



Eastham
MASSACHUSETTS

Wastewater Project Information



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History of Wastewater Planning in Eastham

Our first Wastewater Management Planning report was completed by Sterns and Wheeler in March 2009. This report identified both Public Health and Environmental needs, protecting public drinking water was given the highest priority. In response to protecting drinking water, Town Meeting approved a partial municipal water system in 2014. A year later approving a town-wide municipal water system which is nearing completion.

In the same time period, the Conservation Law Foundation (CLF) sued the United States Environmental Protection Agency (EPA), charging that the EPA has not fulfilled its obligation under the Federal Clean Water Act to adequately regulate the discharge of nitrogen into Cape Cod Water Bodies. On Cape Cod, septic systems are the primary source of nitrogen in coastal waters. "In response to that suit in 2012, The Cape Cod Commission was designated as the agency that would work with the towns to identify each towns responsibility and monitor progress towards nitrogen reduction goals. The suit was settled in 2014, and established an Area-wide (Cape Cod) Water Quality Management Plan under section 208 of the Clean Water Act. This plan is referred to as "the 208 plan" and provided a framework of what the towns would do to move forward with wastewater initiatives focused on resolving nitrogen impacts to our waterbodies. The plan was certified by Governor Baker and accepted by the EPA in 2015.

(<https://www.capecodcommission.org/our-work/208>). The plan is based on all the towns making progress toward the goal of preventing nitrogen from entering fresh or salt water.

Since 2012, Eastham has participated in the 208 process and have concurrently, with public water, been working on strategies for our ponds and estuaries, focusing on Salt Pond , Nauset Marsh, Rock Harbor, and the Wellfleet Harbor watershed(s).

Wastewater Planning Timeline



Sterns and Wheeler completed a wastewater management planning report, which identified public health and environmental risks and recommended the development of a public water supply and a comprehensive wastewater management plan



The state designated the Cape Cod Commission to identify each town's vulnerable (nitrogen-sensitive) areas and monitor progress toward nitrogen reduction goals, resulting in the Area-wide (Cape Cod) Water Quality Management Plan (208 Plan).



The town developed a Targeted Watershed Management Plan (TWMP) to address water quality issues. This comprehensive, adaptive management approach will advance our nitrogen reduction goals for healthy estuaries. We also installed a permeable reactive barrier at Salt Pond to test alternative technology.



Eastham participated in the 208 process and concurrently worked on strategies to reduce nitrogen in our ponds and estuaries while designing and constructing the public water system approved in 2014 and 2015. Field studies focused on Salt Pond, Nauset Marsh, Rock Harbor, and the Wellfleet Harbor watershed(s).



Town Meeting Voters approved to fund the design and engineering of a wastewater treatment facility and collection system.



The Town issued a final TWMP. MA DEP updated Title 5 rules for towns without sewers to reduce nitrogen pollution. Towns in nitrogen-sensitive areas must get a watershed permit, follow the 208 Plan, and create a town-wide plan. If not, residents must upgrade to advanced septic systems within five years.

Why Now?

Eastham has long been addressing nitrogen pollution from septic systems, which is polluting local water bodies. Due to lawsuits enforcing the Clean Water Act, all Cape Cod towns, are subject to water quality management plans requiring nitrogen reduction in sensitive areas.

Eastham's efforts target major watersheds like Salt Pond and Nauset Marsh, where 75–100% of nitrogen must be removed. In 2024, new DEP rules required towns without sewers to submit nitrogen reduction plans or require property owners to install costly Innovative Alternative (IA) septic systems—averaging \$50,000 to install and \$4,000 per year to maintain.

To avoid burdening residents, Eastham developed a DEP-approved plan that includes building a centralized sewer system for parts of town. Which alleviates the need for all property owners in Town to install IA Systems on their own. Saving individuals thousands and the community as a whole millions of dollars.



Eastham's waterways are being polluted. Addressing this issue relies on reversing nitrogen pollution in our waterbodies. Achieving this requires a comprehensive plan, including the construction of a small sewer system to complement and unify existing efforts.



New DEP regulations mandate I/A systems in nitrogen-sensitive areas within five years unless a watershed plan is adopted. This would be at the cost of the property owner. The cost of an IA system can reach \$50,000 and \$4,000+ yearly maintenance.



The Town must meet the requirements of a 2014 court settlement to reduce nitrogen flow into our marshes, ponds, and Cape Cod Bay to avoid litigation.





What's the rush?

We realize that this decision may seem rushed. However, we felt it important to let the Town decide. It is inevitable that our community will need to implement a wastewater solution, and a community wastewater system is the most cost-effective, efficient solution that will save each of our property owners thousands of dollars annually, estimated to be over \$120,000 over a 20-year life cycle.

Just recently, we received notice that we are eligible for funding through the State Revolving Fund Loan program (SRF) – which is now guaranteed for our whole project. That notice also indicates that future funding is not guaranteed for an entire project – and likely will not be offered on as attractive terms.

We expect the current guaranteed funding package will provide for loans between 0% and 2.6% and include some amount of loan forgiveness, whereas future funding is not guaranteed, will likely be at higher interest rates, and require the Town to issue its own bonds at market rates – this will add tens of millions of dollars of cost to any eventual project.

Special Town Meeting

**The Select Board
scheduled a Special
Town Meeting on
6/23/2025 to
discuss and decide
on this single issue.
To participate in
the SRF Program,
the State needs the
Town to authorize
the project by
June 30, 2025.**



Project Financing

Implementing wastewater infrastructure will be the most expensive project the Town has ever undertaken. Accordingly, we have identified and stewarded resources to be able to complete this inevitable work in a manner as affordable as possible for the Eastham community.

The Cost of Doing Nothing

The Town does not have to take on this project now. However, there is a cost to doing nothing. Current DEP regulations will require most property owners in Town to install, operate, and maintain expensive Innovative Alternative (IA) septic systems starting within the next 5 years.

We conservatively estimate the cost of installing an IA system to be \$50,000 per property (which potentially can be reduced by a \$18,000 tax credit) and that it has an operating cost of \$4,000 annually. Which translates to \$7,000 per year for each property owner, over the 20-year life (maximum) of an IA system.

Town-wide these amounts result in approximately \$183.40 million (net of tax credit) for construction and \$30.8 million annually for operating costs – resulting in an average, annual cost of \$40 million Town-wide.

Additionally, and unfortunately, it is very unlikely that even this level of effort would result in enough nitrogen removal to stop the DEP from requiring the Town to undergo some additional level of sewerage in the future.

We expect the current guaranteed funding package will provide for loans between 0% and 2.6% and include some amount of loan forgiveness.



A Community Solution

Implementing and targeting a community-based wastewater system to our most nitrogen sensitive and key economic development areas will not only resolve our nitrogen removal needs but will also alleviate most of our property owners from the “cost of doing nothing.”

Taking advantage of attractive financing terms, subsidies, and consolidating our resources, a Town-based approach provides a much more affordable solution, as well as a much better solution for several reasons (see separate infomatic).

We estimate a Town implemented wastewater treatment plant and collection system will cost \$170 million and cost \$1.5 million annually to operate. After applying anticipated funding sources and subsidies, these amounts translate to a town-wide \$10 million average annual cost over a 20-year period. The property tax increase to pay these costs for the median valued home would be approximately \$792.

As illustrated on the next page, a Community Solution is not only the best option for Eastham as whole from a cost perspective, but also from an environmental, water quality, and operational perspective. Given the changes in the funding landscape, escalating costs, and inflation – it is imperative for our Town and residents' fiscal sustainability to address these requirements now and reap the benefits of improved water quality and quality of life.

Cost Element	Cost of Doing Nothing IA's on Your Own	Community Solution	Savings
Town-wide capital cost	\$183,360,000	\$170,000,000	\$13,360,000
Town-wide annual operating costs	\$30,800,000	\$1,500,000	\$29,300,000 annually
Town-wide avg annual cost over 20 years	\$40,000,000	\$10,000,000	\$30,000,000 annually
Median valued home – average annual cost	\$7,000	\$1,000 (rounded up from \$792 actual estimate)	\$6,000 annually
20-Year cost to median valued home	\$140,000	\$20,000	\$120,000



What and when did MA DEP change in the Title 5 regulations?

In July 2023, the Massachusetts Department of Environmental Protection (MA DEP) amended the Title 5 septic system regulations (310 CMR 15.000) to address the increasing nitrogen pollution in estuaries and coastal waters, particularly on Cape Cod. The changes aimed to protect sensitive ecosystems and public health by reducing nitrogen discharges from on-site septic systems.

Eastham's sandy soil allows nitrogen, nutrients, and other contaminants from our septic systems to easily leach into groundwater and coastal waters, leading to degraded water fresh and salt water quality, algal blooms, and harm to our saltwater estuaries. Traditional standard septic systems currently installed without innovative alternative components are ineffective at removing nitrogen, which is what necessitated this regulatory change. The amendments made to Title 5 aim to provide municipalities with flexible, adaptable tools to address nitrogen pollution while setting timelines for action.

Key Changes

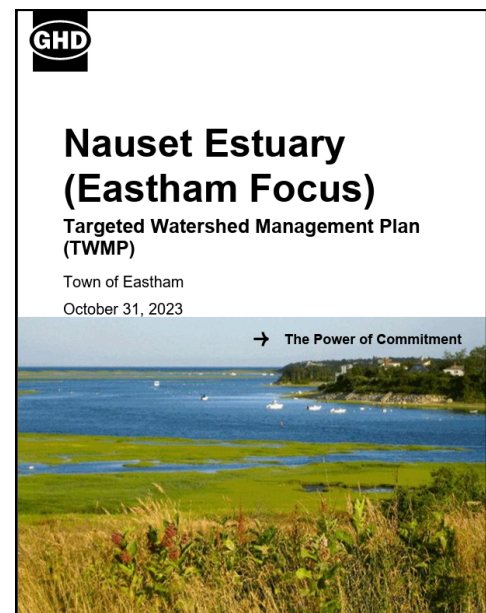
1. Designation of Nitrogen Sensitive Areas (NSAs): MassDEP introduced a new category of NSAs, termed “Natural Resource Areas,” encompassing watersheds or embayment’s with excessive nitrogen levels, as identified by EPA-approved Total Maximum Daily Loads (TMDLs). MassDEP retains the authority to designate additional NSAs statewide following a public review process.

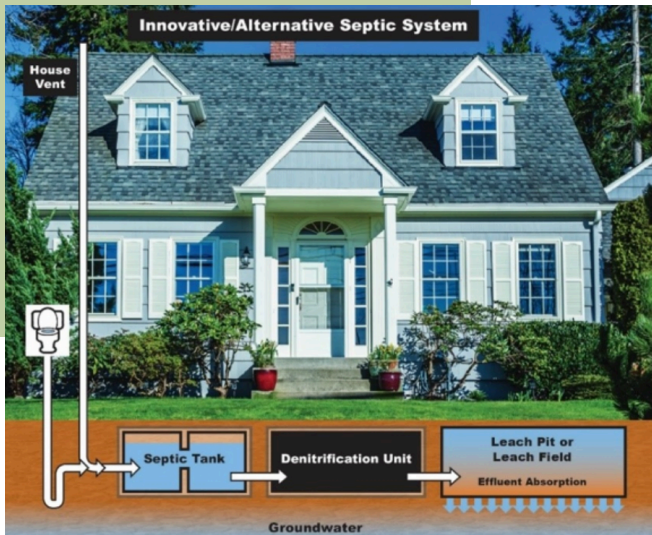
2. Mandatory Septic System Upgrades: Property owners within NSAs are required to upgrade their existing septic systems to the Best Available Nitrogen Reducing Technology (Innovative/Alternative or I/A systems) within five years of the NSA designation. This requirement is waived if the municipality secures a Watershed Permit within two years of the designation.

3. Watershed Permit Program: Municipalities can apply for a 20-year Watershed Permit, allowing them to implement comprehensive community wide nitrogen reduction plans, such as collection and treatment, wetland restoration, and shellfish aquaculture. If a town files a Notice of Intent to apply for a Watershed Permit within two years of the NSA designation, the five-year upgrade requirement for homeowners is paused.

4. Regulations for New Construction: Six months after an area is designated as an NSA, any new construction requiring a septic system must incorporate nitrogen-reducing technology. This requirement is waived if the municipality has filed a Notice of Intent for a Watershed Permit.

Eastham filed our Notice of Intent in 2024 and received a Certificate of Approval for our Targeted Watershed Management plan through the Executive Office of Environmental Affairs. It is this document which outlined the need and basis for a community wide approach to our wastewater issues and proposes the collection and treatment system in applicable areas, stormwater mitigation projects and regional planning to mitigate nutrients in our fresh water and coastal estuaries. Our plan will preserve the valuable and fragile natural resources in Eastham while allowing for sustainable growth and development for future generations as directed by MA DEP.





What about IA Systems?



Current IA systems will not achieve our nitrogen reduction requirements – meaning

ultimately, we will still have to have some form of town sponsored sewer system and our residents will end up paying twice – once for the IA, and again for a town sewer program.



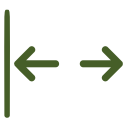
Will IA's work? - an IA system requires a consistent flow in order to operate effectively and efficiently. Although some IA systems can be utilized in a seasonal or part-time home, their effectiveness greatly diminishes, further increasing the need for additional centralized treatment. People concern themselves with noise and odor issues at central treatment plants, which can be addressed and resolved – these issues would also be present for over 5,700 IA systems throughout town, largely incumbent on individual owners to remediate.



Emerging contaminants – DEP regulations are expected to change in upcoming years and require treatment for new contaminants. A centralized system can be modified and upgraded to accommodate new requirements much more easily and cost effectively than 5,730 individual IA systems.



Cost – we estimate current installation costs will be approximately \$50,000 on average – tax credits of up to \$18,000 may be available. However, these will not offset the cost of expensive annual operating costs and required vendor maintenance contracts – estimated at approximately \$4,000 per year, on average. These systems will likely also need to be upgraded or replaced every 15 – 20 years.



IA's take up developable space – just like a Title V system, no building can take place over an inground IA system. Depending upon the hydrology of your specific lot, some IA systems will also be partially above ground or “mounded” systems, further reducing usable lot space.

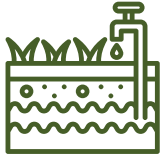


Who will install and service these systems? – practically speaking, it will be near impossible to install thousands of IA systems in Eastham (as well as in neighboring towns) in any orderly, timely or cost-effective manner.

Environmental Importance



The proposed Phase 1 collection and treatment system to serve the Nauset Estuary, Salt Pond Watershed has several important environmental benefits, especially given our town's coastal location and our current reliance on septic systems. Here are some of the environmental reasons why this project is important and necessary.



Protection of Groundwater Quality

- Eastham depends completely on a single aquifer for drinking water.
- Septic systems can pollute the groundwater with nitrogen, phosphorus, pathogens, chemicals, and bacteria, putting the town's water at risk.
- A centralized treatment system would help remove these contaminants and protect the water supply.



Reducing Nitrogen and Phosphorus Pollution in Estuaries and Ponds

- Excess nitrogen and phosphorus from septic systems ends up in nearby estuaries, salt ponds, and freshwater ponds (like Salt Pond, Schoolhouse, Minister and Moll).
- This causes eutrophication, which leads to algal blooms, increased vegetation, decreased oxygen levels, fish kills, and the degradation of critical habitats for fish, birds, and invertebrates.



Preserving Ecology and Health

- Moving away from septic systems will enable us to meet Total Maximum Daily Load (TMDL) goals for nutrient reductions, required under the Clean Water Act and by MA DEP ensuring enhanced water quality for future generations.
- Bacteria and Nutrients from septic systems can lead to contamination and closures of salt water and freshwater bathing beaches.
- Increased algal blooms, cyanobacteria, and other harmful growths can make water murky, smelly and dangerous for humans and pets.
- Uses of our natural resource areas become diminished with increased vegetation growth, kayaking, fishing and swimming become more difficult and less desirable with increased vegetation.
- Health advisories and closures hurt the public's enjoyment of our natural environment.



Protection of Coastal Ecosystems and Shellfish Beds

- Contaminants from septic runoff can harm coastal wetlands and shellfish areas.
- Shellfishing is an important part of Eastham's heritage and economy, and polluted waters can lead to closures of shellfish harvesting areas for commercial and recreational fishermen.
- Nitrogen and low oxygen can stress or kill sensitive species like scallops, herring, and crabs and can break down natural balance and the food web.
- Wetland plant communities are necessary to maintain existing native species diversity, contamination from septic runoff causes native species to be replaced with more invasive which eventually disrupt and replace native communities.
- Impaired wetlands can also lose their ability to filter pollutants naturally.



Mitigating Climate Change Impacts

- Rising sea levels and increased storm events from climate change can flood septic systems, making them fail more often.
- A centralized sewer system is more resilient and prevents pollutant surges during extreme weather.
- Damaged wetlands may lose their ability to buffer storms effectively.

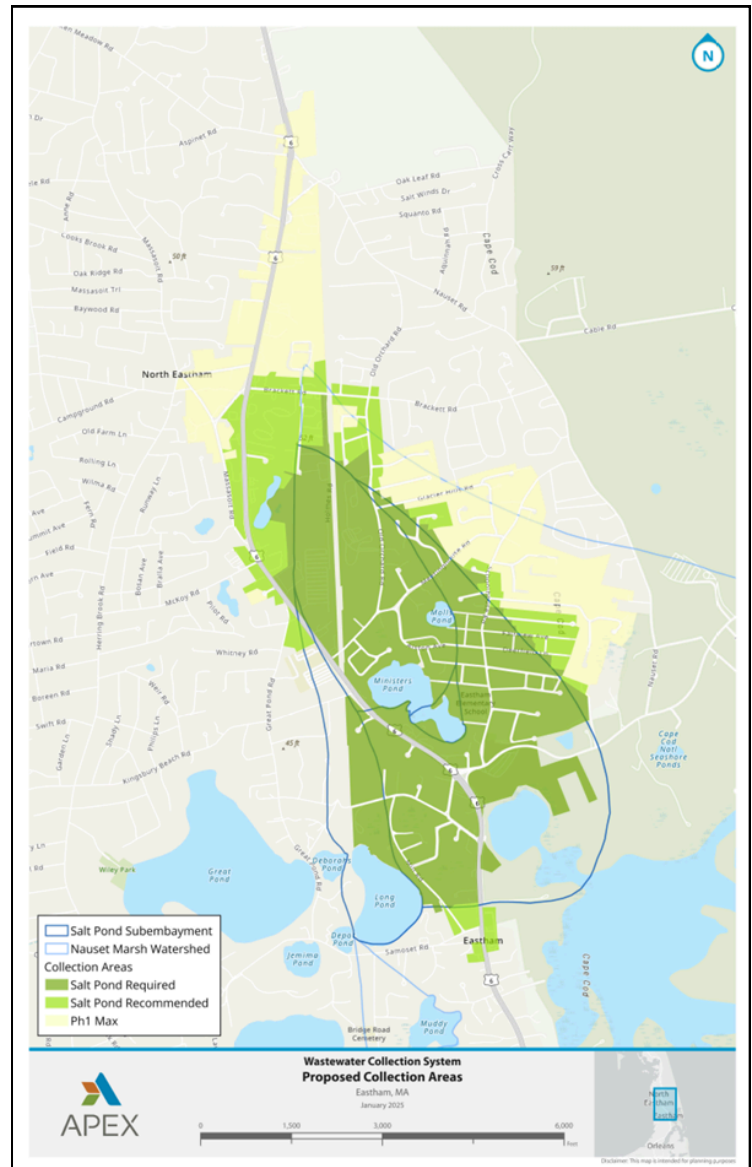
A centralized collection and treatment system can treat the wastewater removing the pollutants and contaminants of concern ensuring acceptable drinking and environmental water quality for future generations to support our health and well-being, recreational needs, continued tourism, allow for sustainable development, and most important put us in compliance with state and federal regulations.

What does our Wastewater Plan consist of?

The Town's wastewater plan consists of two phases.

Phase 1 requires the construction of a treatment plant and a collection system around Salt Pond and extending to parts of Nauset, School House, Old Orchard, and adjoining roads. This phase also extends down Route Six to Bracket/Holmes Road area, and T-Time site. This phase is designed to remove nearly 100% of nitrogen impacting the Salt Pond watershed and for economic development in North Eastham. It is expected that this phase will take approximately 3 years to complete once it has begun.

Phase 2 consists of a collection system in South Eastham and Rock Harbor areas and is currently planned to occur at least 10 years (likely more) after the completion of phase 1.



Obviously, a lot can change in that amount of time, so we are maintaining an “adaptive management” approach to the future phase 2. Perhaps new options will be available to us, or there will be an opportunity to partner with Orleans to handle some of our needs. Since this phase is so far off, we are focusing on the planning and design of phase 1 and ensuring that our treatment plant and collection system is sufficient to accommodate our future needs.

Where is the Treatment Plant located and Why?

The treatment plant is planned to be located at our DPW and Transfer Station site off of Old Orchard Road. This was the only practical site for the Town that meets hydrogeological modeling standards necessary to get permitted by the Massachusetts Department of Environmental Protection without significant additional costs for additional treatment or conveyance.

We considered multiple locations for siting a treatment plant or for recharge facilities, including:

- Sandy Meadow – not pursued because it is a protected conservation area.
- T-Time and the North Eastham Sand Pit – both of which are located within zone 2 of our wells and did not meet hydrogeological standards that would allow permitting the site;
- A parcel located behind the Cape Cod Children's Place – which may be suitable for future recharge facilities, but not a treatment plant because of its topography.
- **Our existing DPW site on Old Orchard Road, which was considered the best (only) feasible and available site for a treatment plant.**



Our professional engineers conducted extensive field tests and prepared hydrogeological ground water modeling on potential sites, and the obvious selection was our already cleared and available DPW site. It provided the best monitoring and test results and was the only site where the hydrogeological modeling indicated was not impactful to our wells. In addition to being a suitable location for our plant, it also is suitable for effluent recharge on-site, saving millions of dollars in project costs and annual operating costs from having to convey treated effluent elsewhere to be recharged into our ground water.

What can we do to reduce neighborhood impact?

We are currently in the planning & design phase for phase 1 collection system and the treatment plant. We are keenly aware of neighborhood concerns for the siting of a wastewater treatment plant and are doing our best to minimize those concerns. Some of the steps we are taking include:

- Placing the treatment building near the west side of the DPW parcel, providing approximately 500' separation from Old Orchard Road. Treatment buildings are typically where most complaints would come from – particularly noise, and occasional odors.
- Utilize state-of-the-art technology in the construction of our facilities. This facility will provide appropriate odor control and sound baffles to minimize impacts.
- It is important to note that our proposed facility will not be accepting septage, unlike the plants in Orleans and Yarmouth. Septage is pumped from on-site title V systems, transported via truck and discharged at a plant in above ground and typically open facilities – this contributes significantly to odor issues at those facilities. Our plant receives sewer via underground piping directly into the sealed treatment building and is treated prior to release.
- Reconstruction of the buffer between Old Orchard Road and the DPW parcel. Currently, this area is not particularly attractive, part of our plan is to reconstruct this area with brand new fencing and add new trees and plantings.
- Sludge and grit removal are expected to occur in an enclosed facility (indoors) and will be transported off-site to an off-cape waste facility.
- Sand filtration beds are being placed in a manner so that they will not be visible from the road. The two buildings being constructed, although not small, are not large industrial looking facilities from 50 years ago. We plan to use finishes appropriate to our area to the best of our ability. Our plant is similar in size and scope to what is currently being developed in Mashpee - below is their treatment building, Eastham's would be slightly larger.





Interested in the project?



Join us at an information session!

Saturday, May 10th

11:00am

Eastham Library

Wednesday, May 21st

11:30am

Eastham Senior Center

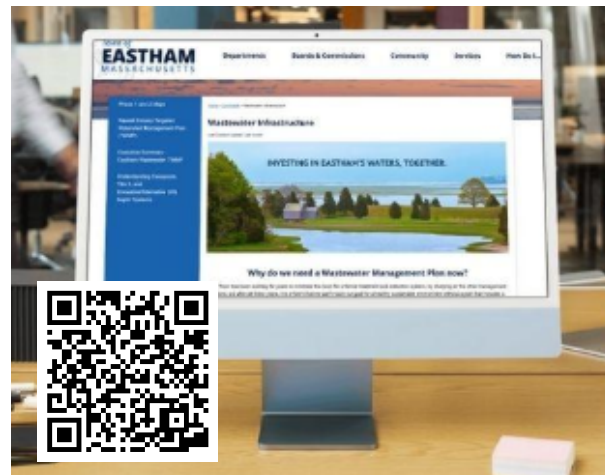
Monday, June 2nd

5:30pm

Eastham Library

Looking for more information?

Visit our Wastewater Website for the latest updates, detailed information, and resources about our wastewater initiatives.



Have Questions? Email us or submit them here!

Jacqui Beebe

Town Manager

jbeebe@eastham-ma.gov

Rich Bienvenue

Assistant Town Manager

rbienvenue@eastham-ma.gov

Hillary Greenberg-Lemos Director of Health & Environment

hgreenberg-lemos@eastham-ma.gov

INVESTING IN EASTHAM'S WATERS, TOGETHER.

We Value Your Input!

The Town of Eastham is seeking community feedback on our proposed Wastewater Plan. This plan is crucial for protecting our water quality, preserving the environment, and ensuring the well-being of future generations.

Please take a moment to submit your thoughts, concern input will help shape this important initiative and go

* What wastewater questions and/or feedback do you have?