



protecting our water resources

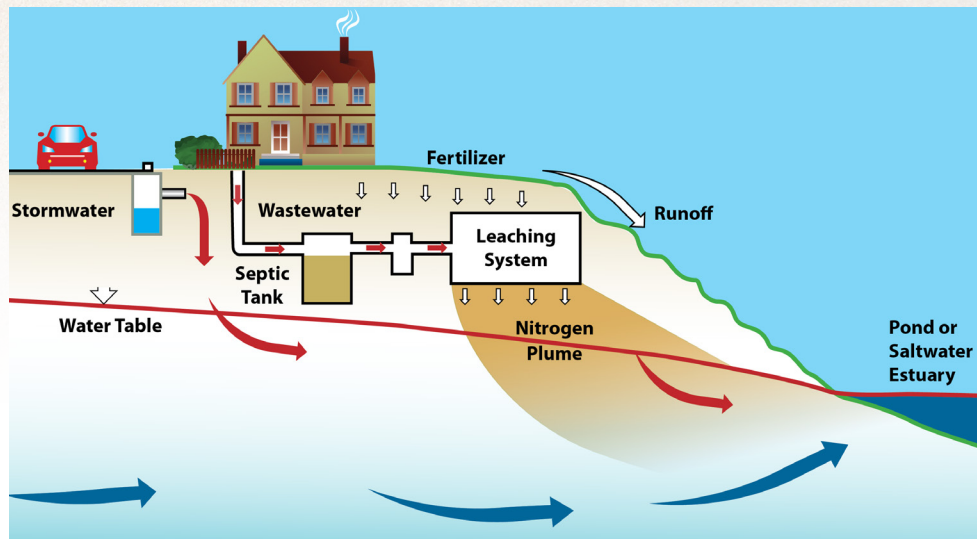


Town of Harwich *Phase 2 Implementation*

2017 Annual Town Meeting — Articles 11 and 12 and Ballot Questions 1 and 2

Our Challenge.

Our population has increased over 400 percent since 1951. That growth has resulted in various water quality issues that now must be addressed. Most homes in Harwich rely on traditional Title 5 on-site septic systems which are not effective at reducing the required level of nitrogen to restore our water resources. Harwich has developed a state and county approved Comprehensive Wastewater Management Plan (CWMP) to address this challenge.



Nutrient Sources and Wastewater Flow to Receiving Waters

Our Solution!

Our near-term focus, Phase 2, is to remove nitrogen in the Pleasant Bay Watershed via sewerage, naturally remove nitrogen in the Cold Brook area, and restore water quality in Hinckleys Pond. We have negotiated an Inter-Municipal Agreement (IMA) with Chatham for us to convey our East Harwich Service Area (Pleasant Bay Watershed) collected wastewater to the existing Chatham water pollution control facility for treatment and initial recharge. Our 300,000 gallons/day capacity purchase fee is about \$6.8 Million to be paid in four installments over a 7-year period.



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

Why are we addressing Pleasant Bay Watershed first?

Five Harwich watersheds need to be addressed; requiring septic system nitrogen removal of 58 to 100 percent. After much discussion the town has decided the Pleasant Bay watershed should be done in the next phases for these six important reasons:

- Harwich shares the watershed with Chatham thus offering significant cost savings as Harwich can use a portion of the existing Chatham wastewater treatment plant rather than build its own facility in the Pleasant Bay watershed area.
- The Pleasant Bay watershed is the largest Harwich watershed requiring the greatest percentage (65%) of septic system nitrogen removal.
- The town relies on 14 groundwater wells to supply water to about 10,000 accounts. While overall the water quality is excellent, three of the wells are located in the Pleasant Bay watershed and show nitrogen levels above background concentrations, indicating impacts from development.
- Phasing in the watersheds over time provides opportunities in future years to save money by working with Dennis and Yarmouth to share costs of a future regional wastewater treatment plant.
- During Phase 1, Harwich completed a joint project with Chatham to replace the Muddy Creek culvert with a bridge increasing tidal flow to improve the water quality and reduce by 230 the number of homes needing to be sewerred. This sets the stage for further cooperative efforts.
- Concern has been expressed that sewerred the Pleasant Bay watershed to meet water quality regulatory requirements will encourage unreasonable growth in East Harwich. Potential growth of East Harwich will be determined by Harwich residents as voiced through resident input, Zoning, the Planning Board, the Board of Selectmen, and ultimately future Town Meeting action. The CWMP establishes a framework to support existing needs and future vision for Harwich but does not make these decisions.

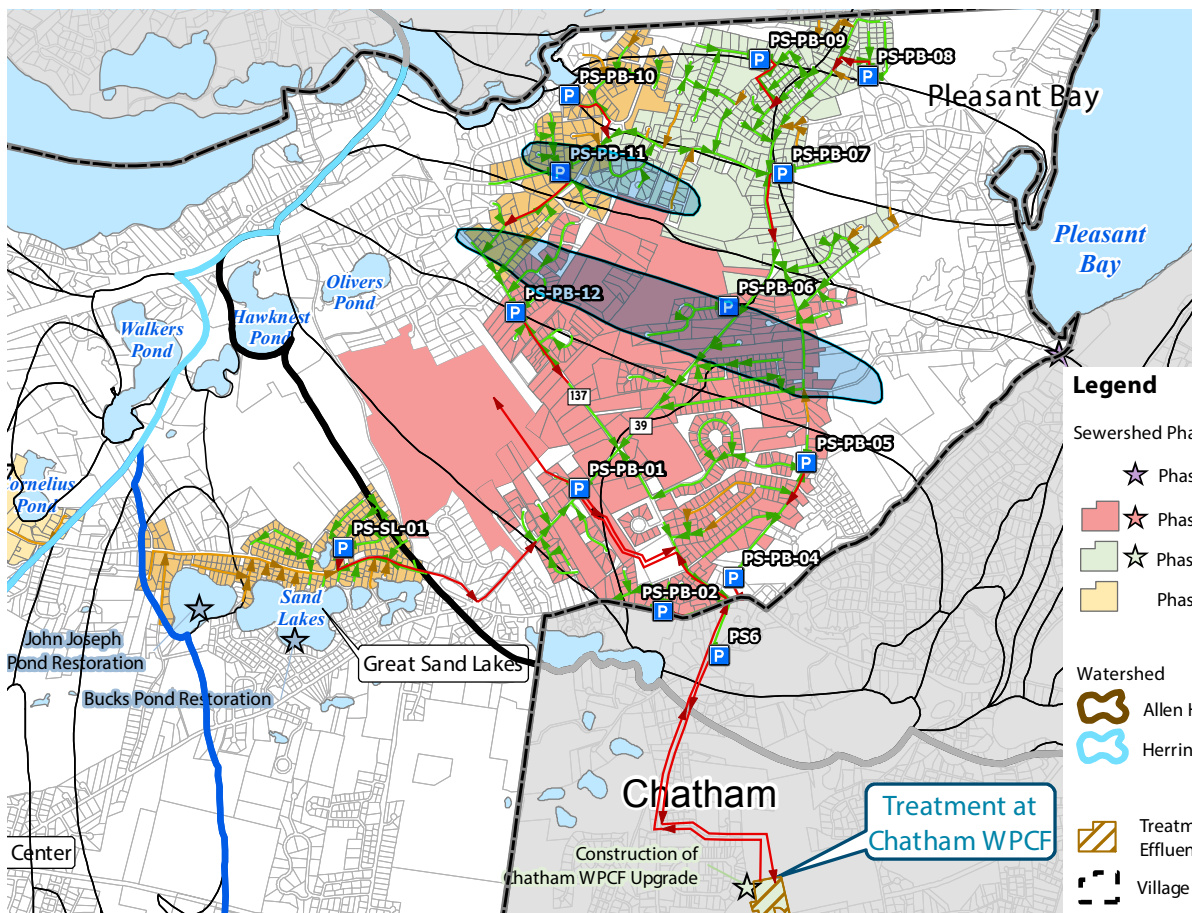
IMA CAPACITY PURCHASE FEE AND DESIGN OF INTER-CONNECTION WITH CHATHAM AND SEWERS IN THE PLEASANT BAY WATERSHED

ARTICLE 11: To see if the Town will vote to raise and appropriate, transfer from available funds, or borrow a sum of money to implement a portion of Phase 2 of the Town of Harwich Comprehensive Wastewater Management Plan, approved by the Massachusetts Secretary of Energy and Environmental Affairs in a Massachusetts Environmental Policy Act Certificate dated May 13, 2016, consisting of the payment to the Town of Chatham of the capacity purchase fee pursuant to an intermunicipal agreement between the Town of Harwich and the Town of Chatham which permits the Town of Harwich to deliver wastewater to the Chatham Water Pollution Control Facility for treatment and design of sewers in the Pleasant Bay Watershed and design the Chatham interconnector system, as more fully described in said Comprehensive Wastewater Management Plan, including any land acquisition costs and all other costs incidental and related thereto; provided that any borrowing authorized hereunder shall be contingent on the passage of a Proposition 2 and ½ debt exclusion vote; and to act fully thereon. By request of the Board of Selectmen. Estimated cost: \$9,035,000.

Explanation: The Board of Selectmen have decided to request the design components of the CWMP Phase 2 and the cost to implement the Chatham IMA to purchase capacity of \$6,765,000; the design of Pleasant Bay (south) sewer system \$2,020,000; and design of Chatham interconnector system \$250,000. The total cost is \$9,035,000. It is anticipated that when the design is complete, an article for \$22,980,000 will be requested in 2018 to fund the construction. The IMA Interconnector cost is \$2,150,000; the Southern section of the Pleasant Bay is \$20,280,000; and the restoration of Hinckley Pond is \$550,000. The anticipation is the numbers should be more refined by 2018. The voter should consider the full amount of such when deciding to vote at Town Meeting and on the Ballot Question. It is anticipated that the Board of Selectmen will be seeking a further appropriation to implement the CWMP at the 2018 Annual Town Meeting.

COLD BROOK PROJECT

ARTICLE 12: To see if the Town will vote to raise and appropriate, transfer from available funds, or borrow a sum of money to implement a portion of Phase 2 of the Town of Harwich Comprehensive Wastewater Management Plan, approved by the Massachusetts Secretary of Energy and Environmental Affairs in a Massachusetts Environmental Policy Act Certificate dated May 13, 2016, consisting of the design, construction, and implementation of the Cold Brook Project, as more fully described in said Comprehensive Wastewater Management Plan, including any land acquisition costs and all other costs incidental and related thereto; provided that any borrowing authorized hereunder shall be contingent on the passage of a Proposition 2 and ½ debt exclusion vote; and to act fully thereon. By request of the Board of Selectmen. Estimated cost: \$2,000,000



Pleasant Bay Sewer Service Areas

Legend

Sewershed Phase

- ★ Phase 1
- ★ Phase 2
- ★ Phase 3
- ★ Phase 4
- ★ Phase 5
- ★ Phase 6
- ★ Phase 7
- ★ Phase 8

Watershed

- Allen Harbor
- Herring River
- Pleasant Bay
- Wychmere Harbor
- Saquatucket Harbor
- Zone of Contribution to Municipal Well
- Pumping Station
- Effluent Infiltration Basin
- Treatment / Effluent Recharge
- Village Center

What will this cost?

Financial Impacts

The 40-year Plan will be constructed in eight 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 for Phase 2 calls for design (1-2 years) and construction (3 years) 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.

41 Cents Per Day

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 entire 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.



Phase 2 costs are summarized in the table below.

Phase 2 Funding		Total = \$34,165,000
Source	Amount	Component
Art. 11	\$6,765,000	Capacity Purchase at Chatham WPCF
Art. 11	\$2,020,000	Design of Pleasant Bay (South) Sewer System
Art. 11	\$250,000	Design of Chatham Interconnector System
Art. 12	\$2,000,000	Design, Construction and Implementation of Cold Brook Project
FY 19	\$20,280,000	Construction of Pleasant Bay (South) Sewer System
FY 19	\$2,150,000	Construction of Chatham Interconnector System
CPC	\$550,000	Hinckleys Pond Restoration
Budget	\$150,000	CWMP Implementation Services



A wastewater tax calculator is on the town website at: bit.ly/HarwichWWCalc

The Consequences...

“The cost of doing nothing is economically devastating to every Cape homeowner.

— Cape Cod Commission, 208 Plan, 2014

What if we don't fund Phase 2?

The Massachusetts Department of Environmental Protection (MassDEP) in a letter from Commissioner Suuberg dated February 21, 2017, indicated that if a community does not move forward with implementation of their CWMP to address Total Maximum Daily Loads (TMDLs) established for watersheds leading to embayments on Cape Cod, that they will likely designate these watersheds to be a Nitrogen Sensitive Area (NSA) and NSAs in the future will require all on-site Title 5 systems to be upgraded to enhanced treatment systems for nitrogen removal. That means each homeowner or business would need to install a biological treatment system to treat nitrogen down to the 13 to 19 mg/l level with an estimated capital cost of \$20,000 to \$25,000 per system and an annual operating cost of \$1,500 to \$3,000. This option was evaluated in the Harwich CWMP and was shown to be twice as expensive as any other option considered. Also this option did not remove sufficient nitrogen quantities in certain watersheds and thus, required some areas to be sewered and collected wastewater treated at a centralized facility as a supplement to the on-site enhanced systems.

“This enhanced on-site treatment option was evaluated in the Harwich CWMP and was shown to be twice as expensive as any other option considered.

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.

Harwich residents are fortunate to have a good roadway system, municipal water system, school system, etc. that our ancestors funded for us to utilize. These quality well-established facilities are the foundation for the quality of life that makes Harwich so desirable. Thus, it is incumbent upon the residents of Harwich to implement our wastewater program so that future generations receive the benefits that existing residents have of enjoying our valuable water resources.

The wastewater program will not get any cheaper to implement in the future. While the town is committed to continue evaluating new innovative systems or processes in the future in hopes of lowering costs we cannot wait to implement the next phase of the 40-year program.

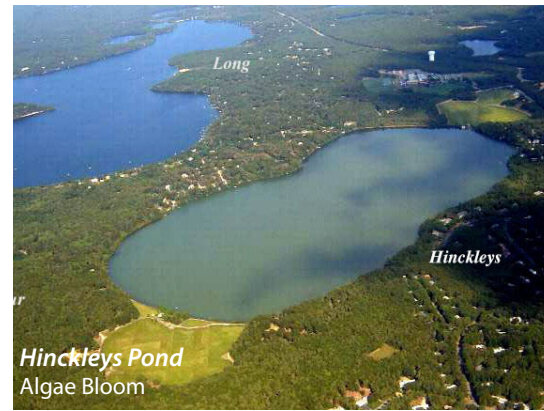
For additional information go to:

- <http://www.harwich-ma.gov>
- <http://bit.ly/HarwichCWMP>
- <http://bit.ly/HarwichWIC>

***We have a plan to restore
Harwich Water Quality for
generations to come***



Allen Harbor
Algae Bloom



Hinckleys Pond
Algae Bloom

“A 1% decline in water quality led to an average loss in home value of 0.61%

— Cape Cod Commission,
Three Bays Study, 2015

Back in the 1970s, Harwich, like many other Cape Cod communities, passed on state and federal grants that would have paid for 90 percent of this program. Those funds are no longer available. We cannot continue to make that mistake and let our water resources continue to degrade. If our water resources continue to decline, our real estate values will as well and our tourist economy will be negatively impacted.

