



PECONIC GREEN GROWTH

GREENPORT (Town) Fact Sheet

Water sustains life and symbolizes purity. But water quality is degrading. Our ground and surface waters need protection. The aquifers are not only sources of drinking water, but flow horizontally to surface waters, impacting the marine health of our bays. Excess nitrogen compounds are a critical cause of algal blooms, which lower oxygen levels, create toxins, and ultimately cause fish kills. Contaminants of emerging concern, such as pharmaceuticals and personal care products, need to be treated before being released to ground and surface waters. Poor water quality will ultimately impact community character and vitality, which are especially relevant for our coastal and tourist economies.

The following is a snapshot of local issues that impact excess nitrogen loading. More detailed maps are available at <http://peconicgreengrowth.org/community-maps-2014/> where you can find the areas needing priority action, as well as identify conditions relevant to your home. Visit our website to learn about options for upgrading your wastewater system to help protect your environment.



EXCESS NITROGEN (N) LOADING

- Excess nitrogen compounds can be harmful to human health.
- Our surface waters are 20 times more susceptible to N loads than maximum contaminant levels for drinking water.
- Excess N feeds algal blooms, which in turn create toxins. These impact fish and shellfish formation and survival rates.
- Excess nitrogen contributes to declines in eel grass and wetland grass beds. Their loss impacts marine habitats and reduces their usefulness as property buffers in storms.

Sources of Nitrogen



Courtesy TNC and Prof. Christopher Gobler

SOURCES OF EXCESS NITROGEN

The Greenport/East Marion subwatershed is responsible for 7% of all the nitrogen loading in the Peconic Estuary (43 subwatersheds). Sources are estimated as coming from:

- 53% septic/cesspool systems
- 22% atmospheric deposition
- 10% agriculture
- 10% fertilizer from lawns
- 4% golf course

GREENPORT WATER QUALITY

- Waters off the coast of Greenport in the Peconic Estuary show high ratios of dissolved organic nitrogen to inorganic nitrogen, an indicator of poor water quality contributing to brown tides.
- Hashamomuck Pond has a TMDL for Pathogens and it, together with Sage Pond and Mill Creek, have seasonal restrictions on shellfish harvesting.
- Rust Tide (algae) occurred in PE in 2016 off of Greenport. Greenport surrounds the Village of Greenport Sewer District. The sewage treatment plant (STP) was updated in 2008. While the STP mostly serves lots in the Peconic Estuary, the outfall pipe of the treatment plant discharges directly to the LI Sound at Clarks Beach. Plans to expand the STP in the Peconic Estuary should accompany treatment improvements in the LI Sound watershed to mitigate increases in nitrogen loading.





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Is this a Cesspool or Part of a Septic System? Answer: Could be either

CESSPOOLS VS. SEPTIC SYSTEMS

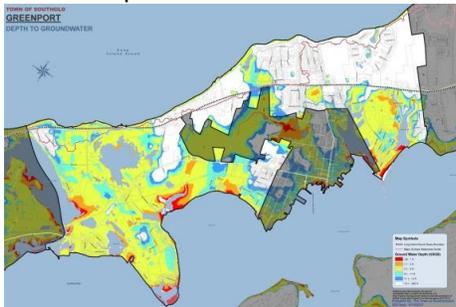
CESSPOOLS, which are often found on properties developed before 1973, dispense all wastewater with no treatment directly to the ground. Dissolved solids, contaminants and pathogens can percolate to groundwater.

The current code requires SEPTIC SYSTEMS, which places an enclosed tank before the leaching pits (which resembles a cesspool) or field. In the tank, fats rise and solids settle to the bottom, where microbes treat the solids. Clarified effluent is dispensed, with roughly 10% of the nitrogen mitigated. New, enhanced systems can lower nitrogen levels by 50 – 90%.

DEPTH TO GROUNDWATER

The Suffolk County Sanitation Code (SCSC) requires a 3-foot separation distance from the bottom of wastewater systems to groundwater to allow for natural treatment and filtering of effluent. When groundwater is less than 7 feet below grade, there can be difficulties siting the system. Where depths to groundwater are less than 13 feet, systems are likely to become noncompliant as groundwater elevations rise due to climate change. In Greenport 793 buildings (66%) in the PE and 70 (17%) in the LI Sound have depths to groundwater of less than 13 feet.

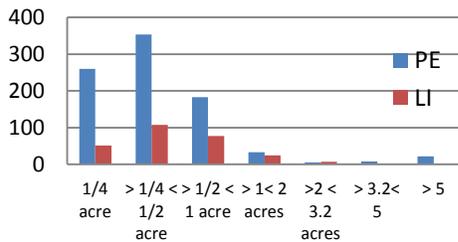
Depths to Groundwater



SMALL LOT SIZES

In Greenport **65%** (619) of the developed lots in the PE and **53%** (144) in the LI Sound watershed are **nonconforming** to the 20,000 SF (nominal half-acre) minimum lot sizes SCDHS requires to dilute wastewater to acceptable contamination levels for drinking water. If a community relies on individual wells, this minimum lot size is even larger – a nominal one acre.

Greenport # Developed by Lot Size (not in a sewer district)

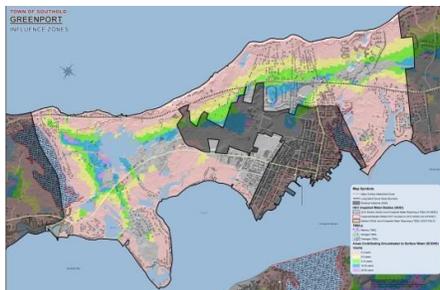


30% of developed parcels in the Peconic Estuary in Greenport are less than ¼ acre. This means that contaminant concentrations discharged from these systems are higher than code.

By 2080 we estimate that 95 buildings in Greenport will be inundated.

CLIMATE CHANGE

1,031 buildings are in a flood or SLOSH zone. By 2080 an estimated 567 buildings in Greenport will most likely have their wastewater treatment systems compromised due to inadequate horizontal distances to surface waters.



INFLUENCE ZONES

Denoting the Time it Takes Groundwater to Reach Surface Waters
 689 or **57%** of the buildings in Greenport in the Peconic Estuary 264 or **64%** of the buildings in Greenport in the LI Sound watershed are in the “Pink Zone, where it only takes 0-2 years for groundwater and any contaminants to reach surface waters. It makes sense to prioritize improvements in the “pink” zone, as the beneficial impacts will be felt more quickly.