

NET NITROGEN REDUCTION:

A Mathematical Solution to Cleaning Our Water



Peconic Baykeeper is embarking on a mission of having our East End towns adopt a “Net Nitrogen Reduction Policy” to clean up our waters. While local, county, and state municipalities have begun taking steps to *lessen* our nitrogen pollution inputs, none have agreed to adopt policies that would *reduce* the pollution actually reaching our fragile waters.

What we are asking town governments to do is simple: **Take out more pollution than you allow to be put into our waters.** *We are the only organization advocating for this approach.*

THE PROBLEM



Septic systems are, by far, the largest cause of nitrogen pollution in our waterways. The nitrogen dumped from our septic systems and cesspools into our local waterways contributes to:

- ~ Precipitous drops in shellfish populations: Landings of clams and scallops have declined 99% since 1980.
- ~ Fish kills and disruption of fragile aquatic ecosystems
- ~ Routine closure of hundreds of our beloved beaches, ponds, and lakes for recreation and fishing
- ~ Costly drinking water remediation
- ~ Eventual loss of property values

Development on the East End is dramatically outpacing our ability to treat the wastewater we produce.

- ~ Currently, there exist 360,000 residential cesspool and septic systems in Suffolk County, with around 1,000 new systems being approved and installed every year.
- ~ Nitrogen-reducing wastewater treatment is not mandated in Suffolk County and county government is slow to approve and adopt more efficient alternatives.
- ~ The cost of installing sewers is exceptionally high, with both direct and indirect costs.
- ~ Updating antiquated systems is cost-prohibitive for many property owners.



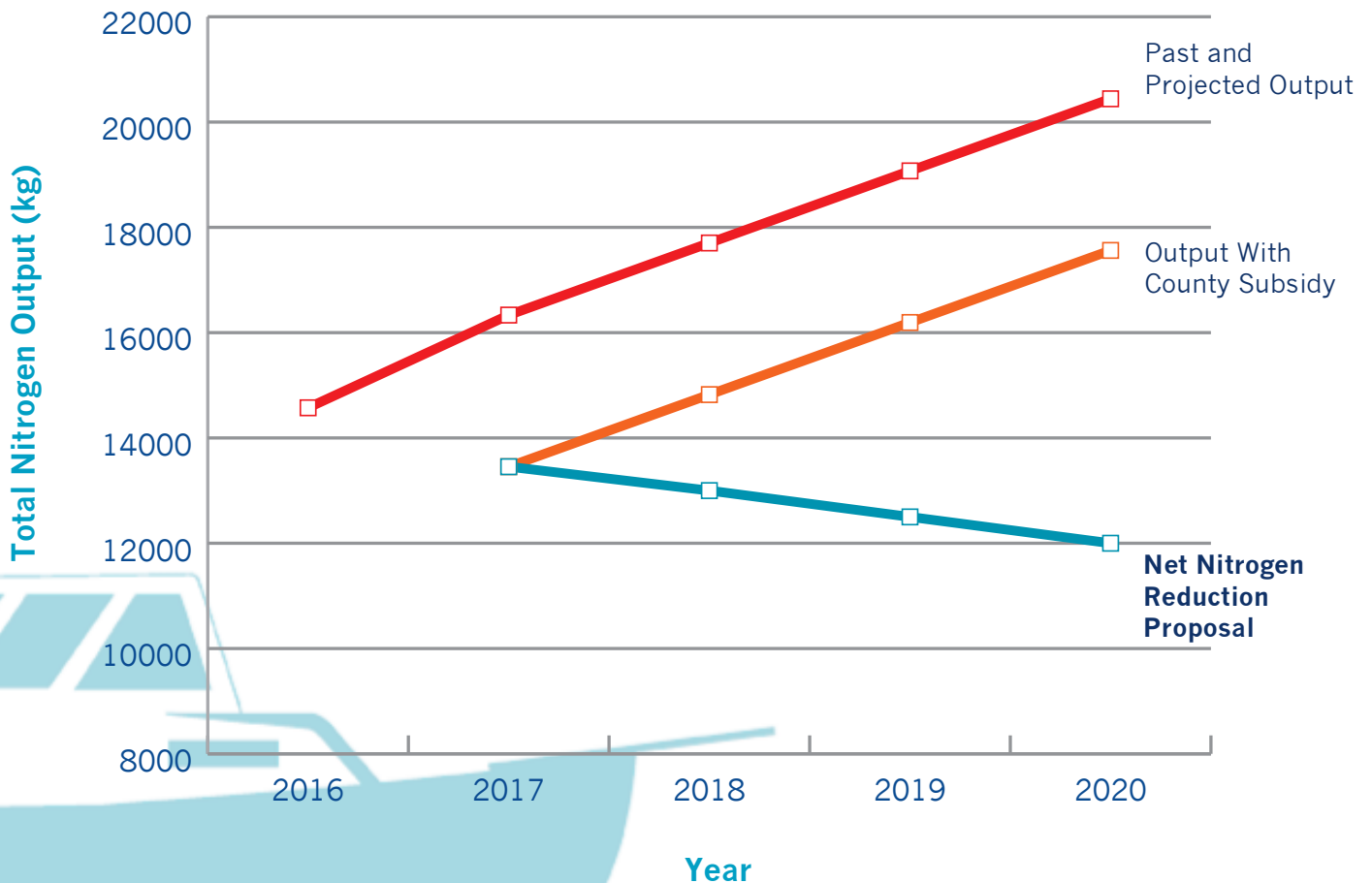
THE SOLUTION: NET NITROGEN REDUCTION

Net Nitrogen Reduction is simple arithmetic: Municipalities should adopt standards that lead to a quantifiable nitrogen reduction on a yearly basis. If X new nutrient load is permitted in the municipality, at least X+1 load must be reduced in the municipality within the same year. For example, if the installation of 100 new septic systems, each producing 10kg of nitrogen each year, is approved in a municipality, the municipality must find a way to reduce its total yearly nitrogen output by at least 1,001 kg. This could be achieved by requiring the installation of alternative septic systems in new development, along with upgrading pre-existing systems.

Suffolk County currently provides subsidies to homeowners who are interested in upgrading their septic systems on a voluntary basis. While seemingly well intentioned, the rebate program does not replace enough systems to reduce overall pollution.

Net Nitrogen Reduction is the only proposed approach that will lead to an overall decrease in the amount of nitrogen pollution reaching our streams, rivers, bays, and oceans.

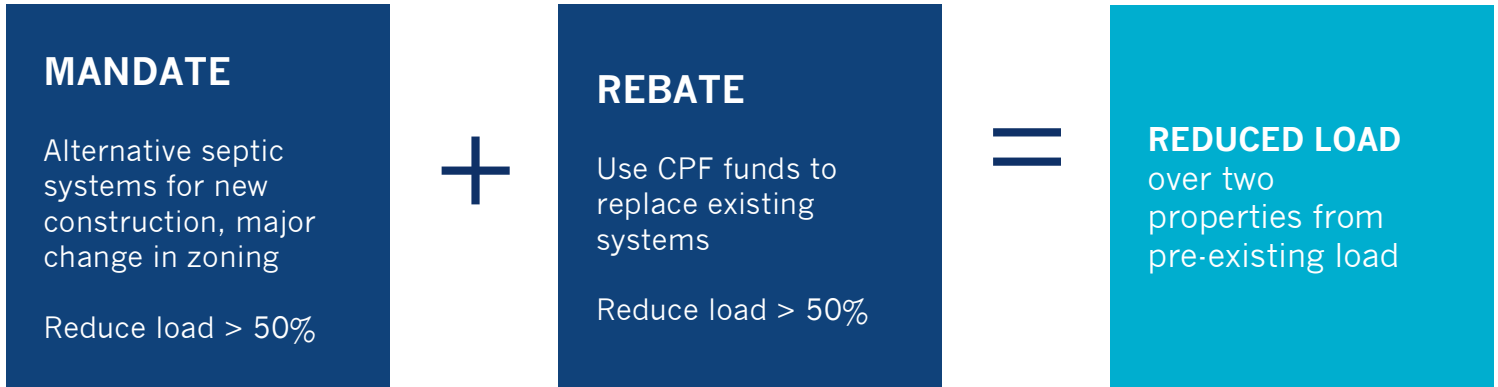
NEW NITROGEN LOADS*



**Projections based on 2013-2016 single-family onsite wastewater permits issued by Suffolk County Department of Health Services*

MANDATE + REBATE

In order to achieve net reduction, rebate programs should be paired with mandates requiring the installation of alternative septic systems in all new development. Community Preservation Fund (CPF) Water Quality Improvement Projects funds are available to support the rebate program.



BY THE NUMBERS

Alternative Septic Systems:

- ~ Cut nitrogen output by over half
- ~ Are beneficial in recharging groundwater
- ~ Cost around \$16,000, on average

Community Preservation Fund (CPF):

- ~ A 2% tax on real estate transfers on five East End towns that generates \$90-\$100 million yearly
- ~ 2016 referendum allows 20% of CPF revenue to be spent on water quality projects, including septic system rebates

EXAMPLE

The initial load per system in a community is X.

Property #1 (new construction) reduces load to 0.4x.

Property #2 (rebate for existing system) reduces load to 0.4x.

$0.4x + 0.4x = 0.8x \rightarrow$ a 20% reduction over existing conditions

While the specifics of Net Nitrogen Reduction will vary by town, the following is an example of legislation proposed for the Town of East Hampton.

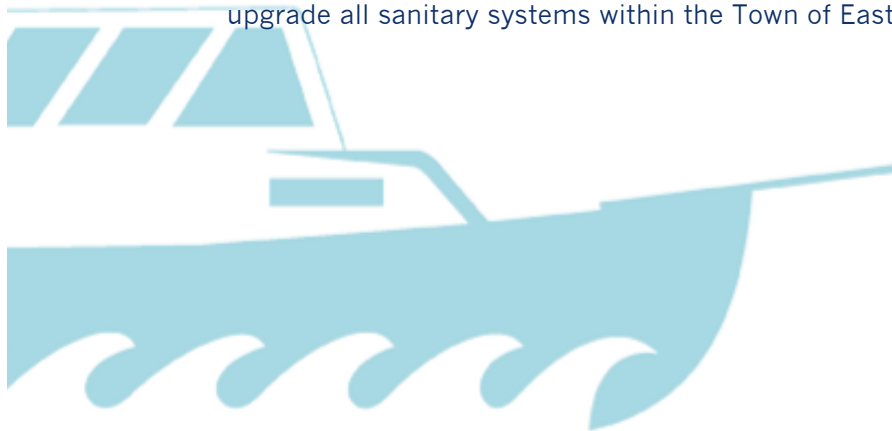


TOWN OF EAST HAMPTON

Low-Nitrogen Sanitary System Standard and Rebate Program

BACKGROUND:

- ~ In the preparation of the Town's Water Quality Improvement Plan, it became clear that improving the efficiency of sanitary systems in the Town of East Hampton would have a significant impact on the nitrogen pollution of the Town's surface waters and aquifer, especially with certain sanitary systems and in vulnerable areas.
- ~ Of the approximately 19,400 developed parcels in the Town of East Hampton, more than 12,500 parcels are using antiquated cesspools and 6,700 use traditional leach field systems to treat wastewater, neither of which were designed to treat for nitrogen removal. Additionally, 6,330 developed parcels, or 32% of the total, are located in the Water Protection District, a critical environmental area.
- ~ With the passage of the local law extending the Community Preservation Fund (CPF) and expanding its use to include Water Quality Improvement Projects (WQIP), the Town will have access to funding to incentivize the voluntary upgrade of standard sanitary systems to Low-Nitrogen Sanitary Systems.
- ~ Based on a 10-year average of CPF revenue (2005-2015), approximately \$4,600,000 will be available annually for water quality improvement projects. Over the life of the CPF WQIP, approximately \$152,000,000 will be available for water quality improvement projects. This funding would allow the Town of East Hampton to make significant improvements to water quality using a targeted approach in areas of concern.
- ~ Suffolk County Department of Health has made great strides to approve installation Low-Nitrogen Sanitary Systems, including systems that reduce nitrogen levels to 19 milligrams or less per liter, with the intent to approve systems that reduce nitrogen levels to 10 milligrams or less per liter.
- ~ With the combination of the rebate program and the requirement for new Low-Nitrogen systems in new construction, substantial expansion and replacement systems hold the potential over time to upgrade all sanitary systems within the Town of East Hampton.



LEGISLATIVE PROPOSALS:

A. REBATE PROGRAMS (percentages and maximum amounts set by resolution)

1. All Sanitary Systems in a Water Protection District¹

- ~ Eligible owners² may receive 100% of the costs associated with replacing a sanitary system with a Low-Nitrogen system, with a maximum rebate of \$15,000.

2. All other Sanitary System in the Town of East Hampton

- ~ Eligible owners may receive 75% of the costs associated with replacing the sanitary system with a Low-Nitrogen system, with a maximum rebate of \$10,000.
- ~ Eligible owners who meet the income/asset requirements for Affordable Housing may receive 100% of the costs with a maximum rebate of \$15,000.

B. TOWN SANITARY SYSTEM LAW

The implementation of the rebate program is only effective if the Town also requires the use of Low-Nitrogen systems going forward for all new installations either of new construction or voluntary or EPA-mandated replacement of current systems. The Town will also require the replacement of standard systems with Low-Nitrogen systems when there is substantial expansion of an existing structure³. For non-residential properties the Town will also require the replacement of standard systems with Low-Nitrogen systems when certain site plan review is required.⁴

Low-Nitrogen systems by design need ongoing monitoring and maintenance to retain their nitrogen-reducing properties. The Town will need to take an active role in ensuring that Low-Nitrogen systems continue to reduce nitrogen. Chapter 210—previously enacted to create and to support not only the upgrading of the Town's septic standard to Low-Nitrogen, but also to support the rebate program. The legislative proposal is to amend the law to make it applicable to the implementation and maintenance of Low-Nitrogen systems.

¹ Water Protection District – all areas within the Harbor Protection Overlay District (Accabonac Harbor, Fort Pond, Georgica Pond, Lake Montauk, Hog Creek, Napeague Harbor, Northwest Creek, Northwest Harbor, Steppingstones Pond, Three Mile Harbor, Tuthill Pond and Wainscott Pond) as well as priority areas in the Montauk business district, Lake Montauk dock area, Ditch Plains, Camp Hero, southern Three-Mile Harbor watershed, south Hog Creek watershed, East Hampton Village Business Center, high density neighborhoods in Springs and Sag Harbor Water Quality Priority Area.

² Eligible Owners – residential property owners whose income would qualify for basic STAR rebates (§425 NYS Real Property Tax Law); and owners of non-residential property

³ §255-1-20 Expansion, Substantial - Structure. A substantial expansion of a structure shall be deemed to occur in the following circumstances:

(1) Gross floor area: upon making an addition to the structure which increases its gross floor area by 50% or more over the gross floor area which the structure had on the date it first became subject to the provisions of this chapter regulating or limiting its substantial expansion.

(2) Value: upon making an addition to the structure or undertaking a reconstruction, rehabilitation or other improvement of the structure, the cost of which equals or exceeds 50% of the market value of the structure prior to making or undertaking the addition, reconstruction, rehabilitation or other improvement. For the purposes of this provision, if the addition, reconstruction, rehabilitation or other improvement is made following damage to the structure, the market value of the structure shall be that which it had before the damage occurred. The term does not, however, include either:

(a) Any project for improvement of a structure to correct existing violations of state or local health, sanitary or safety codes and which are solely necessary to assure safe living conditions; or

(b) Any alteration of an historic structure, provided that the alteration will not preclude the structure's continued designation as an historic structure.

⁴ Any change from one category of permitted or special permit use listed in the Use Tables of § 255-11-10 to another listed category of permitted use, if such change in use increases site parking requirements or requires approval of the wastewater disposal system by the Suffolk County Department of Health Services; any use of land requiring a special permit, except a use for which the only special permit needed is a natural resources special permit; any other activity or land use which increases the occupancy limits of a building or increases site parking requirements; or any conversion - the changing of the use of all or any part of a building, structure or lot which is being used as a resort, transient motel or multiple residence to a different such us