



CAPE COD
COMMISSION

Wastewater Initiative

FREQUENTLY ASKED QUESTIONS

SPRING 2012

1. WHAT IS THE PROBLEM WITH WASTEWATER?

Of the 57 coastal embayments on Cape Cod, 46 of their watersheds have been assessed for the protection and restoration of declining water quality due to eutrophication. Eutrophication, the process that happens when water bodies receive excess nutrients causing an overgrowth of algae and plants, results from many factors. *The single highest contributor to the eutrophication of coastal embayments on Cape Cod is nitrogen-containing compounds in the water draining from on-site septic systems.* Nitrogen is a waste product of our bodies that is not removed by septic systems. Nitrogen from these systems is released to the groundwater, which runs underground and drains into coastal water bodies. The excess nitrogen in that water ends up spurring excess algae growth, which severely impairs coastal water quality, diminishes the growth of eel grass, and reduces the productivity of shellfish beds.

Approximately 85% of the wastewater flow into Cape Cod's embayments comes from on-site septic systems. Properly functioning septic systems do reduce the release of solids, which protects public health; however, these systems are not designed to remove contaminants such as nitrogen, which passes readily from the septic leach field into the ground. Cape Cod's very permeable, sandy soil readily accepts the water released from septic systems, which eventually enters the groundwater and makes its way to our coastal embayments, impairing water quality.

2. WHAT ROLE DOES THE COUNTY PLAY IN WASTEWATER PLANNING? WHO IS INVOLVED TODAY IN WASTEWATER PLANNING?

Barnstable County's regional government is a leader in wastewater planning for Cape Cod. Several departments and associated groups – namely, the Cape Cod Commission, the Cape Cod Water Protection Collaborative, and the Barnstable County Department of Health and Environment – have worked many decades to raise awareness of issues, to perform necessary scientific assessments, and to plan for the protection and remediation of water quality problems on Cape Cod. With the support of Barnstable County's executive branch (the County Commissioners) and legislative branch (the Assembly of Delegates), these departments of regional government work with state and federal partner agencies and the government offices of Cape Cod's 15 municipalities to identify wastewater problems and recommend solutions to keep Cape Cod's ecology and economy healthy.

The Department of Health and Environment's programs have addressed the public health aspects of wastewater for many years. The department operates a center to test alternative septic treatment methods, manages a septic loan program for homeowners, and supports municipal boards of health. Similarly, the Cape Cod Commission and its predecessor agency (the Cape Cod Planning and Economic Development Commission) has studied Cape Cod's hydrology and ecology and engaged in regional land use planning and policy making for decades. The Cape Cod Water Protection Collaborative, formed in 2005, was established by Barnstable County to coordinate and seek funding for the water and wastewater management efforts of Cape towns and the regional government.

3. WHAT IS THE REGIONAL WASTEWATER MANAGEMENT PLAN (RWMP)?

The RWMP is a plan being developed by the Cape Cod Commission and is intended to guide wastewater management. *The plan promotes regional approaches in order to reduce public investment in wastewater infrastructure and limit taxpayer expense while meeting water quality goals.* The plan promotes intergovernmental coordination and cooperation between towns that share watersheds and considers a wide range of solutions, both traditional infrastructure and sustainable "green" alternatives. The RWMP promotes consistency between land use and wastewater planning to ensure that wastewater infrastructure does not promote growth in areas where on-site wastewater disposal would have limited or prohibited such growth. The plan recommends that wastewater planning ensure adequate wastewater infrastructure for areas identified for future growth (including Economic Centers, Village Centers, Industrial Service and Trade Centers) and adopt zoning and other land use regulations to prevent growth due to new wastewater infrastructure outside of identified growth areas.

The Cape Cod Commission's work on wastewater management planning intensified during the last several years as the Massachusetts Estuaries Project scientifically documented the severity of the impacts of excess nitrogen from wastewater in Cape Cod's embayments. As part of the regional wastewater management planning process, the Commission and partners are currently working toward development of an interactive, flexible application that will allow users to input variables and test scenarios (including gray and green infrastructure options) before arriving at recommendations for specific wastewater management solutions.

4. IS THERE A DIFFERENCE BETWEEN A REGIONAL PLAN AND A REGIONAL AUTHORITY?

Yes. A regional plan, such as the one being developed by the Commission, is just that – a plan that outlines solutions for our wastewater and water quality problems, identifies all of the appropriate alternative solutions, and provides some direction on how to begin moving forward in implementing these solutions. A regional authority, *if determined to be appropriate*, would take on the task of implementation of a regional effort.

5. WHAT ARE THE PROPOSED SOLUTIONS?

No single technique is going to solve Cape Cod's wastewater pollution problem. One size does not fit all, and forcing a "big pipe" solution does not make sense everywhere on Cape Cod. Instead, a mix of solutions will need to be implemented. Each possible solution requires making choices – trade-offs that balance important factors such as the effectiveness of the clean-up method and the economic cost of that method.

Besides traditional wastewater management techniques (sewers connected to treatment facilities), we can employ a combination of alternative and biological techniques – so, traditional along with so-called gray and green infrastructure – if their ecological effectiveness and economic affordability are balanced. *We foresee a mix of gray infrastructure* (for example, Title 5/IA, cluster, satellite and centralized) *along with a mix of green infrastructure* (for example, fertilizer reduction, wetland restoration/culvert widening, constructed wetlands, and others).

Although no single technique solves the wastewater problem, a unified and coordinated approach is necessary because watershed conditions and boundaries are complicated and do not follow town boundaries. By looking at solutions for each watershed, we can choose the best match that balances the most important factors in that location. Choosing solutions through a watershed approach requires thinking as regions, rather than as individual municipalities.

6. ONCE A SOLUTION IS IN PLACE, HOW LONG WILL IT TAKE TO SEE WATER QUALITY IMPROVEMENTS?

Scientists have mapped ground water travel times for Cape Cod and found that, due to our highly permeable soils, it takes less than 10 years for wastewater pollutants to reach our bays from the time that they initially enter our groundwater in most areas of the region. Once methods to control nutrients from reaching our groundwater are put in place, this information tells us *we should be able to see improvements in our coastal water quality within that 10 year time frame.*

7. OUR TOWN IS WORKING ON A COMPREHENSIVE WASTEWATER MANAGEMENT PLAN (CWMP). SHOULD WE CONTINUE TO WORK ON THIS PLAN?

Ultimately, this is a choice that only your town can make. The Cape Cod Commission is working on a Regional Wastewater Management Plan (RWMP) that approaches wastewater solutions on a regional level rather than on a town-by-town level. This does not mean, however, that work done by a town toward a Comprehensive Wastewater Management Plan is wasted effort. All CWMPs subject to review under the Massachusetts Environmental Policy Act (MEPA) are also reviewed as a Development of Regional Impact (DRI) by the Cape Cod Commission. Information gathered through the CWMP process has been incorporated into the RWMP. If a town does decide to wait for further information from the Cape Cod Commission, it is unlikely that this will put them far behind everyone else, as a draft Regional Wastewater Management Plan will be released by the Cape Cod Commission by the end of the 2012 calendar year.

8. WHAT HAPPENS IF THERE IS NO REGIONAL EFFORT AND TOWNS GO IT ALONE?

“Going it alone” would mean:

- Each town would be required to complete its Comprehensive Wastewater Management Plan (CWMP) individually, indicating its paths forward for improving water quality in the affected coastal embayments.
- Each town’s CWMP would be required to undergo review by the Massachusetts Environmental Policy Act (MEPA) Office.
- Each town’s CWMP would also be required to undergo review by the Cape Cod Commission as a Development of Regional Impact (DRI).
- Each town would need to build its own wastewater treatment facilities and take the necessary steps to improve their impaired water bodies.

“Going it alone” would result in 15 *individual* efforts, at least 15 *individual* wastewater treatment facilities, and capital, operation, and maintenance costs that would need to be covered by each individual town.