Water Quality Harwich

Town of Harwich

Protecting our Water Resources

Wastewater Education Handbook

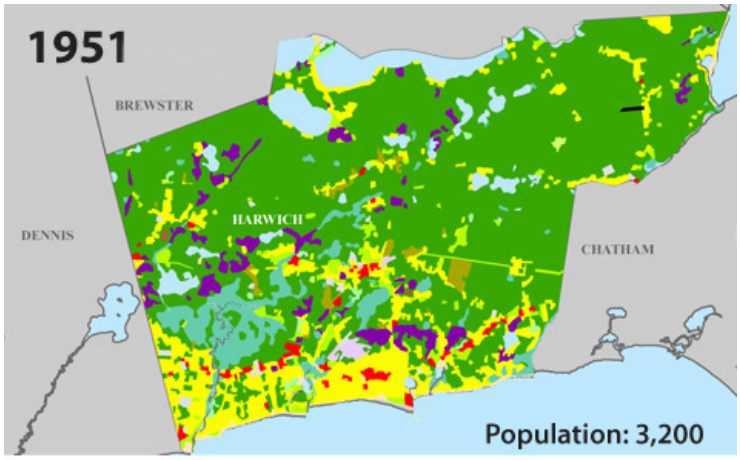
February 2017

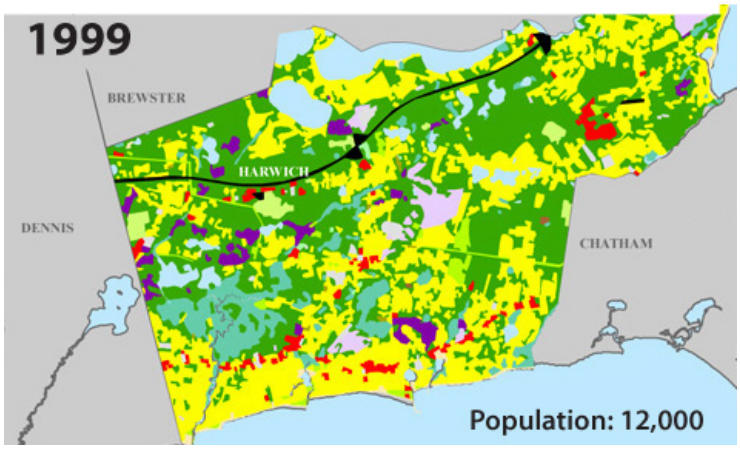
Herring River at Route 28

Introduction

The Town of Harwich has undergone significant growth over the past 50 plus years.

Our population has increased over 400 percent since 1951. That growth has resulted in various water quality issues that now must be addressed. Historically, Harwich has dealt with wastewater by installing Title 5 septic systems on each individual property. These systems were designed to remove solids and pathogens and do a very good job at it. However, they do very little to reduce nutrients in the liquid waste. The nitrogen level in the liquid waste which infiltrates into the ground and eventually flows through our watersheds and into the saltwater estuaries is over fertilizing these water bodies resulting in negative impacts. In addition, phosphorus in the liquid waste, if not absorbed in the surrounding soils, can cause water quality issues in our freshwater ponds and streams.





In the past few years, the negative impact of excess nitrogen has become the driving force for Cape Cod towns to begin implementing wastewater programs. Harwich has developed a town-wide comprehensive plan to address the wastewater management needs to protect our drinking water sources and restore our freshwater ponds and saltwater estuaries. Protection and restoration of these valuable water resources is extremely important to maintain the quality of life and economic vitality of the Town. Since 2007, these efforts have been coordinated predominantly by the Wastewater Implementation Committee (WIC) and the Board of Selectmen (BOS). The Wastewater Implementation Committee, consulting with CDM Smith, has spent approximately $1.2 million to sample and summarize our water resources and has recommended a program to address Harwich's wastewater issues with phased implementation over the next 40 years. Our Comprehensive Wastewater Management Plan (CWMP) calls for a conventional wastewater collection and treatment system connecting approximately 50% of the properties (5,000 lots) in Harwich. The total Capital Cost is estimated to be between $180M and $230M, spread over the 40 year implementation period.

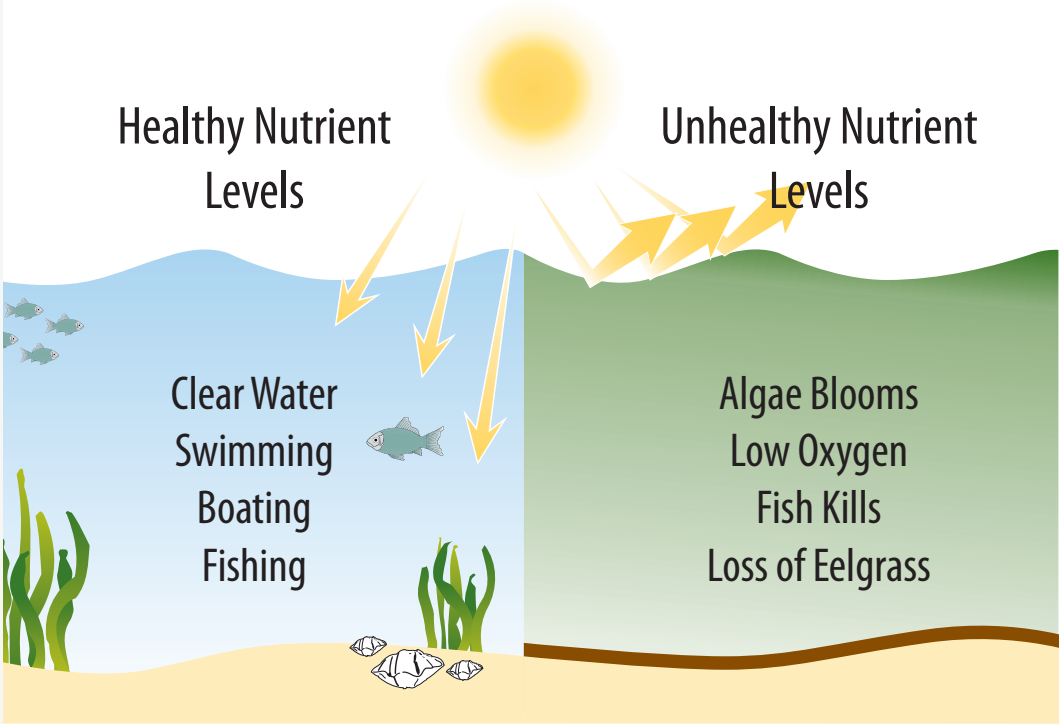
In 2013, the Massachusetts Department of Environmental Protection (MassDEP) designated the Cape Cod Commission

(CCC) to prepare an update to the 1978 Water Quality Management Plan (WQMP) for Cape Cod to address the degradation of Cape Cod's water resources from excessive nutrients, with a primary focus on nitrogen. The Massachusetts Water Pollution Abatement Trust committed to the CCC $3.35 million to fund an update to the 1978 plan in accordance with Section 208 of the Federal Clean Water Act, referred to as the 208 Plan. This Plan is a resource to the Cape's communities to better understand how to manage the Total Maximum Daily Load (TMDL) thresholds established by the Massachusetts Estuary Project (MEP) reports. The TMDL is the amount of nutrients that can enter a body of water and still maintain a healthy environment in a specific pond or estuary (http://bit.ly/MEPTMDLs).

The Harwich CWMP received regulatory approval from The Commonwealth of Massachusetts Environmental Policy Act (MEPA) Office and the CCC on May 13, 2016 and Aug, 18, 2016 respectively, and is in full compliance with the 208 Plan. The wastewater management program put forth in the CWMP is a guide for the Town to follow based on current conditions and regulations. Should the Town desire to make changes to the program in the future, based on water quality monitoring feedback, changing community interests, growth or other pertinent factors, it may do so by revising the CWMP using the appropriate regulatory review procedures.

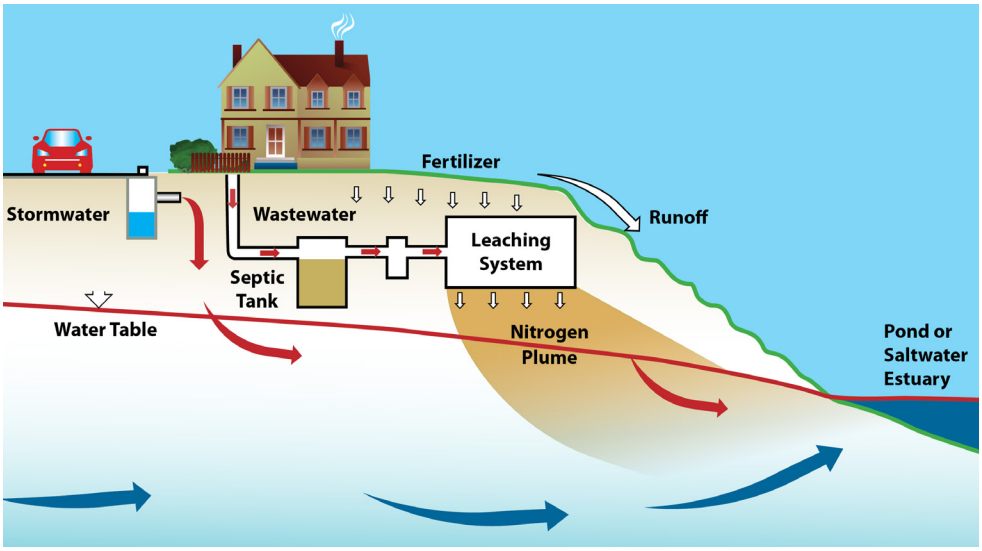
The approved CWMP is available on the Town website at: http://bit.ly/HarwichCWMP

Beaches, rivers and harbors are severely impacted by nitrogen pollution. Too much nitrogen from septic systems allows algae to flourish. The algae clouds the water and blocks sunlight, causing aquatic grasses and other plant life to die. As the algae uses all available nutrients and dies, decomposing algae (and dead grasses) depletes dissolved oxygen in the water which results in further loss of fish and bay organisms and an unhealthy environment.



Key Factors

Most homes in Harwich rely on traditional Title 5 on-site septic systems for wastewater management. Title 5 septic systems are not effective at reducing the level of nitrogen in the wastewater. The liquid or effluent exiting the septic system leaching field contains high concentrations of nitrogen. This liquid eventually flows in the groundwater to our estuaries and results in over-fertilized / unhealthy conditions. It doesn't matter whether a home is located next to the estuary or two miles inland since the groundwater collects and conveys the nitrogen to the watershed outlet or in this case the saltwater estuary/harbor.



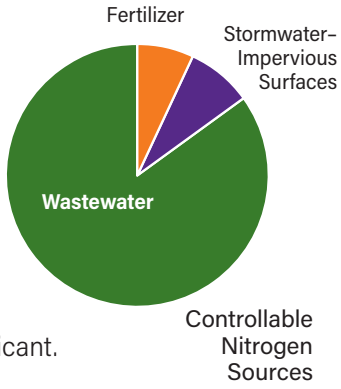
Nutrient Sources and Wastewater Flow to Receiving Waters

Since 2002, the MEP has developed and published a series of reports that assess the nature and extent of nutrient influence within saltwater estuaries and embayments. Reports are available at: www.oceanscience.net/estuaries

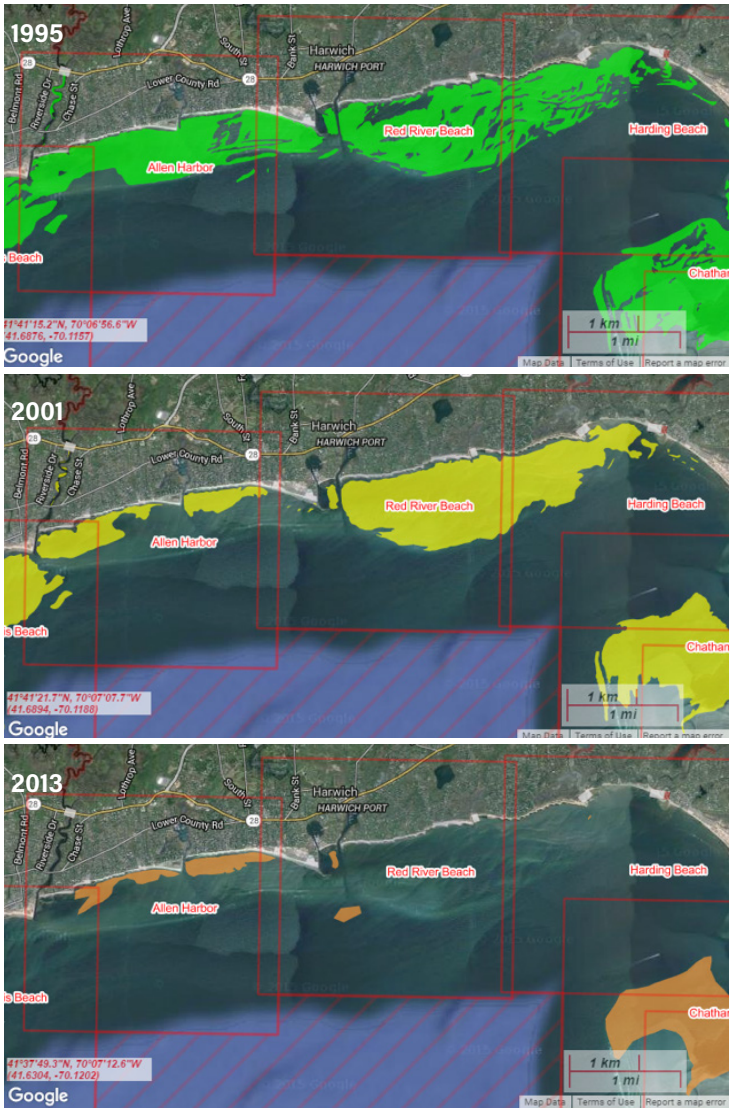
The Town of Harwich has 5 watersheds that terminate in estuaries which require nitrogen (N) reduction to maintain or restore acceptable water quality. These levels of remediation have been determined through an extensive and longterm water sampling program and computer water quality modeling of the watersheds. These results are documented in the MEP reports.

- **Allen Harbor –** 78% Reduction in Septic Nitrogen
- **Wychmere Harbor –** 100% Reduction in Septic Nitrogen
- **Saquatucket Harbor –** 58% Reduction in Septic Nitrogen
- **Pleasant Bay –** 65% Reduction in Septic Nitrogen
- **Herring River –** 58% Reduction in Septic Nitrogen

Approximately 85 percent of the controllable nitrogen in a given watershed comes from septic systems. Stormwater run-off and fertilizer account for about 7 to 8 percent each of the remaining sources. Thus, the focus is on removing nitrogen from septic systems, since the required reduction levels are so significant.



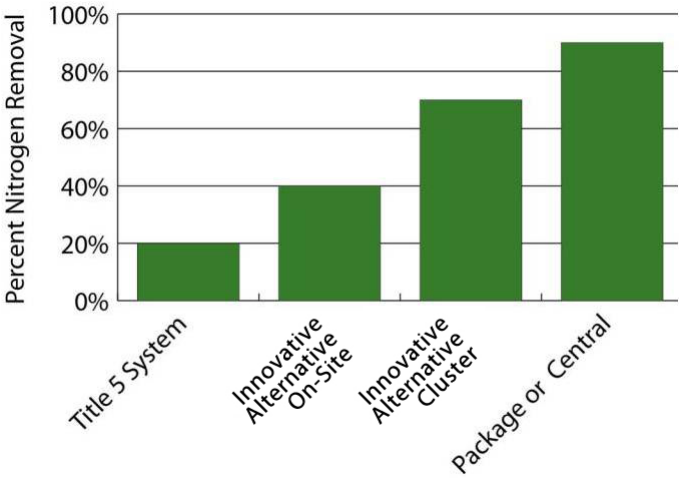
An indicator of a healthy saltwater environment is whether Eel Grass exists in those waters. It is similar to the "canary in the mine" concept. As shown on the DEP Eel Grass Mapping photos, Harwich has lost several acres of Eel Grass near its estuary outlets indicating that degraded water quality exists.



MassDEP Eel Grass Mapping (from top, 1995, 2001 and 2013).

The Town evaluated several options presented in the 208 plan in order to meet the necessary nitrogen removal requirements. However, either insufficient treatment levels as shown in the Effectiveness of Wastewater Treatment Systems figure or cost analyses as documented in the CWMP resulted in a core recommendation plan that utilizes sewer collection systems flowing to centralized treatment facilities.

Effectiveness of Wastewater Treatment Systems

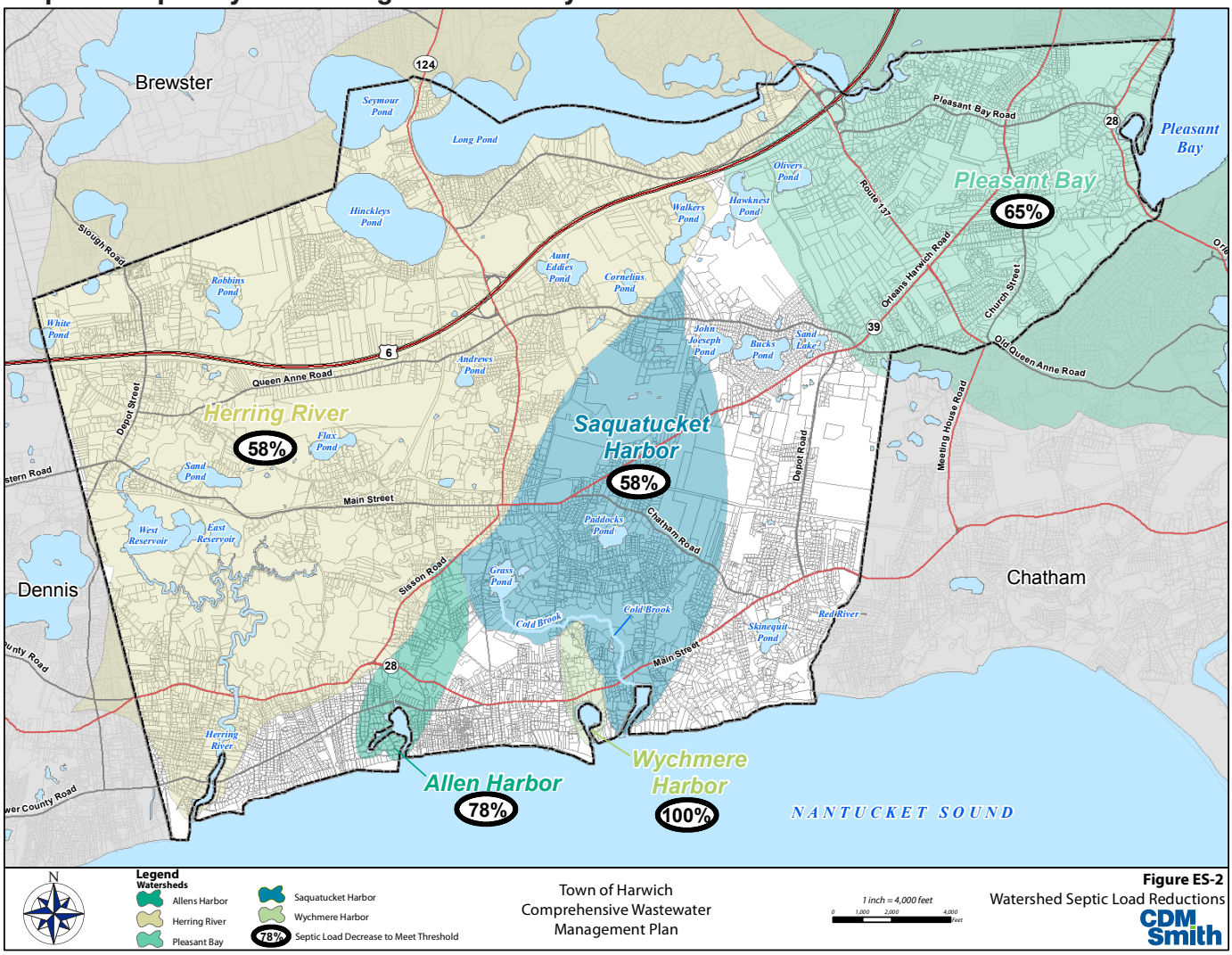


Drinking Water

Municipal drinking water supply is generally available throughout the Town using water from 14 gravel-packed groundwater supply wells. These wellfields draw water from the Monomoy Lens Aquifer. All of Harwich's residents and businesses are reliant on the groundwater supply for drinking water, whether through public or private sources of the supply.

While the locations of public water supply wells in Harwich do not drive a specific need for sewering in any particular area of the Town, a few wells in the Pleasant Bay Watershed have shown nitrogen levels above background concentrations as a result of development in the area. Therefore, a reduction in on-site septic system inputs into the groundwater, especially in well zones of contribution, will result in a beneficial reduction in potential contaminants to the aquifer. These include nutrients like nitrogen and phosphorus, bacterial and viral constituents and potential contaminants of emerging concern (CECs).

Required Septic System Nitrogen Removal by Watershed



Freshwater Ponds

In freshwater ponds, the overabundance of phosphorus (P) is the main concern. Phosphorus is typically a nutrient in limited supply. Therefore an increase in phosphorus waste can result in significant plant and algae growth which can cause a shift in the health status of a pond from healthy to fairly healthy, to degraded.

Long Pond clear, algae bloom in Hinckleys Pond, June, 2009.

Four ponds in Harwich which were identified as degraded, or at risk of moving toward degraded, are the primary potential cause for concern: Hinckleys, Seymour, Buck, John Joseph.

In 2008 the towns of Brewster and Harwich jointly implemented a successful alum treatment program to restore and improve water quality in Long Pond. That same treatment is recommended for Hinckleys Pond in the near-term plan.

Natural Nitrogen Attenuation

Natural attenuation occurs to some degree in the watersheds. However this has been accounted for in the results of the MEP nitrogen models and therefore further work is required to meet the TMDLs. A cooperative endeavor between Harwich and Chatham to widen the Muddy Creek inlet and increase flushing to improve the estuary habitat and decrease nitrogen levels was completed and opened for traffic in May 2016. This project results in an offset for Harwich of not having to sewer approximately 230 homes. The total project cost was approximately $6.3 million with the state of Massachusetts contributing $4.6 million and the Towns of Harwich and Chatham equally sharing the remaining balance.

The Town in FY15 and FY16 funded a study entitled "Bank Street Bogs at Cold Brook – Evaluation of Natural Nitrogen Attenuation/ Baseline Assessment" dated September, 2016. (http://bit.ly/BankStBogs) This study collected additional field data on groundwater flow and nitrogen concentrations and several other parameters over a one year period to help supplement information gathered during the earlier MEP report. This site is owned by the Harwich Conservation Trust (HCT) and they are developing plans for the area to restore it back to natural conditions. The results of the study indicate that there are some natural nitrogen attenuation options available that would increase the nitrogen removal and help offset the need to sewer approximately 240 homes

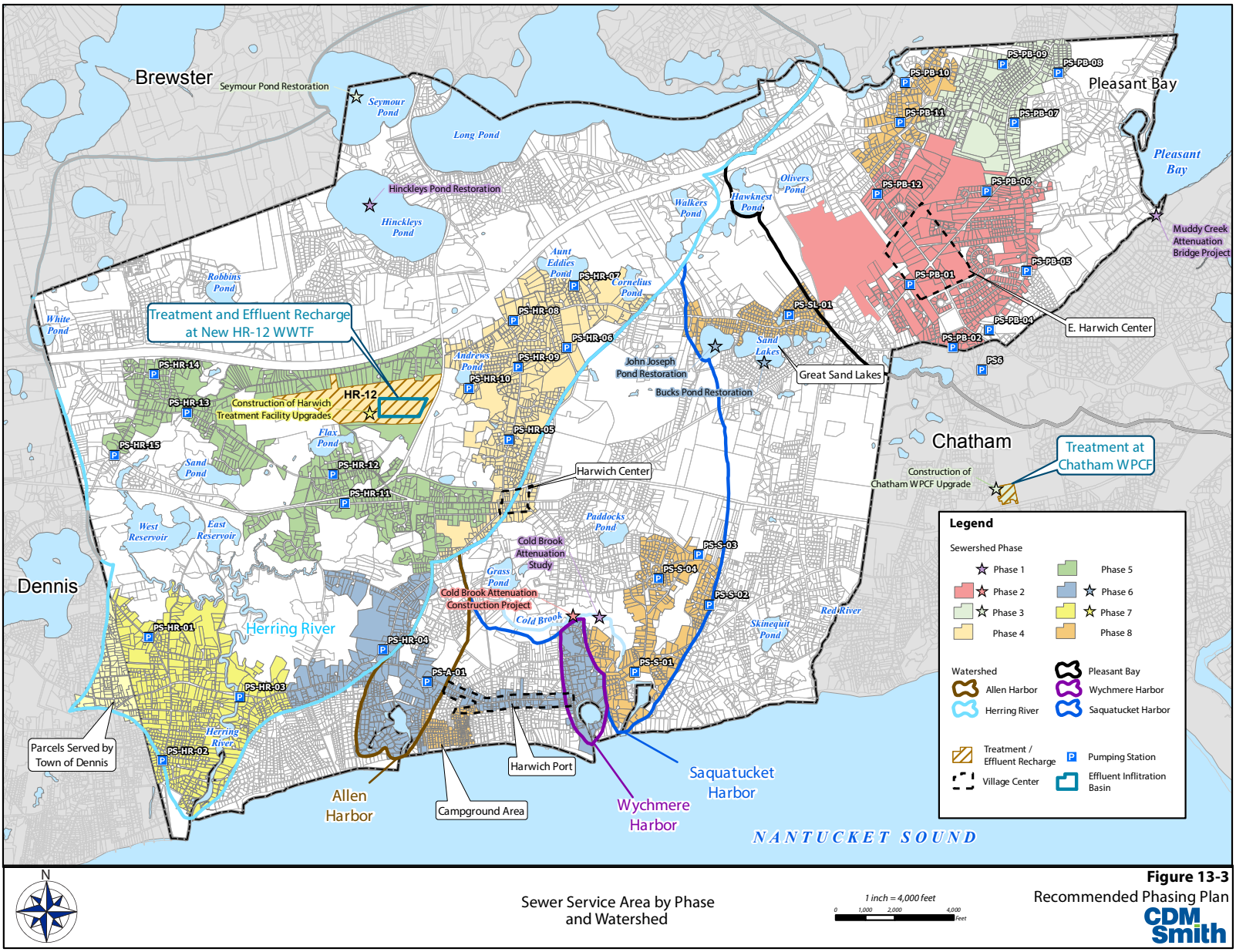
Before (top) and After (bottom) Muddy Creek Inlet Widening.

Nitrogen Reduction by Natural Attenuation in Cold Brook at Bank Street bogs – Existing conditions.

in the Saquatucket Harbor Watershed. These opportunities are being discussed with HCT representatives to develop the best approach which meets the goals of both the Town and the HCT.

Wastewater Implementation Strategy

Since everyone in the Town of Harwich contributes to the nitrogen problem, we all need to contribute to the solution. It is anticipated that real estate taxes will be the source of funding for the design and construction of the system and user fees will eventually support the operation and maintenance costs. Our wastewater consulting firm, CDM Smith, was hired by the Town of Harwich to help with the development of the program to address these issues. The CWMP is proposed to be implemented in 8 phases over 40 years. Many variables will change over this timeframe. This program is very similar to our municipal water system which was built over 40 years and is valued at approximately $225 Million.



Sewer Service Area by Phase and Watershed

Figure 13-3
Recommended Phasing Plan

CDM Smith

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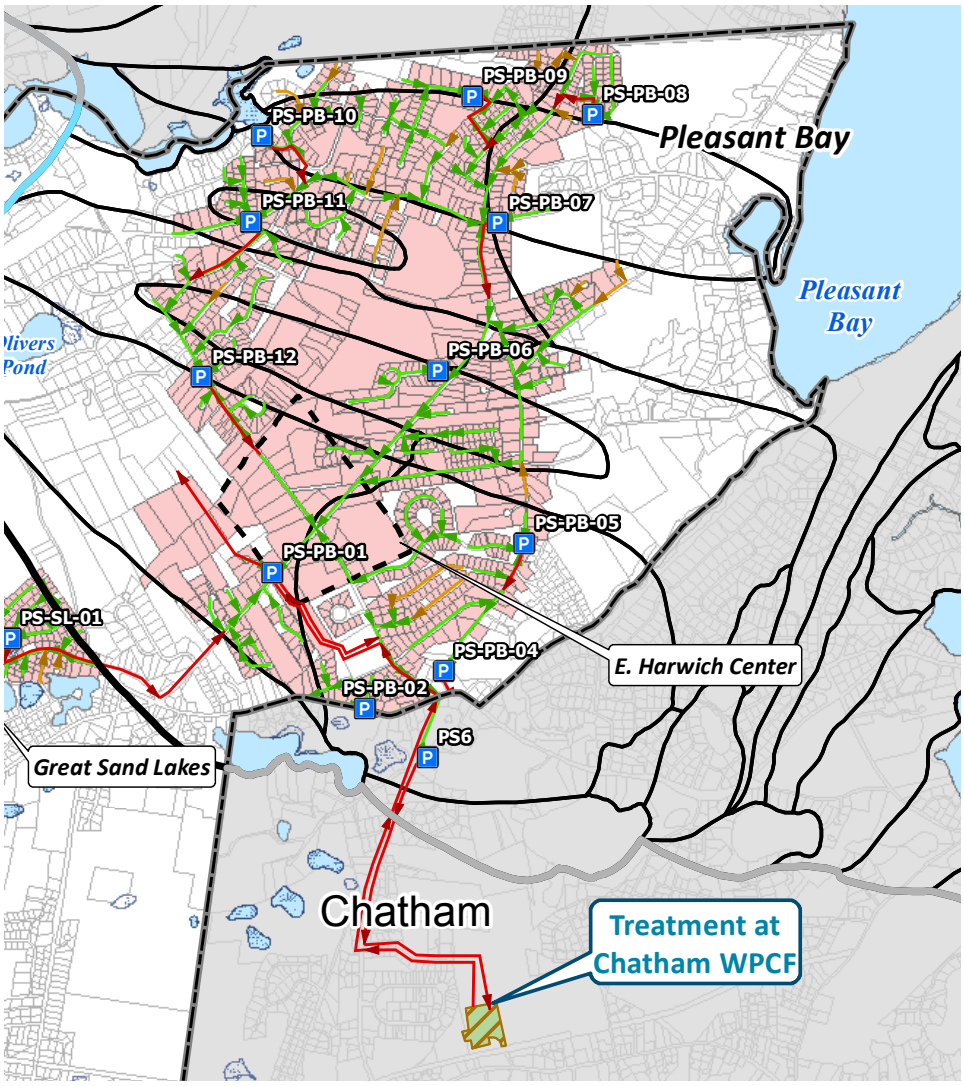
CWMP Overview

The recommended plan includes the use of two treatment facilities: one located at the Harwich public works facility near the landfill site, and the other one being the existing Chatham Water Pollution Control Facility (WPCF) which has available capacity.

The initial focus of the Harwich CWMP seeks to solve the nitrogen loading in the Pleasant Bay (PB) Watershed. Harwich is one of the four towns that contributes nitrogen to the Pleasant Bay Watershed. In lieu of Harwich building a wastewater treatment facility in East Harwich, we are negotiating with Chatham to purchase up to 300,000 gals/day of wastewater capacity in order to send collected wastewater from the PB watershed to Chatham for treatment. The Chatham facility has a design capacity to handle an annual average daily flow of 1.3 mgd (million/gals/day). To accomplish this, an Inter-Municipal Agreement (IMA) needs to be executed between the two Towns which includes capital costs and operation and maintenance (O&M) costs associated with the Harwich wastewater flow from the sewered areas of PB pumped to the Chatham Treatment Facility. This flow is projected to be sufficient to restore the water quality in PB and meet Harwich's share of the TMDL. It will also help protect Harwich drinking water wells in the area and allow for desired economic growth. If we are able to use the Chatham facility, our short term efforts will focus on the wastewater collection system and associated interconnection to the Chatham facility. This will extend the time at which Harwich needs to construct its own treatment facility by approximately 10 years. Current plans identify 2021 as the initiation of wastewater flow from Harwich to Chatham.

Chatham Wastewater Treatment Plant (1.3 million gallon per day average flow capacity with open infiltration recharge basins)

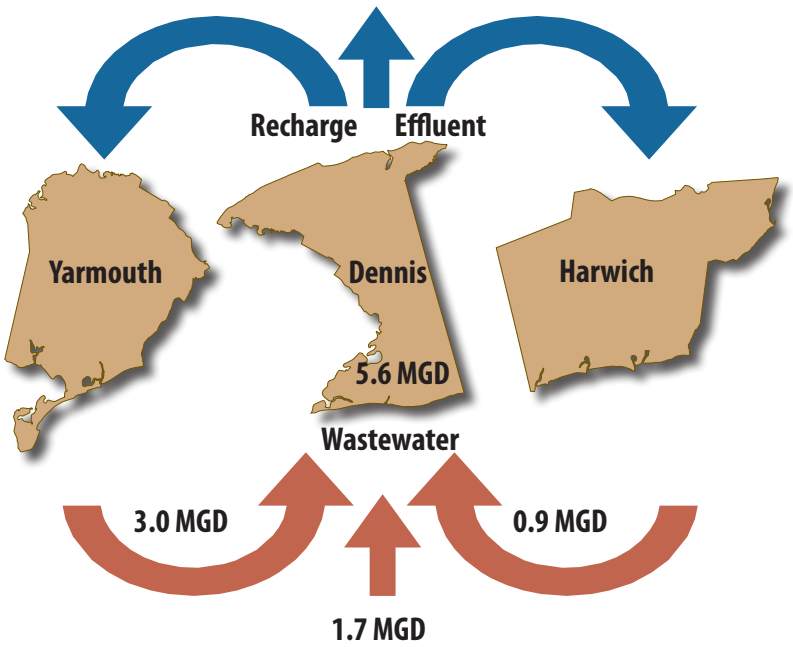


Sewer Collection System Concept for the Pleasant Bay Watershed

Regional Opportunities

Harwich is also participating in discussions with the Towns of Dennis and Yarmouth to consider the potential of a single wastewater treatment facility to be located in Dennis. This would eliminate the need for a treatment facility to be constructed at the existing Harwich public works facility site near the landfill. These discussions are ongoing, and Harwich has several years before it would need to decide whether to construct its' own facility or join in the regional solution.

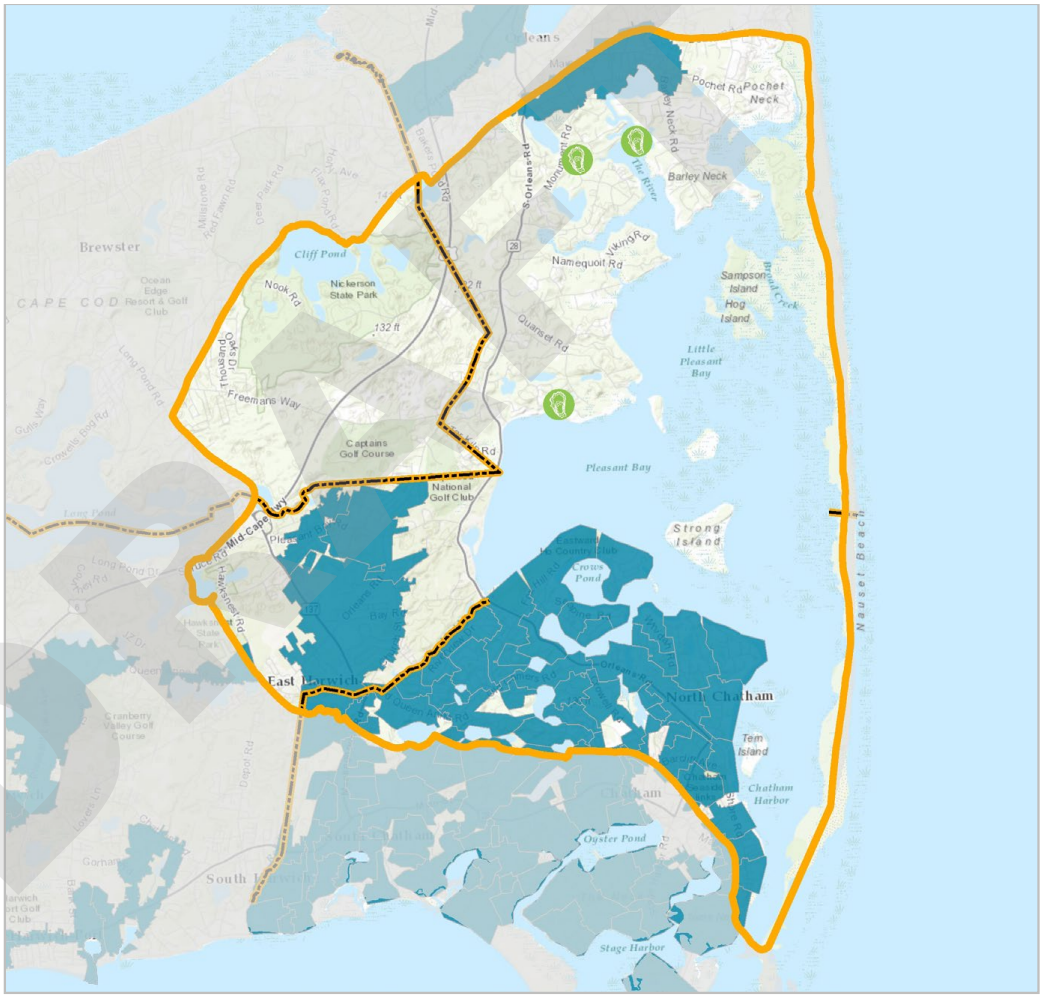
Community Partnership – Dennis, Harwich, and Yarmouth



MGD – million gallons per day

Chatham, Harwich, Orleans and Brewster Proposed Restoration Program

Pleasant Bay Watershed Scenario Map



Source: Cape Cod Commission

GLOSSARY

CCC-Cape Cod Commission

CWMP-Comprehensive Wastewater Management Plan

Embayment-a recess in a coast line or an indentation off of a shore line that forms a bay

IMA-Inter-municipal Agreement

MassDEP – Massachusetts DEP (Department of Environmental Protection)

MEP-Massachusetts Estuaries Project

Natural Attenuation-The process by which the concentration of nitrogen in a water body or groundwater is reduced by conversion to nitrogen gas, sediment absorption, and other biological processes when nitrogen-innundated water passes through natural systems such as streams, rivers and ponds

TMDL-Total Maximum Daily Load for estuaries

UMASS – University of Mass/Dartmouth SMAST (School of Marine Science and Technology

Watershed-an area or ridge of land that separates waters flowing to different rivers, basins or seas

WIC-Wastewater Implementation Committee

Financial Impacts

The 40-year Plan will be constructed in phases with each phase between $1.0 to $47.2 million. This results in a total cost of $230 million over 40 years. However, the CWMP is a living document and the Town will continue to pursue means to lower that overall cost.

The near-term plan calls for design and construction of the Pleasant Bay watershed sewer collection system such that initial flow to the Chatham facility will start in 2021. Since near term needs are capital only, property taxes will be used to service the debt. Once customers are connected and utilizing the system, they will be charged for a portion of the system operation and maintenance costs.

Typical Cost to Homeowner

The average tax increase for a resident in a $350,000 assessed value home to fund the Phase 2 amount is about $150 annually assuming all construction costs are recovered via general property tax. The average annual tax increase for the whole 40-year wastewater program is about $400. Those connected to a sewer would also pay a portion of the operation and maintenance costs and the initial hook-up cost to connect their home to the pipe in the street. It is assumed that the Town would utilize the State Revolving Fund (SRF) loan program at 0 to 2 percent interest over a 30 year bond to fund this program.

You can also go to the Town website at **http://bit.ly/HarwichWWCalc** to calculate your specific tax increase.

Capital Outlay Committee Requirements for CWMP (updated 2017)			
2013 Funding (completed): Phase 1			**Total = $1,000,000**
✓	n/a	For Recharge Facility Land Purchase	
✓	$100,000	For Cold Brook Attenuation Study	
✓	$6,300,000	For Muddy Creek Attenuation Bridge Project (after $4.6 million grant and Chatham share of cost, Harwich paid $900,000)	
2017 Funding (pending): Phase 2			**Total = $34,165,000**
1	$6,765,000	Capacity Purchase at Chatham WPCF	
2	$2,400,000	Tie-in Costs to Pipes and Pump Station	
3	$150,000	CWMP Implementation Services	
4	$22,300,000	Design and Construction of Pleasant Bay (PB) Collection System: South (600 households)	
5	$2,000,000	Design and Construction Cold Brook	
6	$550,000	Restoration of Hinckleys Pond	
2021 Funding (projected): Phase 3			**Total = $12,900,000**
1	$12,600,000	For Construction of Pleasant Bay Collection System: North (440 households)	
2	$300,000	For Seymour Pond Restoration	
2026 Funding (projected): Phase 4A			**Total = $34,400,000**
1	$34,400,000	For Design and Construction of Harwich Treatment Facility HR-12	
2029 Funding (projected): Phase 4B			**Total = $22,300,000**
1	$22,300,000	Design and Construction of Herring River Collection System: Northeast (700 households)	
2033 Funding (projected): Phase 5			**Total = $23,200,000**
1	$23,200,000	For Design and Construction of Herring River Collection System: Northwest (730 households)	
2038 Funding (projected): Phase 6			**Total = $21,200,000**
1	$20,700,000	For Design and Construction of AWS and Herring River (SE) Collection Systems (640 households)	
2	$250,000	For Bucks Pond Restoration	
3	$250,000	For John Joseph Pond Restoration	
2043 Funding (projected): Phase 7			**Total = $47,200,000**
1	$26,500,000	For Design of Harwich WWTF Upgrade and Design and Construction of Herring River Collection System: Southwest (760 households)	
2	$20,700,000	For Construction of Harwich Treatment Facility Upgrade	
2048 Funding (projected): Phase 8			**Total = $33,900,000**
1	$33,900,000	For Design and Construction of Campground Area, GSL and Final PB Area to Meet TMDL (1076 households)	
Total Funding (projected): Phases 1-8			**Total= $230,000,000 (Rounded)**

Frequently Asked Questions - Update January 26, 2017

The Town of Harwich (the Town) has developed a town-wide Comprehensive Wastewater Management Plan (CWMP) to address long-term wastewater needs and restore and maintain the quality of all 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 seeks to balance water quality needs with the ability to finance necessary improvements. Priorities will be set and an implementation schedule established to maximize the effect of any public improvements within a watershed and between watersheds. The State and County approved CWMP is currently available and posted on the Town's website.

Q1. What is the purpose of this project?
A1. The CWMP is an integral part of the planning process to address Harwich's long-term wastewater and water resource needs over the next 40 years. These critical needs include:

- Addressing existing nitrogen issues that are degrading the water quality of the saltwater harbors and estuaries along the Harwich shore;
- Maintaining the excellent drinking water quality in the Town's 14 municipal groundwater supply wells;
- Preserving and restoring the valuable fresh water pond resources in town;
- Providing future utilities for Harwich to implement smart growth via its Village Centers Initiatives;
- Meeting state Total Maximum Daily Load (TMDL) requirements for impaired watersheds.

Q2. Who is involved in this Project?
A2. Several groups are involved at both the local and the state level. Locally, the Wastewater Implementation Committee (WIC), the Board of Selectmen (BOS), Town Administrator's office, several town staff, consultants and many other stakeholders. At the state level the Massachusetts Department of Environmental Protection (MassDEP) is overseeing the Massachusetts Estuaries Project (MEP), which was prepared by the School for 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 WIC is the lead advisory group for the Town, and it contracted with engineering consultant CDM Smith for technical guidance during this process. Coordination among all the groups was crucial to developing an implementable program that meets Harwich's needs now and into the future. The WIC has been working on this project since 2007.

Q3. What is the MEP?
A3. The MEP is a tool to quantify and evaluate nitrogen entering the embayment from the associated watershed and develop nitrogen thresholds for each embayment that will restore or maintain healthy water quality. Ultimately, the MEP is utilized to develop an acceptable Total Maximum Daily Load (TMDL) for nitrogen that can enter each of the embayments. Under the Federal Clean Water Act, the EPA and MassDEP have the authority to require communities contributing nitrogen to the particular embayment to meet the TMDL.

Q4. Why is nitrogen an issue?
A4. Nitrogen deposited in an estuary or embayment 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.

A standard Title 5 septic system is designed to remove solids and pathogens and only removes about 10 to 20 percent of the nitrogen entering it 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 while fertilizers and stormwater run-off each account for about 7 to 8 percent.

Q5. Will this plan result in sewers for the entire Town of Harwich?
A5. No. Based on the MEP report results sewers are recommended as part of the overall strategy to address nitrogen impacts to our estuaries. Approximately 50 percent of the Town will be sewered. The areas selected were determined to be the most cost effective way of nitrogen removal.

Q6. We pump our home septic system as required and never have problems. Why can't we just leave things as they are? Aren't our beaches and harbors pretty good as is?
A6. Pumping a septic system removes the solids and should be done approximately every 3 years to keep it in good working order. However the nitrogen is mainly contained in the liquid that leaves the system daily and exists in groundwater ultimately surfacing in our estuaries and harbors which continue to show signs of degradation.

Q7. Why does Harwich have to do this?
A7. The Town is moving forward now with the CWMP so it can implement the plan on its own timeline rather than on a MassDEP mandated schedule. The abutting towns of Chatham, Orleans, Brewster and Dennis are all in various stages of completing CWMPs and implementing them 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 that embayment.

Q8. We've heard solving our wastewater problem will cost tens of millions of dollars. Is that true? Who will pay for this? How will they pay?
A8. The overall cost of the Harwich recommended wastewater program is estimated to be in the $180 to $230 Million range implemented over a 40 year period. The BOS has adopted a policy of using property taxes, and user fees to pay for the program. This overall program is very similar in cost and implementation timeframe to our current municipal water system which was also implemented over 40 years.

Q9. If impacts are affecting estuaries, are our groundwater wells protected?
A9. Fresh water bodies and groundwater supply wells are more resilient to nitrogen impacts than salt water estuaries. 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 for drinking water are 10 mg/L. There is an order-of-magnitude higher sensitivity to estuary systems.

Q10. What is the timeline of the Project?
A10. Development of the CWMP began in earnest in August, 2007. Water quality sampling for the MEP began a few years before. The CWMP was approved in 2016 by state and county regulators. The plan includes eight phases over 40 years. The Town has already implemented components of Phase 1 (Muddy Creek inlet widening, etc.) and is seeking funding for Phase 2 at Spring 2017 Town meeting.

Q11. As a Harwich property owner, will my property values be decreased?
A11. Projects in other communities have demonstrated that sewers and/or enhanced wastewater management actually may 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. If nothing is done, property values will decrease.

Q12. Isn't wastewater a single Cape-wide problem which requires a single Cape-wide solution?
A12. Wastewater Management is an issue being addressed by every town on Cape Cod. The nitrogen in groundwater flows by watersheds, not town boundaries. Thus communities are evaluating regional solutions and the County is assisting in that process. Whether a local or regional solution, each town will want to implement an environmentally sound solution for the least cost. Harwich has been working with Chatham to implement the restoration of the Pleasant Bay Watershed and has initiated discussions with Dennis and Yarmouth for a regional treatment facility. It is conceivable that Harwich may export its wastewater to adjacent treatment facilities which means we would only need pipes, pumps and valves in Harwich

Q13. As a Harwich resident, what can I do to reduce my nitrogen contribution?
A13. 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 will not meet the nitrogen removal recommended in the MEP reports for embayments in Harwich, they will potentially help reduce the amount of sewering required.

Q14. Can the wastewater just be piped out into the ocean like in Boston?
A14. Recent changes to the Ocean Sanctuaries Act allow for greater flexibility in permitting open water discharges. The new standards, however, are still very stringent and require a thorough impact analaysis prior to any approvals. Cost analyses have not proven them to be cost-effective.

Q15. What are we doing to minimize the cost of this project?
A15. Multiple cost recovery options are being evaluated now with the goal that no single group is significantly impacted. Several entities are also pursuing potential outside funding sources and Harwich will do everything it can to make sure it qualifies for those funding sources should they become available. This is in part also why a 40 year implementation timeframe has been recommended.

Q16. Will wastewater treatment lead to explosive growth and development, including condominium developments, large apartment complexes, strip malls, and such. What will happen to the "villages" of Harwich?
A16. The plan addresses existing needs and future desired needs. Future flows are based on what could be built based on existing zoning. Land use controls and zoning may be evaluated and revised accordingly if the Town decides to encourage smart growth in some village center or commercial areas.

Q17. What will happen if the Town decides not to fund implementation of this wastewater program?
A.17 Harwich has five estuaries that have Total Maximum Daily Loads (TMDLs) established that must be met to restore their water quality. The Massachusetts Department of Environmental Protection (MassDEP) will require the municipality to implement a nitrogen removal system or each individual Title 5 septic system be upgraded to an expensive nitrogen removal system in order to meet the TMDL. This may be done under an Administrative Order which would disqualify Harwich from receiving zero percent interest State Revolving Fund loans. MassDEP could also mandate the creation of a Water Pollution Abatement District for the watershed which would be tasked with meeting the water quality requirements.

This could also leave the Town susceptible to third party lawsuits from groups like the Conservation Law Foundation requiring the Town to implement the recommended wastewater program under a more aggressive timeline than the currently approved 40-year plan.

Lastly, the value of every home in Harwich will start to decline as water quality continues to decline.

For additional information go to:
- http://www.harwich-ma.gov
- http://bit.ly/HarwichCWMP
- http://bit.ly/HarwichWIC

Restore Harwich Water Quality for generations to come