



Buzzards Bay “SepTrack” Initiative

Demonstrating Practical Tools for Watershed Management Through the National Estuary Program

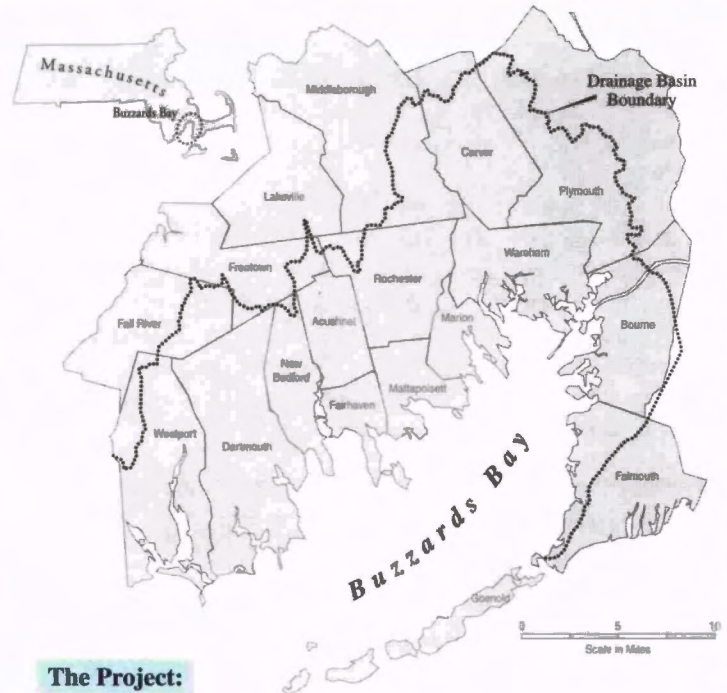
Buzzards Bay, Massachusetts

Characteristics:

- The Buzzards Bay watershed includes 432 square miles comprised of significant portions of 17 municipalities, with nearly 236,000 people living therein. Approximately half of the homes utilize on-site, subsurface sewage disposal systems (cesspools or septic systems) to dispose of sanitary wastes.
- Government in Massachusetts is generally done by “home rule” through cities and towns. Virtually all decisions related to on-site septic system installation and maintenance is done at the local community level by an elected Board of Health.
- Failing on-site systems may lead to contamination of waters of tributaries to the bay and smaller embayments around its margins, resulting in the closure of shellfish beds and possibly other water-contact recreation activities because of threats to public health.

The Problem:

Local Boards of Health typically lack the ability to efficiently and effectively monitor septic system permits and inspection and maintenance information due to insufficient staffing and information-processing equipment and systems.



The Project:

The SepTrack Demonstration Project was designed to provide computers and specialized software to communities to allow them to better manage information related to on-site septic systems, thereby freeing staff time for better design review and enforcement and helping identify patterns of failure.

The National Estuary Program

Estuaries and other coastal and marine waters are national resources that are increasingly threatened by pollution, habitat loss, coastal development, and resource conflicts. Congress established the National Estuary Program (NEP) in 1987 to provide a greater focus for coastal protection and to demonstrate practical, innovative approaches for protecting estuaries and their living resources.

As part of the demonstration role, the NEP offers funding for member estuaries to design and implement Action Plan Demonstration Projects that demonstrate innovative approaches to address priority problem areas, show improvements that can be achieved on a small scale, and help determine the time and resources needed to apply similar approaches basin-wide.

The NEP is managed by the U.S. Environmental Protection Agency (EPA). It currently includes 28 estuaries: Albemarle-Pamlico Sounds, NC; Barataria-Terrebonne Estuarine Complex, LA; Barnegat Bay, NJ; Buzzards Bay, MA; Casco Bay, ME; Charlotte Harbor, FL; Columbia River, OR and WA; Corpus Christi Bay, TX; Delaware Estuary, DE, NJ, and PA; Delaware Inland Bays, DE; Galveston Bay, TX; Indian River Lagoon, FL; Long Island Sound, CT and NY; Maryland Coastal Bays, MD; Massachusetts Bays, MA; Mobile Bay, AL; Morro Bay, CA; Narragansett Bay, RI; New Hampshire Estuaries, NH; New York-New Jersey Harbor, NY and NJ; Peconic Bay, NY; Puget Sound, WA; San Francisco Bay-Delta Estuary, CA; San Juan Bay, PR; Santa Monica Bay, CA; Sarasota Bay, FL; Tampa Bay, FL; and Tillamook Bay, OR.

Introduction to Buzzards Bay

Buzzards Bay extends for 28 miles between the western shore of Cape Cod and the mainland of southeastern Massachusetts. Its 210 miles of shoreline provide a widely diverse habitat of salt marshes, sandy beaches, eelgrass beds, small embayments and tidal streams, and urban ports. The waters of the bay are used for shellfishing, swimming, and boating as well as marine transportation.

Buzzards Bay, as a whole, is still considered a relatively healthy waterbody. However, the waters of the smaller, fringing embayments are threatened by increasing amounts of contamination. Pollution associated with residential development and other land uses, indicated by fecal coliform bacteria and elevated nitrogen concentrations, contributes to a decline of water quality in some locations.

Cesspools, failed septic systems, and high densities of septic systems contribute to the closure of swimming beaches and shellfish beds, contaminate drinking water supplies, and cause eutrophication of ponds and coastal embayments. For these reasons, improved implementation of septic system regulations and promotion of better functioning alternatives are important objectives in the Buzzards Bay Comprehensive Conservation and Management Plan.

Overview of the Buzzards Bay SepTrack Initiative

Can computers and software protect the environment and public health? The Buzzards Bay Project of the National Estuary Program thought so. In Massachusetts, municipal Boards of Health are responsible for implementing and overseeing state regulations for on-site wastewater disposal systems (septic systems). These boards, composed of elected volunteers, and sometimes lacking professional staff, are typically overburdened just keeping up with new permits. Keeping track of past permits, past orders of non-compliance, and reviewing pump-out reports submitted by sewage treatment facilities are tasks that sometimes fall to the bottom of the pile. Add to this workload new state requirements such as septic system inspections within six months of property transfer and soil evaluations before system installation, and

clearly Massachusetts Boards of Health face a sizable information management problem. In some towns, the problem is especially difficult since records are filed away in storage boxes and computers are unavailable—even for word processing. These are the issues the SepTrack project was designed to address.

Initiative Objectives

The purpose of this initiative was to better enable each Board of Health to track septic system permits and inspection and maintenance information. The Project's goal was to reduce information management and retrieval burdens on Boards of Health, thereby allowing time to enhance protection of public health and the environment.

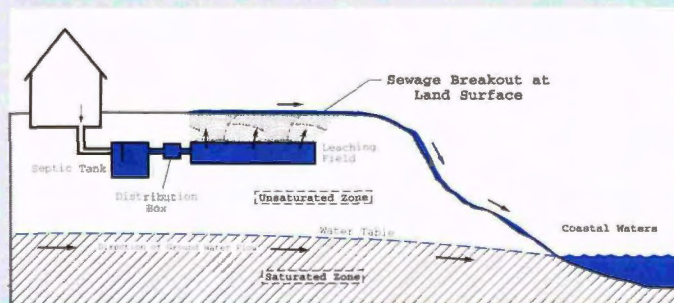
Implementing the Initiative

To achieve this end, in 1996, the Buzzards Bay Project provided computers and specialized software to 11 municipal Boards of Health in the Buzzards Bay watershed.

The Buzzards Bay Project developed the concept for a Windows-based database management software application and hired a software development firm to produce the package. Project staff had a clear sense of what kind of information Boards of Health wanted to track, but to ensure that the software met the needs of area municipalities, the Project set up a panel of health officials to test and evaluate early versions of the software. The outcome of this effort is known as SepTrack, an easy to use Windows program that enables health officials to track information on every property in their community. More than 180 categories of information are tracked in the database ranging from septic system design, leachfield type, number of bathrooms, presence of wetlands, and pumpout frequency—essentially all the information routinely supplied to towns in building and health permits. At a click of a mouse button, data on any lot will be available to municipal staff, allowing them to be more responsive to information requests and help towns process permit applications more quickly. The program has the ability to display graphics files of site plans and engineering designs.

To help towns adopt and use the new software package, the Buzzards Bay Project provided funding for assessors' data in each community to be transferred into the SepTrack database. The Project also hired a student intern to work in each town on a rotating basis to enter old permit information and septic pumping records. Once this historical information is entered, health office administrators merely have to spend a few minutes a day entering new permit data.

SepTrack (Vers. 1.0) was written to run as an application under the database manager, Microsoft FoxPro for Windows (Vers. 2.6). However, because this software package is being



Hydraulically Failing Septic System

Buzzards Bay Project's SepTrack

File Edit Database Tools Entry Output Window Help

First Prev Next Last Print Find New Edit Save Cancel Close

General System Information

Sys ID: **Map-Sct-Prcl-Lot#-#** Lot Location: **0401** Village: **ACAPESKET RD**

Other Desc: **summer residence**

Owner Name (Last, First MI): **BROWN CHARLES** Parcel Size: **29021**

GPS Location: **642384 246543** Zoning: **RB** User: **1010** Sq Ft: **0.67**

Structure Information (Y/N/U) Rental (Y/N/U) Year Built: **1950**

Structures: **1** Sewered: **N** Town Water: **N** Last Transferred: **01/25/95**

Bedrooms: **5** Ungnd. Tank: **N** Seasonal/ Yr Rnd (S/Y/U): **V** Plot Plan Filename: **sp40-317.tif**

Full Baths: **1** Pumpouts: **Reserved:**

Half Baths: **1**

Type: **CESSPOOL** Source: **HOUSE/APT.** Permit #: **95-02** Design Flow: **440**

Special Districts? **Y** Pumpout History: **02/15/77** O&M Req?: **/ /**

Shared System? **N** #/12 mos. **2** Repair/Upgrade: **02/10/85** Testing Due: **/ /**

Betterments? **N** Last: **06/12/96** Last Inspection: **/ /** Contract Exp.: **/ /**

Districts Pumpouts Design Soil Eval Inspect Subdiv Repairs Betterment

Ins Num

phased out by Microsoft, the Buzzards Bay Project is now making available a special, compiled, stand-alone version of SepTrack (Vers. 1E.0) that can run in Windows even if FoxPro is not installed. Both versions operate identically, but Version 1E.0 is not able to run certain advanced features that are available through FoxPro. (FoxPro, Windows, and MS-DOS are trademarks of the Microsoft Corporation.)

Funding for this work was provided by the U.S. Environmental Protection Agency as part of a grant to the Buzzards Bay Project through the Massachusetts Coastal Zone Management Office.

Success Stories of the SepTrack Initiative

Is SepTrack protecting the environment? It may be too early to tell, but one thing is clear, SepTrack is becoming very popular. Buzzards Bay towns seem very pleased and enthusiastic about the software. Even before SepTrack was installed in most towns around the bay, the Project was getting calls from municipal Boards of Health in other parts of the state wondering if they, too, could receive a copy. Inquiries about the software increased this fall when the Buzzards Bay Project's sister Estuary Program, the Mass Bays Program began helping its South Shore communities implement the data management system as part of a pilot program. Generating even more interest in the software was a series of workshops around the state by the Massachusetts Department of Environmental Protection highlighting SepTrack as one of two applications for boards to manage septic system data (the other was a spreadsheet application).

Recent revisions to Massachusetts' septic system regulations bode well for the future, but only if the regulations are successfully implemented at the local level. The true utility of SepTrack will be in helping Boards of Health to be more

productive and responsive, and freeing staff for much-needed field inspections, enforcement, and pressing health and environmental issues. In a very practical sense, SepTrack is allowing Massachusetts Boards of Health to systematically track, for the first time, the permitting, inspection and maintenance of septic systems. But SepTrack is doing more than just telling municipal officials if grease traps and tight tanks are being pumped regularly. A glimpse of some of the other benefits of SepTrack is provided by these examples.

Most Boards of Health receive a monthly report from sewage treatment plants detailing dozens of pumpouts reported by septage haulers. (In Massachusetts, septage haulers must report the source of their septage.) In the past, most boards have simply filed this information because it is too time-consuming to search out properties

frequently pumped (often a sign of a failing septic system). With SepTrack, at a click of a mouse button, towns are now seeing a list of these frequent pumpers, and the results have, in some cases, been eye-opening. Surprisingly, in one town, the most frequently pumped system turned out to be a town-owned property. Towns are also discovering that septage hauler information does not always appear to be complete or accurate.

For house renovations, Boards of Health tend to rely on information provided by engineers on permit applications, such as number of bedrooms in a residence, presence of private wells nearby, and other important data. In one town, the staff person for the Board of Health seldom checked the assessors' records to see if the number of bedrooms listed was, in fact, correct because the data were not easily accessible. With SepTrack in place, the staff person quickly realized that the numbers of bedrooms reported on permit applications were often inaccurate (fewer bedrooms means a smaller—and cheaper—septic system). After these "errors" were consistently caught, construction firms and engineers became much more consistent with assessors' records.

The Buzzards Bay Project had been working with one town to reduce high fecal coliform concentrations in stormwater discharges contributing to shellfish bed closures. This town hired a college student to enter public works water and sewer data into the SepTrack system to complement Board of Health data. Much to the surprise of the health officials, 200 homes along one embayment had never been connected to a sewer line. Most homes in the area were sewered years earlier because they had cesspools and the water table was high. Ironically even the residences had been charged a sewer betterment fee for years, but the homeowners at the time did not want to pay a \$300 sewer connection fee. The Board of Health is now requiring these homes to connect to the existing sewer.

Lessons Learned

Early in its existence, the Buzzards Bay Project learned that you cannot simply offer computers and software to a town to solve a problem. Technical assistance and support are also vital. To ensure the success of this effort, the Buzzards Bay Project hired an intern to spend time at each town hall training municipal staff and entering data. Entering old permit data was an especially important task because Board of Health staff were reluctant to use the software if the old data were not present. Perhaps not surprisingly, with the old data in place, the towns became almost enthusiastic about keeping up with the entering of new permit data.

Another lesson learned is that a good software program and computer are not substitutes for good office management. In one town, poor management and personnel relations have resulted in the SepTrack computer being relegated to a dark corner.

Overall, the Buzzards Bay Project has found this initiative so successful that it has begun a similar initiative with municipal Planning Boards. In the latter case, the Project is providing computers, training, software, and data layers to the municipalities to create parcel-level GIS information to assist with planning growth, developing open space plans, and protecting water quality and habitat in the many sub-watersheds of Buzzards Bay.

For more information contact:

The Buzzards Bay Project is making the software available at no cost to Massachusetts municipalities. For locations outside Massachusetts, to obtain a free copy of the software and manual, send three 3.5" blank diskettes and a self-addressed mailer with appropriate postage to the Buzzards Bay Project, 2 Spring Street, Marion, MA 02738. For general information, contact Dr. Joseph Costa, Buzzards Bay Project, (508) 748-3600.

or

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