

February 25, 1991

Ms. Robbin Peach
Director
Massachusetts Environmental Trust
100 Cambridge Street, 20th Floor
Boston, MA 02202

Dear Ms. Peach:

On behalf of the Buzzards Bay Project, the Coalition for Buzzards Bay, and the Westport River Watershed Alliance, we respectfully submit this proposal for a Buzzards Bay Citizen Participation Program to the Massachusetts Environmental Trust.

This proposal contains two major and discreet tasks: 1) implementation of a model citizen water quality monitoring program in the Westport River, and 2) formation of a baywide citizen participation network that includes water quality monitoring, oversight of municipal boards, and documentation of environmental degradation.

We are seeking \$15,000 from the Massachusetts Environmental Trust to fund the first task. We are simultaneously submitting this proposal to the U.S. EPA, Office of Marine and Estuarine Protection to fund the second task at \$45,000.

We wish to point out that, although our objective is to fund both tasks, the success of either is not dependent on the other. An award from the Massachusetts Trust would, however, meet non-federal match requirements for funding by the EPA for the second task, and we believe improve our success for securing funds for the expanded program.

It is our hope that the Massachusetts Environmental Trust looks upon this proposal favorably. We believe that the Buzzards Bay Citizen Participation Program has many innovative features and will be considered a model for other programs in the Commonwealth and around the nation.

Sincerely,

Joseph E. Costa, Ph.D.
Project Manager,
Buzzards Bay Project

Marion McConnell
Director,
Coalition for
Buzzards Bay

Elizabeth McEvoy
Director
Westport River
Watershed Alliance

tlw:citizmon

cc: Ted Pratt, BBAC, Dave Fierra, EPA, Jeff Benoit, CZM

A Multifaceted Citizen Participation Program for Buzzards Bay

A proposal by the

Buzzards Bay Project,

Coalition for Buzzards Bay,
and the
Westport River Watershed Alliance

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INTRODUCTION

The Buzzards Bay Project, a participant in the U.S. Environmental Protection Agency's National Estuarine Program, has developed a Comprehensive Conservation and Management Plan (CCMP) to protect and restore the water quality, living resources, and ecosystem health of Buzzards Bay, Massachusetts. In this Management Plan we identify the specific actions required by local, state, and federal managers to achieve these goals. Many of the key recommendations in the CCMP require local action. An effective way to build public support for local environmental action, as well as to increase public awareness of the environmental problems facing Buzzards Bay, is to involve citizens and citizen groups with monitoring the environment, and with oversight of environmental decisions made by elected and appointed municipal officials. For these reasons, citizen involvement was identified in the CCMP as a key component to achieving this goal.

The Buzzards Bay Project, together with the two largest citizen groups in Buzzards Bay--the Coalition for Buzzards Bay and the Westport River Watershed Alliance--are working together to implement an integrated citizen participation and water quality monitoring program. The purpose of this citizen program is to foster citizen involvement in environmental management and to facilitate implementation of management recommendations contained in the Buzzards Bay CCMP.

Our two immediate objectives, or tasks, are to implement a model citizen water quality monitoring program in the Westport River drainage basin, and to initiate a broader citizen participation program baywide.

The Westport River is a logical choice for the model citizen water quality monitoring program for two major reasons. First, the Westport River estuary has greater shellfish resources, larger areas of salt marshes, more barrier beaches, and eelgrass beds than any other single embayment in Buzzards Bay. Not only does it have important ecological habitat, but it also has beautiful vistas, and is an important recreational area for residents and visitors. This "jewel" of Buzzards Bay, however, is also increasingly threatened by water quality degradation. For example, shellfish resource area closures have increased dramatically during the past decade.

Second, through the Westport River Watershed Alliance (WRWA), with 1000 members, the Westport River already has a large constituency. Furthermore, the WRWA has already implemented effective "town watch", Adopt-A-Stream, and River Watch/custodial programs which serve as models for citizen participation programs for other embayments. The WRWA, however, does not have a coordinated citizen water quality monitoring program.

WRWA is a non-profit environmental organization dedicated to protecting the natural resources of the Westport River estuary as well as its 100 square-mile watershed. This organization was founded in 1975 and is currently staffed by two full-time and two part-time employees. WRWA's primary focus is citizen education and involvement on issues pertaining to land use and water quality. WRWA has been instrumental in getting Westport residents to adopt recycling and composting programs. It has also helped to strengthen and expand the town's household hazardous waste collection program, as well as zoning bylaws and open space purchases. Some of its on-going education efforts include a monthly publication called "River News" and education programs in eight area schools.

The Coalition for Buzzards Bay, the only baywide environmental protection group, is composed of both citizens and other member groups. The Coalition already has an effective public education effort underway, but is now attempting to expand its efforts to have citizens participate more actively in protecting Buzzards Bay. Thus, the Coalition would like to form a multifaceted citizen participation program, that not only includes water quality monitoring, but also town watch programs in each municipality, and citizen environmental custodians for each bay and river. The Coalition would form and maintain this network -- which will contain organized groups like the WRWA -- and keep information exchanged between groups, share resources, and interface between the citizens, the media, the Buzzards Bay Project, and government officials.

The Coalition for Buzzards Bay was founded in 1987 as an umbrella organization to bring together other

groups, businesses, and individuals to work on the cleanup, restoration, and protection of the 235 square-mile Buzzards Bay estuary including its 210 miles of coastline. The Coalition is currently staffed by two full-time employees as well as occasional interns for special projects. The organization's accomplishments include: an annual Environmental Report Card, which helps communities pinpoint and solve problems within town government; a monthly State of the Bay Report, which raises public awareness on how each person/business/town is responsible for the Bay's condition; the creation of informational brochures on household hazardous waste alternatives and septic tank maintenance; as well as other ongoing activities.

The Buzzards Bay Project will not only provide technical assistance to the citizen program, but has also set aside \$25,000 of support. The Buzzards Bay Project will use most of this money to purchase equipment, water quality test kits, and supplies to outfit the two citizens groups. The money sought from the Massachusetts Environmental Trust and the EPA Office of Marine and Estuary Protection for the two respective tasks would be used by the two non-profit citizen groups to hire full-time and part-time personnel to implement these programs.

Overview of the Citizen Participation Program

Citizens and citizen groups can work effectively to enhance environmental protection in many ways. Our proposed Citizen Participation Program for Buzzards Bay is multifaceted because it has three major components: water quality and resource monitoring, local government oversight, and custodianship of the environment.

An overview of each component is given below.

! Monitoring of water quality and resources

A well coordinated citizen effort, with good technical and managerial oversight, will not only produce good quality information that is useful for managers, but will also increase citizen awareness of local environmental degradation. For example, citizen monitoring of dissolved oxygen has been identified as a key component of the Buzzards Bay Project's nitrogen management strategy because only volunteers can gather the information needed to document the degree to which embayments are stressed by eutrophication, during these times of budget/personnel cuts on the state and local level.

" Local government oversight ("watchdogging")

Many critical environmental management decisions are made by local boards (Selectmen, Planning, Appeals, Health, Conservation). These boards are typically composed of volunteers, often with inadequate expertise and/or conflicts of interest. We propose that in each of the 12 municipalities around the Bay, a team of trained citizen monitors will attend key meetings of the five boards (Planning, Health, Conservation Commission, Zoning and Selectmen) to spot possible environmental abuses. This would add to public and town official awareness of the need for responsible, environmentally sound local decisions. Recruiting these 120 people to adequately monitor all these municipal boards, preparing them through training sessions, and organizing prompt action to avoid environmental damage, would be the central elements incorporated into this watchdog strategy.

" Custodianship of the environment

Through "Adopt-A-Beach" and "Adopt-A-Stream" programs, citizens not only can help clean up trash along the coast, but they can also serve as the eyes and ears for environmental managers and enforcement officials. Citizens can document actual or potential environmental abuse, and thereby become custodians or guardians of the environment. Through the citizen participation network, individuals can document and report problems. Such dedicated and ongoing efforts also help citizens to feel empowered, to know they are making a difference, and to keep specific areas clean and attractive. A network will be established to create coverage of all major streams and embayments in Buzzards Bay. To assist these citizens, a simple and concise manual would be

prepared that explains environmental abuses for which they should watch. Through the Citizen Participation Program, environmental problems can be investigated and pursued to insure that action is taken by government authorities where environmental degradation could or does occur.

We believe these three components complement each other as part of a unified approach to put concerned citizens to work, which in turn assists in the enforcement of environmental rules and regulations and protection of the environment.

PROPOSED WORK

Task 1: Implementation of a model citizen water quality monitoring program in the Westport Rivers

As stated in the introduction, the Westport River estuary and drainage basin are prime candidates for a model citizen water quality monitoring program. Three major subtasks, and several ancillary monitoring efforts will make up the monitoring program. The parameters included in the monitoring program were chosen to yield the most meaningful sets of data but still be within reach of volunteer citizens. Funding by the Massachusetts Environmental Trust would enable the Westport River Watershed Alliance to hire a full-time staff person to coordinate the water quality monitoring program in the Westport River. This individual would also interface with the Buzzards Bay Project and the Citizen Participation Coordinator at the Coalition for Buzzards Bay. The Buzzards Bay Project will purchase the equipment and materials to support the effort. The Buzzards Bay Project will also help the Westport River Watershed Alliance manage and analyze the data collected by the citizen water quality monitoring program.

In addition, the Westport River Watershed Alliance has a grant pending with the Donaldson Charitable Trust to monitor nitrogen and groundwater in the Westport River drainage basin. If the Westport River Watershed Alliance receives this funding, it will expand its citizen monitoring program to include this parameter.

Task 1.1 Monitoring dissolved oxygen concentrations

A sign that an embayment is adversely affected by nitrogen enrichment is that dissolved oxygen concentrations may reach critically low concentrations. This phenomenon is an indirect effect caused by higher rates of respiration and decomposition caused by increased growth and accumulation of algae in response to eutrophication. Anoxic and hypoxic events can be devastating to many populations of fish and invertebrates, but because these events are typically ephemeral in shallow embayments like those found in Buzzards Bay, they have not been well documented. This is because these kinds of events occur mostly late at night and early in the morning during warm quiescent periods, with oxygen minima occurring typically between 7 and 9 AM, and oxygen concentration conditions often quickly return to normal ranges by noon. This pattern has precluded comprehensive documentation of these patterns by regulatory agencies and scientists. While continuously recording dissolved oxygen technology is available, it is too expensive to deploy in every sensitive embayment. Instead, a network of trained citizen monitors armed with oxygen test kits and oxygen meters can be deployed when meteorological and hydrological conditions would most likely result in anoxic or hypoxic events. Long-term documentation of these phenomena will assist the Buzzards Bay Project and regulatory agencies know at what level of nitrogen loading these kinds of adverse changes occur.

Task 1.2 Identifying upstream sources of fecal coliform bacteria

State agencies and municipal boards typically devote most of their resources to determine if our shellfish are safe to eat and if our beaches are safe to swim. If water quality is degraded, a resource area may be closed, but seldom do these authorities have the manpower or resources to investigate the cause of the problem and identify upstream sources. During the summer of 1989, trained town employees proved invaluable in helping the towns and the MA Division of Marine Fisheries (DMF) conduct shellfish shoreline surveys.

Using trained volunteers, the WRWA will sample possible upstream and nearshore sources of fecal coliforms. These samples will be analyzed at the town of Westport's laboratory (see attached

letter of support). Coupled with stream flow and stormwater flow data, this information will be very important in helping set priorities for remediating various pollution sources.

The Buzzards Bay Project will purchase the additional supplies required by the town to implement this program. The WRWA monitoring coordinator would become DMF approved and also volunteer some time to the Division of Marine Fisheries to help that agency conduct monitoring in the Westport River estuary.

Task 1.3 Quantifying stream flow

The transport of pollutants through streams and rivers can be quantified if water volume transport and the concentration of pollutants is known. In many cases, however, pollutant concentrations are available but stream flow data has been unavailable. This is particularly true in assessments of nutrient loading. It is too costly to deploy automatic stream stage recorders in every stream in Buzzards Bay, but it is feasible to deploy homemade stream depth staffs and have local residents record daily stream levels. From these stream levels volume can be calculated, if for each stream a team of citizens measure flow directly in the stream at a number of different stream heights (there are a variety of simple techniques that require only stop watches, dye, tape measures, and depth staffs). This stream flow data can be used to calculate the mass load of pollutants reaching an embayment.

Task 1.4 Quantifying intermittent stormwater flow

Like stream flow monitoring, monitoring flows through storm pipes is the kind of information that is difficult or a low priority for agencies to collect, but extremely important data that trained local residents can collect. For some of the smaller discharges, flow can be measured simply with a bucket and a stopwatch. For larger flows, techniques used on streams may be more appropriate. Measurement of stormwater flow rates is a high priority for the Buzzards Bay Project and the Division of Marine Fisheries to help evaluate the significance of a specific discharge as a fecal coliform source.

Task 1.5 Documenting physical and meteorological conditions, and selected chemical parameters.

Trained citizens will measure selected meteorological, physical and chemical parameters in marine and freshwater sources.

" rain gauges

Because of micro-climatological differences, rain gauges will be set up in selected drainage basins. These data will enable more reliable correlations between rainfall and flow through streams and stormwater pipes.

" salinity, temperature, secchi disk depth, pH

Fixed stations around the Westport River will be established to measure these parameters and oxygen (see Task 1.1). These data will help establish hydrological features of the estuary, and parameters like secchi disk depth can be used to document long term trends in water quality. pH will only be measured in the freshwater portions of streams and rivers.

" tidal fluctuation

Permanent and temporary tidal stations will be established and monitored on selected days to document spatial tidal patterns within the Westport River Estuary. This information can be used to quantify flushing and other hydrological features.

Task 1.6 Documenting changes in selected living resources

Changes in aquatic bird populations, distribution of eelgrass beds, and small scale expansion or erosion of salt marshes are a few of the parameters that can be documented through a coordinated effort of trained citizens.

Task 1.7 Manpower for special investigations

Field scientists often seek volunteers or field hands that can help them with their experiments and sampling, give them a hand in the field, or taxi them in their boat. The Buzzards Bay Project will work with the scientific community to identify their needs and set up a pool of willing individuals to volunteer for scientific studies. The Project will also ask scientists to identify simple projects that

local volunteers can conduct and that researchers can use in their studies.

Task 2: Implementation of a baywide citizen participation network

The Coalition for Buzzards Bay would like to establish a baywide citizen participation network. The citizens will be organized into teams of individuals to monitor the actions of town boards and local officials within all Buzzards Bay coastal municipalities, to act as guardians for each of the major embayments in Buzzards Bay, and to organize these citizens into an effective data collecting force. The Coalition will interface with the citizens and citizen groups and appropriate agencies, municipal groups, and regional authorities to take prompt action to avert damage to Buzzards Bay's coastal environment.

The Coalition for Buzzards Bay is the ideal candidate to implement such a bay-wide Citizen Participation Program. Its membership includes 1089 individuals, 36 organizations, and 35 business members and is constantly recruiting new volunteers for a wide variety of activities. The Coalition has been stymied from expanding its efforts in the past because of a limited number of staff, but with funding from the EPA Office of Marine and Estuary Protection for two additional full-time staff for this program, they will be able to create an effective citizens participation and monitoring network to put teeth into the watchdog effort. The Coalition will then be able to not only scrutinize the deliberations and actions of key boards in every community, but bring concerted forces to bear in preventing environmental abuses. With this information base, the Coalition will be able to better shape public opinion and resolve by highlighting what is being done wrong (or right) in each community with respect to the environment.

This initiative also comes at a time when the Commonwealth of Massachusetts is finding it very difficult to enforce its environmental regulations because of budget and personnel cuts. This makes such a program all the more critical because it necessitates that citizens become more vigilant in their oversight of government and the environment.

Task 2.1 Water Quality and Resource Monitoring

This task includes all the water quality and living resource monitoring tasks identified in the subtasks of Task 1 for the Westport River Watershed Alliance in selected other embayments around Buzzards Bay.

Task 2.2 Local Government Oversight

In the past it has been routine for local boards to "give away the store," whether intentionally, through apathy, or through ignorance of the law. For example, at a workshop sponsored by the Coalition in June, 1989, for members of Zoning Board of Appeals (ZBAs) members, it was pointed out that 90% of the variances granted by ZBAs are very likely illegal. In general, a part of everyday life around the Bay is that requests by developers and others to alter wetlands, enlarge marinas, construct docks, or build homes are often granted, even where they would be inappropriate or environmentally unsound, because of cronyism, politics, or lack of knowledge. This can occur because decisions by town boards are not adequately scrutinized by the residents.

This problem can only be overcome if each key board is watched over by trained, informed citizens who take careful notes and record what has transpired. We have found that this public scrutiny together with public comments at the meetings often have beneficial effects in averting blatant abuses. This approach is particularly effective where the Buzzards Bay Project or Coalition for Buzzards Bay has alerted the appropriate agencies and abutters of potentially damaging decision and actions.

To implement this effort, the Coalition will train and organize teams of individuals to attend meetings of the Planning Board, Board of Health, Zoning Board of Appeals, Conservation Commission, and Selectmen, within each municipality in Buzzards Bay. To facilitate this effort, the Coalition for Buzzards Bay will create a handbook for citizen monitoring of key boards. The handbook will identify each board's responsibilities and constraints, what citizens should watch for, how to report a potential or actual abuse, and how to gather background information to assist the Coalition and relevant agencies in taking timely and effective actions. The Coalition is gathering background for this handbook and it will be completed by the new staff of the Citizen Participation Program.

Task 2.3 Environmental Custodianship Program

The Coalition will expand Adopt-A-Beach, Adopt-A-Stream, and Adopt-A-Bay programs in Buzzards Bay and attempt to form groups for every major embayment. These efforts will not only focus on debris cleanup days, but also help citizens identify potential environmental degradation. A second handbook will be produced by this effort. This handbook will identify potential problems and responses. For example, if a citizen observes a lot being cleared near a wetland, but no hay bails or other erosion control structures are put in place, the monitor should report the situation to the local conservation commission. Similarly, if a structure is being built within 100 feet of a wetland but no Department of Environmental Protection (DEP) permit is posted, the monitor should contact both the Conservation Commission and the DEP regional office.

In practical terms, because dealing with regulatory agencies can be difficult, and because letters are more effective than phone calls in generating a response from a regulatory authority, many potential and actual environmental abuses will be reported to the Coalition who will work with the Buzzards Bay Project to investigate the problem and if necessary file appropriate paper work such as "Requests for Determination of Applicability" and appeals to the DEP under the Wetlands Protection Act.

Coordination with other citizen groups

In organizing and implementing all these tasks, the Coalition would work carefully with all other environmental groups in Buzzards Bay. For example, in some communities, the League of Women Voters is active in attending town board meetings but may need assistance in knowing how to respond to troubling observations. In such cases, we would establish criteria for calling on the Coalition to become involved with a specific problem. Other groups with which the Coalition will try to expand levels of cooperation include the: Onset Protective League, S.O.S., 300 Committee, Cataumet Civic Associates, Lloyd Center for Environmental Studies, Brandt Island Association (must get correct name), Bourne Pollution Task Force, Bourne Conservation Trust, Dartmouth Natural Resources Trust, Fairhaven Improvement Association, American Littoral Society, Precinct One North Dartmouth (POND), Elizabeth Island Association, ACTION (Acushnet), Committee to Save Onset's Beaches, Buzzards Bay Garden Club, Concerned Shellfishermen of MASS, North Falmouth Village Association, Sippican Lands Trust, Westport Land Trust, Save West Island, Alewives Anonymous, and others. Cooperation among these groups would strengthen ties and improve chances of stopping environmental degradation.

PRODUCTS

- Task 1.1: semi-annual data reports of oxygen concentrations
- Task 1.2: semi-annual data reports of fecal coliform concentrations
- Task 1.3-1.6: Final report data and major findings
- Task 2.1: semi-annual data reports, in conjunction with the Buzzards Bay Project produce a citizen water quality monitoring guide
- Task 2.2: monthly town watch reports, town watch guidebooks
- Task 2.3: Handbook of potential environmental abuses and violations of environmental regulations

TIMELINE

- March - BBP meets with scientific community, purchases equipment
- April - WRWA hires coordinator
- begin organizing citizen network
- May - Sept. - major monitoring data collection
- results published monthly in WRWA newsletter and highlights in BBP newsletter
- Sept. - semi-annual data reports
- Sept. - April - data collection continues
- April - final reports

BUDGET

Implementation of the Citizen Participation Program requires approximately \$85,000. The Buzzards Bay Project received \$25,000 through its federal grant to begin implementing this citizen program in its last grant, hence \$60,000 of additional funding is needed. To fulfill this need we are seeking \$15,000 from the Massachusetts Environmental Trust to fulfill Task #1, and \$45,000 from EPA OMEP to fulfill Task #2. The breakdown of the Budget is as follows.

Task	Amount Requested ¹	In-kind Contrib.	BBP Support ²
Task 1:WRWA Citizens Water Quality Monitoring Program Coordinator	\$15,000		
WRWA other staff, newsletter contribution		\$3,000	
supplies, materials, equipment			\$6,000
Task 2:Coalition for Buzzards Bay Citizen Participation Coordinator	\$17,500		
Water Quality Monitoring Coordinator	\$17,500		
Interns	\$5,000		
Program support (postage, application fees, communication, mileage, etc.)	\$5,000		
Task 2 subtotal	\$45,000		
CBB Administration, supervisory		\$4,000	
Supplies, materials, equipment, some production and design costs			\$19,000

¹ Funding for task 1 is being sought from the Massachusetts Environmental Trust by the Westport River Watershed Alliance. Funding for task 2 is being sought from the US EPA Office of Marine and Estuarine Protection by the Coalition for Buzzards Bay.

² Contributions from the Buzzards Bay Project to implement a citizen monitoring program were awarded previously to the Project through the National Estuarine Program and are already matched by non-federal cash match.

BUDGET JUSTIFICATION

Funding from the Massachusetts Environmental Trust will enable the Westport River Watershed Alliance to hire a full-time staff person to coordinate citizens water quality monitoring activities in the Westport River drainage basin. This coordinator will become DMF approved and volunteer some time toward efforts by DMF to conduct shoreline surveys in the Westport River.

Funding from the Office of Marine and Estuarine Protection will enable the Coalition to hire two full-time Citizen Participation Coordinators and two summer interns to implement the baywide Citizen Participation Program. One of the coordinators would be in charge of forming and implementing the town watch, and bay custodianship program. The other coordinator will organize and implement the baywide citizens water quality monitoring effort. This latter coordinator will become DMF approved and volunteer some time toward efforts by DMF to conduct shoreline surveys in Buzzards Bay. The interns would assist in both

these activities.

The cost of supplies, materials, and equipment to implement both efforts will be supplied by the Buzzards Bay Project. The Buzzards Bay Project will work closely with the scientific community to purchase reliable, cost-effective field monitoring kits and equipment. The Buzzards Bay Project will also cover some of the costs of designing and producing the citizen manuals in Task 2.