

CHAPTER 10

CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

Many Cape Cod communities are struggling with the technical, legal and financial issues associated with providing comprehensive wastewater management. To begin to address these concerns, Barnstable County has established a regional Wastewater Implementation Committee (WIC) as a forum for sharing information, funding municipal planning studies, and participating in the development of a regional wastewater strategy. The WIC is comprised of representatives from each of the Cape's 15 towns, as well as various agencies and environmental groups. An important component of the regional effort championed by the WIC is the development of planning, legal and administrative guidance to the towns on wastewater issues, including the potential role of wastewater management districts.

Barnstable County, through the WIC, has funded this analysis of planning, administrative and legal tools to improve wastewater management on Cape Cod. This study has been conducted by a Working Group, led by Wright-Pierce and subconsultants Teal Ltd and CLF Ventures, and comprising town, Barnstable County and Cape Cod Commission staff that have advanced the project through several phases. First, an inventory was developed of existing wastewater infrastructure, and current regulatory programs were evaluated. In the second phase, the Working Group identified those aspects of current programs and policies that are hurdles to more effective management. Next, we identified specific enhancements to existing programs and proposed new programs to supplement them. In the fourth phase, those existing and potential tools were applied to four towns as case studies. Through the case studies, several important tools were fine-tuned and further developed to be available to other towns.

Proper wastewater treatment and disposal is needed to:

- Protect public and private water supply wells,
- Prevent unsanitary conditions,
- Avoid nutrient contamination of fresh and salt water resources,
- Preserve community character, and
- Support sustainable development.

While the recommendations of this report cover all of these fundamental areas, the greatest emphasis is on those tools that towns can use to control nutrient enrichment, a still evolving field in wastewater management.

EXISTING WASTEWATER FACILITIES

Cape Cod has 5 **centralized** wastewater facilities (the municipal plants in Falmouth, Barnstable, Chatham and Provincetown and the federal facility at Otis), over 40 **satellite** plants (serving schools, nursing homes, commercial developments, condominium projects, etc.), a handful of **cluster** systems, and over 120,000 **individual on-site** systems. **Enhanced treatment**, necessary to address nutrient issues, is in place for less than 15% of the 70 million gallons of daily capacity of these wastewater systems. Two regional facilities (Yarmouth and Tri-Town) receive and treat septage and the sludge removed from satellite plants. Chapters 2 and 3 provide definition of these terms and details of the size and location of these facilities.

APPLICABLE PLANNING, FUNDING AND REGULATORY PROGRAMS

Towns use **Title 5**, the state sanitary code, to address the fundamental sanitary aspects of on-site wastewater disposal. Towns develop **comprehensive wastewater management plans** to assess needs; identify and evaluate options for collection, treatment and disposal; identify and acquire treatment and disposal sites; and formulate implementation plans. The **Massachusetts Estuary Project (MEP)** is undertaking comprehensive studies of 89 embayments that will determine their threshold nitrogen loads and serve as the basis for nutrient control programs developed through comprehensive planning. The DEP provides low interest loans for eligible public wastewater facilities through its **State Revolving Fund**. DEP also licenses facilities with design flows over 10,000 gallons per day through its **Groundwater Discharge Permit Program**. The Cape Cod Commission assists towns in adapting the standards of the **Regional Policy Plan** into local comprehensive plans, and regulates wastewater issues at Developments of Regional Impact. Chapter 3 provides further description and discussion of these programs.

CURRENT CHALLENGES TO EFFECTIVE WASTEWATER MANAGEMENT

Among the challenges faced by towns in effectively managing wastewater are the following:

1. Comprehensive wastewater management planning is a lengthy, expensive and often controversial process. While that planning process is underway, local boards are often uncertain about continuing their usual permitting practices for on-site systems. Often there is a desire to institute interim measures to begin to address perceived problems before planning is complete.
2. Individual enhanced treatment systems have been viewed as a panacea for real or perceived problems with nitrogen loading, and are routinely required by one or more local boards, whose members may not be aware of their limitations. These systems generally do not provide the degree of nitrogen removal that is expected, or that collectively may be needed to protect sensitive embayments.

3. Suitable sites for wastewater facilities are rapidly being developed for residential, commercial or municipal uses. The lack of timely progress in comprehensive planning may be significantly limiting municipal options for siting wastewater treatment and disposal facilities.
4. Many of Cape Cod's stressed embayments receive nitrogen loads from more than one town. The lack of coordinated and synchronized planning efforts among towns may preclude the most cost-effective solutions or delay their implementation.
5. There are over 40 satellite treatment plants on Cape Cod, many designed built and operated by private developers. These facilities are typically developed outside the municipal wastewater planning process, and are potential assets as municipal infrastructure.
6. Affordable housing projects built under MGL Chapter 40B are not subject to locally-imposed wastewater treatment and disposal regulations that are more stringent than state requirements. Wastewater disposal from these projects may be contrary to the water quality needs of freshwater ponds and coastal embayments.
7. Towns must be careful in predicting wastewater volumes and nitrogen loading at build-out conditions, particularly with respect to seasonal occupancy and how seasonality may change in the future. There is the risk of either "under-building" or "over-building" facilities if build-out projections are not carefully prepared.
8. Under current state law, towns cannot deny the application of a property owner to connect to a town sewer if that property abuts the street in which the sewer is located. Without special legislation, towns are unable to implement "checkerboard" sewer systems designed to serve selected individual lots, especially those that cannot meet Title 5 requirements.
9. Towns typically recover a portion of the costs for wastewater infrastructure through betterment assessments. Betterment can be assessed only against those properties that are directly connected to the public facilities. Properties not connected to municipal infrastructure, even if they are sources of nitrogen loading in the watershed, cannot be charged betterments.

Chapter 5 provides further discussion of these challenges.

RECOMMENDED SOLUTIONS

After extensive evaluation of these problems and discussion of a range of possible solutions, the Working Group developed a number of recommendations. A summary of these recommendations follows, categorized by the entity which should take the lead in implementing them. We recommend that either the towns, Barnstable County or DEP take the lead role in addressing these recommendations. (Barnstable County and DEP logos are used to highlight their recommended roles, without implying any formal approval by these entities).



Action that **towns** should take include:

1. Towns should do whatever is necessary to accelerate comprehensive planning for wastewater management. *Section 5A*
2. Towns should undertake wastewater planning tasks in advance of, or concurrent, with studies underway in the Massachusetts Estuaries Program: *Chapters 5 (A, B, E, I, K) and 6*
 - Involve town planners in integrating wastewater issues with overall town growth plans to ensure a growth-neutral approach;
 - Identify prospective growth centers and estimate sewer needs;
 - Plan for affordable housing projects;
 - Evaluate water use data as a tool for determining seasonality and conducting build-out analyses;
 - Establish a mechanism for escrow accounts for deferral of private expenditures;
 - Identify prospective sites for wastewater treatment and disposal; and
 - Consider earlier-than-build-out planning horizons, phasing, and their impact on reserve capacity.
 - Consider implementation of interim water quality goals.
3. Boards of selectmen should review and fine-tune their town's short-term approach to wastewater management to: *Chapter 5 (C, D and K) and Chapter 8*
 - Ensure coordination among local boards;
 - Promote inter-town cooperation where appropriate; and
 - Begin to consider long-term organizational structures, including management districts.
4. Towns should adopt a local bylaw or regulation on private cluster systems and satellite plants that will: *Section 5B, Chapter 7 and Chapter 9*
 - Require evaluation of cluster systems for projects with flow greater than 2,000 gpd;
 - Require a consistent engineering basis for estimating design flows;
 - Require consideration of the town's wastewater planning activities and the treatment of wastewater from nearby areas;
 - Establish design and construction standards;
 - Require discussions on potential town ownership; and
 - Establish a town role in the oversight of plant operations.
5. Towns should undertake a comprehensive analysis to evaluate, rank and acquire potential sites for wastewater facilities. This should be a hierarchal approach that, in general, ranks disturbed open space first, followed by joint use of developed open space, vacant undeveloped land and, last, land formally set aside as open space. *Section 5H and Ch. 6*

6. Towns should evaluate and develop regional solutions where appropriate, with support from the County and DEP, including: *Sections 5D and 5K*
 - Participate in the Barnstable County Wastewater Implementation Committee; and
 - Evaluate the feasibility of a County-wide entity as proposed by APCC/Business Roundtable; and
 - Consider wastewater management districts and districts of critical planning concern.
7. Towns should educate the public on the importance of regular pumping of individual systems and ensure proper handling of wastewater residuals by: *Section 5L*
 - mandating regular pumping and proper disposal of waste solids from cluster and satellite plants; and
 - making long-term arrangements with septage treatment facilities or centralized plants with septage handling capability.



COUNTY

Barnstable County should take a lead role in the following:

8. The County should continue to support the Wastewater Implementation Committee as an important forum for discussion of regionally-consistent wastewater management plans and public education. *Section 5D*
9. The County should continue to participate in and support the Massachusetts Estuaries Project in its work to provide science-based management for the protection and restoration of Cape Cod's coastal embayments. *Section 5D*
10. The County should continue to actively participate in and provide regional input on DEP's efforts to develop new regulations and policies on all wastewater management issues on Cape Cod, and continue to support towns' development of related regulations and bylaws. *Section 5D*
11. The Cape Cod Commission should expand its application of a uniform regional approach in identifying nitrogen sensitive areas to assist towns in interim planning in advance of completion of studies under the Massachusetts Estuaries Project. The Commission should also identify watersheds where wastewater management districts could be effective. *Sections 5A, 5I and 5K*
12. The County should take the lead role in working with the legislative delegation to modify MGL Chapter 83, Section 3 to allow checkerboard sewer systems when part of an adopted comprehensive wastewater management plan. *Section 5F*
13. The County should expand its program for oversight of enhanced treatment systems and work with the towns to develop a standard agreement that provides for town-imposed fees to be passed on to the County. *Section 5J*



DEP

The **DEP** should undertake the following actions:

14. DEP should amend its guidelines for small wastewater treatment facilities to: *Section 5B*
 - Allow a consistent engineering design basis for estimating design flows; and
 - Promote consideration of local wastewater planning issues (changes in DEP guidelines have been recently put in place)
15. DEP should modify its requirements related to groundwater discharge permits to:
 - Require consideration of town wastewater planning issues; and
 - Modify the fee structure, review period and monitoring requirements for smaller projects. *Section 5B*
16. DEP should modify the SRF program to allow eligibility of costs for town purchase of private facilities and costs for early planning activities. (DEP has indicated informally that SRF funds may be used for these purposes.) *Section 5B and Chapter 7*
17. DEP should modify its site assignment policies as they may relate to town take-over of private satellite plants. *Section 5B and Chapter 7*
18. DEP should amend Title 5 to allow the establishment of Nitrogen Sensitive Areas (without being linked to 440 gpd/acre standard) as determined through comprehensive wastewater management planning. *Section 5I*
19. DEP should support the appropriate use of innovative effluent disposal techniques. *Section 5H*

Chapter 5 of this report provides more detail on these recommendations as well as background information and discussion points. Chapter 6, 7, 8 and 9 illustrate the application of some of these recommendations in four Cape Cod towns.