

**MINUTES
SELECTMEN'S MEETING
GRIFFIN ROOM, TOWN HALL
MONDAY, FEBRUARY 6, 2017
6:30 P.M.**

APPROVED

SELECTMEN PRESENT: Hughes, Kavanagh, LaMantia, MacAskill

OTHERS PRESENT: Town Administrator Christopher Clark, Assistant Town Administrator Charleen Greenhalgh, Aly Sabatino, Peter DeBakker, Ed McManus, Jeremy Gingras, Pat Nadle, Sally Urbano, and others.

WEEKLY BRIEFING

No one appeared before the Board.

PUBLIC COMMENT/ANNOUNCEMENTS

No one appeared before the Board.

CONSENT AGENDA

- A. Approve minutes –
 - 1. January 17, 2017 Regular Meeting
 - 2. January 23, 2017 Regular Meeting
- B. Set seasonal population at 30,500 for Alcoholic Beverages Control Commission
- C. Approve application for Road Race by B.A. Event Promotions for the Harwich Cranberry Harvest Half Marathon & 10K Road Races on Sunday, October 1, 2017 including request for a One-Day Entertainment License and One-Day Special License for Wine and Malt and to waive Town-wide Facilities Use Policy for the event
- D. Reappoint Dan Casey as full member of the Waterways Committee for a term to expire June 30, 2019
- E. Approve request for assistance from the Caleb Chase Fund as recommended
- F. Approve the 2017 Summer Concert Series to be held at Brooks Park
- G. Approve the recommendation of the Town Administrator to approve the Eversource petitions to install underground conduit and hand holes to supply service to 18 Snow Inn Road and 30 Cherokee Road

Ms. Kavanagh moved approval of the Consent Agenda. Mr. Hughes seconded the motion and the motion carried by a unanimous vote.

PUBLIC HEARINGS/PRESENTATIONS *(Not earlier than 6:30 P.M.)*

A. Presentation – Outer Cape Health Services

Mr. McManus, member of the Board of Directors of Outer Cape Health Services and Chair of their Building Committee, introduced fellow Board member Jeremy Gingras, and Larry Ballantine of their Harwich Site Advisory Committee. He further introduced their new Executive Director Pat Nadle and other staff members Andy Lowe and Patty Hartsfeld. Mr. Lowe, Ms. Hartsfeld and Ms. Nadle

provided a Power Point presentation to the Board outlining their services and their mission. They stressed that they are not going to be urgent care. They took questions from the Board with regard to parking, impact on local fire departments, and lease of the property. Ms. Nadle responded that they have the required parking, she reiterated that they aren't urgent care and therefore expect impact on local fire departments to be minimal, and with regard to their lease she noted that they have right of first refusal every 5 years. Mr. Hughes said this is a great service for the community and the Board thanked them.

OLD BUSINESS

A. CDM Smith Phase II Contract

Mr. Clark opened discussion by noting that tonight we are asking to enter into a contract with CDM Smith which will be contingent on Town Meeting vote and it is anticipated to be a debt exclusion for the Pleasant Bay Watershed project. David Young, CDM Smith and Patrick Hughes, Senior Vice President of CDM Smith provided a presentation of the contract elements, the company's qualifications, an overview of CDM Smith services done to date with Harwich and the proposed phase 2 services. Mr. Hughes asked for an organization chart and to clarify how we would be billed for services. He said he is comfortable with CDM Smith and commented on Mr. Young's professionalism. Chairman MacAskill agreed but asked why we shouldn't go out to bid as this is a \$22 million project. Mr. Clark said this contract is for \$4 million to design out the system and then put the material out for bid. He pointed out that the big construction element will be competitively bid. Chairman MacAskill questioned the same for the \$4 million element of the project. He asked why it makes sense to go with CDM Smith and not go outside. Mr. Clark drew attention to page 45 of the presentation regarding what other projects cost in other towns. He said from a reasonable perspective they are in the ballpark of other projects of this magnitude. He stated that by going out to bid we do have the potential that someone could bid less but we already have \$1.2 million into this partnership, and someone else could come in with a different management or design style and we could be rehashing what has already been done and that is not in the best interest of the town. He commented on the character of the company noting that they are reputable and have lived up to what they have said. He commented that this is the best decision for the town. The Board further discussed the financial aspects of the contract. Chairman MacAskill said he had some questions regarding the fine print and would like to bring this item back. The Board agreed to bring the item back.

B. 97-93 Route 28 Project Update

Mr. Howell reported on organizational changes at HECH noting that Robin Wilkins resigned and Terry Newberry is now President and he is the Vice President. He then made the following statement:

As far as the project goes, we have actually found a purchaser for the front part of the building and we are actively negotiating the language to put into the title restriction for the historic preservation of the façade of the building. You may recall that when we met in April and then again in October concerning this project, Habitat was not in the position with their engineering to identify all of the site conditions. They were able to place the houses roughly where they are going to be. They have done substantially more work now. When the April meeting occurred there was a motion by Mr. LaMantia relative to \$25,000 for HECH's part of this project and the Chair actually asked what that was going to be spent on at that point and it was for the reconfiguration of the property, to promote the development of affordable housing, and to hire a historic preservation consultant to create

and manage a historic restriction. We found that we were able to accomplish all the earlier tasks in-house on our own time but what we didn't anticipate was when the engineering came in from Habitat, it necessitated us as the owners of the property to reconfigure and move two separate systems, one was actually going to be under the roadway that's going to provide the access into the 40B project, we have to move that, we also have to move the other one that's on the historic property 97 so that it's on our side of the lot line that is being created. In any event, we anticipate that we would be aiming that money to that function to be able to engineer and re-locate the septic so that we can effectuate the sale of both of the properties under the 40B plan which is why I am here tonight. We haven't spent any of it, we haven't incurred any obligations relative to it but we're probably going to have to because at least on 93 there's some very unusual things that have to happen with the leaching field to get it onto the property and locate it so that its within the lot lines which will allow the 40B homes to be built in the back.

Ms. Greenhalgh said this past Thursday, Habitat for Humanity filed their Comprehensive Permit with the Zoning Board of Appeals and they are looking at a hearing date on either March 8th or 15th. She stated that abutters will be notified as required by law, it will be advertised in the newspaper and information is available on the website regarding this application.

Mr. Hughes said considering the Board's original intent of using that \$25,000, is there a way they could bill the Town against that \$25,000 for what they have already done and then they could use their own money to do the septic. Mr. Howell said it would have to be used for the reconfiguration of the property and he was just letting the Board know that HECH has absorbed the cost of the first two legs of that. Mr. Clark said he would look at the original intent of the Board vote and if it was to include redoing the sight lines or the property lines, the study relating to the septic could be in the confines of the original vote. He said he would meet with Mr. Howell and the Accountant to seek clarification of the vote.

C. Housing Production Plan

Mr. Hughes said the presentation did a good job of telling us where we are and what we need to do regarding number of units in order to get to the 10% that the state requires but he is not sure it tells us how to go about doing that. Chairman MacAskill said it is a very aggressive plan and asked Ms. Greenhalgh if there has been discussion in the working plan about how we are going to obtain those goals. Ms. Greenhalgh said that right now the plan is outdated so this plan will lend itself to additional monies from grants. She commented that even if we are doing it one unit at a time we are making progress. She discussed the problem of lack of land and unique methods for creating affordable housing. Ms. Greenhalgh took further questions from the Board. She said the Planning Board is taking this up at their meeting on the 14th. Mr. LaMantia moved to approve the Housing Production Plan as presented to us. Mr. Hughes seconded the motion and the motion carried by a unanimous vote.

D. Wastewater Information Guide

Mr. Hughes said all of his comments have been included and it is time to get this out there. He thanked David Young, Sharon Pfleger and the Wastewater Implementation Committee for their efforts. Mr. LaMantia said he still concerned and has a problem with not focusing on why we are

doing this project in the first place. Ms. Kavanagh said we should flip flop some of the information from end to beginning and include an introduction regarding the impact if we don't do this. Chairman MacAskill pointed out that this will be followed up by both a 4 page more direct piece as well as some 1 page pieces to be followed by some Channel 18 programs. Mr. Clark stressed the need to get this material out and noted that they expect to have the 4 pager out in a week or so. He described other forums for distribution of the information including the website. Mr. DeBakker said people don't want to hear it and all we can do is distribute the brochure and continue to provide more details. He commented that it doesn't matter what order we put things in. Ms. Kavanagh moved to approve for distribution the Town of Harwich Protecting our Water Resources Wastewater Education Handbook. Mr. Hughes seconded the motion and the motion carried by a 3-1-0 vote with Mr. LaMantia in opposition.

E. Wastewater Tracking Project Update

Chairman MacAskill referred to the tracking spreadsheet provided by Administration. Ms. Greenhalgh highlighted the document. Mr. Clark commented that this is a functional tool to be used for tracking so that responsible parties have ability to access their portions and update it. He stated that the CWMP calls for us to provide a status report annually. He noted that this could allow the general public to see how the Town is complying but it is primarily for internal use to comply with CWMP. Mr. Clark thanked Ms. Pflieger for her work on this.

F. Wastewater Project Oversight discussion

Chairman MacAskill suggested approaching the Water Commission about having the Water/Wastewater Superintendent manage the wastewater project. Mr. Clark said that was a good idea. He stated that his sense was that the Board wanted to have Administration do the work in terms of getting the construction, and when that is done in Phase 2 then it gets turned over to Water but if the Board wants to accelerate it that it makes perfect sense. Mr. Hughes stated that he thought the Board would be responsible at first. He stated that he thinks if we are successful in negotiating with Chatham, Phase 2 would more appropriate with the Water Department but initial levels should be with the Board. Chairman MacAskill pointed out that at the same time the Board talked about making the Water Commission a five member Board. He said it is important that this falls under one point person. He questioned if the Board should have control of the project, with the exception of finances, as the Board turns over often and they are not wastewater experts. Mr. Clark noted that it is important to have the Administrator function. He said it should be managed by a team of people, not just one. Ms. Kavanagh agreed with Chairman MacAskill's recommendation. Mr. LaMantia said he prefers it to be the way they voted but said he sees no problem with starting the Phase 2 step a little earlier but the Town Administrator must be involved and none of this can happen until the agreement is made with Chatham. Mr. Clark stated that as things need to be financed you need the Administrator to farm that out and to determine if there are things that could be done in-house. He said that when there are times that he can't get to what needs to be done or he doesn't think the house staff has the talent to do it, we need to reach out to that resource to move the project forward. He said he doesn't think the \$150,000 is necessarily for a project manager but to help us move forward in terms of the overall plan and have this organization move. He stressed that by Charter, the Water/Wastewater Superintendent doesn't have the authority to compel people to do things that need to get done. Chairman MacAskill said he visualizes it the way it was presented in the packet and it is obvious that the Town

Administrator will direct the project. Mr. Young noted that task #4 (\$150,000) includes assisting with public outreach, community partnership discussions, discussing open space acquisition, fertilizer management brochures and education programs. Chairman MacAskill said that this is why we hired the Water/Wastewater Superintendent and Mr. Clark said he agreed with having him be more of the driver of this. Mr. LaMantia said it is important he gets involved at this point and that he and Mr. Clark work together. The Board agreed that Mr. Clark and Chairman MacAskill can have this conversation with the Water Commission.

G. Action Item Register

Ms. Kavanagh said she met with Traffic Safety and she doesn't see it updated. Mr. Clark said he has those comments and will get them in. Chairman MacAskill said the Board should be prepared to give updates in the next couple of weeks.

NEW BUSINESS

A. Draft RFI for West Harwich School

Ms. Sabatino highlighted the RFI to relocate or repurpose the West Harwich School. Mr. Hughes suggested making the response time 45 days rather than 30 days. The Board discussed it and it was decided that the response time should be 60 days. Ms. Urbano asked about Ms. Sabatino's thought process in putting the RFP together as it is different than what was put together earlier. Ms. Sabatino said the only difference is the relocation of the building. Ms. Urbano asked if anyone has inquired about this and Chairman MacAskill responded that the farm bureau has reached out to us but there is nothing official. Mr. Hughes asked if it is clear that we would accept a lease or sale of the building. Ms. Sabatino said she would add the sale of the building.

B. Potential Adoption of West Bridgewater Temporary Moratorium on Legalized Marijuana

Mr. Clark stated that a moratorium would allow us another Town Meeting cycle to be able to do zoning changes. Mr. Hughes asked if Attorney Giorgio has weighed in on this and Mr. Clark said we could send it to him but noted that the Attorney General approved the West Bridgewater language. Ms. Kavanagh moved that we approve adoption of the West Bridgewater temporary moratorium on legalized marijuana for Harwich and refer to the Planning Board to start the public hearing process necessary for a zoning amendment. Mr. LaMantia seconded the motion and the motion carried by a unanimous vote.

C. Support of Room Rental Tax

Mr. Clark stated that we had a discussion as a result of the MMA meeting and this is informational only. He said it would allow taxation to be extended to private residences that are used for rental purposes. Mr. LaMantia suggested looking at what other towns have done. Mr. Hughes said he would only have an interest in this if the revenue generated can be specifically designated for something like wastewater. He also questioned how we would enforce it and said they should think about it first. There was discussion about the rental registration program and how it might be applied. Ms. Greenhalgh pointed out that the program is a one time deal. Ms. Kavanagh was opposed to regulating these rentals. No action was taken on this item.

TOWN ADMINISTRATOR'S REPORT

A. FY18 Budget Message to be presented at February 13, 2017 Board of Selectmen meeting

Mr. Clark noted that the FY18 Budget Message will be presented at the February 13th meeting.

B. Response from Attorney Giorgio on Charter changes

Mr. Clark reported that Mr. Giorgio has responded about the various Charter changes presented by the By-Law Charter Review Committee and he outlined that response. He reported that he met with Mr. Howell and he has been made aware of the opinion.

C. Efficiency and Regionalization Grant Program

Mr. Clark stated that we put together an Efficiency and Regionalization Grant Program that would be for \$185,000 to assist the 3 towns of Dennis, Yarmouth and Harwich to basically get us to where we are now with the Chatham IMA. He noted that the grant was submitted officially by the town of Dennis as the host community and he did write a letter of support for the project. He reported that March 8th has been selected for a meeting of the 3 towns to hear a presentation by CDM Smith on the potential value of a tri-town agreement.

ADJOURNMENT

Mr. Hughes moved to adjourn at 9:25 p.m. Mr. LaMantia seconded the motion and the motion carried by a unanimous vote.

Respectfully submitted,

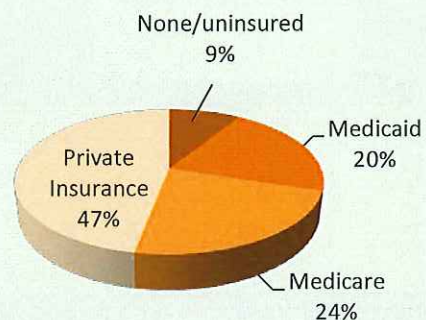
Ann Steidel
Recording Secretary

Our Mission

The mission of Outer Cape Health Services (OCHS) is to provide a full range of primary health care and supportive social services that promote the health and well-being of all who live in or visit the eight outermost towns on Cape Cod.

Who We Serve

- OCHS cares for more than 17,000 patients per year
- 53% of patients are uninsured or on public insurance
- 24% have Medicare coverage
- 9% have no insurance
- Sliding scale fee structure to ensure that all patients receive care regardless of ability to pay (we provide over 3,000 free visits on average per year)



Services

- Primary care
- Behavioral health
- Dental care
- Urgent care (Provincetown only)
- Pediatrics
- Women's health
- Dermatology
- Optometry
- HIV/AIDS care
- Office-based opioid treatment
- Nutrition
- X-Ray
- Pharmacy (Wellfleet & Provincetown)



Additional Programs

- WIC (Women Infants & Children)
- Healthy Connections – Insurance Enrollment Assistance
- Community Resource Navigator Program



Certified by
The Joint Commission 2016

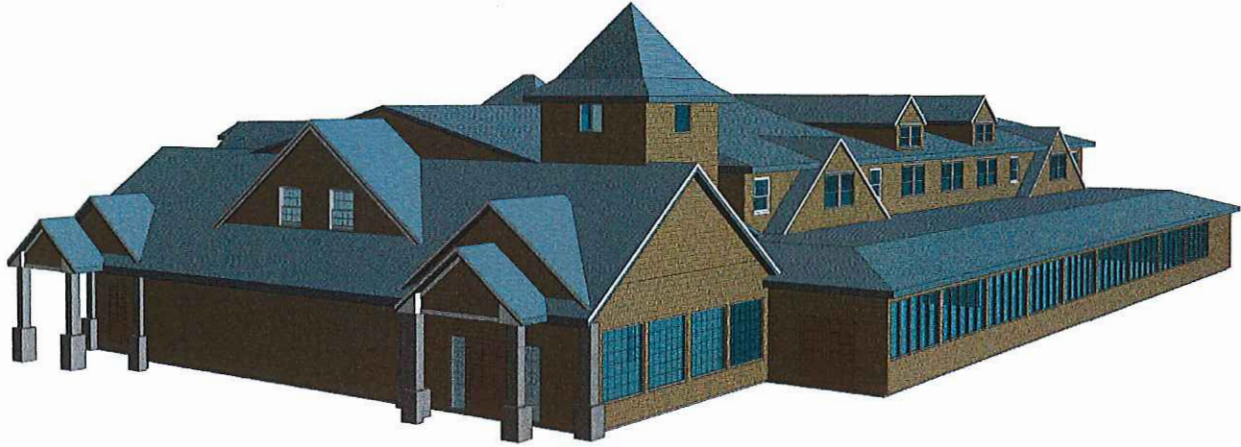
Locations

HARWICH
269 Chatham Road

WELLFLEET
3130 Route 6

PROVINCETOWN
49 Harry Kemp Way

Outer Cape Health Services Harwich Health Center Replacement Project



710 Main Street, Harwich Port

18 Room Health Center on 1st floor (18,500 sq. ft.) offering Primary Care, Behavioral Health, Family Resource Center, Specialty Care (replaces current 5-exam room Harwich health center)

OCHS Administrative Offices on 2nd floor (13,300 sq. ft.), up to 50 Administrative, Management, Access Center staff

Team-Based Health Center Design: Two 9-room pods

Clinical Team (Per Pod): 4 Providers, 1 Behavioral Health Provider, 2 RN, 4 Medical Assistants

Phased Health Center Opening: 12 exam rooms Summer 2018, remaining 6 exam rooms Spring-Summer 2019

Administrative Staff (32) move in February–March 2017

Supportive Services: Dispensing Pharmacy, WIC, Healthy Connections, Lab, X-Ray (add/alternate)

Estimated Cost: \$6,800,000

Funding: USDA Loan, HRSA HIIP Grant, OCHS Fundraising

Anticipated Visits/Year: 30,000 (after fully operational with 18 exam rooms)

Ambulance Bay for pick-up/transport

1st Floor Staffing: Up to 32 (MD, PA, NP, RN, MA, front desk, lab, Rx, WIC, Health Connections, management)

2nd Floor Staffing: Up to 50 (billing, call center, finance, administrative, management, development, IT)

Proposed CDM Smith Services During Harwich Phase 2 Implementation

Town of Harwich

Patrick Hughes, PE, BCEE
David Young, PE, BCEE

February 6, 2017



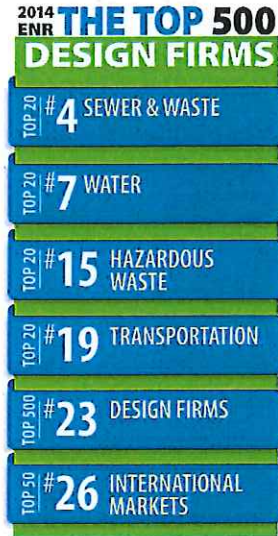
**CDM
Smith**

Presentation

- Who is CDM Smith.
- Brief overview of CDM Smith services to date with Harwich.
- Proposed Phase 2 services.
- Questions and comments.

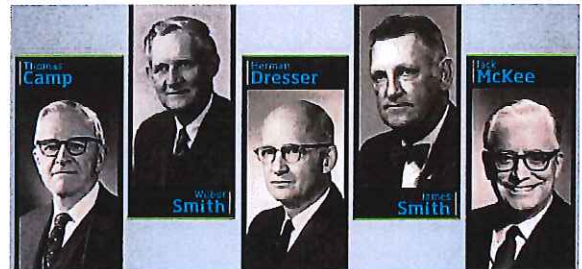
About CDM Smith

- We have an annual revenue of more than \$1.2 Billion and more than 5,000 professionals in over 125 offices worldwide
- Our World Headquarters are located in Boston, Massachusetts, USA
- Employee-owned and operated
- Markets – Water, Environment, Transportation, Energy and Facilities



CDM Smith History

- Founded as partnership in 1947
- Established international subsidiary in 1968
- Incorporated in 1970
- Today over 5,000 employees



- Established federal subsidiary in 1985
- Established construction subsidiary in 1992
- Merged with Wilbur Smith Associates in 2011, branded as CDM Smith in 2012

Our Core Services

CDM Smith provides lasting and integrated solutions in water, environment, transportation, energy and facilities to public and private clients worldwide. As a full-service engineering and construction firm, we deliver exceptional client service, quality results and enduring value across the entire project life cycle.



WATER



TRANSPORTATION



ENVIRONMENT



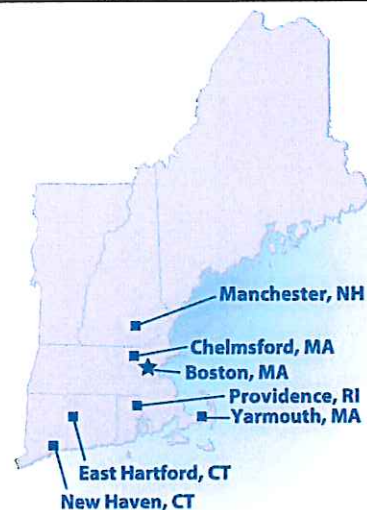
ENERGY



FACILITIES

CDM Smith

- National resources available to assist as needed.
- Local, responsive service to meet Harwich's needs.



CDM Smith has partnered with Harwich and knows the Wastewater Program

- CDM Smith hired in July, 2007 for Comprehensive Wastewater Management Plan (CWMP).
- Over 125 committee and community meetings.
- Town CWMP approved by State and County in 2016.



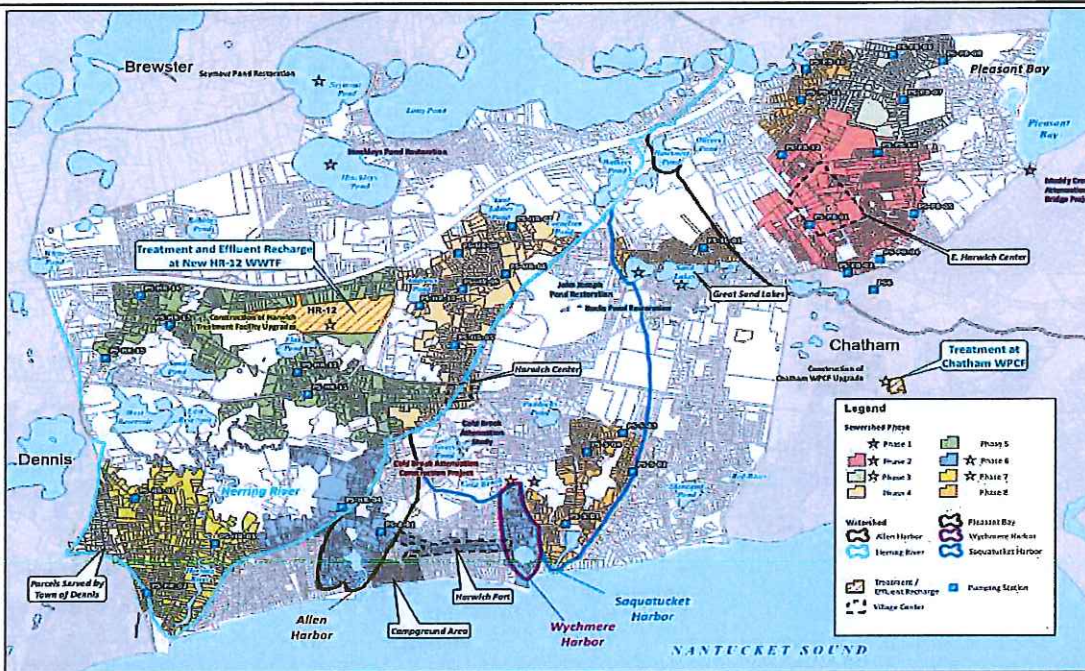
The Town of Harwich invites all citizens and business owners to attend the first community meeting to help kick-off the development of a town-wide Comprehensive Wastewater Management Plan.



Our valuable water resources are being stressed by pollution. Learn about this threat to our environment, and become involved in developing a solution.

3. Ladies indicate that nitrogen is significantly degrading our water quality. On-shore septic systems are the largest local source of nitrogen pollution.

Protect your environment. Protect your local economy. Protect your quality of life.
Get involved



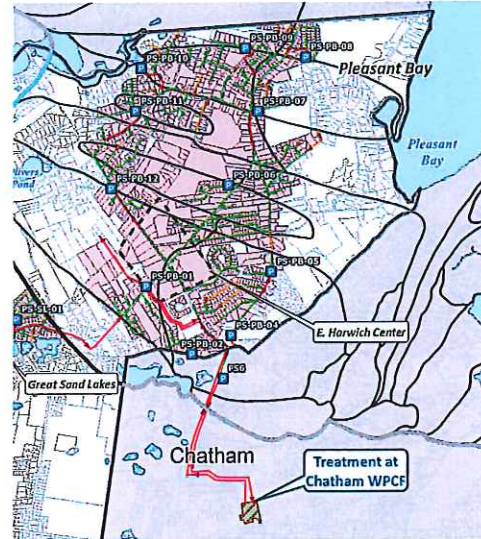
Sewer Service Area by Phase

1 inch = 4,000 feet
Scale 1"=4000'

Figure 13-3
Recommended Phasing Plan
CDM Smith

Phase 2 – Pleasant Bay Watershed Sewer System Design

- 12 miles of pipelines.
- Six pumping stations.
- 100 design drawings.
- Over 200 borings.
- Local and state permits.
- Chatham coordination.
- Public outreach.



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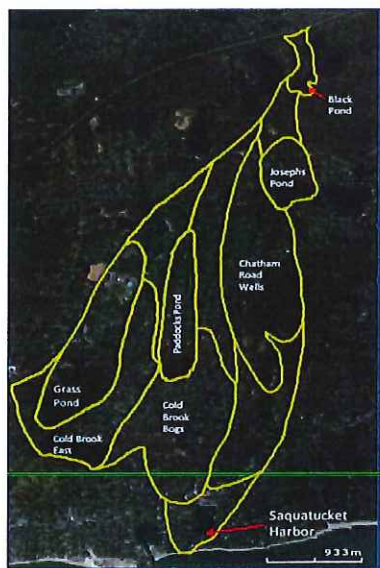
Sewer Installation



Chatham Wastewater Treatment Plant Inter-Municipal Agreement Negotiations



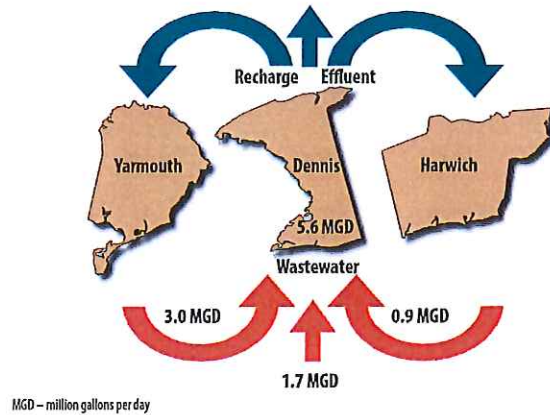
Cold Brook – Natural Nitrogen Attenuation



Community Partnership Option

- Treatment Plant located in Dennis.
- Effluent recharge in all three communities.
- Economy of scale saves cost of construction as well as operation and maintenance costs.

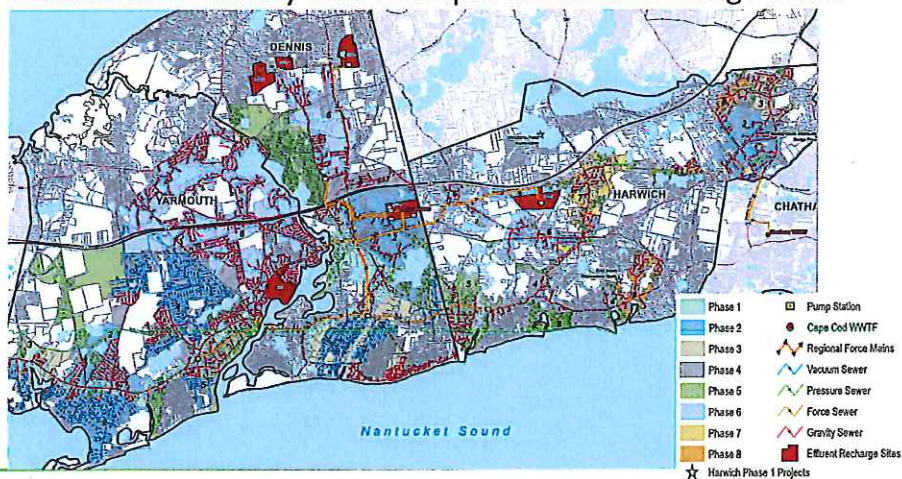
Community Partnership – Dennis, Harwich, and Yarmouth



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Community Partnership Option

Dennis, Harwich, and Yarmouth are currently evaluating the construction of one centralized treatment facility and multiple effluent recharge sites.

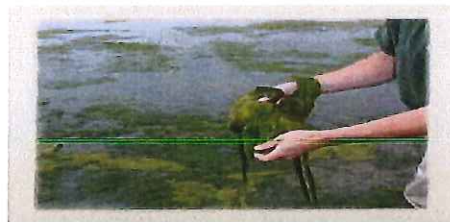


Value to Harwich

- Wastewater implementation is our core service
- We have successfully implemented many similar systems
- Our change order ratio is well below industry standard
- We are expert at maximizing State Revolving Fund (SRF) loans
- We intend to partner with and advocate for the Town of Harwich
- This is an important project for CDM Smith and we're here for the long-term

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Questions and Comments



Algae Bloom in Allen Harbor, Harwich, Swan Pond, Dennis and Mill Creek, Yarmouth

Town of Harwich

**Protecting our
Water Resources**

Wastewater Education Handbook

February 2017



Herring River
at Route 28

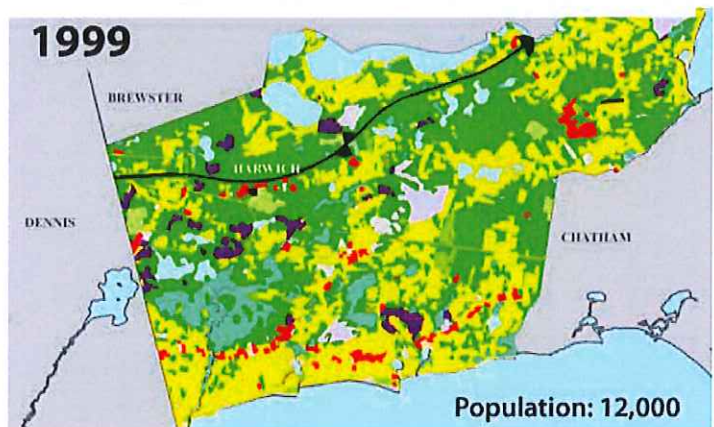
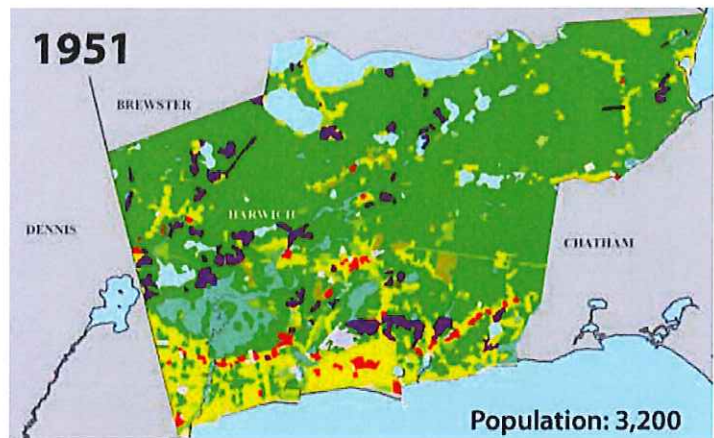


Introduction

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.

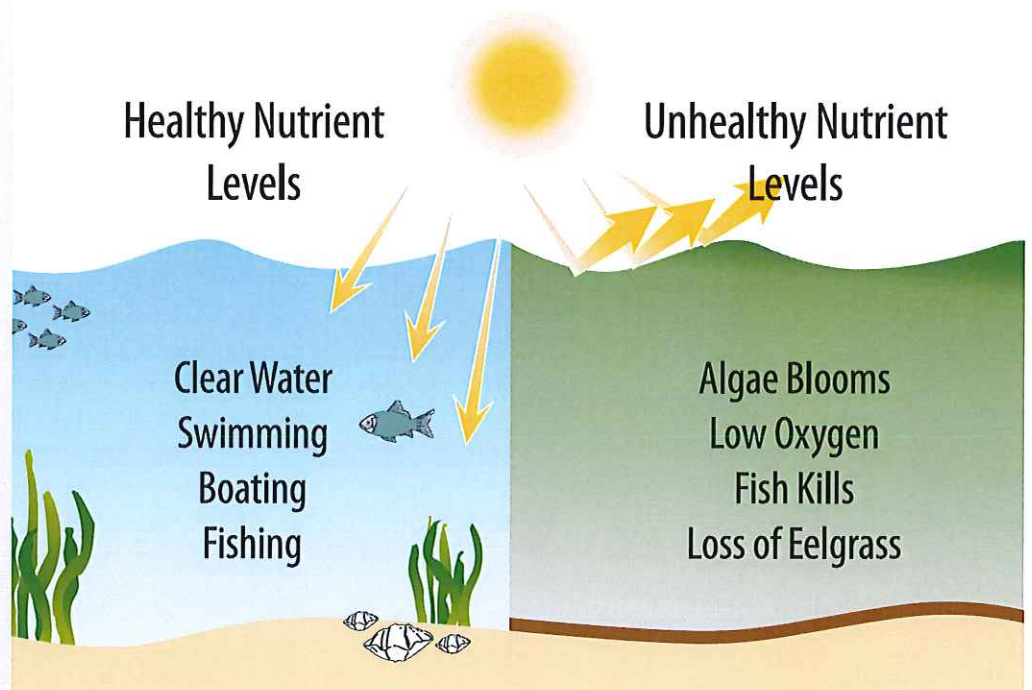
The approved CWMP is available on the Town website at: <http://bit.ly/HarwichCWMP>



Beaches, rivers and harbors are severely impacted by nitrogen pollution.

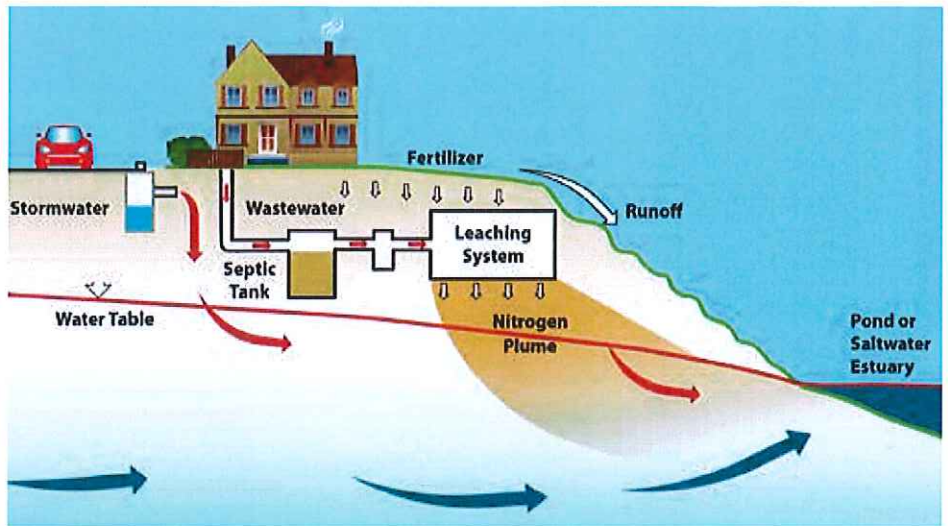
Too much nitrogen from septic systems allows algae to flourish.

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.



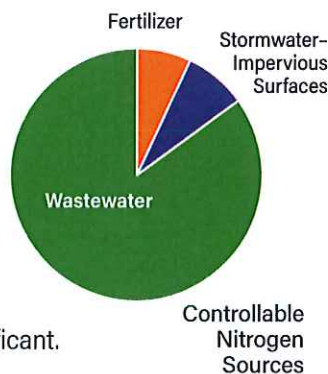
Nutrient Sources and Wastewater Flow to Receiving Waters

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

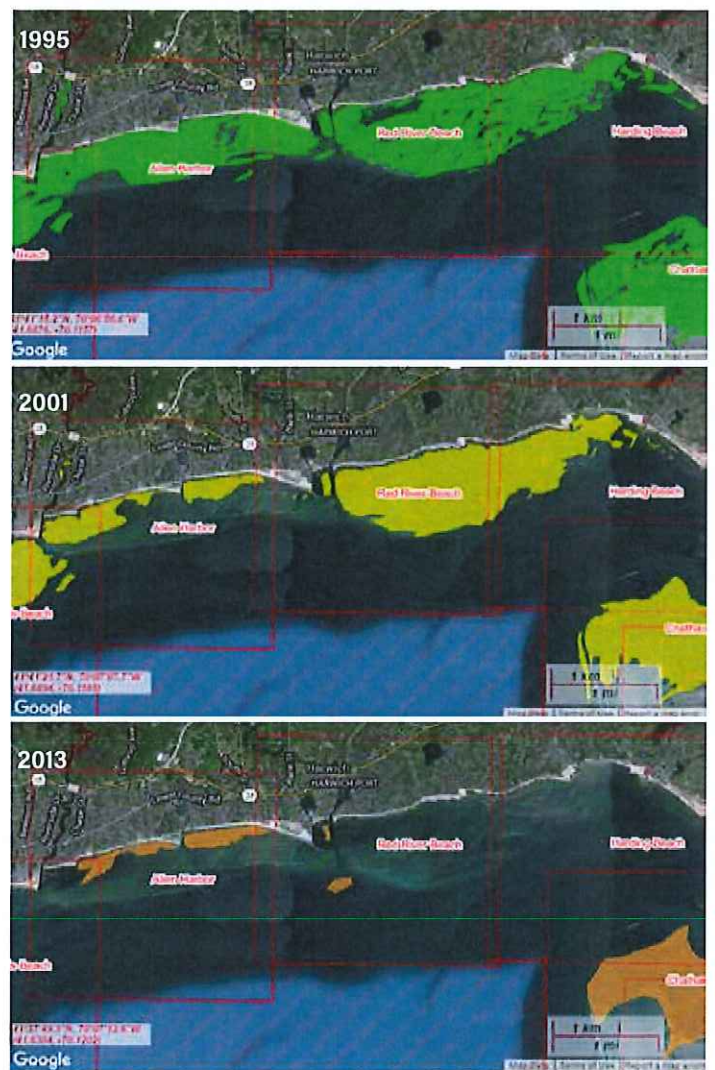
The Town of Harwich has 5 watersheds that terminate in estuaries which require nitrogen (N) reduction to maintain or restore acceptable water quality. These levels of remediation have been determined through an extensive and longterm water sampling program and computer water quality modeling of the watersheds.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

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.

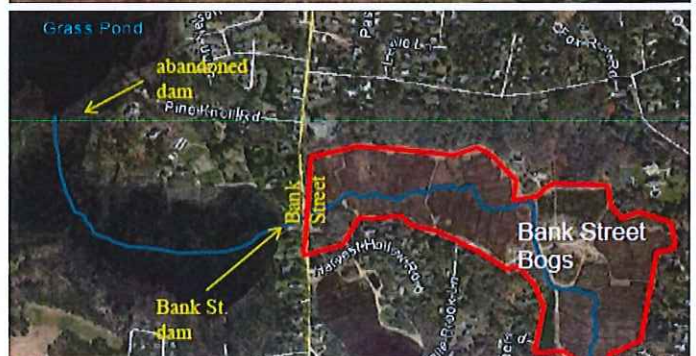


Before (top) and After (bottom) Muddy Creek Inlet Widening.

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



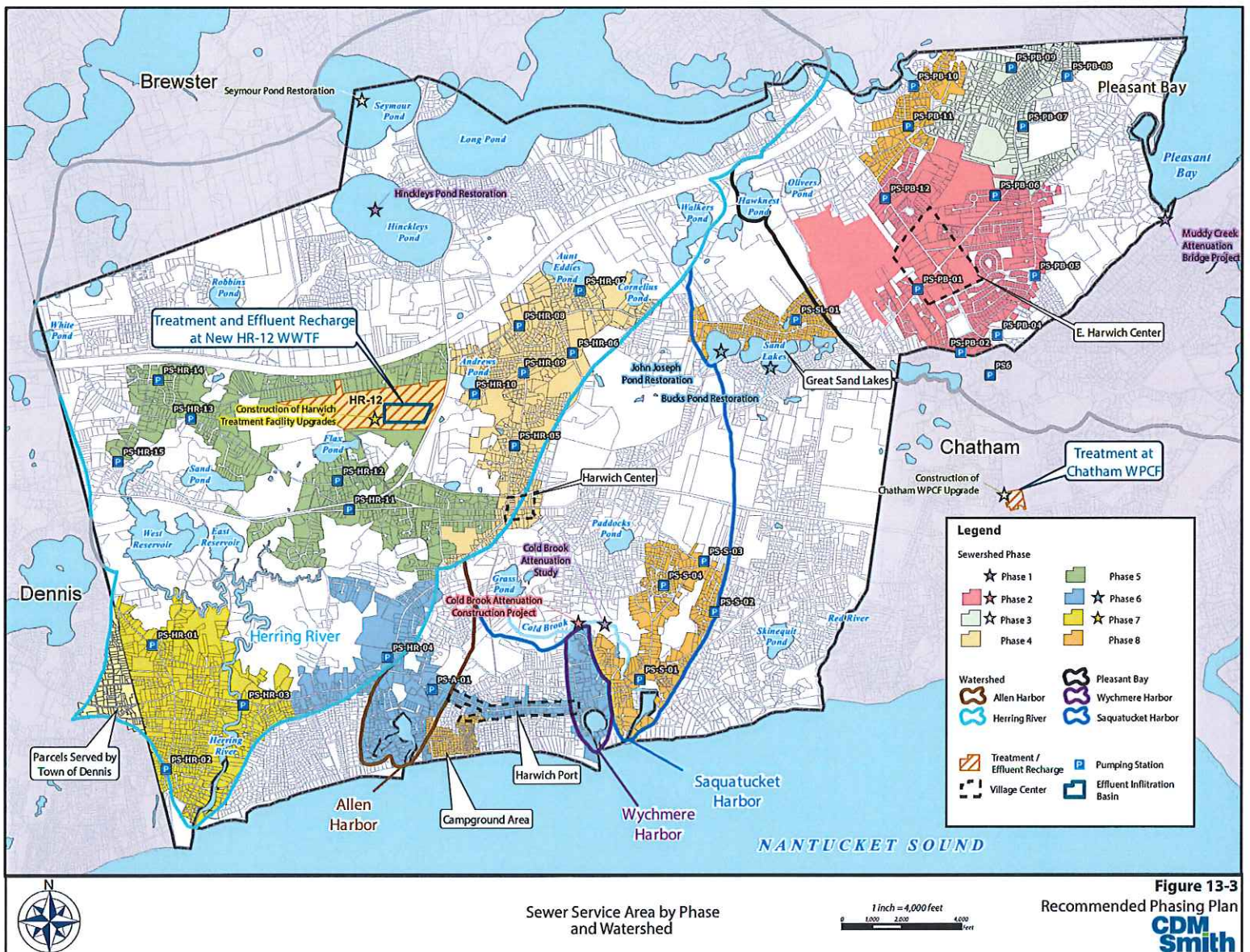
Nitrogen Reduction by Natural Attenuation in Cold Brook at Bank Street bogs – Existing conditions.

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.



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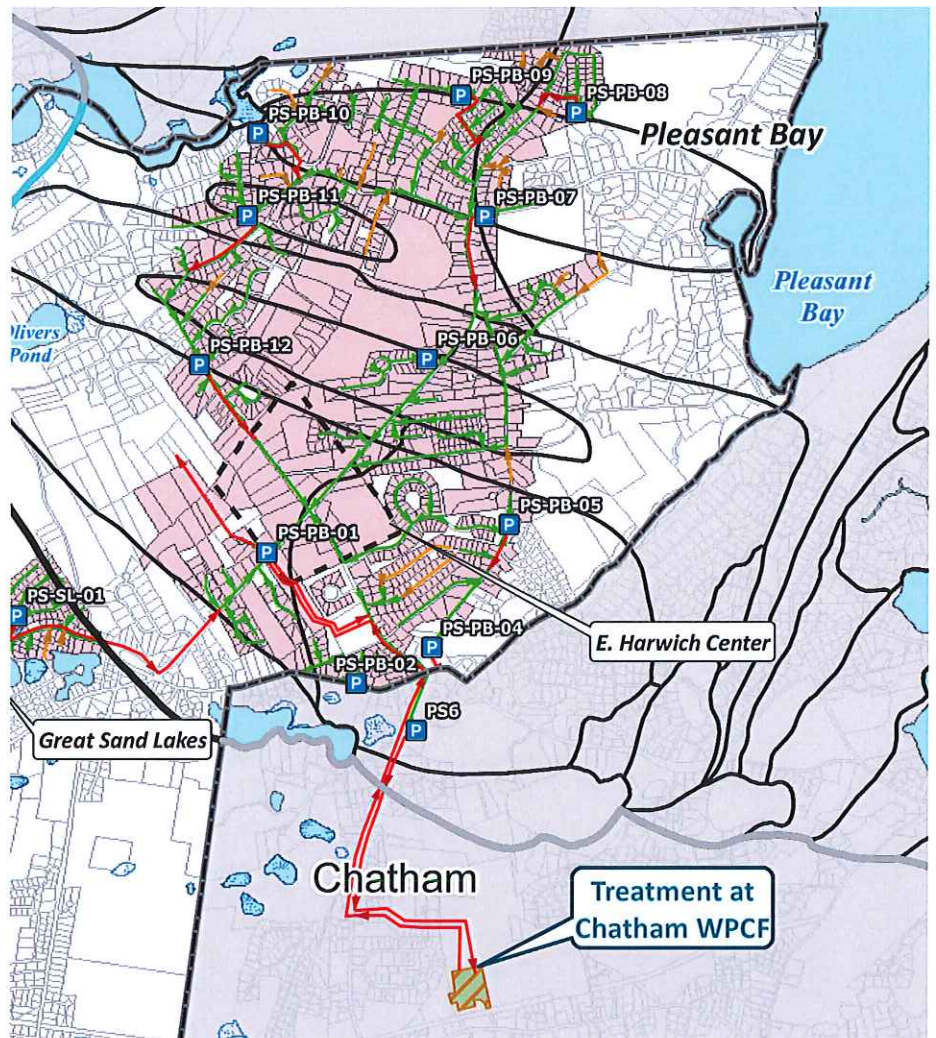
CWMP Overview

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 excess 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 sewerred 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)

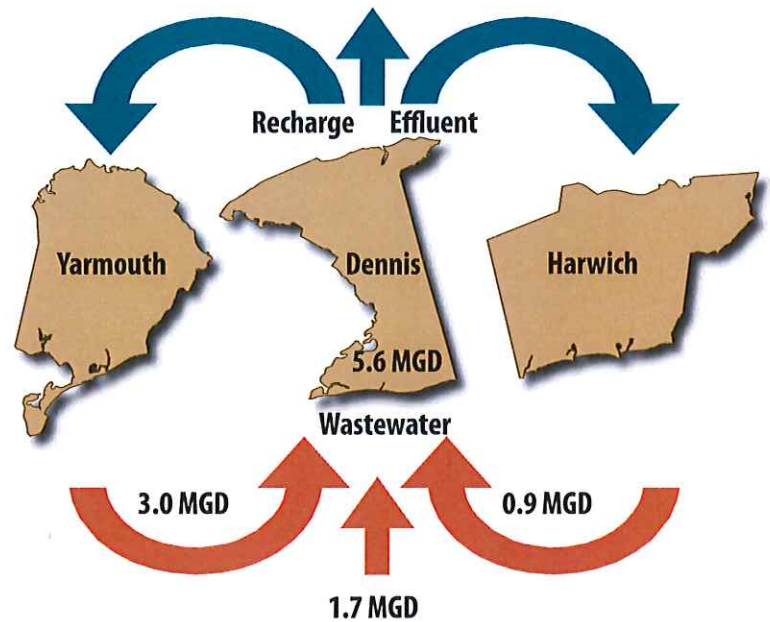


Sewer Collection System Concept for the Pleasant Bay Watershed

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.

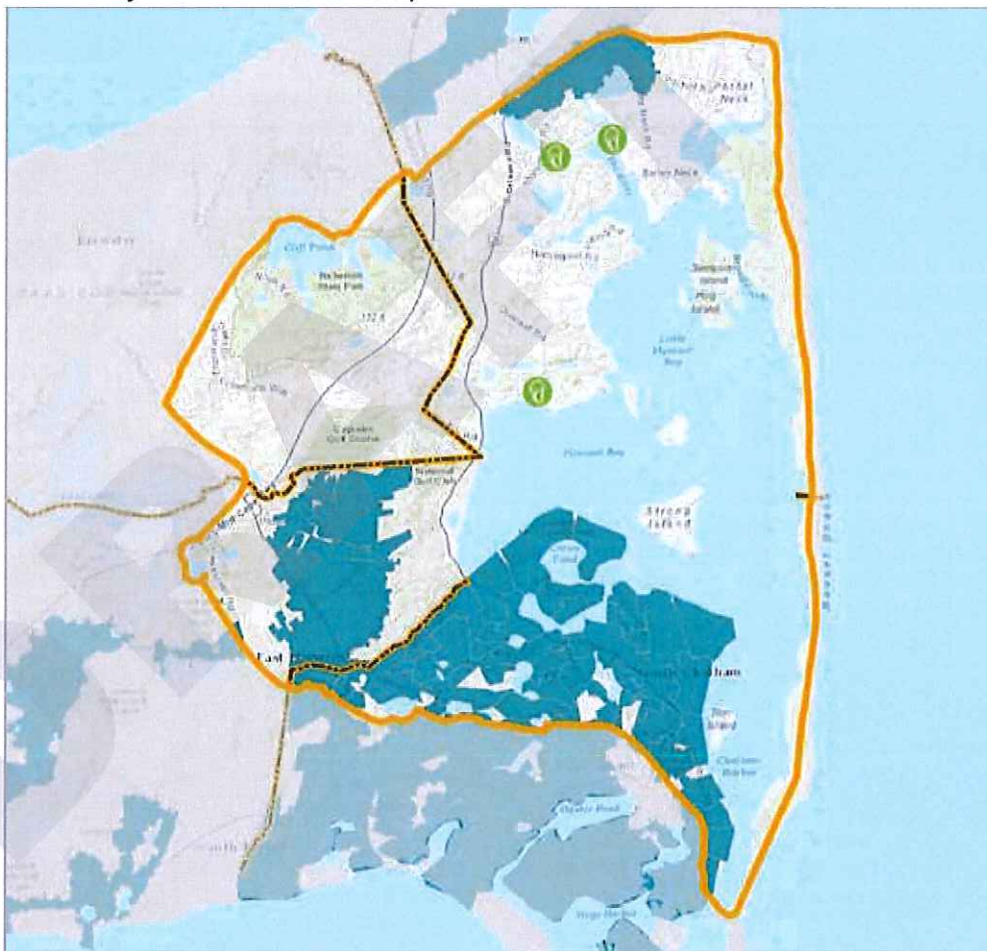
Community Partnership – Dennis, Harwich, and Yarmouth



MGD – million gallons per day

Chatham, Harwich, Orleans and Brewster Proposed Restoration Program

Pleasant Bay Watershed Scenario Map



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-inundated 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

Legend

Aquaculture

Embayment Watersheds

Proposed Sewershed

Source: Cape Cod Commission

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)

Harwich Comprehensive Wastewater Management Plan

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 (SMASST), 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 sewerred. 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 sewerage 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 analysis 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?

A17 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



Related Documents - 2/6/17 BOS Meeting

- 01 Agenda.pdf
- 02 Minutes Jan 17, 2017.pdf
- 03 Minutes Jan 23, 2017.pdf
- 04 Seasonal Population.pdf
- 05 Road Race.pdf
- 06 Waterways Appointment.pdf
- 07 Concert Series.pdf
- 08 Eversource Petitions.pdf
- 09 Outer Cape Health Presentation.pdf
- 10 CDM Smith Phase II Contract.pdf
- 10 CDM Smith Profile.pdf
- 11 Housing Production Plan.pdf
- 12 Action Item Register.pdf
- 13 Wastewater Information Guide.pdf
- 14 West Harwich School RFI.pdf
- 15 Proposed Adoption of Marijuana Moratorium.pdf
- 16 Room Rental Tax.pdf
- 17 Charter Changes.pdf
- 18 Efficiency & Regionalization Grant.pdf