

Harwich Comprehensive Wastewater Management Plan

Frequently Asked Questions - Update

November 2, 2009

The town of Harwich is developing a town-wide Comprehensive Wastewater Management Plan (CWMP) to assess long term wastewater needs and improve the quality of the town's water resources. The CWMP will provide the flexibility to create a lasting solution by addressing the existing sources of pollution within a given watershed as well as potential sources of pollution posed by changing development patterns. The CWMP will seek to balance water quality needs with the ability to finance necessary improvements. Priorities will be set and a schedule established that will maximize the effect of any public improvements within a watershed and between watersheds.

1. What is the current status of the Comprehensive Wastewater Management Plan (CWMP)?

After a delay of several months, while the town awaited the results of the Massachusetts Estuaries Project (MEP) evaluation of the town water quality, the town has begun to receive the information required to move the project forward.

2. What is the purpose of this project?

The CWMP is an integral part of the planning process to address Harwich's long-term wastewater needs through 2025. These needs include:

- Addressing nitrogen issues that are degrading the water quality of the harbors and estuaries along the Harwich shore
- Maintaining the excellent drinking water quality in the town's 14 municipal groundwater wells
- Preserving the valuable fresh water pond resources in town
- Providing future utilities for Harwich to implement smart growth via its Village Centers Initiative
- Meeting acceptable wastewater management practices either through continued use of on-site Title 5 subsurface disposal systems or an offsite treatment and disposal process

By addressing these needs Harwich will remain a vibrant tourist community that provides a desired quality of life for year-round and seasonal residents.

3. What does this Project involve?

This project consists of two elements. One is for the MEP to identify embayments to waterways where nitrogen reductions are required. The second is a comprehensive review of current wastewater management practices in Harwich to evaluate how these reductions can best be realized. Using available information and projections, the future needs of the town will be assessed, and alternatives to address those needs will be evaluated for effectiveness, implementability, and cost.

4. Who is involved in this Project?

Several groups are involved at both the local and the state level. Locally, the Water Quality Task Force (WQTF) Wastewater Management Subcommittee (WMS) is coordinating the CWMP. This

subcommittee includes consultants, town staff, a Citizens Advisory Committee (CAC) and many other stakeholders. At the state level the Department of Environmental Protection (DEP) is overseeing the MEP, which is being prepared by the School of Marine Science and Technology (SMAST), the Cape Cod Commission (CCC), the United States Geological Survey (USGS), and several other advisory or peer review groups. The WMS is the lead group for the town, and it contracted with engineering consultant CDM for technical guidance during this process. Coordination among all the groups will be crucial to developing an implementable program that meets Harwich's needs.

5. What is the MEP?

The MEP is a program to evaluate the nitrogen impacts on 89 embayments in the southeastern part of the state, including all of Cape Cod. The MEP is funded by the communities and by the state. The SMAST is conducting the program in partnership with the local communities, the CCC, the USGS and the Department of Environmental Protection (DEP).

The purpose of the MEP is to provide an analytical means to evaluate nitrogen entering the embayment and develop nitrogen thresholds for each embayment that will restore or maintain healthy water quality. Ultimately, the MEP will develop an acceptable Total Maximum Daily Load (TMDL) for nitrogen that can enter the embayment. Under the Federal Clean Water Act, the Environmental Protection Agency (EPA) and DEP have the power to require communities contributing nitrogen to the particular embayment to meet the TMDL.

6. Why is nitrogen an issue?

Nitrogen deposited in an estuary or bay acts as a fertilizer and stimulates the over production of algae in the salt water. The algae can become so dense that desirable eel grass beds, shellfish resources, and overall water quality (as well as boating, swimming and overall aesthetics) are negatively affected. Also, reduced light penetration affects healthy plant growth, and decaying plants and algae settle to the bottom, using up oxygen in the water, often resulting in fish kills and odors. If nitrogen is allowed to continue to flow to the embayments at excessive levels, the embayments will become severely degraded.

Nitrogen enters the embayments from several sources, including wastewater effluent from on-site septic systems, infiltration from lawn and garden commercial fertilizers, stormwater run-off from pavements and roofs, and atmospheric deposition. Nitrogen from these sources enters the groundwater or surface waters that ultimately discharge to the embayments. The first three sources are considered to be controllable while the direct atmospheric deposition is not. Title 5 septic systems only remove about 10 percent of the nitrogen entering them while more sophisticated on-site nutrient removal systems can remove up to about 50 percent nitrogen. Studies on the Cape have shown that nitrogen entering the embayments from septic systems account for 75 to 85 percent of the controllable source.

7. Why does Harwich have to do this?

Harwich representatives and residents understand the need to address this nitrogen issue to maintain the quality of life in town. DEP will also be establishing a TMDL for each embayment once the MEP report has been finalized for each. That will require the town to implement a plan to remove the required amount of nitrogen to restore the water quality of the particular embayment. The town is moving forward now with the CWMP so it can develop the appropriate plan on its own timeline rather than on a DEP schedule. The abutting towns of Chatham, Orleans, Brewster and Dennis are all in various stages of completing CWMPs to address the nitrogen issues in their communities. All the other

Cape Cod communities are doing similar CWMPs. Some watersheds are shared by communities such as Pleasant Bay and will require a joint effort to meet the TMDL for this embayment.

8. If impacts are affecting estuaries, are the groundwater wells protected?

Fresh water bodies and groundwater supply wells are more resilient to nitrogen impacts than salt water embayments. Salt water is much more sensitive to elevated nitrogen levels, since the recommended limits to the estuaries are less than 1.0 mg/L, and limits to drinking water are 10 mg/L. There is an order-of-magnitude higher sensitivity to estuary systems. The most recent five-year average of nitrogen sampling in the Harwich water system is about 0.77 mg/l (Nitrate), indicating the Zone of Contribution to the town's wells have limited development and are sufficiently protected.

9. As a Harwich resident, what can I do to reduce my nitrogen contribution?

While septic systems contribute 75 to 85 percent of the controllable nitrogen, residents can minimize the remaining contribution sources. Education on the use and types of fertilizers can help. Using slow release fertilizers and not applying commercial fertilizers before a rainstorm (where it can run-off) would help. Also, using alternative landscapes that do not require as much fertilizer would have a positive impact. Channeling run-off from paved surfaces or roofs onto grasses for nitrogen uptake will help compared with direct discharge into a surface water or coarse sand where it enters the groundwater table. The run-off from these areas or stormwater contains the nitrogen from atmospheric deposition. Although these actions alone are not likely to meet the nitrogen removal recommended in the MEP reports for embayments in Harwich, they will potentially help reduce the amount of sewerage required.

10. Will all of the wastewater within the MEP watersheds need to be conveyed out of the watersheds to achieve the desired levels of nitrogen removal?

Not necessarily. Although nitrogen reductions are expected for each MEP watershed, the amount is likely to vary in each watershed. A watershed requiring 100 percent nitrogen reduction will likely require sewerage and recharge of the treated effluent outside that watershed. However, a watershed requiring 70 percent nitrogen reduction could sewer a higher percentage than that (say 80 percent) since the septic system effluent contains nitrogen with around 35 mg/l and treatment plant effluent contains around 3 mg/l or about 90 percent nitrogen removal. In this case 72 percent of the nitrogen would be removed from the area seweraged, allowing the effluent to be recharged in the watershed. Combined with fertilizer and stormwater management programs the town would feel comfortable that the acceptable nitrogen removal level would be attained.

11. Are neighboring communities participating where watersheds are shared between adjacent communities?

Yes, Harwich is participating in a collaborative effort that has been ongoing (Pleasant Bay Alliance) for the Pleasant Bay Watershed. Harwich is one of four communities along with Brewster, Chatham, and Orleans that share this watershed. A small portion of the Herring River Watershed is shared with Dennis. The watersheds for Allen, Wychmere, and Saquatucket harbors are all within Harwich.

12. What is the timeline of the Project?

This CWMP project began in August 2007. Water quality sampling for the MEP began a few years before. Phase 1 of the CWMP (Existing Data Review and Needs Analysis) was originally scheduled for completion in late 2008. Phase 2 of the CWMP (Alternatives Evaluation and Recommended Plan) was scheduled for completion in mid 2009. However, a delay in receiving the MEP reports has resulted in a

corresponding delay in the original schedule for completing Phase 1 and 2. Currently the Phase 1 plan is scheduled for completion in spring 2010 as the first of the MEP reports has been received and is under review. Phase 2 is likely to be completed 6 to 9 months after that date. Implementation of the recommended plan will occur over five to ten years once the town endorses and the DEP approves the recommended plan.

13. Can Harwich afford not to do this?

No. We are all living here because of the beautiful beaches, the active and convenient waterways, the high-quality drinking water, and general access to several recreational activities, all of which lead to a desired quality of life. Our economy is based around tourism for those same reasons. Even if DEP did not regulate implementation of a plan to meet the TMDLs for each embayment, we must maintain tourism economy and our quality of life.

14. Will this plan result in sewers for the entire town of Harwich?

No. This project is a planning tool to identify and recommend action to address Harwich's overall wastewater management plan. Based on preliminary MEP report results it appears sewers will be recommended as part of an overall strategy to address nitrogen impacts to our estuaries. However, only portions of Harwich are likely to require a new sewer collection system. The full extent of sewerage will not be known until all the MEP reports are completed for Harwich embayments. The Herring River MEP Report is scheduled to be the last one and should be available in early 2010.

15. If wastewater treatment facilities are recommended to be built, will they be an eyesore?

Through careful planning and site selection the treatment facilities can be designed to be harmonious with the architectural style within the community and employ property-screening techniques to minimize visual and other aesthetic impacts. Also, state-of-the-art odor control measures will address odor issues.

16. As a Harwich property owner, will my property values be decreased?

Projects in other communities have demonstrated that sewers and/or enhanced wastewater management actually increase property values. Improving wastewater management procedures will restore water quality in the embayments and protect the other water resources so that the tourist economy continues to flourish and the quality of life is maintained. All these factors combine to preserve property values.

17. Can the wastewater just be piped out into the ocean like in Boston?

No, environmental regulations (Ocean Sanctuaries Act) prohibit new wastewater outfalls (discharges) to the oceans. Some communities such as Boston and Plymouth already had an ocean discharge prior to this regulation being implemented. Thus, they were allowed to continue to use it but only after significantly increasing the treatment level of the effluent.

18. How can I get more information, or contact the WMS or CAC to get my opinions heard?

An important element of this project includes public outreach. The CAC has been formed to provide for an exchange of information. Moreover, community meetings are scheduled to keep residents and business owners informed about the progress, and the Harwich Water Quality Task Force has a website (www.hwqtf.com). Copies of the meeting schedule and other project documents are available at Town Hall and the public library. The WMS also has a mailbox at Town Hall. WMS meetings and community meetings are listed on the calendar on the town's website, and all are welcome.