impacting the region's declining offshore fish stocks. Please refer to the discussion on "fishing" in The Human Habitat section of Chapter II (The State of the Bays).

2 Please note the amended language in the concluding paragraph of the "Project Description" section of the "Massachusetts Bay Disposal Site" discussion in Chapter IV.

3 Please note addition of phrase "endanger any protected species that may occur in the area" to the "Issues of Concern/Impact on Marine Biota" in the MBDS discussion in Chapter IV.

4 Please note the expanded title and description of the SBNMS in the bulleted item previously labeled "Stellwagen Bank" in the MBDS discussion in Chapter IV.

5 Please note the revised and expanded description of NOAA (including NMFS and SBNMS) in Appendix A - Management Framework.

6 Please note the revised and expanded description of the U.S. Coast Guard in Appendix A - Management Framework.

KEITH K. DAVISON
37 Hastings St., #206-ME
West Roxbury, MA 02132
(617) 327-5761

January 30, 1996

Ruth Knykendall
Massachusetts Bays Program Office
100 Cambridge St., Room 2006
Boston, MA 02202

fax 727-2754

RE: CCMP - Draft Final Plan (Dec 1995)
Massachusetts Bays Comprehensive Conservation and Management Plan

This valuable and informative document is obviously the result of a great deal of work by many people. The challenge over the coming years will be to keep it updated, a living document - and to make it effectively accessible. (It is common for such documents to soon become "out of print".)

Considering that this proposed plan has been five years in the making, the stated bare month between the close of the public comment period and publication of the final draft is inadequate to meaningfully incorporate public comment in the plan. The announcement in the 24jan96 EM of an overlapping (separate?), intervening MCZM comment period is confusing.

- Keith K. Davison

p.III-35

1 The stated per capita average sewage flow for the MWRA system is over twice that of the Lynn system. What explains this glaring discrepancy?

Most regions covered in Section III list detailed directories. Oddly, the Metro Boston region does not. Groups such as SH/SB & BHA don't seem to even be included indirectly in "citizen group efforts" (p.III-41).

p.IV-3

2 The very brief introduction to the origin of the MWRA seems confused/confusing. The two sentences introducing the MWRA obscure the fact that it is the successor agency to the MDC with regard to sewage treatment (and seem to downplay the role of lawsuits and the court in the existence of the MWRA).

p.IV-5 Sludge Processing

Full beneficial reuse is still just a goal. Molybdenum contamination is an ongoing challenge. Fore River is being upgraded/enlarged.

3 The major tunnel project associated with Fore River and the sewage upgrade in that area don't seem to be mentioned in this section. Current exploration of a marine pipeline alternative raises new harbor impact issues, in addition to the unacknowledged excavate disposal impacts of the default design.

Megaprojects, esp. this one, entail significant levels of injury and death among construction workers. It would be fitting to acknowledge this.

p.IV-11 CA/T

Most of this section seems to be over two years old, a long time for this immense, ever-changing project. The tunnel is open, Spectacle Island is being fought over (the

4 configuration of docking and other final facilities, completion and operations funding), CRC and the new Charles park are evolving. Changes have been made to stormwater plans north of the Charles, and the details of the destruction and mitigation of Miller's River have just been completely re-planned.

This section should be substantially re-written to bring it up to date; I'd like an opportunity to review it before final publication.

5 p.IV-17

Is the Navigation Improvement Project actually a 50-year planning framework?

6 p.IV-21 MBDS

In a few places throughout the text, words appear with extraneous hy-phens separating syllables.

As long as the MBDS is "authorized" for "consideration", it will be used. There must of an ongoing process larger than individual projects -- monitoring impacts, developing and exploring alternatives.

7 p.IV-31 Plymouth Sewage

The CDM documents include a fine discussion of water reuse, which deserves specific mention here as a conservation/efficiency measure.

8 Chapter V Action Plans

Each action has associated estimated cost and target date(s). These are worth attempting to incorporate in short form in the summary table.

9 Plan #1 - Public Health

Collecting test results is a basic requirement. But analyzing data and developing accurate and usable predictive models seems equally important.

10 Plan #3 - Coastal Habitat

I find no mention of the history of mosquito control and current salt marsh restoration/management plans.

11 #3.10

There should be an effort to make GIS data effectively available to local officials, non-profit organizations, and citizens.

12 Plan #4 - Stormwater Pollution

I find no mention of snow dumping/BMP.

Plan #5 - Toxic Pollution

13 #6 - Oil Pollution

DEP is actively promoting municipal collection programs for oil and paint.

HHW programs have not made notable progress over the last decade. Only permanent, year-round programs have any chance of significant impact. There is also a need for uniform, simple labeling of all potential toxics at point-of-sale.

Mercury should be removed from commerce (e.g. batteries) so that it doesn't end up in the water.

Rationally, restaurants that serve seafood could effectively inform the public about seafood safety.

p.V-77

14 LEPC's are supposed to facilitate the public right to know and public participation. This is not happening, certainly not in Boston.

There are no local, regional, or state programs that annually survey the worst toxic spills and plan on appropriate future prevention, with public participation.

p.V-84

15 "Targeted" niche HHW collections may be more cost-effective, but I fear they are less convenient for the public and thus result in more inappropriate hazardous waste disposal.

No private sector actions are recommended. Major vendors and retailers of paint should be encouraged to set up paint take-back programs.

The availability of private HHW disposal facilities, such as Clean Harbors in Natick ($4/lb) is an oddly well-kept secret, deserving of wider publicity and emulation. If the fact can be brought home to citizens that many substances cost more to dispose of properly than to purchase, perhaps they will start taking purchase decisions more seriously.

Plan #6 - Oil Pollution

16 Is natural gas significantly cleaner for the environment than fuel oil heating, on the whole? Should public policy tip the scales more towards natural gas?

What percentage of Massachusetts Bays oil shipments are double-hulled?

The City of Boston has a permanent used oil collection program which needs wider publicity and a more conveniently distributed neighborhood presence. It would be logical for fire stations to become more responsive to a spectrum of such local needs.

The used oil retailer take-back program has not been a success. A deposit/tax system to support a more effective program should be considered. More encouragement, publicity, and accolades should be given to service stations that accept used oil from the public. Perhaps public policy should also do more to emphasize the "environmental correctness" of having your oil changed by a responsible, properly equipped "professional". (It is not easy to know which service stations actually implement "best management practices" for the various wastes - oil, [illegible] antifreeze, for example). It seems to me that if motor oil were retailed as a bulk fluid, people who change their own oil would be more naturally inclined to return/exchange the bulk used fluid.

17 p.V-91

The listed costs seem so low, compared to the benefit, that the MWRA should consider subsidizing such programs.

18 p.V-95

What spills of note have occurred since 1991?

A major oil spill has just occurred off Rhode Island, weather-related, or at least weather-aggravated. What is being done to avoid vulnerable toxic material shipments during bad weather?

Is it really beyond our technical capacity to totally enclose a foundering barge or tanker - or do we merely lack the will?

19 Plan #7 - Municipal Wastewater

I suggest mention of beneficial reuse of biosolids vs. incineration/landfill disposal, and discussion of black vs. grey water and water reuse.

It is not necessary to mix human biosolids with vast quantities of water, and this wasteful standard practice is vastly expensive - and polluting. Composting toilets are available. (As you note on p.V-108. Besides Clivus, other compact, self-contained residential systems are available. Perhaps you should describe currently available convenience and de-emphasize past drawbacks. Don't obscure the underlying fact that this may be the most responsible alternative, and in some cases perhaps the truly cheapest on the whole.)

20 p.V-99

You might mention molybdenum sludge contamination issues and the controversy over chlorine.

21 p.V-121

No contact is given for the ad hoc task force for decentralized wastewater management. How do I get on their mailing list?

22 Plan #8 - Boat Wastes

All standard boating waste disposal practices seem environmentally irresponsible. No model BMPs are in sight.

What do pump-out facilities do with these toxic materials?

Yacht club memberships, docking fees, etc. should <u>include</u> pump-out privileges, to avoid an economic incentive for improper disposal.

You don't mention the use of "dissolving" chemicals, or deal with the variety of other boating wastes.

23 Plan #9 - Dredged Materials Disposal

- Is it possible to convey disposed materials to the bottom without distributing them in the water column?
- Is it possible to inject disposed materials under the ocean bottom?
- Is there any long-term statewide mechanism for matching disposal of clean dredged or inland excavate with shoreline erosion-control needs?

24 Plan #10 - Marine Flotables

Are cigarette butts (one-third of total items) a hazard to wildlife?

Apparently, laws prohibiting ocean plastic disposal are widely ignored. Perhaps commercial docking fees should include trash disposal.

25 Plan #12 - Waterfront

- Boston HarborWalk
- No approved Ft. Point Channel Master Plan
- No S. Boston Marine Industrial Park Master Plan - Impending sale
- Lack of adequate rail freight connections to ports

Plan #15 - Public Participation

26 Chapter XI

An effective public participation program is extremely difficult to implement, and there are no adequate Massachusetts models to emulate.

The Internet should be an important part of future plans to make information available and promote dialog.

The CCMP is clearly the product of many meetings, of many groups. Most such "public" meetings are public in name only. Access to agendas and meeting minutes are critical to public participation, but the key is just becoming aware of the very existence of an ongoing series of meetings. Every such group should be listed at least annually, ideally quarterly, in the Environmental Monitor.

Only a small fraction of citizens potentially interested in the CCMP are likely to know it exists.

27 p.V-189 CAN

List member organizations and contacts.

28 Chapter IX

I am surprised that the statement of the overarching goal does not include the word "restoration".

29 Chapter XI

The terms "draft final" and "final draft" are confusing.

One month is inadequate for consideration and incorporation of public comments in the plan itself. Better not to pretend.

Providing copies of public comments to the public is a vital mechanism of dialog. "Summarizing" the comments may be necessary as a practical matter, but is likely to adversely impact true diversity of authentic public opinion. Delaying such material until the very end of the process greatly detracts from its value. Such delayed, formal "written responses" are a minimal form of meaningful dialog.

30 p.A-6

My understanding is that RPA's/counties in Massachusetts are relatively weak and powerless. "Home rule" seems to be more a mechanism of legislative obstruction than local empowerment.

MBP Response to Keith K. Davison, West Roxbury

1 The MWRA's average sewage flow of 500 mgd includes the sewage flows from all 43 MWRA communities, not just the eight Metro Boston coastal communities listed. A note to this effect has been added to the "1995 Metro Boston Municipal Sewage Treatment Information" chart in the Metro Boston Region section of Chapter III.

A "Directory of Coastal Projects, Programs, and Sources of Assistance" has been added to both the Metro Boston and the South Shore Region sections in Chapter III.

2 The brief discussion of the origin of the MWRA has been clarified. Please refer to the "Background" section in the Boston Harbor Project: Upgrading Sewage Treatment in the Metro Boston Area discussion in Chapter IV.

3 Please refer to MBP response #19, following, for a discussion of biosolids (e.g., sewage sludge) reuse. With respect to the ongoing challenge of molybdenum contamination, please refer to the introductory section of Action Plan 7A (Managing Centralized Wastewater Treatment Facilities) in Chapter V.

The MBP acknowledges that certain construction projects of the size and scope of the "megaprojects" described in the CCMP may indeed involve issues of construction worker health and safety, but these issues are beyond the MBP's focus on water quality, living resources, and habitat preservation.

4 The Central Artery/Tunnel (CA/T) Project description in Chapter IV has been updated to reflect recent milestones (e.g., dedication and opening of the Ted Williams Tunnel) and the project's current status.

5 The U.S. Army Corps of Engineers estimates maintenance dredging requirements over a 50-year period in order to evaluate a project's long-term benefit/cost ratio. The brief discussion on maintenance dredging in the "Issues of Concern / Source Control" section of the Boston Harbor Navigation Project writeup in Chapter IV is intended to inform the reader of the ongoing nature of sediment accumulation in Boston Harbor's navigation channels, and of the value of controlling pollution at the source to minimize sediment contamination and future dredged materials disposal costs.

6 The extraneous hyphens inadvertently placed in the text of the MBDS discussion of Chapter IV have been removed.

7 MBP staff will review the referenced CDM discussion on water reuse as a conservation/efficiency measure for the Plymouth Sewage Treatment Project, and as appropriate, may summarize or cite it in a future update to the CCMP.

8 As it moves into the implementation phase of the Program, the MBP plans to produce companion documents to the CCMP, through its LGC technical assistants, which will summarize community-specific CCMP actions, costs, and timetables for each of the five coastal subregions.

9 The MBP, through its RPA/LGC technical assistants, will work closely with the Department of Public Health (DPH) and local Boards of Health to ensure the proper development, interpretation, and use of public beach testing data. Please refer to DPH Action #1.1 in Action Plan #1 (Protecting Public Health) of Chapter V.

10 The Commonwealth has an active program underway to identify, prioritize, and restore degraded salt marsh and other wetland types. Please refer to EOEA Action #3.13 in Action Plan #3 (Protecting and Enhancing Coastal Habitat) of Chapter V for a discussion of the Commonwealth's innovative Wetlands Restoration and Banking Program.

11 Through funding to be provided through the 1995 Open Space Bond, the Regional Planning Agencies (RPAs) will be established as regional GIS data centers. Working in collaboration with the Mass-GIS Office, the RPAs will make GIS data available to local officials, non-profit organizations, businesses, and citizens.

12 Sources of stormwater pollution, and best management practices (BMPs) for controlling stormwater pollution, including "snow dumping" BMPs, are too numerous to have discussed individually in the CCMP.

13 Under the leadership of the Executive Office of Environmental Affairs, the Commonwealth is consulting with industry representatives (including manufacturers and retailers), municipal officials, environmental organizations, and others to explore and form public/private partnerships that can facilitate the safe management of a broad range of hazardous products - emphasizing reduced products use and recycling wherever possible. [See EOEA/Municipal/Private Sector Partnership Action #5.4 in Action Plan #5 (Reducing and Preventing Toxic Pollution).]

With respect to used motor oil, EOEA has drafted and will be pursuing legislation in 1996 that will make significant improvements in the collection of used oil from do-it-yourself oil changers (DIYers). In particular, the EOEA-proposed legislation would make current collection requirements more flexible, and pay recycling incentives to both collection centers and to DIYers who return used oil for recycling. It also would provide needed resources (through payments made by motor oil manufacturers) for public education programs, reimbursement of collection centers for costs of disposing of contaminated oil, and expansion of current Department of Environmental Protection (DEP) municipal recycling grants for used oil storage tanks. The Massachusetts Bays Program supports the passage of the revised legislation developed by EOEA. [See Municipal Action #6.1 in Action Plan #6 (Reducing and Preventing Oil Pollution).]

14 There is clearly a need to broaden and enhance emergency response planning at the local level to address situations such as toxic spills to storm drains. There is also a need to provide better linkages among local, regional, state, and federal agencies to coordinate and share data. The CCMP is a living document, and as such, can be revised to reflect developments in and improvements to emergency response planning For example, assistance to support local emergency responders may be considered as a future area of support under EPA's Emergency Planning and Community Right-to-Know Program.

15 See response #13, above.

16 The question of whether natural gas is cleaner than fuel oil, and whether public policy should tip the scale toward greater use of natural gas, is far broader than the current Massachusetts Bays Program focus on near coastal water quality and living resources of the Bays. For more information on these subjects, the MBP recommends that the writer contact the Federal Department of Energy at (617) 565-9700 or the Massachusetts Executive Office of Energy Resources at (617) 727-4732.

17 For several years, the MWRA financed a pilot program for used oil collection in selected communities, and issued a guidance manual for use by other communities interested in establishing similar collection programs. The MBP staff has passed the writer's comment along to the MWRA regarding possible future subsidy of local oil collection programs by the MWRA.

18 The tracking and recording of oil spills, the specific safeguards being instituted to prevent toxic materials spills during bad weather, and the technical capacity to totally enclose a foundering barge or tanker are subjects beyond the current scope of the Massachusetts Bays Program. For information on these subjects, the MBP recommends that the writer contact:

Marine Safety Division
First Coast Guard District
408 Atlantic Avenue
Boston, MA 02110
Tel.: (617) 223-8434

19 The reuse of "gray water" or other waters from sanitary systems is not a widespread practice in Massachusetts due primarily to local and state

health regulations, but it is being examined and researched in the context of alternative wastewater systems. Some individual on-site systems do allow water reuse. With respect to the beneficial use of biosolids on a small scale, several makes of composting toilets are becoming more widely allowed and used; these are part of a range of innovative wastewater technologies which the MBP encourages communities to consider in managing nutrients and pathogens from individual on-site systems. Finally, land application of certain classes of biosolids from larger sources (e.g., wastewater treatment plants) is regulated under both federal and state law, and as such, can be a viable alternative to more traditional disposal options such as incineration and landfilling.

20 The CCMP has been expanded to include a brief discussion of the issue of seasonally elevated molybdenum concentrations in the MWRA sewage sludge. Please refer to the introduction to "7A. Action Plan for Managing Centralized Wastewater Treatment Facilities" in Action Plan #7 (Managing Municipal Wastewater) of Chapter V.

The "controversy over chlorine" is presumed to refer to the adverse effect of excess chlorine on aquatic life versus the need to adequately disinfect wastewater effluent (typically using chlorine) prior to its discharge to coastal waters. While this conflict may have historically been controversial, both the Massachusetts DEP and the EPA currently use the chronic aquatic life criterion to set the chlorine limits in wastewater effluent discharge permits. As a result, some wastewater effluents undergo dechlorination prior to discharge in coastal waters as a means to protect aquatic life in those waters from excess chlorine levels.

21 The Ad Hoc Task Force for Decentralized Wastewater Management may be contacted as follows:

c/o Marine Studies Consortium
Pine Manor College
400 Heath Street
Chestnut Hill, MA 02176
Tel.: (617) 566-8600

22 The MBP believes that aggressive implementation of Municipal Action #8.1 (*Municipalities should work cooperatively with neighboring communities, private boatyards, and state agencies (DFWELE and CZM) to establish, promote, and maintain Boat Pump-out Programs in targeted embayment areas*) will significantly reduce the problem of improper boat waste disposal along the coast. Already, over 50 new pump-out facilities have been placed in Massachusetts coastal waters as a result of Clean Vessel Act (CVA) grants and technical assistance to communities from DFWELE, CZM, and DEP personnel. Another year of funding though the CVA grants program is expected to help finance additional pump-out facilities. Boat wastes collected at these facilities are required to be properly disposed of at authorized sewage and septage treatment plants.

23 Using a subaqueous discharge tube at reasonable depths, the mixing of dredged materials with a large portion of the water column is minimized. However, the use of this technique may prove difficult with strong currents in the upper water column. These discharge tubes have not yet been widely used. With respect to "injection" of dredged materials, although the intent of this word is unclear, dredged materials have been successfully isolated in natural or manmade depressions on the ocean bottom. Also, capping of surface mounds in some of the New England's dump sites has successfully isolated dredged materials from marine biota. Finally, both state and federal regulations require the evaluation of alternatives to open water disposal of dredged materials. Agency policies regarding these alternatives encourage the beneficial uses of these materials, as appropriate. For example, these uses could include shoreline stabilization, beach nourishment, habitat development, and landfill capping.

24 According to CZM staff, discarded cigarette butts on a beach are not known to constitute a significant hazard to coastal wildlife. Nevertheless, like other litter, they are unsightly and detract from the public's beach-going experience. See Action Plan #10 (Reducing Beach Debris and Marine Floatables) in Chapter V.

Commercial as well as recreational docking fees can, and in some instances do, include the costs of trash collection and disposal. For example, the design standards for marinas under Chapter 91 (Waterways) licensing regulations require the placement of trash receptacles at all marina gangways and restrooms.

The U.S. Coast Guard has regulations addressing the management of both shipboard waste (plastic, food, medical, etc.) and dockside receptacles. A

"designated waterfront facility", in accordance with US law/regulation, must have a Certificate of Adequacy (COA) to operate. The COA shows that the facility has capacity to handle shipboard waste (generally through contractors). Fish facilities handling over 500,000 lbs. of fish per year also fall under this COA requirement.

As the commenter pointed out, economics often encourage disposal of waste elsewhere, since U.S. waste disposal is very expensive. Currently, the requirements focus on the availability of the disposal facilities, not the costs of such capacity.

If a vessel has illegally disposed of trash, and the USCG notes a discrepancy when boarding such a vessel, one of two actions will be taken:

1. If the USCG cannot prove that the vessel dumped plastic within the EEZ (U.S. Exclusive Economic Zone - 200NM), then all obtainable data are collected and forwarded to the flag state of the vessel by the USCG Commandant.

2. If the USCG obtains evidence that the vessel may have dumped illegally within the EEZ, the USCG unit will process a civil penalty against the vessel; these cases can be very difficult to process because of the requirement for *proof* of dumping within our waters.

25 No response required.

26 The MBP has worked hard over the last five years to develop and implement an effective public participation program. The Management Committee - the MBP's principal deliberative body - is composed of diverse representatives from numerous larger public and private constituencies, including scientists and educators, business and industry, resource user groups, environmental advocacy groups, and government agencies (federal, state, regional, and local). Complementing the work of the Management Committee, and a major success of the Program, has been the formation and *active* participation of Local Governance Committees (LGCs) from the five coastal subregions. The LGCs consist of a broad range of local officials and citizens and have played a key role both in developing, and now implementing, the CCMP.

Building on its already considerable outreach efforts, the MBP is currently developing a home page on the Internet, and has provided funding to link member organizations of the Coastal Advocacy Network through the Internet. MBP will continue to explore electronic and other means of communicating the work of the Bays Program, including its extensive research findings and the CCMP, to the public. For more information on the MBP's public participation efforts, please refer to Chapter XI (Public Participation/Public Responsiveness Summary).

27 Members of the Coastal Advocacy Network and their affiliations are listed in the "Acknowledgements" section in the front of the document.

28 No response required.

29 Public participation in the development of the CCMP, and solicitation of public comments on the contents of the CCMP, have been ongoing over a 5-year period. The most recent public review process, as with those preceding it, was formally approved by the Management Committee. As this section of the Plan attests, all public comments on the Draft Final CCMP have been incorporated in full, along with a corresponding written response from the MBP.

30 While it is true that most Regional Planning Agencies (RPAs) lack regulatory authority, they have proven to be an effective mechanism for delivering a broad range of professional planning services and technical assistance to local governments. Through the RPAs, the MBP has been able to provide Local Governance Committees and municipal boards along the coast with much needed technical assistance in the areas of water quality task force organization, pollution source identification and remediation, habitat protection, aquaculture development, and grant writing and public education. The strong MBP/RPA/LGC partnership created by the Massachusetts Bays Program will serve as one of the key mechanisms for implementing CCMP actions at both the local and regional (i.e., embayment and watershed) levels.

Boston Redevelopment Authority

Thomas M. Menino, Mayor
Clarence J. Jones, Chairman
Mariso Lago, Director

January 19, 1996

Ms. Ruth Kuykendall
Massachusetts Bays Program
100 Cambridge Street / Rm. 2006
Boston, MA 02202

Dear Ms. Kuykendall:

Re: Draft Final CCMP

I have reviewed the excerpts from the December 1995 Draft Final CCMP, which were recently submitted to me for review, and have the following comments on the new and/or revised material:

(1) Chapter II, pg. II-4 "Rocky Shores"

Cite "recent study by Northeastern University" (II. 6-7).

(2) Chapter II, pg. II-5 "Shipping, Boating, and Dredging"

Update economic activity figure. Data for 1992 indicate $1.858 billion in economic activity generated by the Port (Port of Boston Economic Development Plan, Nov. 1995, Table 1.11). (This figure is used in the 2nd paragraph of "Expected Benefits" on page IV-16.)

(3) Chapter II, Pg. II-6 "Fishing"

The spread in the annual economic benefit of recreational fishing ($45-$344 million) seems rather large (I. 6, 2nd paragraph). Is this correct?

(4) Chapter II, pg. II-7 "Sources of Pollutants..."

CSO's also are a significant contributor to the degredation of nearshore waters and should be added to stormwater as a source of pollutants (top paragraph on this page).

One City Hall Square
Boston, MA 02201-1007
Tel: (617) 722-4300
Fax (617) 367-5916

Equal Opportunity
Affirmative Action Employer
Equal Housing Opportunity

(5) Chapter II, Pg. II-7 "Concentrations of Toxic Pollutants..."

Cite reference to "MBP funded... sediment triad analysis" (II. 6-7, 2nd paragraph).

Reduction in CSO's also will contribute to a decrease in levels of selected contaminants in Boston Harbor and should be added to improvements in wastewater treatment facilities and reduced use of certain toxic pollutants (last paragraph of this section).

(6) Chapter II, pg. II-8 "Effects of Contaminants..."

I would recommend qualifying the statement that health risks associated with consumption of fish from our coastal waters (including Boston Harbor) are low (last paragraph of this section). As noted in the preceding paragraph, there are some risks, even though generally fish in the Bay are considered safe to eat. Nonetheless, we should be careful about making too general a statement.

(7) Chapter IV, pg. IV-6 (Boston Harbor Project)

In the first paragraph of the section "Work to be Completed", change "on the following page" (last line) to "below" (since this is where the timetable chart is located).

(8) Chapter IV, pg. IV-8 (Boston Harbor Project)

I would again recommend eliminating the recommendation that the MWRA consider, in contingency planning, to relocating the outfall to Boston Harbor (7th recommended action) (see my memo to Diane Gould of July 7, 1995). As noted in my previous comment, the MWRA does not recommend this action and therefore there seems little reason for Mass Bays to support it.

(9) Chapter IV, pp. IV-15-IV-16 (Boston Harbor Navigation Improvement Project)

To clarify the recommended plan, I would recommend rewording the last sentence of the "Maintenance Dredging" paragraph as follows: "It is recommended that the maintenance material be disposed of in-channel (Mystic River, Chelsea River, and Inner Confluence) at a cost of $32 million."

(10) Chapter V, pg. V-61 (DEP Action #4.3)

In line 10 of "Implementation Strategy", should "plan" be "play"?

RM/20.LTR/011896

(11) Chapter VI, pg. VI-2

In the second paragraph of "Models for a Regional Approach..." 16 action plans should be changed to 15 action plans (I.14).

I thank you for the opportunity to comment.

Sincerely,

Richard B. Mertens, AICP
Environmental Review Officer

RM/20.LTR/011896

MBP Response to Richard Mertens, Boston Redevelopment Authority

1 Please note addition of study citation to "Rocky Shores" discussion in Chapter II.

2 Please note updated economic activity figure in "Shipping, Boating, and Dredging" discussion in Chapter II.

3 Bowen et al. (1992) used ranges of estimates from around the country on the consumer surplus value of a recreational fishing day to estimate a range of $45 - 355 million in annual economic benefit of Massachusetts Bays recreational finfishing. The authors acknowledge that their analysis was of necessity limited due to the unavailability of reliable survey data on the particular socioeconomic characteristics and fishing habits of Massachusetts' Bays recreational marine fishermen.

4 Please note inclusion of CSO reference in "Sources of Pollutants to Massachusetts Bays" discussion in Chapter II.

5 Please note inclusion of sediment triad analysis citation in "Concentrations of Toxic Pollutants in the Water Column and Sediments" discussion in Chapter II. Also, please note reference to CSOs in the concluding paragraph of the same discussion.

6 Please note addition of qualifying statement to concluding paragraph in "Effects of Contaminants on Organisms in the Bays" discussion in Chapter II.

7 Please note text change from "on the following page" to "below" as suggested.

8 Please refer to the MWRA Recommended Actions in the "Boston Harbor Project: Upgrading Sewage Treatment in the Metro Boston Area" section of Chapter IV.

9 Please note discussion of the preferred option of "in-channel" disposal of dredge maintenance material in the Chapter IV BHNIP section labeled "Issues of Concern".

10 Spelling corrected as noted.

11 Text changed to "15" action plans as noted.

CITY OF BOSTON * THE ENVIRONMENT DEPARTMENT

Air Pollution Control, Back Bay Architectural, Beacon Hill Architectural, Boston Landmarks and the Conservation Commission

Thomas M. Menino, Mayor
Lorraine M. Downey, Director

January 31, 1996

Ruth Kuykendall
Massachusetts Bays Program
100 Cambridge Street
Boston, MA 02202

RE: 1995 Massachusetts Bays Comprehensive Conservation and Management Plan - Draft Final Plan.

Dear Ms. Kuykendal:

The City of Boston Environment Department has reviewed the Draft Final 1995 Massachusetts Bays Comprehensive Conservation and Management Plan (CCMP) and hereby submits the following comments in response:

General Comments

1 There needs to be a discussion of how the plan will be presented to municipalities and the public and how support for the plan will be solicited. There should also be a discussion as to how municipalities are expected to use this information.

2 The plan discusses the DEP's stormwater performance standards as if they have already been approved and accepted, yet they are still in the development stage. The guidance document "Urban Best Management Practices for Massachusetts", which is intended to accompany the standards, is also referred to in the CCMP as if it were final. However, this document is still in draft form and likely to be revised once final standards are issued. The CCMP should be clarified to reflect the status of the stormwater performance standards. Information could include an update of the DEP's schedule for stormwater performance, the process for developing standards, and how public review of the standards will be conducted.

BOSTON CITY HALL/ROOM 805 * BOSTON, MASSACHUSETTS 02201 * 617/635-3850 * FAX: 635-3435
Printed on recycled paper

Coastal Subregions - Metro Boston Region

3 III-9 Survey Answers and Action Plan #3
Boston does not have local guidelines in addition to the Wetland Protection Act. The survey was given a "yes" answer because Boston has a separate filing fee, procedural policies, and informal protective policies. In the context of the CCMP, as a reference document, the "Y" under "Boston" should be changed to "N". Otherwise the City of Boston has implemented the remaining applicable actions in Action Plan 3.

Projects of Regional Scope and Impact

IV-8 The Boston Harbor Project:
4 We do not endorse Recommended Action #7 which would consider divergence of effluent from the new Deer Island outfall pipe to the existing outfalls in Boston Harbor. This recommendation should be eliminated from the CCMP. The state and the City are spending $30 million and $500,000, respectively, to restore the Boston Harbor beaches. Also, the Boston Water and Sewer Commission is eliminating and/or reducing CSO discharges to the harbor at substantial cost. The purpose of the Beaches initiative is to actively bring people "Back to the Beaches." These efforts should not be hampered by bringing effluent back to the Harbor, especially if it poses a health or odor problem.

5 IV-13 **Central Artery/Tunnel Project -**
The information under this section should be updated by acknowledging the opening of the Ted Williams Tunnel.
Even more important to the Bay, the CCMP should indicate that there is a proposal by CA/T Project to add more excavate to Spectacle Island than previously agreed.

Recommended Actions:
6 The Plan does not make Recommended Actions to the CA/T Project. There have been incidents of sedimentation control breakdown at Spectacle Island, with plumes and sediment suspension observed in the waters around the Island. We ask that the CCMP recommend to the Artery Project that double staked haybales be maintained around the perimeter of the Island as usual best management practices. The CCMP should further recommend that special attention be paid to containing the fill on Spectacle Island.

Action Plans
7 Action Plan #4
The NPDES stormwater discharge permit program applies to municipalities with a separate storm drainage system serving a population of 100,000 or more rather than 500,000 as indicated. 40 C.F.R. 122.26(a)(b).

Action Plan #4 cont.

8 In addition to running Logan International Airport, the Massachusetts Port Authority controls considerable industrial property along Boston Harbor. Stormwater draining from Massport properties picks up foams, de-icing agents, jet fuel, oil and other toxins. As a responsible State Authority with an interest in the Harbor, Massport should have its own "Action Plan #4" calling for best management practices for stormwater discharges, correcting sheetflow, and educating tenants about the effect of their operational practices on runoff.

EPA Action 4.5

9 EPA should provide assistance to all communities in the Mass. Bays watersheds for stormwater management. The rationale provided seems to focus only on the lower Charles River and the Neponsett River. While these areas have been specifically targeted, EPA and DEP should not ignore the other watersheds. Furthermore, in the case of the Charles project, attention should be given to upstream sources.

Action Plan #6

10 Emergency Spill Response Plans should include emergency spills to storm drains. A more extensive analysis of which agency has what responsibility would increase the functioning value of the CCMP document. Preparedness for response to emergency spills should occur on all levels of government, so that implementation can begin sooner rather than later.

Action Plan #8

11 The Massachusetts Port Authority controls several piers in Boston Harbor. Tenants at these piers include tugs, barges, cruise ships, fishing and cargo vessels. As a responsible State Authority with an interest in the Harbor, Massport should have its own Action Plan #8 calling for pumpouts at each pier where tenants tie up. Massport should have a pumpout education program for its tenants, and look for other incentives to ensure compliance.

I thank you for your time and attention.

Sincerely,

Lorraine M. Downey

Lorraine M. Downey
Director

c:\winword\ken\czmccmp.doc

MBP Response to Lorraine M. Downey, Boston Environment Department

1 The CCMP has been expanded to provide additional information on the development of the Plan, its presentation to and use by the municipalities, and mechanisms for its implementation. Please refer to Chapter I (Introduction) and Chapter VI (Implementing the CCMP Throughout the Bays Watershed).

2 The CCMP has been revised to reflect the current status of DEP's developing stormwater performance standards and draft guidance document, *Urban Best Management Practices for Massachusetts*. Please refer to DEP Actions #4.3 and #4.4 in Action Plan #4 (*Reducing and Preventing Stormwater Pollution*) of Chapter V.

3 The CCMP has been revised to reflect the fact that the City of Boston does not currently have local wetlands guidelines in addition to the state Wetlands Protection Act regulations. Please refer to the "Metro Boston Resource Management Survey" chart in the Metro Boston Region section of Chapter III.

4 Please refer to the MWRA Recommended Actions in the "Boston Harbor Project: Upgrading Sewage Treatment in the Metro Boston Area" section of Chapter IV.

5 The CCMP has been updated to reflect the current status of the Central Artery/Tunnel Project. Please refer to the Central Artery/Tunnel (CA/T) megaproject discussion in Chapter IV.

6 The CA/T discussion has been expanded to include a discussion of the past sediment control problems at Spectacle Island and the need for improved best management practices to prevent erosion of fill material. Please refer to the "Issues of Concern" section in the CA/T megaproject discussion of Chapter IV.

7 The CCMP has been revised to reflect the fact that the NPDES stormwater discharge permit program applies to municipalities with a separate storm drainage system serving a population of 100,000, and not 500,000 as originally indicated. Please refer to the introductory section of Action Plan #4 (*Reducing and Preventing Stormwater Pollution*).

8 One specific effort to facilitate the reduction of stormwater pollution from Massport facilities is the planned issuance, by U.S. EPA, of an individual stormwater permit under the National Pollutant Discharge Elimination System for Logan International Airport. This permit may be issued during the 1996 calendar year.

9 To the extent that staff and technical resources allow, EPA will be providing assistance to Massachusetts communities which request it. However, due to currently limited compliance and assistance resources for stormwater control, EPA will be targeting its community-based efforts during Federal Fiscal Year 1996 on the Massachusetts communities situated within the Neponset River and Charles River watersheds, as a complement to existing efforts in these watersheds (e.g., Massachusetts DEP Watershed Initiative). Finally, the Lower Charles River Initiative does consider pollutant sources upstream of the Initiative area.

10 There is clearly a need to broaden emergency response planning to address situations such as spills to storm drains, as well as to provide linkages among local, regional, state, and federal agencies to coordinate and share data. The CCMP is a "living" document, and as such, its future revisions can include developments in and improvements to emergency response planning. For example, federal assistance to support local emergency responders may be considered as a future area of support under EPA's Emergency Planning and Community Right-to-Know Program.

11 Subsequent to receipt of the City's comment letter, a meeting was hosted on 2/23/96 by CZM which included representatives of Massport, the Boston Environment Department, and the State DFWELE, which administers Clean Vessel Act funds. As a result of this meeting, Massport is proceeding with submission of an application for Clean Vessel Act funding. If possible, Massport will submit the application in cooperation with the City of Boston. The application will request funds for the upgrading of existing pump-out facilities and for installation of a series of new pump-outs on Massport property. Sewer connections already exist at the Black Falcon Cruise Terminal and the World Trade Center, and MBP recommends these locations for consideration.

Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Department of Environmental Management

136 Damon Road
Northampton
Massachusetts
01060
(413) 586-8706
Fax: (413) 784-1663

Memorandum BY FAX

To: Alan Macintosh, MVPC/MPB
From: Leslie Luchonok, DEM ACEC Program
Subj: Revisions to draft final plan, CCMP
Date: February 15, 1996

Alan, attached are three pages of suggested revisions to the draft final CCMP regarding ACECs and the ACEC Program.

I will also send another FAX with the specific pages referenced, with locations of suggested changes shown, as you requested.

I hope the suggestions are clearly described and that you can incorporate them into the final plan without difficulty.

Thank you for your patience, and for all your good work!

Please call if you have any questions. I'm in my Northampton office this morning; however, beginning this afternoon I will be out until Tuesday. Liz will be in her Boston office tomorrow. Thanks again.

attachments

cc: Liz Sorenson, DEM

Printed on recycled paper

Comments and Corrections to MBP 1995 CCMP 12/95 Final Draft, Concerning ACEC Program
• submitted by Leslie Luchonok, ACEC Program

1) The Parker River/Essex Bay ACEC is not mentioned in the Upper North Shore Region Section (ACECs are mentioned in other regional sections). On page III-4, provide description of Parker River Essex Bay ACEC under 3) Watersheds and Important Tributaries - add paragraph after Ipswich River paragraph, as follows:

The estuarine portions of the Parker River and Ipswich River watersheds, as well as the Castle Neck River, Essex River and Essex Bay, are located within the Parker River/Essex Bay Area of Critical Environmental Concern (ACEC). This is the only ACEC located on the Upper North Shore, but is the largest ACEC in the Commonwealth - approximately 25,500 acres in size. The ACEC is located in the towns of Essex, Gloucester, Ipswich, Newbury and Rowley, and was designated in 1979 (see description of ACEC Program and table on page V-31).

2) Correct and revise Upper North Shore and Salem Sound Directories on pages III-14 and III-27, and add ACEC listing to Cape Cod Directory on page III-66, as follows:

For each Directory -
a) correct spelling of Leslie's last name - **Luchonok**

For each Directory -
b) revise Program Description - **ACEC status provides additional protection to critical resource areas, and creates ecosystem-based planning and management framework for state and local actions.**

3) Correct and revise description of ACECs on page III-41, as follows:

The Metro Boston region has two estuarine ACECs. The Rumney Marshes ACEC is approximately 2,800 acres in size, and is located in Boston, Lynn, Revere, Saugus and Winthrop. The 1,260-acre Neponset River Estuary is located in Boston, Milton and Quincy. An ACEC Resource Management Plan for the Neponset Estuary ACEC is currently underway, as part of the Executive Office of Environmental Affairs commitment to working with municipalities, environmental organizations and residents for the long-term stewardship of ACECs. Portions of three freshwater ACECs are also in the region - the Cranberry Brook Watershed, the Fowl Meadow-Ponkapoag Bog, and Golden Hills ACECs (see description of ACEC Program and table on page V-31).

4) Correct descriptions of D. Areas of Critical Environmental Concern on page III-52. Add introductory sentence, correct Weir River ACEC, and add Herring River Watershed ACEC, as follows:

Currently there are four ACECs located in the South Shore Region (see description of ACEC Program and table on page V-31):

Weymouth Back River (Hingham and Weymouth)
Weir River (Cohasset, Hingham and Hull)
Ellisville Harbor (Plymouth)
Herring River Watershed - Plymouth and Bourne

5) Add section on Cape Cod ACECs within Mass Bays watershed on page III-64 (as done in other regional sections), as follows:

D. Areas of Critical Environmental Concern

There are three state-designated Areas of Critical Environmental Concern (ACEC) located on Cape Cod within the Massachusetts Bays Watershed. These three ACECs total approximately 24,000 acres. The Inner Cape Cod Bay ACEC is located in Brewster, Eastham and Orleans (2,550 acres); the Sandy Neck/Barnstable Harbor ACEC is in Barnstable and Sandwich (8,850 acres); and the Wellfleet Harbor ACEC is in Eastham, Truro and Wellfleet (12,350 acres). An ACEC designation provides additional resource protection regarding state regulations, programs and actions; creates a framework for ecosystem planning and management; and affords an opportunity for increased state-municipal cooperation and collaboration. Currently an ACEC Resource Management Plan is being prepared for the Pleasant Bay ACEC, a joint effort of four towns, state and regional agencies, environmental organizations and residents (see description of ACEC Program and table on page V-31).

6) Correct and update table of ACECs on page V-31, as follows:

a) Update/revise heading/title, as follows:

Statewide, there are 25 coastal and inland ACECs comprising approximately 170,000 acres:

b) add/update, under inland ACECs, below Canoe River Aquifer:

*** Central Nashua River Valley 12,900 acres Bolton, Harvard, Lancaster, Leominster**

c) add/update, under inland ACECs, below Hockomock Swamp

Kampoosa Bog Drainage Basin 1,350 acres Lee, Stockbridge

d) correct-add/delete * denoting ACECs within Mass Bays Watershed

add * to **Sandy Neck/Barnstable Harbor**

delete * to **Canoe River Aquifer** (this ACEC is in Taunton R. basin)

7) Correct intro paragraph, last sentence, under Department of Environmental Management on page A-5, as follows:

The programs of the following Offices are most closely related to the CCMP.

8) Add section on page A-5 describing Office of Natural Resources, directly under intro paragraph for Department of Environmental Management, as follows (the ACEC Program, the GOALS Program, the Coastal Access Program, and the Greenways Program are administered from this Office):

OFFICE OF NATURAL RESOURCES

The Office of Natural Resources provides for the long-term protection of natural resources, and for the public use and enjoyment of them. Activities include land acquisition, resource management planning for parks and trails, critical resource identification and protection, and municipal technical assistance and greenway grant programs. The Resource Management Planning program develops long range resource management plans (GOALS plans) for Massachusetts State Forests and Parks and identifies significant "Wildlands" areas of Forests and Parks for designation and protection. The Area of Critical Environmental Concern program identifies critical resource areas for designation as Areas of Critical Environmental Concern (ACECs), facilitates state agency actions and coordination to protect ACECs, and supports local and regional actions for long-term ACEC management and preservation. The Coastal Access - Sea Path program coordinates, promotes, and implements the establishment of community shoreline pathways or "Sea Paths" along the inter-tidal zone for the use of walkers or hikers. The Bikeways and Rail Trails program which acquires, plans for, and implements conversion of former railroad rights-of-way into long distance recreation trails.

MBP Response to Leslie Luchonok, DEM ACEC Program

1 Please note addition of Parker River/Essex Bay ACEC description to Upper North Shore Region section of Chapter III.

2 Please note spelling corrections and revised ACEC program description in regional directories of Chapter III.

3 Please note amended discussion of ACECs in Metro Boston Region section of Chapter III.

4 Please note corrected ACEC information in South Shore Region section of Chapter III.

5 Please note addition of ACEC description to Cape Cod Region Section in Chapter III.

6 Please note corrected and updated information in table of ACECs in Municipal Action #3.3 of Action Plan #3 (*Protecting and Enhancing Coastal Habitat*) in Chapter V.

7 Please note correction in introductory paragraph of "Department of Environmental Management" discussion in Appendix A - Management Framework.

8 Please note added description of "Office of Natural Resources" in "Department of Environmental Management" discussion in Appendix A - Management Framework.

U.S. ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND REGION
JFK FEDERAL BUILDING
BOSTON, MA 02203

TO: Diane Gould, Ph.D
Executive Director, Massachusetts Bays Program

FROM: Tara Tracy
Senior Regional Program Manager, Massachusetts Bays Program

SUBJ: U.S. Environmental Protection Agency Comments on the Massachusetts Bays Comprehensive Conservation and Management Plan

DATE: February 26, 1996

Representatives of the Coastal Management Branch and the Marine Pollution Control Branch of the U.S. Environmental Protection Agency (EPA) (Headquarters) have reviewed and commented on the Draft Final Massachusetts Bays Comprehensive Conservation and Management Plan (CCMP) (December, 1995). As such, the purpose of this memorandum is to provide a synopsis of these comments in order to facilitate the inclusion of responses in the Final CCMP.

Coastal Management Branch

1 o Existing and Future Management Conference Structure. The current Management Conference membership which participated in the development of the Draft Final CCMP should be documented, as well as the activities and efforts leading to the Final CCMP. This latter discussion should refer specifically to the letters of commitment and resolutions signed by agencies and communities participating in implementation of the Final CCMP. In addition, the future structure of the Management Conference should also be documented. This relates particularly to the Conference's responsibilities in facilitating and tracking implementation of the Final CCMP, as well as approving annual workplans. Finally, the Final CCMP should describe the structure and approach of the Massachusetts Bays Program on a post-CCMP basis.

2 o Monitoring. The Final CCMP should include schedules related to programmatic monitoring and reporting (e.g., tracking of Action Plan implementation, what will be reported to the public by the Management Conference). Also, the Final CCMP's approach to monitoring should reflect both the currently proposed level of effort, based on present funding and resources, as well as any efforts planned beyond this level

should the current funding situation change. Lastly, the Final CCMP should discuss the means for the public and others to access data which supported the development of Action Plans and recommendations, as well as the monitoring of their implementation.

3 ○ Federal Consistency. Coordination and consistency with the Federal Endangered Species and National Historic Preservation Acts should be addressed in the Final CCMP, since these laws are critical components of the overall CCMP objective to preserve and protect coastal habitat.

4 ○ Base Programs Analysis. The report, The Massachusetts Bays Management System: A Valuation of Bays Resources and Uses and an Analysis of its Regulatory and Management Structure (Bowen, Archer, Terkla, and Myers, June 1993), is referenced in the Analysis, but its results (e.g., identifying the need for technical assistance) are not included. This should be rectified by summarizing the report's conclusions in the Base Programs Analysis (as well as in the Implementation Strategy).

5 ○ Action Plans. As written, the Action Plans do not establish that the absence of implementation priorities is related to the fact that each community will largely be responsible for setting priorities, through their Local Governance Committee (LGC). This approach should be documented in both the Introduction to the Action Plans as well as in the Implementation Strategy; the latter should also document recent "visioning" discussions by the LGCs in support of this community-by-community approach to implementation.

With respect to the Habitat Action Plan, the Final CCMP should describe how the Community Resource Atlases (GIS) document the presence of endangered species.

Each Action Plan with outdated milestones should be updated.

6 ○ Implementation Strategy. A number of the above comments relate to revisions recommended for the Implementation Strategy and are significant enough to reiterate as follows: the role of the Management Conference in implementation; written commitments by agencies and communities to implementation of the Final CCMP; incorporation of the Bowen, etal report; and setting of Action Plan priorities at the local level.

Marine Pollution Control Branch

7 ○ Boat Wastes and Marina Pollution. This Action Plan should consider provisions for "dump stations" for the disposal of the portable heads common on small boats. Also, the U.S. Fish and Wildlife Service (USFWS) has a number of education/outreach materials and grants (Clean Vessel Act) which could support implementation of this Action Plan. A contact at USFWS was provided.

8 ○ Dredging and Dredge Material Disposal. This Action Plan should reflect both EPA and U.S. Army Corps of Engineers (ACOE) regulation and guidance regarding dredge material disposal. This applies to both the proposed capping demonstration project at the Massachusetts Bay Disposal Site, and the potential survey of future dredge areas to identify contaminated "hot spots" using EPA's "Beneficial Use Manual" (currently being drafted). Finally, similar to the National Dredging Team, regional dredging teams are being established; potentially supporting implementation of this Action Plan.

MBP Response to Tara Tracy, EPA - New England/MBP

1 For expanded discussions on the MBP Management Conference's existing and future structure, as well as its role in developing the Draft Final CCMP, approving annual workplans, and facilitating and tracking CCMP implementation, please refer to Chapter I (Introduction) and Chapter VI (Implementing the CCMP Throughout the Bays Watershed). Also, please refer to Appendix L for letters of commitment and resolutions signed by agencies and communities participating in implementation of the Final CCMP.

2 For expanded discussions on: 1) programmatic monitoring and reporting (e.g., tracking of Action Plan implementation); 2) currently proposed and possible future levels of effort; and 3) mechanisms for accessing MBP data, please refer to Chapter VIII (Monitoring CCMP Implementation).

3 CCMP coordination and consistency with the Federal Endangered Species Act and the National Historic Preservation Act is discussed in the Final CCMP. In particular, please refer to Appendices J and K, respectively.

4 The conclusions of the Base Programs Analysis report, *The Massachusetts Bays Management System: A Valuation of Bays Resources and Uses and an Analysis of its Regulatory and Management Structure* (Bowen et al., 1993), are summarized in the Final CCMP. Please refer to the Management Characterization/Base Programs Analysis discussions in Chapter IX and Appendix E (available under separate cover).

5 The approach to setting of implementation priorities by the LGCs is discussed in the Introduction to the Action Plans (Chapter V) as well as in the Implementation Strategy (Chapter VI). The latter also documents the recent "visioning" discussions by the LGCs in support of this community-by-community approach.

The Habitat Action Plan describes how the Community Resources Atlases document the presence of endangered species.

Action Plans with outdated milestones have been updated.

6 For further discussion on: 1) the role of the Management Conference in CCMP implementation; 2) written commitments by agencies and communities to implement the Final CCMP; 3) incorporation of the Bowen report; and 4) setting of action plan priorities at the local level, please refer to Chapter VI (Implementing the CCMP Throughout the Bays Watershed).

7 The Federal Clean Vessel Act (CVA) provides financial support for the establishment of boat pump-out stations. CVA funds are appropriated through the U.S. Fish and Wildlife Service, and granted by the Massachusetts Division of Fisheries, Wildlife and Environmental Law Enforcement to harbors (i.e., municipalities) and marinas which are situated in targeted embayments. In Massachusetts, CVA funds have also been used to establish dump stations in similarly sensitive areas. Dump stations are used as waste receptacles for the sewage wastes from portable heads typically found on smaller boats. Accordingly, in conjunction with CVA funding and planning agency efforts to initiate pump-outs for larger boats, the Massachusetts Bays Program will work to establish dump stations for smaller boats in targeted embayments.

8 Recent revisions to the CCMP Action Plan for Managing Dredging and Dredged Materials Disposal reflect the role federal regulations will play in implementing the Action Plan's recommendations. In addition, MBP staff have a close working relationship with the EPA-New England staff who oversee federally-regulated dredging projects and demonstrations. Accordingly, all work related to implementation of this Action Plan will occur with EPA-New England input and direction, using such sources as available guidance materials (e.g., the *Beneficial Use Manual*) and the yet-to-be-formed regional dredging team.

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
100 CAMBRIDGE STREET, BOSTON, MA 02202
(617) 727-9530 FAX (617) 727-2754

MEMORANDUM

To: Diane Gould, Director
Massachusetts Bays Program
From: Peg Brady, Director
Massachusetts Coastal Zone Management
Date: March 5, 1996
Re: Massachusetts Bays Program Draft Final Comprehensive Conservation and Management Plan; Statewide

---

Massachusetts Coastal Zone Management (MCZM) would like to thank the Massachusetts Bays Program (MBP) for the opportunity to comment on the 1995 Draft Final Comprehensive Conservation and Management Plan (CCMP).

The CCMP is the result of a five year effort by the Massachusetts Bays (or MassBays) Program to characterize the natural resources of Massachusetts and Cape Cod Bays, identify resource management issues, and propose remediation strategies to address these concerns. The MassBays Program has made extensive public outreach and participation efforts, attempting to ensure both scientifically valid and publicly acceptable solutions to resource management problems of the Bays. MCZM has been an active participant in the development of the CCMP.

MCZM is currently conducting a federal consistency review of the CCMP to ensure consistency with its enforceable program policies. This review will be completed following incorporation of comments into the Draft CCMP and submission of the Plan to the US Environmental Protection Agency (EPA) for acceptance.

MCZM offers the following comments for consideration in the amendment of the Draft CCMP.

1 **Introduction:** A great deal of information underlies or is included in the CCMP, however, for a reader who has not participated in the development of the Plan, this depth may not be apparent. MCZM recommends that an introductory chapter be developed that describes:

- the National Estuary Program (NEP);
- the structure and purpose of a CCMP;
- the process by which MassBays developed its scientific understanding of the Bays and the management recommendations embodied in the Plan;

- the authorities under which the NEP operates and the commitments of federal, state and local governments to implementation of the Plan's recommendations;
- participants in the Plan's development.

2 **Chapter II, Shellfish Bed Contamination, page II-8, third ¶:** MCZM recommends that the CCMP cite the US Department of Health and Human Services, Food and Drug Administration's 1989 Revision of the "National Shellfish Sanitation Programs's (NSSP) Manual of Operations, Part I, Sanitation of Shellfish Growing Areas" after the discussion of the criteria for shellfish beds open to harvesting.

3 **Chapter III, Overview of Coastal Subregions:** The overview of coastal subregions is nicely done. The MassBays Program has funded a large body of research on the characteristics of the Massachusetts Bay system -- reference to this research and identification of the location of reports would enhance this section and highlight the excellent work that the MassBays Program has sponsored.

MCZM suggests that, for consistency, directories of Projects, Programs, and Sources of Assistance for the Metro Boston Region and South Shore Region be added to the CCMP. Fara Courtney's name as MCZM North Shore Coordinator should be deleted from the Directory of Upper North Shore and Salem Sound Coastal Projects, Programs, and Sources of Assistance.

4 **Chapter IV, Massachusetts Bay Disposal Site, page IV-19:** Under "Recommended Actions," MCZM asks that MBP consider including a commitment to develop a long-term monitoring program for the Massachusetts Bay Disposal Site (MBDS).

5 **Chapter IV, Plymouth Sewage Treatment Project, page IV-29:** MCZM questions the inclusion of the Plymouth Sewerage Treatment Project in the "Projects of Regional Scope and Impact" section. This project is similar in complexity and significance to ongoing work in Gloucester and in Scituate, which were not included as "Mega-Projects".

6 **Chapter V. Action Plans:** The goals of the Massachusetts Bays Program are mentioned in an introductory section and then are not referenced again in the text. A slight restructuring of the chapter containing the CCMP's Action Plans might make the Action Plan's relevance to the goals clearer.

The authority of the MassBays Program to require implementation of Action Plans is unclear in the current text. It is MCZM's understanding that an NEP's authority is, to a large degree, persuasive. MCZM suggests that the MassBays Program reconsider the presentation of its recommendations, which are all stated in terms of an agency "should" perform the task specified. Rather than

"Municipalities with Areas of Critical Environmental Concern (ACEC) *should* work cooperatively with ...", the CCMP might, for example, read "*The Massachusetts Bays Program recommends that* municipalities with Areas of Critical Environmental Concern (ACEC) work cooperatively with ...". If the agencies being so directed have agreed to implement the recommendation, that fact could be noted in the Implementation Strategy for the recommendation. MCZM believes that this approach will emphasize the cooperative nature of this project.

Throughout the Action Plans, there are disagreements in tense between the recommended action and the implementation sections. From the text, it is very difficult for the reader to know if the Implementation Strategy is proposed or already underway (as many actions are). For example, DPH Action 1.1 recommends the establishment of a clearing house. The text states that DPH "will be the lead agent", DPH "will create" a data base, yet the section on target dates indicates that this task began in July, 1995. Again, notation of agreements with Responsible Agents to carry these proposals forward would be helpful.

7 **Chapter V, Action Plan #3, page V-32**: MCZM recommends that the nominators of an ACEC designation be included among the Responsible Agent(s) for the development of resource management plans.

8 **Chapter V, Action Plan #4, page V-56, second ¶**: MCZM suggests that the last sentence in this paragraph read: "DEP **is developing** a guidance manual,...." instead of "DEP has developed a guidance manual,...."

9 **Chapter V, Action Plan #4.3, page V-61, first ¶**: The state Department of Environmental Protection (DEP) **is producing**, not "has produced two excellent guidance documents...." In addition, DEP has shelved plans to reproduce the *Megamanual* since there appears to be considerable overlap with the Urban Stormwater guidance, currently in progress. The *Megamanual* was also not especially useful for local officials for implementing nonpoint pollution controls. DEP will wait until the Urban Stormwater guidance is finalized and then determine whether some portions of the *Megamanual* are not covered, such as the section on landfills, and could beneficially be reproduced for local boards.

10 **Chapter V, Action Plan #4.5, page V-65**: MCZM suggests that the state is more properly the lead agency in providing technical assistance to communities in the development of comprehensive stormwater management programs.

11 **Chapter V, Action Plan #4.5, page 65, first ¶**: The Action Plan indicates that EPA will work to reduce stormwater pollution by industrial stormwater dischargers through the use of the National Pollution Discharge Elimination System (NPDES) permit compliance.

However, EPA also requires NPDES stormwater general permits for construction activities that disturb more than five acres since these activities have been identified as major contributors to nonpoint source pollution. MCZM suggests MBP mention this additional requirement in the Action Plan, especially because both sources are important issues for the Charles and the Neponset River basins.

12 **Chapter V, Action Plan #5.5, page 85:** MCZM feels that this Action Plan does not greatly differ from Action Plan 4.5 in that both Action Plans address stormwater pollution issues from industrial sites. MCZM suggests that MBP consider combining the two Action Plans or make a reference in this Action Plan back to Action Plan 4.5.

13 **Chapter V, Action Plan #7, page 97:** It is our understanding that this text is meant to suggest that a variety of wastewater treatment options be considered, however, the opening characterization of wastewater facilities as causing a local decline in water quality is easily misread as suggesting that wastewater treatment plants (WWTP) have systematic adverse impacts. MCZM suggests that the overview first discuss the benefits that can be realized from centralized and on-site sewage treatment facilities and the successes associated with these approaches. MCZM recognizes that WWTPs are not without local impacts for most urban and suburban locations, but WWTPs are often an appropriate solution that provides water quality protection. Many WWTPs are built and operated correctly, and, in some areas, WWTPs offer the best available protection for drinking water supplies and shellfish. Often on-site systems have a finite life from the day operation of the system begins. When they fail the best local management systems are often unable to detect the adverse effects on drinking water supplies and shellfish beds until considerable harm has been done.

14 **Chapter V, Action Plan #7A, page 99:** MCZM agrees that the level of treatment at WWTPs is a concern and that advanced treatment be added to facilities where needed. MCZM also agrees that there are impacts from outfalls, but impacts can be managed, identified, and mitigated in ways that decentralized systems impacts often cannot.

15 **Chapter V, Action Plan #7A, page 99:** MCZM suggests that MBP consider not characterizing sludge as "unpleasant." This characterization is somewhat subjective.

16 **Chapter V, Action Plan #7A, page 100:** MCZM agrees that there are coastal WWTPs with flows that are at or above capacity, however the majority of the coastal WWTPs have available capacity to handle additional flows. Therefore, MCZM suggests the statement that many WWTPs "will not be able to handle increased flows" and "have antiquated and undersized collection systems..." is not broadly applicable. While centralized municipal treatment systems are not

all in perfect working condition and that they are a major point source of pollution, MCZM considers poorly designed, inadequate or poorly functioning individual septic systems and stormwater runoff to be the biggest threat to near coastal waters and drinking water supplies.

17 **Chapter V, Action Plan #7A.2, page 103:** MCZM suggests that this Action Plan cite EPA's 1994 Combined Sewer Overflow (CSO) Control Policy and the 1990 Massachusetts Water Quality Standards Implementation Policy for the Abatement of Pollution from Combined Sewer Overflows.

18 **Chapter V, Action Plan #7A.3, page 105:** MCZM supports the delegation of the NPDES permit responsibility to the state. MCZM is a participant in an advisory committee addressing the delegation process and specifically MCZM's federal consistency review of future delegated NPDES permits.

19 **Chapter V, Action Plan #7B, page 107:** MCZM suggests that this Action Plan identify the issue of toxics as a serious concern when managing on-site systems because of potential impacts to groundwater quality, and the longevity and efficiency of the overall on-site system.

20 **Chapter V, Action Plan #7B.1, page 111:** This Action Plan does an appropriate job of addressing the need for on-site management and planning, specifically in sensitive resource areas. However, MCZM suggests that the "Estimated Cost" section of this Action Plan also emphasize that this planning requires that there be a bottom line of environmental protection that must be met. Sensitive resources should not and cannot be forsaken by municipalities or property owners solely because of high costs.

21 **Chapter V, Action Plan #7B.2, page 113:** MCZM recommends that the CCMP recommend that municipalities work cooperatively with the DEP in the development of a regular inspection and maintenance program for on-site systems.

22 **Chapter V, Action Plan #7C, page 121:** When this Action Plan is rewritten, MCZM recommends that local responsibility for waste treatment be emphasized. Decisions about growth management and development will influence what wastewater treatment solutions are viable, desirable, and allowable. There is a spectrum of solutions, but less stringent local planning and growth management tend to drive the solution towards centralized WWTPs.

23 **Chapter V, Action Plan #8.1, page 127:** Implementation of this Action Plan depends on availability of funding from the federal Clean Vessel Act (CVA) Pump Out Grants Program. According to the state Department of Fisheries, Wildlife, & Environmental Law Enforcement (DFWELE), the office that manages the CVA grants program, there is only one more funding year left in this program.

In addition, we suggest that the CCMP note that the CVA grants program has resulted in the placement of over 50 new pump-out facilities in the coastal waters of Massachusetts.

24 **Chapter V, Action Plan #12, page 153**: Twice on this page there is a reference to "Comprehensive Harbor Plans" (second and fifth paragraphs). These should be changed to read "Municipal Harbor Plans." The language is correct on page 154 of this Action Plan.

25 **Chapter V, Action Plan #13, Planning for a Shifting Shoreline**: In the Implementation Strategy it is stated that MCZM has maps depicting areas subject to sea level rise. In fact, MCZM has relative sea level rise inundation maps for only three harbor locations. The Coastal Submergence Program document, from which the maps are taken, includes data on total acreage lost and projected loss per year per community, but not maps.

MCZM suggests that the section on "no new direct, untreated stormwater discharge..." does not appear to fit into the theme of shifting shorelines.

On page 168, reference is made to the availability from MCZM of the draft document "Scientific Recommendations for Performance Standards for Land Subject to Coast Storm Flowage". This document is a draft and has not yet been reviewed or approved by EOEA or DEP. The document is not yet ready for general distribution.

26 **Chapter VII. Financing the CCMP**: Complete implementation of the CCMP will be costly. This chapter describes the content of the *Financing Report* but is silent on its conclusions. It would be helpful to understand the fiscal context for the recommendations of the CCMP and MCZM therefore recommends that the chapter provide this a summary of this information.

27 **Chapter VIII. Monitoring CCMP Implementation**: First mention of four "Measurable Goals" for scientific monitoring is included in this chapter. As these are the measures by which the CCMP will be evaluated, MCZM suggests that these goals be discussed in the introductory chapter described above.

28 **Chapter X. Federal Consistency Analysis** and **Appendix F. Federal Consistency Analysis**: MCZM has worked closely with the MassBays Program and EPA to develop an innovative approach to future federal consistency reviews in the Massachusetts Bay watershed. We look forward to reviewing this chapter and Appendix when they are completed.

MBP Response to Peg Brady, Massachusetts Coastal Zone Management

1 Chapter 1 (Introduction) of the CCMP describes the National Estuary Program, the structure and purpose of the CCMP, the process by which the MBP developed its scientific and management recommendations, and the authorities under which the NEP operates. It also describes the participants in the Plan's development. (Note: for a list of individual MBP committee members and staff, please refer to the Acknowledgements section in the front of the document). Commitments by federal, state, regional, and local entities to implement the Plan are provided in Appendix L.

2 The "Shellfish Bed Contamination" discussion in Chapter II (The State of the Bays) has been expanded to include the citation for the US Department of Health and Human Services, Food and Drug Administration's 1989 Revision of the *National Shellfish Sanitation Program's (NSSP) Manual of Operations, Part I, Sanitation of Shellfish Growing Areas*.

3 The large body of research funded by the MBP is described in Chapter II (The State of the Bays). The location and availability of MBP research reports is discussed in the "Data Management" section of Chapter VIII (Monitoring CCMP Implementation). Finally, Appendix H lists all research reports funded by the MBP.

For purposes of consistency, directories of Projects, Programs, and Sources of Assistance have been added to both the Metro Boston and South Shore Region sections of Chapter III. Fara Courtney's name as MCZM North Shore Coordinator has been deleted from the Upper North Shore and Salem Sound directories.

4 With respect to the development of a long-term monitoring program for the MBDS, please refer to the "Site Management and Monitoring" discussion in the "Massachusetts Bay Disposal Site" section of Chapter IV.

5 The discussion of the Plymouth Sewage Treatment Project in Chapter IV was presented as an example of Massachusetts municipalities that are involved in the complexities of long-term wastewater facilities planning. A note to this effect has been added to the "Background" section of the Plymouth Sewage Treatment Project discussion.

6 The "Base Programs Analysis" (or Management Characterization) of the CCMP (Appendix E) discusses the relationship between the MBP's goals and the Action Plans. In particular, the Analysis identifies both the MBP's overall goal for the Massachusetts Bays (i.e., "...the preservation and management of a healthy ecosystem of living resources, useable by the public...") and its four measurable goals (e.g., improved habitat quality). The Analysis describes in detail how implementation of the 15 Action Plans will support these goals; for example, the relationship between the Action Plan for Reducing and Preventing Oil Pollution and the measurable goal of Reduction of Toxic Contaminants.

Generally, the CCMPs which have already been developed by the other 27 National Estuary Programs in the country use the term "should" in establishing their recommended actions. With respect to the MBP, the use of "should" in the Action Plan text represents the prior commitment of the responsible agency to implement a given action. In particular, all of the actions represent a significant level of effort by both the MBP and the agency in developing the recommendation, as well as to undertake its implementation. This effort is represented in the letters of commitment from the implementing agencies, as found in Appendix L.

7 As recommended, the nominators of an ACEC designation have been added to the list of "Responsible Agents" in Municipal Action #3.3 in Chapter V (Action Plans).

8 As recommended, the reference to the DEP guidance manual, *Urban Best Management Practices for Massachusetts*, has been revised to reflect the fact that the manual is still under development. Please refer to the introductory section of Action Plan #4 (Reducing and Preventing Stormwater Pollution) in Chapter V.

9 As in #8, above, the reference to the DEP BMP guidance document in Action Plan #4.3 has been revised to reflect its status as a document still under development.

While it is true that DEP has shelved plans to reproduce the complete *Megamanual*, copies of selected chapters and appendices are available on request from the DEP Nonpoint Source Program Office in Grafton.

10 Edits have been made to EPA Action #4.5 in Chapter V to address this comment.

11 Efforts by EPA to reduce stormwater pollution under NPDES do not preclude additional NPDES actions by EPA.

12 The last paragraph in the "Rationale" section of EPA Action #5.5 in Chapter V has been expanded to address this comment.

13 The second paragraph of the introduction to Action Plan #7 (Managing Municipal Wastewater) has been expanded to address this comment.

14 Additional language has been added to the first page of Action Plan 7A ("Action Plan for Managing Centralized Wastewater Treatment Facilities") to address this comment.

15 The characterization of sludge as "unpleasant" has been deleted from the first page of Action Plan 7A in Chapter V.

16 The language on the second page of Action Plan 7A has been changed to read "...some centralized sewage systems in the Massachusetts Bays region...", rather than "many". It is important to recognize, however, that the Massachusetts Bays region includes the entire watershed area draining to the Bays, and therefore includes many more centralized wastewater treatment systems than those located in the coastal zone alone.

17 The "Responsible Agents" section of EPA Action #7A.2 has been expanded to address this comment.

18 No response required.

19 The introduction to Action Plan 7B ("Managing On-site Sewage Disposal Systems") in Chapter V has been expanded to include a discussion of the potential adverse impacts of toxic substances on septic system management and groundwater quality.

20 The CCMP recognizes that there must be a bottom line of environmental protection in wastewater management planning. (See the Introduction to Action Plan #7, "Managing Municipal Wastewater.") The MBP agrees that sensitive resources should not be forsaken by municipalities or property owners solely because of high costs.

21 Municipal Action #7B.2 has been revised to include the recommendation that municipalities work cooperatively with DEP in the development of a local I/M program for on-site systems.

22 The first paragraph of the "Description" section of Action Plan #7C (Action Plan for Decentralized Wastewater Management and Treatment) has been expanded to address this comment.

23 Municipal Action #8.1 in Chapter V has been expanded to include references to: 1) the over 50 new boat pump-out facilities that have been placed in Massachusetts coastal waters through the CVA grants program; and 2) the one year of funding remaining in the program.

24 The references to "comprehensive" harbor plans in Municipal Action #12.1 in Chapter V have been revised to read "municipal" harbor plans.

25 Municipal Action #13.1 in chapter V has been revised to delete the references to: 1) CZM sea level rise maps, 2) the "no new, direct stormwater discharges..." performance standard, and 3) the draft document, *Scientific Recommendations for Performance Standards for Land Subject to Coastal Storm Flowage*.

26 The MBP "Financing Report", a companion document to the CCMP, is intended to serve as a technical assistance document for communities and others to use in implementing the CCMP's recommendations and actions. For example, the "Report" provides information regarding sources of financial assistance in the form of grants, revenues, etc., and can also be used to establish a framework through which a community can calculate its cost to implement applicable CCMP actions. The "Report" intentionally does not reach conclusions regarding the overall cost of implementing the CCMP, since the information which would be used to calculate these costs (e.g., individual site conditions, consulting fees, construction materials, etc.) is highly variable over time and is not germane to the implementation of every action.

27 The MBP's "measurable goals" for scientific monitoring are also discussed in Chapter I (Introduction).

28 Chapter X (Federal Consistency Analysis) and Appendix F (Federal Consistency Analysis) were developed in consultation with CZM staff and have been presented to CZM for review and comment.