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Water Quality Branch
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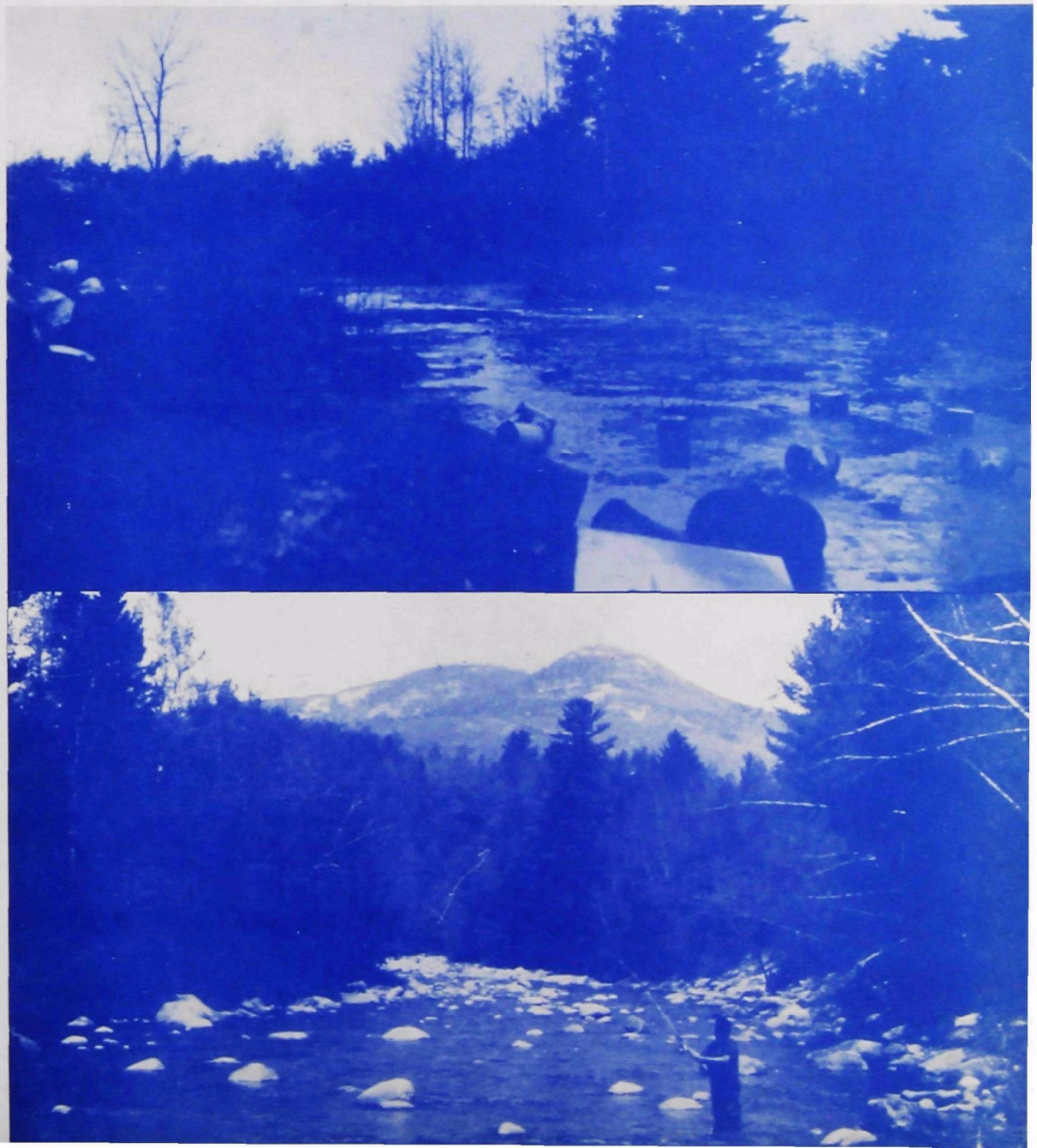
EPA

Water Quality Management For The Future

A New England Success



WATER QUALITY MANAGEMENT FOR THE FUTURE:

A New England Success

The Success of Section 208 Water Quality Management Planning in New England

U.S. Environmental Protection Agency
Water Quality Branch
Region I
JFK Federal Building
Boston, MA 02203

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WATER QUALITY MANAGEMENT FOR THE FUTURE: A NEW ENGLAND SUCCESS

When Congress passed the Federal Water Pollution Control Act Amendments of 1972, it recognized that some of the water quality problems in the United States are so complex or severe that they cannot be solved by technology alone. As the point sources of water pollution are brought under control through the Municipal Construction Grants Program and the NPDES Permit Program, the significance of the impact of nonpoint source pollution becomes increasingly evident.

Section 208 of the Clean Water Act* authorizes the Environmental Protection Agency (EPA) to administer an areawide waste treatment management planning program designed specifically to deal with nonpoint sources of water pollution. The so-called "208" planning programs are designed to control complex water quality problems including urban runoff, agricultural and silvicultural runoff, septage and sludge management, lake eutrophication, and groundwater protection.

The 208 program stresses planning by local governments and the implementation of the cost effective water quality management programs developed. Specifically, Section 208 calls upon local governments in a particular planning area to work together to find and implement solutions to their common water quality management problems.

Water Quality Management Planning in New England

As of May, 1980, more than $21 million in 208 grants have been made to the sixteen designated areawide planning agencies and to the six New England States to prepare these "208 Water Quality Management Plans". Most of the

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*NOTE: The Federal Water Pollution Control Act (P.L. 92-500) was amended by the Clean Water Act of 1977 (P.L. 95-217).

initial areawide 208 plans have undergone final review and have been certified by the appropriate State Governors and approved by EPA. Several of the 208 agencies in New England have already been successful in achieving implementation of strategies identified by 208 plans which are now resulting in actual water quality improvements. EPA will channel future 208 funds to these areas where real progress is being made toward solving serious state and local water pollution problems.

Successful Implementation of Water Quality Management Planning in New England

The 208 Water Quality Management Planning Program in New England has continually stressed the importance of solving specific water quality problems and implementing strong cost-effective, action-oriented environmental programs. This publication presents a compendium of some of the recent 208 implementation successes in New England. Earlier examples of successful 208 implementation efforts have been published in the EPA Region I Environment News and the Region I Regional Administrator's Annual Report 1979.

The compendium of recent 208 implementation successes will be presented under the following general topic areas:

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A. Lake Preservation and Restoration

- Restoring Lakes in Berkshire County

B. Groundwater Protection

- Aquifer Protection Implemented in Southeastern Connecticut
- Cape Cod Towns Act on Gasoline Storage Problems

C. Proper Hazardous Waste Disposal

- Connecticut Hazardous Waste Disposal Progress
- 208 Funds and Hazardous Waste Efforts in New Hampshire

D. WQM and the Agricultural and Silvicultural Communities

- Best Management Practices in Connecticut, Maine and New Hampshire
- Vermont 208 in Cooperation with Timber Industry Establishes Logging Erosion Control Process

E. Septic System Maintenance and Septage Disposal

- Recylcing Septage as Fertilizer in Western Massachusetts
- Development of Massachusetts Septage Disposal Policy
- Development of a Septic System Inspection/Maintenance Program on Martha's Vineyard

These stories demonstrate how state and local governments are working through Section 208 of the Clean Water Act to implement programs that will preserve and protect the quality of New England's waterways. If you would like more information on the Section 208 Water Quality Management Program in your area, contact the State or Regional Planning Agency in your region (see appendix for names and addresses) or contact the EPA Region I, Water Quality Branch, JFK Federal Building, Boston, MA 02203, 617-223-5130.

RESTORING LAKES IN BERKSHIRE COUNTY, MASSACHUSETTS

Berkshire County in western Massachusetts has long been known for its prime recreational lakes. Recently, the accelerated aging of the lakes (eutrophication) has resulted in prolific weed growth, nuisance algal bloom, reduced water quality, and increased sediment deposition. These problems in turn reduce the recreational value by interfering with boating, swimming, fishing, and aesthetics. The process of eutrophication is accelerated by increased amounts of sediment and nutrients entering the lake. The relationship between human activity and accelerated aging is widely documented and is due to land uses that accelerate the avenues and rate of nutrient transport from the land to the lake water.

Having recognized the importance of their lakes, Berkshire County residents are becoming increasingly active in organizing lake management programs. One of their most important sources of both inspiration and information has been the Berkshire County Regional Planning Commission (BCRCP). BCRPC is the Areawide Waste Treatment Planning Agency designated under Section 208 of the Clean Water Act. Section 208 calls for the development of areawide water quality management plans designed to control complex water quality problems. Since lake preservation and restoration were the primary concerns of Berkshire County residents, the BCRPC 208 plan concentrated on developing management practices for the area lakes.

BCRPC has provided technical assistance and public information programs in order to stimulate citizen interest in developing a lake management program. As a result of BCRPC assistance, several county towns have had considerable success in obtaining funds to begin to control eutrophication, with both restorative and preventive measures.

The principal role of BCRPC has been to provide and organize the data necessary for the towns to apply for funding through the Massachusetts Aquatic Vegetation Control Program (MAVCP). This program is administered by the Division of Waterways, under the Massachusetts Department of Environmental Quality Engineering (DEQE). Since 1953, the program has funded short-term solutions for improving lakes, primarily through hervicide application. Within the past several years, under the direction of Mario Boschetti of DEQE, the program has moved to long-term controls, such as removal of available nutrients, drawdown of lakes, and watershed control. Grants awarded under this program equal seventy-five percent of the total funds needed to implement the lake management plans. The remaining twenty-five percent has to be provided by the local communities.

Several municipalities in Berkshire County assisted by BCRPC, have applied for and received MAVCP monies and are currently implementing their programs. The Cheshire Lake Study Commission for example, used data developed by the BCRPC 208 plan in its application for MAVCP funding for Cheshire Reservoir. This information included land use practices, soils analysis, and delineation of the watershed. The BCRPC staff also provided an overview of lake management techniques, reviewed the technical data, assisted in the preparation of

maps and commented on the draft applications. As a result, the Commission received a $9,000 grant for herbicide treatment and is currently implementing the program.

The Town of Stockbridge also made extensive use of the lake management section of BCRPC's 208 plan. Town officials used BCRPC calculations of nitrogen and phosphorus loads, nutrient budgets, impact on lake quality of nutrient loads, land use, soils, vegetation, and watershed boundary data to compare control measures and costs and eventually apply for a MAVCP grant. The town received $10,000 for a harvesting program which began in the summer of 1979 and is continuing.

Laurel Lake has also received money from the Massachusetts Aquatic Vegetation Control Program. The $13,650 awarded was to implement a comprehensive lake program including: drawdown, sediment impoundments to reduce nutrient and sediment loading, weed harvesting, stream diversions, and monitoring. The application for the grant was made possible by BCRPC 208 lakes management studies. To date, some harvesting has been successfully completed and the siphon is being installed for the drawdown which will begin in the fall of 1980. The initiation of the Laurel Lake project was accelerated as a result of a field demonstration of harvesting equipment arranged by BCRPC.

BCRPC assisted in the preparation of a fourth regional application for MAVCP grant. Pontoosuc Lake received $40,500 in state funds for drawdown, sediment removal, retention basins, harvesting, herbicide treatment and lake monitoring. In 1979, the public beach area was treated with herbicides and a local contractor removed vegetation with a weed rake: the lake was drawn down in the fall of 1979. The other projects will be implemented during 1980. Shoreline residents have responded favorably by contributing the matching funds according to their shoreline frontage.

The BCRPC 208 program has effectively assisted the towns of Berkshire County in receiving over $75,000 in state funds for lake restoration and protection. All of the towns concerned with lake management have been willing to provide local funds to

implement the BCRPC 208 lake recommendations; this is particularly significant in this time of tight municipal budgets. Four out of the eight Massachusetts lakes receiving money under the Massachusetts Aquatic Vegetation Control Program were assisted by the 208 Agency. The result of BCRPC's work has been a significant improvement in lake quality and the recognition of the need to determine appropriate long-range strategies with emphasis on a comprehensive lake management approach. For further information on the BCRPC 208 Lakes Restoration Program contact:

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From ENVIRONMENT NEWS 5/80

AQUIFER PROTECTION IMPLEMENTED IN SOUTHEASTERN CONNECTICUT

The Connecticut towns of East Lyme, Waterford, Stonington, and Montville have revised or are currently revising their Plans of Development to include the protection of the stratified-drift aquifer within each town. A stratified-drift aquifer is a large underground sand and gravel deposit of at least ten feet in saturated thickness. Such an aquifer can supply 50 to 10,000 gallons of water per minute, when pumped. This is a suitable volume for a municipal water supply.

These activities are a result of the realization of the need to develop additional sources of water supply in the towns and to protect those currently in use. The implementation of this environmental program is a result of the aquifer protection efforts funded by Section 208 of the Clean Water Act which is assisting state and local agencies in the development of such regulatory programs.

In Connecticut, groundwater protection was identified as a priority issue to be included in the 208 Water Quality Management Planning Program. This is due primarily to the fact that very little additional surface water supply can be developed within the state of Connecticut. Another important factor is that many of the existing surface water supplies will not meet the stringent requirements recently set by the federal Safe Drinking Water Act. As a result, an increasing number of communities find it necessary to seriously consider groundwater as either a supplement to the existing surface water supply or as a cheap alternative to constructing the expensive filtration facilities necessary for those surface water supplies which do not meet federal standards.

The Section 208 water quality management planning already completed has identified and defined the groundwater problems present in Connecticut. In cooperation with the United States Geological Survey, an outline and map of the major aquifers have been compiled. The 208 plan reports on the sources of contamination relevant to each aquifer. By publishing maps of potential pollution sources, the 208 Program has helped to convince state and local officials that there is, indeed, a problem. Maps have also been published by the 208 Program which identify aquifers which currently supply water and those which are potential public water supplies. The recharge areas for all major stratified-drift aquifers (both underflow and artificial recharge) have also been mapped.

Armed with the necessary background information and technical assistance, both provided by the 208 Program the individual towns of Connecticut are now able to incorporate aquifer protection into their Plans of Development.

East Lyme is completely dependent upon groundwater for its water supply. Realizing this, the Town has moved to protect these groundwater supplies and has rezoned the area around its prime aquifer from one to two-acre zones and has changed an industrial zoned area to a non-industrial zone. In addition, the Four Mile River aquifer has been transferred to state and local ownership as part of a land parcel recognized for its important resource value.

The Town of Waterford, in reviewing and amending its zoning regulations, will consider aquifer protection. Special attention will be paid to industrial zoning and necessary changes will be made to ensure protection of aquifers.

The Town of Stonington has combined its need for aquifer protection with the need to protect flood plains and wetland areas from development. As a result, a move has been made to decrease population density over aquifers by rezoning these areas to three-acre residential lots. The Town has also abolished an industrial zone that was closer than recommended to an aquifer area.

Montville has also updated and amended its zoning regulations; its prime intention will be to better protect its stratified-drift aquifers.

Such local interest actions point out the success of the Connecticut 208 Program in implementing the strong environmental protection programs recommended by the Section 208 water quality management plan. The four examples, along with the regulations currently being drafted in Southington and Durham, Connecticut, represent the viability of 208 and the goals of national water quality management. For further information on the groundwater protection program of the Connecticut 208 Program contact:

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From ENVIRONMENT NEWS 2/80

CAPE COD TOWNS ACT ON GASOLINE STORAGE PROBLEMS

Nine Cape Cod towns have taken steps to prevent contamination of their groundwater resources by acting on recommendations of the Cape Cod 208 plan to adopt special health regulations to control subsurface storage of gasoline and other fuels. Gasoline leakage is identified in the "208" Water Quality Management Plan for Cape Cod, prepared by the Cape Cod Planning and Economic Development Commission (CCPEDC), as a major potential water quality problem on the Cape, since the area is totally dependent upon groundwater for its water supply.

CCPEDC is the water quality management planning agency for the Cape Cod area designated under Section 208 of the Clean Water Act. The Clean Water Act provides a series of programs intended to protect and improve the quality of the Nation's water. Section 208 specifically calls for the development of areawide water quality management plans designed to control complex water quality problems. Development of such plans is the responsibility of the designated 208 agencies.

The magnitude of the fuel storage problems is evidenced by the six major spills that have been reported on Cape Cod within the last three years involving a total of more than 5,000 gallons of gasoline. The principal water supply well for one town, Provincetown, has been closed for more than three years because of a leak at a gas station 500 feet away from the well. Costs of cleanup and emergency supply well construction due to this spill has totaled over $500,000 to date. The 208 plan concludes that existing state and local fire prevention regulations are inadequate to control these problems and recommends action by local boards of health to ensure water supply protection.

After identifying the priority of the problem in the 208 plan, the Cape Cod Planning and Economic Development Commission was awarded an additional 208 continuing planning grant in October, 1979, for groundwater protection activities including developing a model regulation for adoption by local boards of health to control gasoline storage.

The model regulation developed by CCPEDC includes: registration of tanks over 900 gallons capacity with the Board of Health; testing the tanks to check for leaks; protecting the tanks from corrosion; reporting of leaks, and removal of those tanks not deemed product tight.

These recommendations were developed in conjunction with industry representatives including the American Petroleum Institute, the National Fire Prevention Association, Owens Corning Co., and Bethlehem Steel. Backup data was provided to boards of health through members of the 208 regional advisory committee, the Cape Cod Water Resources Council. Town boards of health have worked with their fire chiefs, water commissioners, and CCPEDC staff in drafting regulations appropriate for their towns, and the regulations have been promulgated after public hearings as required by the Massachusetts General Laws.

Five towns have enacted the regulations: Mashpee, Barnstable, Dennis, Brewster, and Harwich. Draft regulations have been prepared and public meetings are planned in Yarmouth, Eastham, and Chatham. One town, Bourne, has chosen to enact a town-wide general by-law incorporating these recommendations. The by-law has been placed on the warrent for its annual town meeting.

It is anticipated that this program will prevent water supply contamination, by identifying and immediately removing aging and leaking tanks, and will prevent future leaks by requiring corrosion resistant tank construction. It is the goal of the 208 agency to have such regulations in place by all towns by the end of 1980.

For further information about the 208 program to protect Cape Cod towns from petroleum storage problems, please contact:

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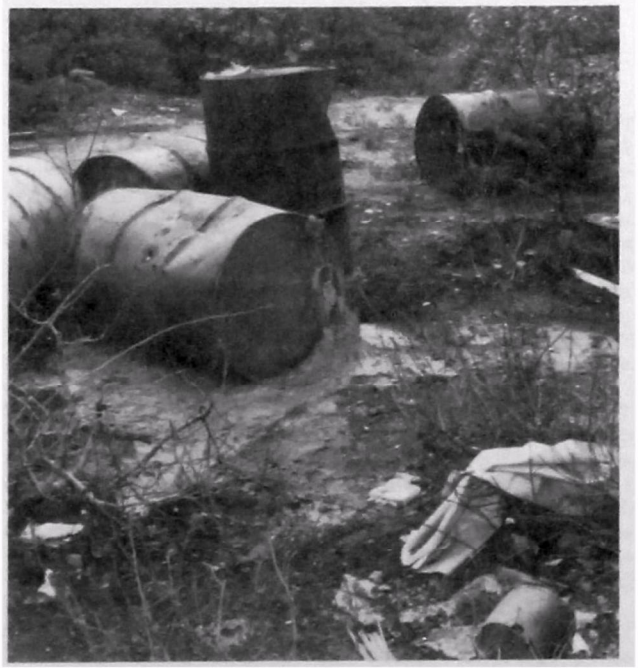
From ENVIRONMENT NEWS 6/80



Evaluating Hazardous Waste Sites: Connecticut Makes Positive Strides

In March of 1979, ABC News televised the documentary "The Killing Ground" which graphically depicted the horrors of improper disposal of hazardous wastes across the country. At its conclusion, there was a list of communities deemed to be among the worst locations of environmental degradation caused by hazardous waste disposal. The inclusion of Southington, Connecticut on this list along with the infamous Love Canal and the consequent reaction of citizens of Connecticut was

the impetus for accelerating the strengthening of the hazardous waste management program in Connecticut. Although subsequent investigation proved that Southington's pollution problem did not approach the magnitude of other locations listed in the documentary, this presentation did serve to emphasize the need for proper State and local cooperation and prompted the development of the 208 Hazardous Waste Site Investigation Manual.

For the two years previous to the Southington incident, the Connecticut 208 Program had been steadily working on the problem of hazardous waste disposal in the State, especially in regard to its effect on water pollution. The Connecticut 208 program, or as it is officially titled, the "Connecticut Areawide Waste Treatment Management Planning Board", is authorized and funded under Section 208 of the Federal Clean Water Act. Section 208 established a Water Quality Management program designed specifically to control the most complex water quality problems including the pollution of ground and surface water by improper disposal of hazardous wastes. The preliminary Connecticut 208 studies had confirmed everyone's worst suspicions; enormous quantities of potentially hazardous wastes were being generated and disposed of with inadequate control or regulation in Connecticut, as elsewhere in the Nation.

In July of 1979, four months after the ABC documentary, the Connecticut General Assembly passed Public Act 79-605. Section 13 of the Act mandated that "the Commissioner of Department Environmental Protection (DEP) shall compile an inventory of any sites in this state which have been used for toxic or hazardous waste disposal, and the types and amounts of such wastes disposed of at any such sites and shall submit such inventory to the general assembly not later than January 15, 1980". Such an undertaking was a complex project and, in the summer of 1979, the staff of the Connecticut Department of Environmental Protection began to compile "The Inventory", as it came to be known, utilizing some 14 different sources of information including information gathered from the earlier 208 Program efforts related to industrial waste disposal. Together, these sources would serve to provide a comprehensive picture of hazardous waste generation and disposal in Connecticut.

As the summer of 1979 drew to a close, the media had begun to pay closer attention to the 208 Program in general, the hazardous waste study, in particular. In August the first 208 hazardous waste study output was published, the Industrial Waste Generation and Disposal Alternatives Inventory. Local reaction was generated by the report's conclusion that almost 100,000,000 gallons of hazardous, industrial wastes were being generated annually in Connecticut. These wastes fall into the following categories: 10.8 million gallons of waste oil (non-automotive), 5.3 million gallons of solvents, 70.1 million gallons of sludge, and 8.0 million gallons of chemicals.

The disposal practices associated with the materials differed by category. Virtually all of the waste oils and solvents were reported to be reclaimed or burned as fuel supplements. Approximately 84% of the chemicals were reported to be taken to private treatment facilities. Of the waste sludges, 78% were reported to be stored or disposed of on-site at the place of generation with an additional 19% being taken to municipal landfills.

The "Pre-Inventory Checklist", which is the first step in the compilation of the "Inventory", developed by DEP for the General Assembly, contained a listing of several thousand potential hazardous waste disposal sites located in virtually every single town in Connecticut. With the horrors of Love Canal still fresh in everyone's mind, the Connecticut 208 program recognized the need for a massive public information program to present the potentially explosive information in understandable and reasonable light.

What was needed was a screening device to separate out the real problem sites from that very large percentage of locations that in all probability would pose no threat to health or safety. It was determined that an uncomplicated manual could be developed which could be applied at the local level by town health officials. The manual, entitled the "Hazardous Waste Site Evaluation Manual", would provide an overview of the project and a step-by-step procedure for site evaluation.

The 208 staff also conducted training seminars around the State to serve the dual purpose of briefing local officials on their role in handling the hazardous waste problem, and allowing local citizenry, and the media, to understand exactly what the "Pre-Inventory Checklist" entailed.

In order to reach the widest possible audience, seven seminars were planned across the State. The locations were selected representing major industrial areas, as these areas would probably contain scores of the sites on the "Checklist" and also represented a major labor market centers. Carrying this message across the State also emphasized that this was a common, local problem.

DEP sent copies of the "Checklist" to local officials on Monday, February 11, 1980. The first 208 workshop was held on Thursday, February 14. Nearly 100 members of the press, public, and local and State officials listened as DEP Commissioner Stanley Pac and 6th District Congressman Toby Moffett kicked off the opening session.

A majority of local elected officials and health officials in the State of Connecticut attended the training workshops. Press coverage of the DEP Checklist and the 208 training sessions was better than anyone had hoped. As a result, the public reacted calmly and reasonably to the listing of sites.

As far as the 208 Program and DEP were concerned, the entire effort was an outstanding success. There had been none of the fear, chaos, and panic that had marked the Southington episode. The major achievement of the workshops and Manual lay

in the fact that a negative situation had been turned into a positive one.

Instead of an adverse reaction from the public and especially the local officials, an overwhelming sense of cooperation in solving a common problem began to develop. The manual and training sessions provided the techniques and the lines of communication necessary to carry out an orderly and efficient site review.

In May, 1980, the Connecticut General Assembly passed an Act Concerning Hazardous Waste Facilities. This Act, which had been drafted by the 208 program, constitutes landmark legislation in that it provides the mechanism for siting a hazardous waste treatment and disposal facility in the State of Connecticut.

While the General Assembly considered the recently passed siting legislation, support was engendered from both industrialists and environmentalists. Here was a coalition of traditional opponents, working to solve a common problem. The Connecticut 208 Program is proud to have served as a facilitator to such an alliance. This is ultimately the success achieved in Connecticut.

The problem, though, is still not solved. Until facilities are constructed to properly treat and dispose of Connecticut's hazardous, industrial wastes, the threat of a potential environmental problem is still a very real possibility.

In May of 1980, William R. Adams, Regional Administrator of EPA, commended the Connecticut 208 Program for the excellent progress made in the area of hazardous waste disposal planning. Mr. Adams wrote "The critical issue of proper disposal of hazardous waste is of priority concern not only to Connecticut, and the New England Region, but to the entire nation. The Connecticut 208 program has provided essential and timely hazardous waste planning and analysis for the State of Connecticut; in many cases, Connecticut's innovative approaches in hazardous waste disposal planning will be providing the leadership to the New England Region."

For further information on the Connecticut 208 Program dealing with hazardous waste disposal and groundwater protection contact:

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From ENVIRONMENT NEWS 9/80

208 FUNDS AID HAZARDOUS WASTE EFFORTS IN NEW HAMPSHIRE

Water quality management planning provided by the New Hampshire 208 Program will aid in the process of safely securing two potentially dangerous hazardous waste dump sites. The two disposal sites, in Nashua and Raymond, were found to contain several thousand barrels of hazardous wastes which had been disposed of improperly. Both sites could pose serious threats to public health.

The Nashua site is a seven-acre sand and gravel pit containing discarded refuse, demolition material, and approximately one thousand 55-gallon drums of hazardous wastes. An additional one thousand barrels may be buried with the demolition debris. Some of these hazardous materials are polluting nearby groundwater.

The Raymond disposal site is only one-quarter acre, but it may contain as many as fifteen hundred 55-gallon drums of hazardous materials, most of them buried and possibly crushed on the site. These materials are polluting both the groundwater and surface water, and could potentially impact the drinking water supply of a nearby town.

Both sites are located near residential areas which would have to be evacuated in the event of a fire on site.

The real and immediate public health dangers which these sites posed made quick action imperative, and the Governor and Attorney General asked the New Hampshire Water Supply and Pollution Control Commission (NHWSPCC) to immediately begin a monitoring program at the sites to provide the data necessary for legal and corrective action.

The Commission was already involved in groundwater quality in its 208 water quality management planning program, and was able, with EPA concurrence, to utilize some of those 208 funds to quickly install test wells at a site. The test wells were installed to determine the extent of the groundwater needed by State officials to determine the strategy for the pollution control efforts.

The New Hampshire 208 Water Quality Management Program is funded under Section 208 of the Federal Clean Water Act. The 208 process gives the U.S. Environmental Protection Agency (EPA), the States, and local governments a potential means of solving some of the complex water quality problems where simply applying standard waste treatment technology might not do the job. The 208 process helps states and local governments find integrated solutions that deal with both environmental and developmental matters.

Data from the test wells installed through the 208 program confirmed the public health threat, and the State was then able to proceed with further legal action.

The next step was an assessment of the best interim and final methods to clean up and close the sites.

Again, the State 208 program, in cooperation with EPA, reacted quickly and developed the mechanisms for assembling the funds necessary for the study. The final funding package consisted fo $10,000 in 208 funds, $20,000 in Safe Drinking Water Act funds and a $120,000 emergency appropriation of State funds. More recently, EPA provided additional funds through section 104 of the Clean Water Act (CWA) to expand the data information base of the stdy. The study is now underway, and final recommendations are expected by the end of 1980.

State officials anticipate that clean-up at the Nashua site will involve complete removal of the surficial hazardous materials and closure of the site. Data from test wells at Raymond and additional surface water sampling by EPA resulted in EPA initiating clean-up action under Section 311 of the CWA. Hydrological investigations at the Raymond site in concert with the 311 action will determine the best method of closure.

State officials concede that without 208 funds they would not have been able to react as quickly as the situations required, and may not have been able to put together the final funding package to clean up the sites.

Further, the New Hampshire officials stated, the experience gained in dealing with the two hazardous waste disposal sites will enable State agencies to deal much more quickly, efficiently, and economically with similar situations in the future. Those savings, they say, will more than equal the 208 funds expended. For further information on the 208 hazardous waste efforts in New Hampshire, please contact:

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208 FACILITATES AGRICULTURAL BEST MANAGEMENT PRACTICES

As a result of 208 water quality management planning, additional programs and funds have been directed to New England rural communities. The areawide and statewide water quality management planning programs are conducted under Section 208 of the Clean Water Act and are intended to protect and improve the quality of the nation's waters. Specific areas where agricultural nonpoint source pollution causes water quality problems have been identified by the 208 process.

For many years prior to the passage of the Clean Water Act, the U.S. Department of Agriculture ran several cost-sharing programs available to farmers to implement conservation practices on farms. The Agricultural Conservation Program (ACP), was one of the principal programs available to the farmers. The 1979 amendments to the Clean Water Act called on the Secretary of Agriculture to establish and administer another program, the Rural Clean Water Program (RCWP). This program is a federal cost-sharing program with individual farm owners and operators for the implementation of best management practices (BMP's) which are in accordance with a 208 Water Quality Plan. Unlike the ACP, only those farmers within the specific areas identified as having an agricultural nonpoint source pollution problem would be eligible to participate in the cost-sharing program.

Best management practices or BMP's are those practices geared to the control of nonpoint sources of water pollution. They are formulated primarily for the improvement and protection of water quality, and secondarily for the optimization of farm productivity.

Recently, several agricultural interests in New England have benefited from the efforts of the 208 Program. State 208 planners identified watersheds in Maine, New Hampshire, and Connecticut as areas of high priority for water quality improvements. These areas applied for funding through the Rural Clean Water Program. Because of funding uncertainties of the RCWP, the applications were submitted under the ACP Program. After federal review these areas were selected from a nationwide competition as ACP Special Project areas and were granted additional money from the ACP National Reserve Fund.

Aroostook County, Maine, received an additional $300,000 from ACP to investigate and eliminate nonpoint source pollution due to agricultural erosion and sedimentation. The Little River Watershed in Connecticut has received an additional $80,000 from the National Reserve Fund and Cheshire County, New Hampshire has received $25,000. Water quality management plans in both Cheshire County and the Little River Watershed are being prepared to reduce water quality problems resulting from animal wastes.

The implementation of best management practices will benefit the farmer, his customers, and the environment. The plans being developed will be more cost effective and environmentally sound as

they are directed toward water quality improvements. The programs in Connecticut and New Hampshire will enable the farmer to manage application of manure in order to maximize the amount of nutrients retained on the farmland and minimize the pollution of local waters. Implementing the BMP's developed by the Maine program will reduce soil erosion and sedimentation from agricultural lands thus preventing fertilizers and pesticides from entering nearby waters.

The successful implementation of these necessary practices can be attributed to the assistance of the 208 planning process and its role in identifiying such nonpoint source pollution problems. For further information on these 208 activities, please contact:

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From ENVIRONMENT NEWS 3/80

VERMONT 208 PROGRAM ESTABLISHES LOGGING EROSION CONTROL PROCESS WITH TIMBER INDUSTRY

Due to the rising demands for both timber products and firewood, Vermont's forests are coming under increasing pressure. Soil erosion and the resulting degradation of water quality are serious adverse impacts that can result from careless timber harvesting practices. Since approximately 75% of Vermont's land area is considered commercial forest land, minimizing erosion from silvicultural practices is essential to the State water protection program.

In developing Vermont's Water Quality Management Plan, State 208 Water Quality Planners identified silvicultural runoff as a priority problem to be addressed in the planning process. The aim of the water quality management planning is to identify the sources and the extent of water pollution and to identify the methods of controlling nonpoint source pollution resulting from silvicultural activities in Vermont.

In a unique effort to control erosion from logging jobs, the Vermont 208 Program worked out an educational program and self-policing agreement between the Vermont logging industry and the State Agency of Environmental Conservation. The 208 Water Quality Management Planning Program is a result of the Federal Clean Water Act (CWA) of 1972. The CWA provides a series of programs intended to protect and improve the quality of the nation's waters. Specifically, Section 208 of the Act calls for the development of areawide water quality management plans designed to control complex water quality problems. Designated 208 planning areas within each state work with the state water quality management agency and the EPA to develop areawide plans which delineate a course of implementation and management of water quality programs.

In 1977, the Secretary of the Vermont Agency of Environmental Conservation appointed the 208 Forestry Runoff Committee and made them responsible for developing a silvicultural nonpoint source plan. The Committee was to identify the problems, examine the research data, review the adequacy of existing laws and regulations, and recommend implementable solutions for controlling nonpoint source foresty runoff. The recommendations developed by this study were the basis of the Vermont 208 Forestry Plan. The Vermont 208 Forestry Plan was then certified by the Governor and approved by EPA in 1979.

Under the State Water Quality Plan for Controlling Silivicultural Non-Point Source Pollution, the Vermont Timber Truckers and Producers Association (VTTPA) divided the state into three sections and elected a three-man committee in each section. All complaints concerning a logging related water quality problem are referred to the Chief Water Resource Investigator at the Agency of Environmental Conservation. If the problem is sufficiently serious, the Vermont Timber Truckers and Producers Association is notified and the three-man VTTPA committee visits the logger responsible for the complaint to encourage him to resolve the problem with appropriate erosion control practices. Within four days of receiving the initial complaint the

committee chairman notifies the Chief Water Resource Investigator and describes the results of the meeting with the logger. The State Water Resource Investigator only becomes involved in onsite visits to loggers when the logging industry's self-policing effort is unsuccessful in bringing about a solution. This self-policing program began immediately after the Governor signed the State Water Quality Plan for Controlling Silvicultural Nonpoint Source Pollution on July 5, 1979. Since then committees have met with loggers on many occasions and satisfactorily resolved water quality problems by encouraging the use of best management practices.

Although the program has not been in effect long encough to judge its overall effectiveness, state water resource investigators have reported a new attitude and higher level of responsibility on the part of loggers who have been contacted. Problems encountered have been resolved quickly and efficiently.

A second part of the Silvicultural Plan calls for a vigorous educational and informational approach. There are four projects involved in this section. The first is a standard erosion control handbook for loggers, landowners, VTTPA committeemen and Water Resource Investigators. The second is a series of erosion control workshops for loggers and landowners. The third element in the educational portion of the plan is a program of television, radio, newspaper and newsletter coverage of the problems and solutions; the fourth is the circulation of model timber sale contracts.

One important component of the educational approach to reduce erosion is the development of best management practices (BMPs) in the form of non-mandatory guidelines. BMP's are those practices geared to the control of nonpoint sources of water pollution. They are formulated primarily for the improvement and protection of water quality and, with respect to silviculture, secondarily for the optimization of forested lands. The guidelines include a review of existing State laws, the resources available for technical assistance, and specificatons for construction design and layout of erosion control devices.

Workshops for loggers were held in 1978 and 1979 as a means of providing technical information, demonstrations, a review of legislation and assistance regarding the control of non-point source runoff control from logging activities in the state. Evaluation forms completed by workshop particpants revealed the huge success of these activities. One survey revealed an increased application of best management practices following a logger workshop.

Vermont intends to continue its present program with the expectation that the documented increase in the use of best management practices will continue to occur with gentle prodding through self-policing and intensive educational program. Such an increase will consequently improve the water quality of the area by eliminating the deleterious effects of silvicultural runoff.

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From ENVIRONMENT NEWS 10/80

WATER QUALITY PLANNERS EXPERIMENT WITH THE RECYCLING OF SEPTAGE AS FERTILIZER

Many Massachusetts communities suffer from the lack of an approved method of septage disposal. The Town of Gill, in western Massachusetts, is one such town. The success of their innovative water quality plan concerning the land application of septage was due primarily to Section 208 of the federal Water Quality Pollution Control Act Amendments of 1972.

The Clean Water Act (CWA) provides a series of programs intended to protect and improve the quality of the nation's waters. Specifically, Section 208 of the Act calls for the development of areawide water quality management plans designed to control complex water quality problems. Designated 208 planning areas within each state work with the state water quality management agency and the EPA to develop areawide plans which delineate a course of implementation and management of water quality programs. After being approved by the local communities, the state and EPA 208 plans serve as the blueprint for all regional water quality related activities.

The septage which must be dealt with is the material which is pumped out of individual septic tanks. The preferred method of disposal has been co-treatment in municipal wastewater treatment plants along with sewage from sanitary sewer lines. However, many communities with such plants are begining to refuse wastes from neighboring towns, due to biological incompatabilities between the added septage and the sewage already in the system.

The Town of Gill, although it has access to the Montague treatment facilities, decided to attempt a pioneer recycling of septic tank material. Alan Sharaf, the Director of the Franklin County Planning Department, a non-designated 208 area agency, was the primary force in the realization of this project. Sharaf, along with Malcolm Hill of the Franklin County Cooperative Extension and the Gill Board of Health, developed and implemented a plan for land application. The initial funds were provided by Section 208, and the County's Water Quality Advisory Board lent additional support, also a result of 208.

Septage from Gill, Montague and surrounding towns is brought to an isolated 300 acre lagoon off River Road in Gill by six area septage hauling companies. The facility is designed to hold a maximum of 200,000 gallons of septage. During this one year demonstration, septage will be collected from September to April and stored in the lagoon. It will then be applied to agricultural land in April where it will fulfill the nitrogen requirements of a silage corn crop. Septage will continue to be collected from April to September and after the harvest will again be applied to support a cover crop of rye.

Septage will be analyzed by the State Department of Environmental Quality Engineering (DEQE) Laboratory in Lawrence prior to application for heavy metals, pathogens and nutrients. Heavy metal content will be monitored but is not expected to be a problem since it is significantly below that of industrial wastewaters. Pathogens can be rendered harmless by proper management practices. Test wells have been dug and will be monitored to prevent groundwater pollution and the lagoon is isolated enough so not to cause an odor problem.

A complete analysis of this project will be available from the 208 agency in the fall of 1980. Such results will be used to help clarify and develop state policy and guidelines for the land application of septage that may open the way for recycling the nutrients contained in it. The Massachusetts DEQE hopes that the results of this project will demonstrate that the land application of septage is an environmentally sound, cost-efficient septage alternative for certain communities.

A state policy concerning land application will be an important product of the 208 program in that it will be an attractive option for communities without access to wastewater treatment plants and also those that have expressed an interest in enlightened resource management practices.

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From ENVIRONMENT NEWS 12/79

DEVELOPING SEPTAGE DISPOSAL POLICY IN MASSACHUSETTS

During the development of the Massachusetts Water Quality Management Plan in 1979, the state Department of Environmental Quality Engineering (DEQE) recognized that the lack of state - approved septage disposal sites was creating a major water quality problem. Illegal and unmonitered septage disposal practices caused pollution of both ground and surface waters of the Commonwealth of Massachusetts. Septage is the treatment residue from septic systems.

Therefore, DEQE proposed to develop a comprehensive state-wide septage management policy as the first step in resolving this problem. EPA also recognized the need to develop such a policy and provided DEQE with Section 208 Water Quality Management Planning funding to assist in the actual development of the policy.

This Water Quality Management Planning funding is authorized under Section 208 of the Clean Water Act. The Act provides a series of programs intended to protect and improve the quality of the nation's water. Section 208 specifically calls for the development of areawide water quality management plans designed to control complex water quality problems.

In 1978, the DEQE 208 staff organized the Septage Task Force composed of staff from various state and local agencies and charged the task force with developing the framework for policy formulation. The task force approved a method for projecting septage generation, reviewed the issue of septage handling with Construction Grants Program personnel and developed a comprehensive state policy for septage disposal.

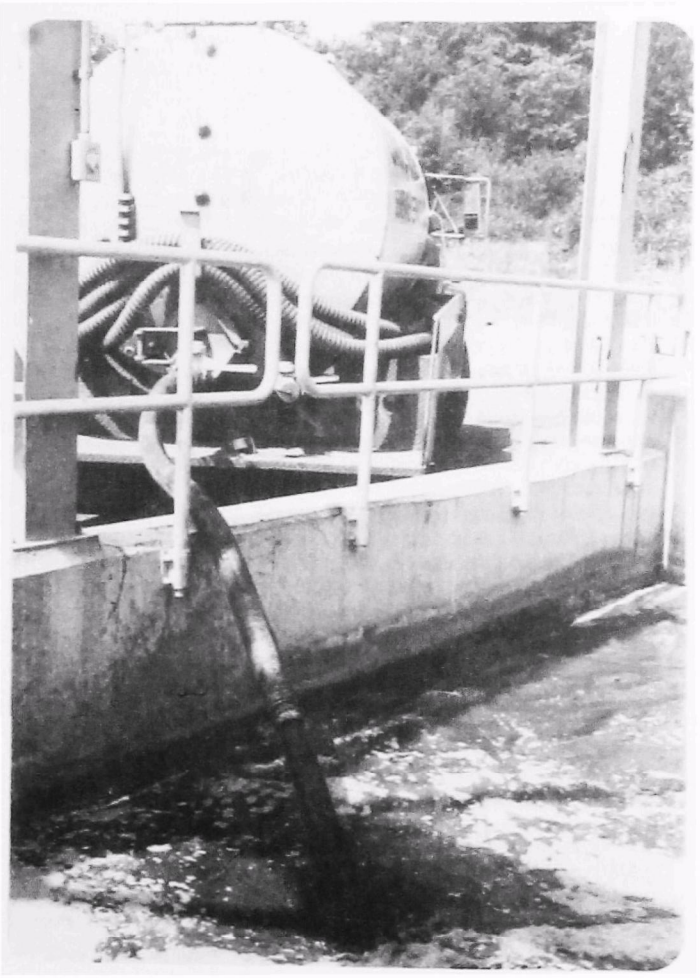
The septage disposal policy developed through the 208 program addressed four key issues. The first point is the identification of co-treatment of septage at wastewater treatment plants as the preferred method of septage disposal in the state.

The second concerns the guidelines that are being developed by DEQE for those areas where co-treatment of septage is not possible, desirable, cost-effective or for some other reason not the preferred option of septage management. The guidelines will include acceptable alternative septage treatment technologies and will specify the safeguards that must be taken in order to avoid ground and surface water pollution, nuisance conditions or other detrimental impacts of an alternative septage management technology.

The third issue is the continuation of research and demonstration efforts for both improved septage handling facilities at municipal sewage treatment works and alternative methods of septage treatment. The fourth and final point of the policy is a result of the time necessary for the implementation of the first three points. During the several years it will take to institute preferred septage disposal methods, alternative temporary solutions to septage treatment will be enacted. Such temporary methods include aerobic and anaerobic lagoons and/or other facilities that will provide adequate treatment of septage. Guidelines to regulate these temporary solutions are also being developed by DEQE.

DEQE has transmitted this policy to EPA and has asked DEQE regional staffs to distribute the policy to boards of health and treatment plant operators. The layout of this policy is only the first step in developing a comprehensive state-wide plan to deal with septage disposal in Massachusetts. Because of this, the Commissioner has asked the DEQE Division of Water Pollution Control to undertake several activities. These projects will be conducted by the original task force set up for the purpose of developing the policy.

The first activity is to collect available data regarding the capability of existing and proposed publicly owned treatment works to accept and treat septage for current or expanded service areas. The second calls for an examination of equitable mechanisms in order to induce towns to accept septage from neighboring towns, where the technical capability exists to do so. The third will be to develop or collect model Memoranda of Understanding for formalizing arrangements between towns. And fourth, the Commissioner has requested that the task force develop regulations for acceptable alternative septage management practices for application where co-treatment is not possible. The 208 program is also involved in this latter aspect of the policy. The 208 program has provided



both funds and technical studies to assist in the attainment fo DEQE's goals.

DEQE Commissioner Anthony Cortese recently stated that "the development of this policy is an important step in alleviating the water quality problem resulting from unapproved septage disposal sites. Until this policy existed, the state had requested the cessation of unregulated disposal, but a clear statement regarding a preferred alternative had not been available. This policy will enumerate the options available, direct towns to neighboring plants that will accept their waste and eventually lead to an environmentally, economically and politically sound procedure for septage disposal." For further information please contact:

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From ENVIRONMENT NEWS 7-8/80

THE DEVELOPMENT OF A SEPTIC SYSTEM INSPECTION/ MAINTENANCE PROGRAM ON MARTHA'S VINEYARD

Martha's Vineyard is a 100 square mile island lying five miles off the coast of Cape Cod, Massachusetts. The Island is divided into six towns each of which has its own government. The local economy, once based on farming, now centers on tourism and services, and construction as it relates to the resort industry. Each summer, the tourist population swells the normal year round population of 9,000 to 54,000.

The tourists come to Martha's Vineyard because of its beauty, its unhurried way of life, and its high quality water. Martha's Vineyard currently has high quality groundwater to drink. It has over 60 miles of beaches and approximately 3,000 acres of shellfish area open to the general public. The residents of Martha's Vineyard have expressed a strong desire to protect these valuable resources. In future years, year-round population will increase, more homes will be built, and more tourists will visit the Island to escape from the traffic and pressures of the mainland. The current absence of major water quality problems, coupled with increased pressure on its water resources emphasized the need for good water quality management planning. The impetus for such planning was Section 208 of the Clean Water Act (CWA) of 1972. Through the CWA, local areas, such as Martha's Vineyard were provided a unique opportunity to plan and develop a comprehensive program to protect their water resources. Since all water supplies are drawn from wells in groundwater underlying soils of high porosity, it is necessary to regulate the materials placed above such resources.

The initial 208 study identified land use zoning, on-lot disposal systems, the siting of fuel storage facilities, solid waste disposal facilities, septage disposal sites, large wells, and other activities which were existing or potentially harmful to its water resource. The Martha's Vineyard 208 study has initiated programs to mitigate each of these problems.

The 208 Water Quality Management Plan revealed that due to "improper design, installation and maintenance, on-lot disposal systems are undoubtedly the most serious threat to the Island's ground and surface water". Except for the downtown area of Edgartown, Martha's Vineyard residents rely primarily upon 7,000 septic system and cess pools for treating their wastewater. The downtown business districts of both Oak Bluffs and Tisbury experience problems of failing or inadequate septic facilities. The problems are principally due to location on small lots which do not allow for expansion or rehabilitation of the system, or to very limited elevation above the groundwater table. For these two areas, the 208 study recommended limited wastewater collection and small wastewater treatment facilities. For the remainder of these two towns as well as the Towns of West Tisbury, Chilmark, and Gay Head, the Marth's Vineyard Commission had determined if on-lot disposal systems are properly sited and cared for, and, if densities of disposal systems are appropriate, it is entirely possible to utilize these systems into the foreseeable future without adverse impacts on the Island's water resources. This solution is by far the most economical solution to Martha's Vineyard's wastewater problems.

To implement these recommendations, the Towns of Oak Bluffs and Tisbury have retained the services of consultants to develop cost-effective solutions for those areas of their towns that need sewering. The Martha's Vineyard Commission received an additional one-year 208 grant to work with local Boards of Health to help initiate a septic system inspection and maintenance program. This program is intended to limit the need for sewering and to help ensure that septic systems function properly and protect the water resources in the remainder of Oak Bluffs and Tisbury as well as the Town of West Tisbury, Chilmark, and Gay Head. A minimum of four factors which affect the operation and expected life of subsurface disposal systems were addressed by this program. They include location, design, installation and maintenance.

The first problem that had to be solved was to find an environmentally safe way to handle septage. The five towns had no acceptable way of handling their septage and were disposing of it at open pits at their respective town landfills. Tisbury was especially vulnerable, as its septage pits were located within 600 feet of the town's public water supply well. Massachusetts Department of Environmental Quality Engineering (DEQE) has been putting pressure on the five towns for many years to provide adequate septage treatment and disposal facilities. This pressure by the State was based not only on their concern for water quality but also their concern for public health and safety. Massachusetts DEQE had advised each of the towns, informally, that they must cease disposing of septage in landfill receiving pits. The consultants for two towns are currently evaluating long-term solutions for septage disposal. It will take several years to develop and implement these solutions. In the interim, the local Boards of Health were quite hesitant to become involved in an inspection/maintenance program until there was an acceptable way to handle septage. To overcome this obstacle, the 208 manager for the Martha's Vineyard Commission worked with the local Boards of Health to find environmentally safe interim solutions for septage disposal. This effort has been quite successful. Massachusetts DEQE has approved interim solutions for temporary septage lagoons in Tisbury and West Tisbury and is currently reviewing a proposed interim solution for Oak Bluffs. Chilmark and Gay Head are disposing of their septage in a sealed lagoon that does not impact its water resources.

With environmentally acceptable interim solutions for septage disposal, the local Boards of Health were quite enthused to work with the Martha's Vineyard Commission in developing inspection and maintenance programs. The next task the 208 manager undertook was to work with the local Boards of Health to help them develop the expertise to ensure all new septic systems are properly designed, sited, and installed. The final task dealt with developing an inspection/maintenance program in the five towns designed to detect and correct failing systems and to continue the operation of those systems which are working adequately. The emphasis of this septic system program was placed on strict adherence to Title V of the Massachusetts Environmental Code. In order that the Boards of Health might better understand the requirements of the Code, and consequently apply them in their decision-making, the 208 manager launched an educational program for the Board members.

As a result of the 208 grant, a plan was developed outlining priority septic system inspection areas in all towns. An inspection form was designed and a workshop for sanitary inspectors was conducted demonstrating percolation tests, deep observation holes, and other Environmental Code requirements.

The need for a continuing septic system maintenance program was stressed and initiated.

A filing system was initiated with the local boards of health to record the physical properties of each septic system and the frequency of pump outs. Point of origin pump out certificates are being issued by the boards of health for this latter purpose. The intention is to identify failing and near-failing systems by means of pump out frequency.

"Septic Systems and their Maintenance", a manual for property owners, board of health members, pumpers, and installers was written, printed, and distributed in quantity. There have been many favorable comments regarding this publication because it is readable and useable by local residents and public officials.

Tisbury has become the model town on the Island for this program. With the completion of its septage disposal facility, it is recording pump outs, analyzing frequencies, and following up potential failures. It is in the process of sectioning the town into a mandatory pump out frequency schedule based upon the incentive of a tax rebate for performance. The Board of Health has also been successful in regulating and containing problem installations.

The Town of West Tisbury instituted a pump out permit program in July of 1979 with the installation of a make-shift septage disposal facility.

The Town of Chilmark instituted a pump out permit system this past spring. Such a system checks to make sure that individual homeowners periodically clean out their septic systems. The Board of Health sends out cards that must be completed by the firm that does the pumping. This program hopes to prevent overloading and back up of the systems and the consequent groundwater pollution. The inspection/maintenance program in this town is effective and is conscientiously administered by the Board of Health.

The Town of Gay Head shares a qualified septic inspector with Chilmark. This town's Board of Health has a strong commitment to the State Environmental Code. Failures and questionable applications for disposal works construction permits are worked through private engineers. No pump out permitting program has been begun, but it is on the Board's agenda.

Oak Bluffs has a serious septage disposal problem which precludes emphasis on maintenance pumping. The design of a facultative lagoon system was approved by the local Board of Health and sent to the State DEQE. Construction is expected to begin this summer and upon its completion, the pump out monitoring program, begun last year, can be reinstated.

The instituation of these inspection/maintenance/rehabilitation programs in the Towns of Martha's Vineyard represent an important step in controlling water pollution on the Island. Each program is effective and each successful resolution strengthens the 208 program through local experience. The continuing success of the 208 program ensures that the waters of the Island will remain drinkable, fishable, and swimmable.

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From ENVIRONMENT NEWS 11/80

APPENDIX

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