

Chapter 5. Implementing the Buzzards Bay CCMP

The CCMP in Perspective

Threats to Buzzards Bay from increased development along its shores and decades of dumping industrial and municipal wastes into its waters, led to the initial calls in the 1980s to restore and protect the bay. The Buzzards Bay Project (later the Buzzards Bay National Estuary Program) was created to assess these threats, and then formulated with its many partners, the 1991 Buzzards Bay Comprehensive Conservation and Management Plan (CCMP) to address these issues²³⁴.

Even with the creation of the first Buzzards Bay CCMP, it was recognized that no single planning document could hope to address all watershed environmental issues in a comprehensive way. Like many of the first National Estuary Program CCMPs, there were numerous challenges in creating, implementing, and monitoring outcomes (Colt, 1994; Imperial and Hennessey, 1996). Nonetheless, despite their limitations, these ecosystem-based management plans, and the programs that implemented them, would become models for other watershed initiatives around the country. As noted by Schneider et al. (2003), NEPs have helped establish less coercive community based solutions that have fostered regional networks. These networks “span more levels of govern-



Figure 114. Buzzards Bay watershed boundary sign.

It is essential that residents understand the sources of pollution in their watershed, where their drinking water comes from, and where their wastewater is disposed. As a cost savings measure, the state removed these signs in 2008.

²³⁴ The program followed draft guidance subsequently formalized in EPA 1992.

ment, integrate more experts into policy discussions, nurture stronger interpersonal ties between stakeholders, and create greater faith in the procedural fairness of local policy, thus laying the foundation for a new form of cooperative governance.”²³⁵

Buzzards Bay remains an estuary in transition, subject to continuing stresses from new development and cumulative discharges of pollution. In this *Buzzards Bay Comprehensive Conservation and Management Plan 2013 Update*, we have sought to address some of the omissions of the 1991 CCMP, and avoid certain limitations in our original approach. The 2013 Update still lays out the general environmental issues facing Buzzards Bay and its watershed, the general management framework that exists to address these problems, and the likely strategies to solve those problems. We have avoided, however, including highly prescriptive site or town-specific recommendations. Instead, we recognize there are inherently many tools and solutions that can be employed to address complex watershed problems and the cumulative impacts of pollution and development. At its core, the document still recognizes the importance of community based solutions and the continued collaboration of a network of stakeholders as a recipe for success.

The Players and Their Roles

This chapter provides a broader overview of the key organizations and agencies who will be most involved in implementing actions needed to achieve the stated goals presented in the action plans of Chapter 4. We also call out some of the most important challenges that will be faced in meeting the goals and objectives laid out in this document.

Each action plan in the CCMP identifies agencies and organizations that are either responsible for taking those steps, or could be partners in achieving the specified goals. These entities include regulatory and planning agencies at the federal, state, regional, and local level, legislative bodies, research and academic institutions, citizens groups, land trusts, and other non-governmental organizations. Table 53 shows the likely lead entities that can best achieve the goals and objectives in the action plans.

For some of the specific actions identified in the action plans, a single organization can achieve the desired result. For still other actions, the implementing responsibility may rest with one entity, but another may be able to provide technical or financial assistance. Because many of the entities and organizations identified in this document have authorities, responsibilities, or interests

²³⁵ Although collaborative solutions are not necessarily a panacea to complex environmental problems (Lubell, 2004).

that overlap, communication and coordination among partners can help ensure success.

Federal and state regulatory agencies, such as the U.S. Environmental Protection Agency (EPA) and Massachusetts Department of Environmental Protection (DEP), have regulatory powers to require specific actions. However, most strategies identified in the CCMP will require local government action because municipalities have the greatest capacity and authority to address the cumulative impacts of growth and nonpoint source pollution. The responsibility and burdens to local government have only been growing as state and federal agencies have been aggregating nonpoint source pollution to require comprehensive solutions. This is particularly evident in the issuance of Phase II MS4 stormwater permits that require comprehensive management of municipal stormwater infrastructure, and the adoption of TMDLs for nitrogen by DEP and EPA. Because the Massachusetts constitution provides considerable home rule authority, this also means that the specific management strategy to address these cumulative impacts will vary among municipalities.

While it is true that the burden to address many pollution sources has increasingly shifted to municipalities, this document recognizes that many goals can only be achieved by an integrated intergovernmental approach. This is essential because the cost and scale of some of the problems are so great, it is impossible for local government to carry the load. This is particularly evident in meeting bacteria and nitrogen TMDLs, where the cost of sewerage and stormwater treatment to meet these TMDLs will likely cost several billion dollars. It is therefore essential that federal and state agencies, and regional planning agencies, provide scientific and technical information, technical assistance staff, and funding to guide municipal actions, laws, and regulations. It is also important for state and federal government to provide financing to help leverage or fund local implementation. State and federal agencies can further support and complement local decisions with additional regulatory actions and policies.

While the preceding discussion acknowledges the leading role of local government to address many land-based problems, the Commonwealth of Massachusetts has specific responsibilities that relate to tidelands and land under the ocean. First, the Commonwealth is responsible for ensuring public access to the intertidal zone for fishing, fowling, and navigation as defined in [Chapter 91](#) of the Massachusetts General Laws. Second, the Commonwealth owns, on behalf of the public, all rights in tidal waterways beyond the low water mark (land under the ocean). The responsibility of the Commonwealth in managing activities offshore was further expanded by the Massachusetts Ocean Act and defined by the 2009 Massachusetts Ocean Plan and other documents. These rights are held “in trust” for the benefit of the public.

Table 53. Primary lead entities that must implement the Buzzards Bay CCMP action plans.

	Action Plan	Primary Leads
1	Managing Nitrogen Sensitive Embayments	Municipalities, EPA, DEP
2	Protecting and Enhancing Shellfish Resources	Municipalities, DMF
3	Managing Stormwater Runoff and Promoting LID	Municipalities, EPA, DEP
4	Improving Land Use Management and Promoting Smart Growth	Municipalities
5	Managing Onsite Wastewater Disposal Systems	Municipalities, DEP
6	Managing Impacts from Boating, Marinas, and Moorings	Municipalities, DEP, CZM
7	Protecting and Restoring Wetlands	Municipalities, DEP
8	Restoring Migratory Fish Passage	Municipalities, DFW
9	Protecting Bio-Diversity and Rare and Endangered Species Habitat	Municipalities, MEPA, DEP
10	Managing Water Withdrawals to Protect Wetlands, Habitat, and Water Supplies	Municipalities, DEP
11	Managing Invasive and Nuisance Species	EPA, DEP
12	Protecting Open Space	Municipalities, EEA
13	Protecting and Restoring Ponds and Streams	DEP, DFW
14	Reducing Beach Debris, Marine Floatables, and Litter in Wetlands	Municipalities, Citizen Groups
15	Managing Coastal Watersheds, Tidelands, and the Waterfront	Municipalities, EEA
16	Reducing Toxic Pollution	DEP, EPA, Municipalities
17	Preventing Oil Pollution	DEP, USCG, EPA
18	Planning for a Shifting Shoreline and Coastal Storms	Municipalities, CZM, DEP
19	Protecting Public Health at Swimming Beaches	Municipalities, DPH
20	Monitoring Management Action, Status, and Trends	Buzzards Bay NEP, BBC, DMF, DEP
21	Enhancing Public Education and Participation	BBC, Buzzards Bay NEP, DEP

This responsibility of stewardship of these public trust lands²³⁶ and protecting the integrity of the Buzzards Bay ecosystem is reflected in several action plans.

With respect to implementing actions, it is important to recognize that the public will not automatically embrace the management recommendations presented in the Buzzards Bay CCMP, or any other planning document for that matter, merely because they are good ideas.

²³⁶ A full discussion of the Public Trust Doctrine is contained in Slade, 1997.

There is a political element too that may be driven by costs, individual or collective hardships, property rights, or any of a number of other issues. Some municipal actions will require the support from a majority of voters. Some local initiatives just need vocal leaders demanding action. Underlying all these actions is the need for public involvement. The need for increased public awareness and understanding of environmental issues is the reason why the 2013 CCMP includes the new Action Plan 21 Enhancing Public Education and Participation.

At all levels of government, better planning is one of the most important elements to prevent worsening water quality and habitat conditions. Good planning can also set a course for restoration and pollution reduction strategies. During the 1980s and 1990s, efforts to manage growth in Massachusetts municipalities often failed and instead promoted sprawl because policies and regulations were poorly thought out and had unanticipated impacts. The resulting patterns of development also increased financial burdens to local government. A good example of these impacts can be seen in large lot size zoning without clustering, where the cost per home for infrastructure and services (repaving and plowing of roads, water and sewer service, school bus costs, etc.) skyrocketed. Buzzards Bay communities should learn from these past mistakes and engage in better land use planning, and adopt smart growth and low impact development techniques to manage the impacts of future growth.

To achieve all the goals of the 2013 Buzzards Bay CCMP will likely take decades. This is because some particularly intractable problems, like stormwater management and nitrogen reductions, will cost billions of dollars and immense levels of effort among local, regional, state, and federal entities. Continued cooperation among the different levels is essential to protect and enhance the viability of the bay and its watershed resources because no one level of government can solve all the problems. Implementation will require improved regulatory programs, planning for the future, establishing a regional perspective, taking legislative action, and institutionalizing the recommendations contained in the Buzzards Bay 2013 CCMP.

Table 53 shows the primary leads for actions identified in the CCMP. Throughout this document more specific actions and strategies are defined involving many more agencies and organizations than shown in this table. However, not all agencies or entities face equal levels of effort. In the sections below, we identify the greatest challenges that face the three levels of government.

Federal Challenges

In Massachusetts, EPA has primary responsibility for issuing wastewater discharge permits (both wastewater and stormwater) under the National Pollutant Discharge Elimination System (NPDES), although most permits are

issued after consultation with DEP. EPA also has principal authority in enforcing the Clean Water Act, and ensuring compliance of TMDLs and water quality standards. Given the scale and scope of addressing stormwater and nutrient pollution problems, and in complying with pathogen and nutrient TMDLs, EPA must take a more proactive stance in assisting local government to take action. EPA must also facilitate state action necessary to implement these programs and achieve the goals of the Clean Water Act.

In 2000, EPA developed an improved (but still imperfect) set of indicators for evaluating and classifying swimming beaches. About the same time, the FDA made some minor changes in how they classified shellfish beds and assessed risks associated with pathogens in the water. Both agencies must continue their efforts studying and evaluating new approaches and developing water indicators to assess public health risk associated with pathogen contamination of coastal waters.

During the past 20 years, the U. S. Department of Agriculture (USDA) Natural Resource Conservation Service has expanded its efforts considerably to protect and restore wetland habitats and water quality. While these efforts have been admirable, more effort is required to encourage farmers to implement best management practices to minimize pollutant runoff from farmlands. USDA should also ensure that farm plan agreements are adhered to and enforced through the various USDA farm loan programs. The USDA should continue to work with farmers to minimize the offsite transport of agrichemicals and better manage water use.

Federal agencies are undertaking a variety of planning activities to help meet the goals and objectives relating to shifting shorelines and sea level rise. The Federal Emergency Management Agency has recently updated floodplain boundaries in Buzzards Bay municipalities. The agency should continue to work with the municipalities and state to help develop hazard mitigation plans and encourage municipalities with large numbers of structures at risk to participate in the Community Rating System. Other agencies should support other climate adaptation measures.

State Challenges

DEP is the major regulatory authority for environmental protection in Massachusetts, and as such, has the responsibility for most state recommendations contained in this management plan. EPA issues NPDES permits after consultation with DEP. In this regard, this agency is on the frontline in ensuring the goals and requirements of those programs are met.

Perhaps DEP's greatest responsibility in the next decade will be to encourage towns to adopt management strategies to meet nutrient and bacteria TMDLs. Their responsibility is all the more crucial given recent legal decisions affirming limits to EPA's abilities to manage

certain nonpoint sources of pollution. The agency can achieve this goal through its grant programs, permit programs, and through enforcement action.

Local Challenges

Most streams and ponds in the Buzzards Bay watershed and near coastal waters of Buzzards Bay are affected by small yet cumulatively significant and numerous nonpoint sources of pollution. Increasingly, through permit programs like the MS4 NPDES stormwater program and through implementation of TMDLs, state, and federal government has directly shifted responsibility for action to local government. In Massachusetts, because a considerable amount of authority has been delegated to municipalities, these discharges can and should be managed by local boards and municipal departments. This will not happen automatically, or quickly, because local government has neither the financial capacity for massive infrastructure changes, nor personnel to implement many of the needed programs.

Many Buzzards Bay communities are handicapped in their efforts to implement local regulatory programs because they lack personnel with either the requisite technical expertise, or they lack a sufficient number of staff to handle all the new responsibilities thrust upon them by the state and federal government. Some smaller Buzzards Bay communities lack professional staff like planners and conservation agents or full time health agents. Many municipalities do not have staff and software to undertake the simplest of GIS analyses. Due to the wide range of disciplines required of any one local employee, even the communities that retain staff are hard-pressed to deal expertly with the many complex environmental issues that they must confront. It is for these reasons that the Buzzards Bay NEP directs so much of its operation toward providing technical and financial assistance to Buzzards Bay municipalities.

To focus local efforts, each municipality should establish a water quality committee, and staff to support the committee. This committee can meet MS4 permit requirements and other goals within the municipality. The responsibilities of the committee, and a water quality coordinator to staff it, would be to:

- Establish water quality goals and objectives for the town so that municipal departments and boards clearly understand the critical water quality and living resource issues that need to be addressed.
- Review the community's present management and regulatory policies and recommend necessary modifications.
- Advise selectmen and other policy makers as to appropriate actions necessary to meet these goals and objectives.
- Review relevant environmental data collected by state and federal agencies and local departments,

and integrate this information into the local management program.

This recommendation was in the original Buzzards Bay CCMP, but was rarely implemented²³⁷. Efforts to develop comprehensive water management plans, Phase II MS4 permits, and state and federally imposed TMDLs make such a committee all the more important.

As noted above, Buzzards Bay communities need to better plan for growth and development in a way that protects environmental quality. Adopting "smart growth" and "low impact development" techniques and regulations are essential to meet this goal.

Establishing a Regional Perspective

While pollution in Buzzards Bay is often localized, it is also important to view Buzzards Bay and the living resources in its watershed as a regional resource shared by municipalities. This is particularly true in the case of nitrogen loading and stormwater discharges influencing water quality and habitat in the estuaries around the bay because these problems typically cross municipal bounds. Because restoration efforts will often require coordination among two or more communities, and because addressing nitrogen and stormwater impacts will cumulatively cost billions, regional or intermunicipal collaborations might be one mechanism to reduce costs.

The appreciation of Buzzards Bay as a regional resource became evident for the wrong kind of reason after the *Bouchard 120* oil spill in 2003. The spill bound together municipal first responders and other local officials, state, and federal legislators, and the public in a way that sped up the cleanup of Buzzards Bay and fostered improvements to navigation and oil transport in Buzzards Bay.

Bay-wide organizations, like the Buzzards Bay Coalition, the Buzzards Bay Action Committee, and the Buzzards Bay NEP have all been instrumental during the past 20 years encouraging regional and intermunicipal collaborations, and raising the awareness of residents and local officials as to their common interests in protecting Buzzards Bay, but more effort is needed. The protection of a resource the size and complexity of Buzzards Bay requires cooperation and consistency of approach among the communities sharing these resources. It is for this reason that these three Buzzards Bay regional organizations, together with regional planning agencies like SRPEDD, and the Cape Cod Commission, continue to implement initiatives that cross municipal boundaries and enhance watershed awareness.

²³⁷ After the first CCMP was approved, the Town of Bourne established what is now called the Selectmen's Task Force on Local Pollution, which remains in existence to this day. The task force over the years has developed programs and plans to reduce pathogen and nutrient pollution in the Town's coastal waters.

Institutionalizing the Buzzards Bay CCMP

It is unimportant whether the average Buzzards Bay resident knows or understands that a Comprehensive Conservation and Management Plan exists for Buzzards Bay and its watershed. What *is* important is that both young people and adults understand the sources of pollution and environmental degradation, and what actions, both individually and collectively, need to be taken to protect the environment. They must also understand the costs of action and inaction. Without an informed citizenry, inaction will be the norm.

However, even with the noblest intentions, failure to act may occur because of high costs. This is why it is vital that regulations and the burden of restoring degradation be placed on those causing the degradation. More importantly, public policies and regulations must be structured so that new development and redevelopment not only prevents new impacts, but also helps mitigate existing impacts. In this way, the cost of restoring the environment becomes incorporated into the cost of development.

The CCMP is not a regulatory document, so successful implementation will require continued commitment and collaboration of all the partners. The Buzzards Bay NEP staff has successfully forged strong institutional arrangements with local, state, and federal stakeholders during the past twenty years. The emphasis has been on fostering partnerships with town regulatory boards because most Buzzards Bay CCMP actions are directed at local government, which has the greatest burden to implement the Buzzards Bay CCMP, and because Buzzards Bay NEP technical and financial assistance is most needed by them. The staff's focus has been on providing technical assistance to planning boards, boards of health, and conservation commissions. This assistance takes the form of bylaw development, workshops, open space planning, septic system tracking, stormwater treatment designs, GIS capability, and other useful implementation tools. Since the Buzzards Bay CCMP's approval by the EPA in 1992, Buzzards Bay NEP staff has had the opportunity to work in all major Buzzards Bay watershed towns to varying degrees. The staff's expertise has strengthened local capacity and accelerated Buzzards Bay CCMP implementation.

Besides technical assistance, the Buzzards Bay NEP has helped local grant writers with proposals, and secured highly competitive state and federal funds that were probably otherwise out of reach.

The Buzzards Bay NEP's ability to strengthen local capacity and facilitate Buzzards Bay CCMP implementation can be seen in numerous examples. In the 1990s, the NEP could be seen in the deployment of SepTrack (on-site septic system software) and grants to provide GIS capability to the communities, and to enhance the towns'

abilities to work with GIS data, prepare for oil spills, and provide funding for professional staff to boards of health and conservation commissions. In the 2000s, efforts continued through expansion of stormwater GIS databases, assistance on the update of open space plans, and an expanded municipal grant program, supplemented with state funds, to help leverage many new actions.

Beyond establishing strong local relations, the Buzzards Bay NEP has also developed a solid working arrangement within state government. This starts with the program being housed within the Massachusetts Office of Coastal Zone Management (CZM), which provides a special institutional advantage. The program has used the prestige of CZM and the expertise of key staff to further the accomplishment of many program priorities within the Buzzards Bay watershed. CZM also provides valuable administrative support and framework to the program.

The Buzzards Bay Action Committee (BBAC) has been an essential partner guiding the Buzzards Bay NEP's grant and technical assistance program. The monthly meetings of the BBAC have also been effective in furthering local partnerships. These sessions have allowed discussions that both promote the Buzzards Bay NEP's activities and provide an opportunity to hear from town representatives about community needs. The BBAC has used these forums to help the Buzzards Bay NEP establish funding priorities, and to ensure that the municipal needs are incorporated into the program's annual work plan.

The Buzzards Bay Coalition has become a leader of environmental action, advocacy, and education in the Buzzards Bay watershed. It is a membership-supported non profit organization, which, because of strong leadership and public support, has grown into a nationally recognized organization with an annual budget of over a million dollars, and more than 20 regular staff. As noted on their website, the Coalition is dedicated to the restoration, protection and sustainable use and enjoyment of Buzzards Bay and its watershed. The Bay Coalition works to improve the health of the bay ecosystem for all through education, conservation, research, and advocacy. The vision of the Coalition is:

A Bay shoreline defined by safe swimming beaches, open shellfish beds, and stretches of scenic open spaces for all to enjoy.

Healthy waters that support abundant fish, shellfish, and wildlife populations.

A Bay safe from the threats of oil spills, industrial and sewer discharges, and ocean dumping.

The Coalition has also collaborated with the Buzzards Bay NEP on the program's EPA grant and other initiatives for many years. The organization has been instrumental in assisting Buzzards Bay municipalities to seek and receive grants from the NEP and other state and

federal agencies in their efforts to meet the goals of the organization and the CCMP.

Massachusetts Coastal Zone Management (CZM) has supported the Buzzards Bay NEP, and included elements and recommendations in the CCMP in its program plan and other documents. Other elements of the CCMP will be considered in future CZM program updates submitted to NOAA. CZM has a well-established and effective review process for evaluating projects, especially federal actions that may affect the state's coastal zone. This process can address priorities in the Buzzards Bay CCMP and Buzzards Bay watershed that are not currently addressed in the state program plan²³⁸.

At the state and federal level, the Buzzards Bay CCMP can continue to be institutionalized into other programs as has been done during the past decade. This includes providing priority funding to projects that implement Buzzards Bay CCMP recommendations, and refocusing state and federal programs to achieve Buzzards Bay CCMP goals. EPA has already implemented such a policy in its 319 NPS pollution program and in its 604(b) watershed programs.

Because nitrogen management is a key component of the original Buzzards Bay CCMP, the Buzzards Bay NEP focused much of its early efforts in promoting state and local action on nitrogen related issues. The Buzzards Bay NEP was instrumental in assisting the Massachusetts Department of Environmental Protection (DEP) to incorporate nitrogen management issues into its rewrite of the state onsite septic system code in 1994 and in 1996, and in the adoption of new policies and regulations for the adoption and use of innovative wastewater systems. This work also set some of the groundwork for nutrient and pathogen TMDLs that were adopted by DEP and the Massachusetts Estuaries Project in the 2000s. It is important the Buzzards Bay NEP continue to support DEP's efforts to develop and adopt TMDLs, and in assisting municipalities to implement actions to meet those TMDLs once approved. It is also essential that the Buzzards Bay NEP work on stormwater management issues and assist towns in their efforts to treat stormwater and implement programs to improve water quality and meet bacteria TMDLs.

A key responsibility of the Buzzards Bay NEP is to monitor the implementation of actions by municipal, state, and federal government, and the private sector, that support the goals of the CCMP. Another responsibility is to facilitate those actions whenever possible through financial or technical assistance. The Buzzards Bay NEP,

a unit of the Massachusetts Office of Coastal Zone Management, works under the guidance of its Steering Committee²³⁹. It is essential that the members of the Steering Committee meet periodically to assess progress and action, improve coordination and collaboration of the partners, ensure participation of other entities and organizations, and promote actions within their programs that further CCMP goals. These activities are essential in the broader effort to protect and restore water quality and living resources in Buzzards Bay and its surrounding watershed.

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²³⁸ This has already occurred in several instances such as in comments submitted by CZM to MEPA on large groundwater wastewater discharges outside of the Massachusetts coastal zone, but within the Buzzards Bay watershed, that would cause environmental degradation due to nitrogen loading. Reauthorization of the Coastal Zone Management Act in the 1990s expanded state authority to go beyond the designated coastal zone.

²³⁹ The Steering Committee currently consists of the Massachusetts Office of Coastal Zone Management, U.S. Environmental Protection Agency New England, Massachusetts Department of Environmental Protection, Southeastern Regional Planning & Economic Development District, Buzzards Bay Action Committee, and the Buzzards Bay Coalition.