

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 Nitrogen 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



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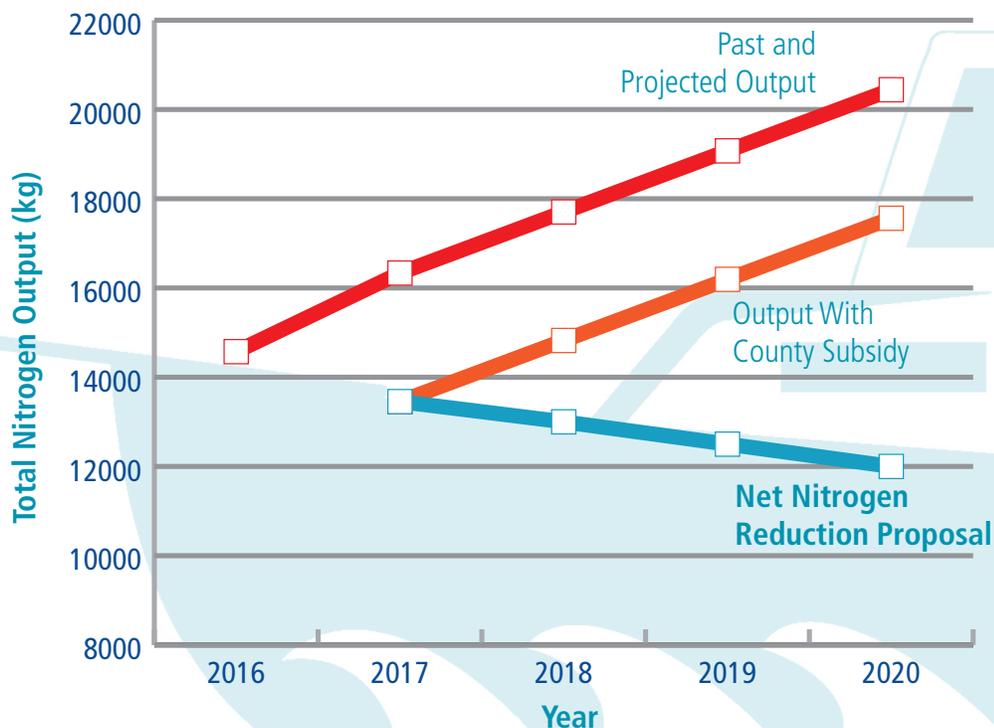
The Solution: Net Nitrogen Reduction

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

The Septic Problem

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.

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

An 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.

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

The Solution: 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.

MANDATE

Alternative septic systems for new construction, major change in zoning

Reduce load > 50%

+

REBATE

Use CPF funds to replace existing systems

Reduce load > 50%

=

REDUCED LOAD

over two properties from pre-existing load