Southold Conservation Agenda

GROUP FOR THE EAST END

Dear Neighbor,

For 38 years, Group for the East End has worked to protect the natural environment of Eastern Long Island through professional advocacy, community action and education.

As a Southold resident and President of Group for the East End, I know how important a healthy environment is to my neighbors and friends. So when it came to setting our priorities for the future, I wanted to hear directly from the local community.

To make this happen, with the support of the Long Island Community Foundation we conducted a town-wide scientific poll to identify the conservation issues of greatest concern and interest to Southold residents.

In large numbers residents told us they were very concerned about clean drinking water and the effects of ground and surface water contamination. They also told us they were interested in energy conservation, renewable energy resources and traffic.

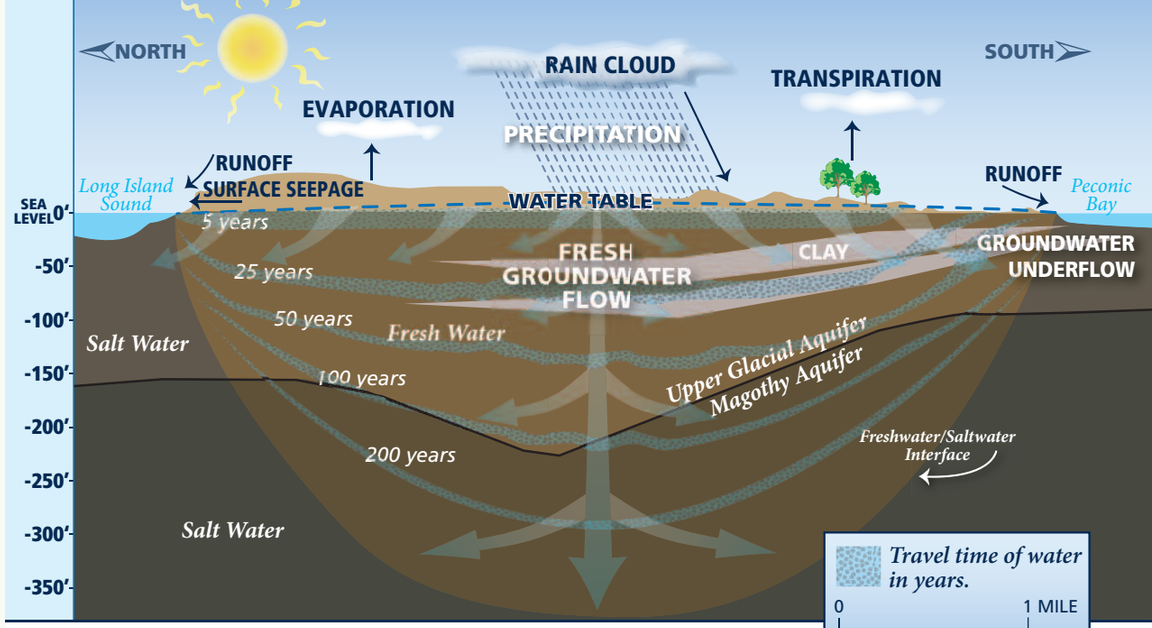
We produced this brochure to provide you with some well-researched information about the environmental concerns of many Southolders. We offer some concrete recommendations for protecting the local environment and planning the most sustainable future. I hope this information gives you a better understanding of our local resources and the actions we can take as a community to preserve and restore the local environment.

We invite you to learn more about Group for the East End at ***www.EastEndEnvironment.org****. When you visit please consider becoming a member of the Group. Your tax-deductible contribution to Group for the East End ensures that we remain a professional voice for conservation in Southold and throughout Eastern Long Island.*

Thank you.

Sincerely,

Robert S. DeLuca
President



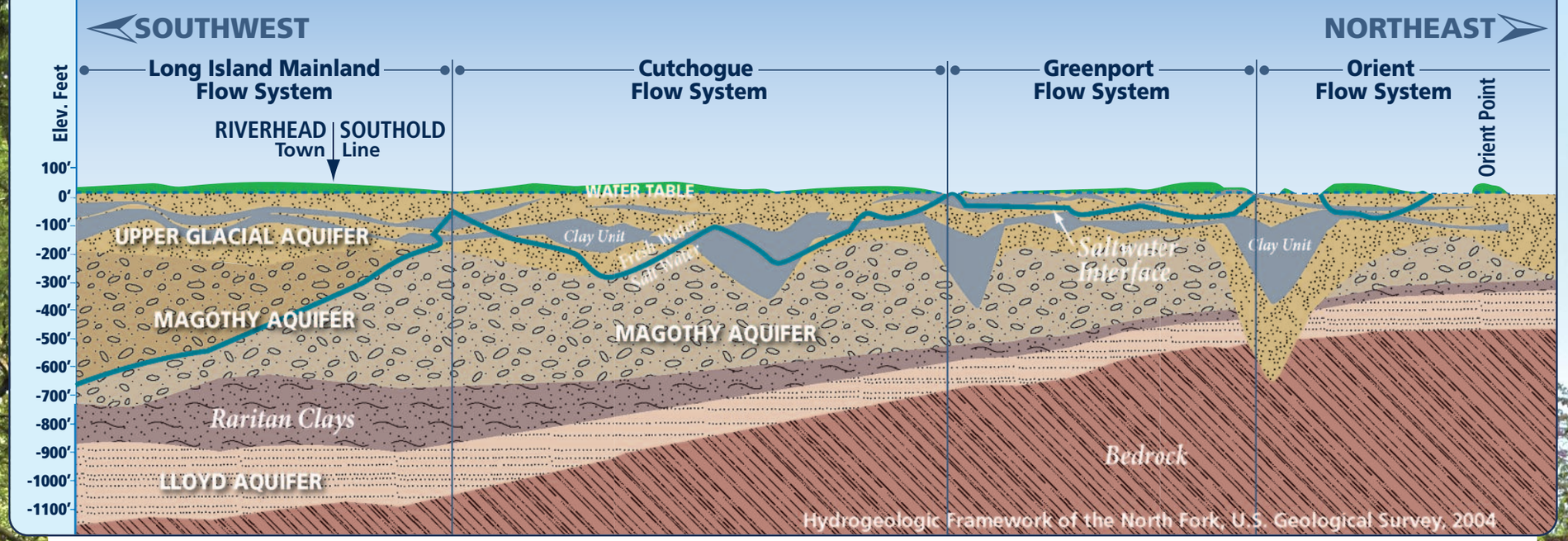
The Water Cycle

Southold receives about 46 inches of rain and snow each year. Just over half percolates down to the *aquifer*, the saturated soils that hold our drinking water supply. Evaporation and transpiration (the process by which plants "sweat" water through their leaves) return much of this precipitation to the atmosphere. Collectively these processes are called *evapotranspiration*. The remaining rain and snowmelt flows across hard surfaces such as paved road endings and parking lots and then into our ponds, creeks, harbors and bays. Unfortunately, along the way it picks up large quantities of chemical pollutants and trash and carries it into these *surface waters*.

Increased nutrient levels are a major threat to the Peconic Estuary. They enter the water through poorly maintained septic systems, lawn care products, contaminated groundwater and agricultural fertilizers.

Water that percolates into the aquifer can take decades to return to the earth's surface, often seeping back into our local creeks, bays, ponds and estuaries as *groundwater underflow*.

The water cycle is completed when water evaporates from surface waters and combines with water vapor formed by evapotranspiration to produce clouds that produce precipitation. From a conservation standpoint, it's important to recognize that the water cycle serves as a conveyor belt that can carry surface pollutants and soil pollutants into our local surface waters.



The Water Beneath Our Feet

In Southold fresh water is pumped from the saturated layers of soil, sand, gravel, and clay beneath our feet. Depending on where you are along the North Fork the supply of fresh water may be only a few feet thick or it could be more than 100 feet thick. The point at which dry soil meets these saturated soils is called the water table.

The depth of the water table – how far a person must dig to find water – depends on the amount of *recharge* from precipitation and the size and shape of the land. Additional precipitation and hydrologic pressure from a rising tide can also bring the water table closer to the surface. The effect of recharge on the local aquifer can be seen in the changing levels of local freshwater ponds. Heavily paved or built areas can substantially reduce recharge and increase the amount of precipitation that becomes runoff, carrying pollutants directly into our surface waters instead of recharging the aquifer.

Environmentally Sensible Landscapes

- Grass cut no shorter than 3" stays greener in dry months and discourages weeds
- Minimizing lawn area helps preserve wildlife habitat
- If you must fertilize, use "slow release," and only the minimum amount needed
- Irrigate early or late in the day to prevent waste through evaporation
- Keep native soils and vegetation
- Go organic: use only organic pest and weed controls

Wells: The Process Down Below

Like huge mechanical straws, public and private wells draw fresh water to the surface. Water in the surrounding soil is pulled toward the base of the well shaft. High volume wells frequently create a *cone of depression* that can leave nearby wells dry or draw saltwater into the fresh water aquifer. Once a well is fouled by salt – a common issue facing shallow private coastal wells – it is very difficult to remove.

Freshwater recharge from precipitation ensures there is sufficient pressure to keep saltwater from spoiling the aquifer. Such intrusion is less of a threat at higher elevations where the freshwater "lens" is thickest. Conversely, nearshore areas usually have a thinner lens of fresh water and a greater risk of saltwater intrusion. When recharge is sufficient, fresh water percolates into wetlands, creeks and harbors creating areas of reduced salinity that serve as important nurseries for finfish and shellfish.

Rebates: An Idea that Works

Hundreds of antiquated home fuel tanks and septic systems are spread across Southold, adding chemicals and unwanted nutrients to the groundwater. Group for the East End has helped other local communities address these problems through cash incentive programs that pay property owners to retire buried fuel tanks and failing septics. Similar incentives in Southold could stimulate local business while helping the environment.

Natural Resources

- **Private Conservation Lands** – Peconic Land Trust, The Nature Conservancy
- **Development Rights** – Owner Voluntarily Sold Rights to Further Development of Their Land
- **Subdivision Reserve Lands** – Land Protected as Condition of Subdivision Approval
- **Public Parks and Preserves**
- **Unprotected Farmlands, Woodlands, Grasslands and Wetlands**
- **Unprotected Farmland**
- **Developed or Divided for Development**
- **No Dischage Zones for Boat Effluent** – Peconic Estuary, Harbors, Bays and Creeks
- **Peconic Eelgrass Beds 1930s**
- **Peconic Eelgrass Beds 2009**
- **Suffolk County Water Authority Properties** – Owned or Leased
- **Reserves with Hiking Trails**
- **Seaview Trails Bicycle Trails**

Up to 10 percent of Southold's Community Preservation Fund may be used for stewardship of preserved land. Encourage the Town Board to ensure management plans are in place for all protected lands.

Long Island Sound

The Peconic Estuary

Horton Point Lighthouse
Peconic Dunes County Park
Goldsmith's Inlet County Park
Hashamomuck Beach
Arshamomaque Preserve
Hashamomuck Pond
Arshamomaque Pond Preserve
Moore's Woods
Inlet Pond County Park
Silver Lake
Dam Pond
Truman Beach
Orient East Marion Park Dist.
Orient Point County Park
Klipp Park
Orient Beach State Park
Breakwater Beach Dist. Park
Baiilie Beach Dist. Park
Laurel Lake
Cedar Beach County Park

SOUTHOLD
PIPES COVE
GREENPORT VILLAGE
STIRLING BASIN
EAST MARION
ORIENT
ORIENT HARBOR
LONG BEACH BAY
MATTITUCK INLET
PECONIC
TOWN CREEK
SOUTHOLD BAY
GOOSE CREEK
CUTCHOGUE
MATTITUCK
HOG NECK BAY
LAUREL
NEW SUFFOLK
CUTCHOGUE HARBOR
SOUTHOLD TOWN LINE

The Peconic Watershed is home to 111 Rare and Protected Species, one reason the EPA designated the Peconics an Estuary of National Significance in 1993.

Transportation: A Regional Solution

East End residents are taxed more than $60 million annually for the MTA's Long Island Rail Road, far more than we receive in services. Only months after increasing taxes and raising fares, the Metropolitan Transit Authority has proposed to virtually eliminate rail service to the North Fork. In response, local, regional and State lawmakers are exploring creating an East End transportation network. Professional, independent assessments price regional train and shuttle bus service — running every 30 minutes — at $40 million annually. For more information on the East End Shuttle proposal or to get involved in improving public transportation on the East End, visit **www.EastEndShuttle.org**.

Prescription Drugs in our Drinking Water

Because our bodies do not absorb all of the medicines we consume, our septic systems can "recharge" trace amounts of medications into our drinking water supply. Several medications including over-the-counter pain relievers and cholesterol-lowering prescription drugs have begun to show up in routine water testing from all types of wells.

At present, there is no readily available filtering technology that can remove these pharmaceuticals from our drinking water nor is there adequate information to identify potential impacts related to the presence of these products in the environment. Our only means of limiting the amount of medications found in our water supply is to eliminate flushing these products down the drain.

Southold Town should join the handful of communities on Long Island that have expanded their Stop Throwing Out Pollutants (S.T.O.P.) events to include safe medication disposal programs where expired or unwanted medications can be turned over for destruction. Southold currently has two S.T.O.P. Days a year when residents can dispose of chemicals and other toxic items that should not be mixed with regular trash. In the meantime, Eastern Long Island Hospital in Riverhead is accepting some types of prescriptions for safe disposal. See the "Do Your Part to Protect Natural Resources" section for more details.

Estuaries are the most productive ecosystems on earth, containing more life per square inch than the most lush rainforest canopy, and they are essential for 75% to 95% of commercially and recreationally used finfish and shellfish.

Eelgrass, The Canary in the Estuary

Eighty years ago the shallows of the Peconic Estuary were thick with a dark green carpet of eelgrass that covered nearly 9,000 acres of bottomland. In 2000, just over 1,500 acres remained, primarily to the east of Shelter Island. Since then eelgrass beds have continued to thin and even disappear completely.

Today's bay bottom is largely devoid of the complex habitat critical to many native and migratory species. Without thick beds of seagrass to serve as nurseries and protective cover for young fish, populations of everything from scallops to flounder to horseshoe crabs must overcome steeper odds to survive. The ripple effects are felt hundreds of miles offshore as stocks of prey species decline. The effects inshore are devastating too. Fewer scallops means less filtering of the nutrients and pollution that scientists believe are choking seagrass beds. The cycle accelerates and local fisheries and ways of life are lost.

There is hope, however, that with help from scientists, conservation advocates, and reduced nutrient loads in the Peconic Bay and LI Sound, seagrass beds can make a comeback. Today, several organizations are tackling the problem from a variety of angles. Scientists from Cornell Cooperative Extension have 9 transplant sites within Southold Town that have raised over 10,000 new shoots of eelgrass. A similar effort around Plum Island has grown to 4,500 shoots in under two years.

These apparent successes come after many setbacks and it is too early to know if success will continue. Diseases and algal blooms such as brown tide continue to impact local sea grasses and unexplained die-offs are still common several years after initial success. What is clear is that poor water quality is the biggest threat to seagrass beds and the rich sea life they support. See the "Do Your Part to Protect Natural Resources" section for more information on reducing your impacts on seagrass beds. And visit **www.SeaGrassLI.org** for information on restoration efforts and research.

Nitrogen and Pathogens

According to the Federally sponsored Peconic Estuary Program and Management Plan, nitrogen and pathogens (potentially harmful bacteria) present a significant threat to the Peconic Estuary system. The western portion of the Peconic Estuary and several bays further east are already exhibiting dissolved oxygen stresses due to high nitrogen levels. Groundwater carries nitrogen from fertilized areas and septic systems through the aquifer and eventually into surface waters. Rising nutrient levels can fuel explosive algae growth, reduce clarity, lower dissolved oxygen levels and, ultimately, suffocate fish.

Federal regulations now require all local governments to address pollution from stormwater runoff. As systems are updated and redesigned however, it is critical that routine cleaning and maintenance of these systems be budgeted. Stormwater recharge systems only work if they are regularly cleaned and maintained. Of course, the best way to reduce nitrogen loading and keep other contaminants out of the Estuary and the Sound is to limit or eliminate pollutants from our homes and lives.

Green Boating

- Switch to non-toxic, water soluable antifreeze
- Use only biodegradable boat soap (NEVER use dish soap on your boats)
- Anchor only in designated areas and always avoid eelgrass beds
- Honor No Discharge Zones
  Even treated boat waste must be pumped-out.
- Search "Peconic pump-out" on the web and click the first link for a list of free pump-out options across the East End or visit our office to pick up a map of Peconic pump out stations.

No Discharge Zone

Southold's Aquifer

Thickness of Fresh Water

- Existing and Proposed Water Mains
- Groundwater Divide
  Arrows Indicate Major Direction of Groundwater Flow
- Flow System Boundaries
- Well Moratorium Boundary
- Suffolk County Water Authority Properties
  Owned or Leased
- Suffolk County Water Authority Well Fields

Source Data for All Maps:
Suffolk County Department of Real Property, Suffolk County Health Department, Suffolk County Water Authority, Town of Southold, US Geological Survey, The Nature Conservancy, Peconic Land Trust, Cornell Cooperative Extension, Peconic Estuary Program

Unsafe To Drink: A Cautionary Tale

Since 1997, it is illegal to drill wells or use the groundwater from underneath a roughly 2,000-foot wide strip that starts at the Town's recycling facility along Route 48 and runs north to Long Island Sound. The ban is the only way the Suffolk County Health Department can ensure that a variety of contaminants including benzene, freon, vinyl chloride, MTBE, and other chemicals that were illegally dumped in the Town's old landfill do not end up in homes, businesses or on farm fields. A cleanup removed much of the toxic waste but could not recover contamination that had already percolated into the aquifer and begun migrating north in a narrow band toward the Sound. Hydrologists estimate that it could be hundreds of years before this contamination is no longer detectable in test wells. In the meantime, the Suffolk County Water Authority pumps clean water from wells outside the moratorium area to all homes and businesses, including the Town's recycling center, within the moratorium boundary.

Save Water, Save Energy

A recent EPA study highlights the connection between water use and electricity use, finding that a faucet fed by a private well uses as much energy in five minutes as a 60-watt light bulb left on for 14 hours. Reducing water waste reduces energy consumption and helps fight climate change.

Rainwater that fell 400 years ago on the North Fork's first large-scale farming operations (near what is now North Road), is only now percolating into Long Island Sound and Peconic Estuary, according to the U.S. Geologic Survey. Samples of that 400-year-old water show the first traces of nitrates from local agriculture and remind us that what we put on the ground and into our water will be with us for a very long time.

Areas within the blue lines are isolated aquifers – fresh water supply systems – typically unconnected from the adjoining water supplies in all but the wettest of years

The Peconic Estuary

No Discharge Zone

According to the EPA "Between 1950 and 2000, the U.S. population nearly doubled while the public demand for water more than tripled. Americans now use an average of 100 gallons of water each day – enough to fill 1,600 drinking glasses."

Search on Google™ for "Suffolk County invasives list" and follow the first link to learn about identifying and controlling invasive plants that have spread from gardens to natural areas and are destroying our complex native plant communities. On the same web page you can find a link to the Nation's first "Do Not Sell List" of invasive species.

The True Cost of Public Water

Despite Southold's limited freshwater capacity, experts stress that management should focus on water quality not water quantity. Throughout Suffolk County, the Water Authority uses advanced filtering systems (granular activated carbon, greensand, and resin) on 25% of the water pumped. In Southold, the numbers are nearly 100%. The difference stems from the lingering effects of historic agricultural operations that utilized many chemicals that have been outlawed in the last 30 years. Unfortunately, many of these products can still be found in local wells because they can take centuries to move through our drinking water supply.

This filtering technology for public supply wells averages $40,000 per well, per year. Accordingly, the cost to pump and filter 1,000 gallons of water in Southold is approximately $1.45, compared to a county-wide average of $0.16. Fortunately for Southold customers, state law requires that all utility customers pay the same rate for service.

According to the Suffolk County Water Authority, drinking water pumped from beneath natural open space is significantly higher in quality than that pumped from beneath either developed or agricultural areas. As such, costs to deliver this water are significantly lower. These data reflect the critical importance of continuing to preserve undeveloped natural areas for the benefit of our water supply as well as the character of our community.

One Town, Eight Flow Systems

On parts of Long Island fresh water extends as deep as 1,000 feet through three distinct *aquifers* – or layers of saturated soils – the Upper Glacial, the Magothy and the Lloyd. Hydrologists agree Suffolk County has sufficient water quantity to meet our needs. However, concerns stem from the chemical contaminants we flush down our drains, spread on our lawns or put into the aquifer through the recharge process. The North Fork presents a series of particular challenges.

Near Jamesport, the Magothy Aquifer contains some fresh water. However, farther east, fresh water is limited to the upper most reaches of the Upper Glacial aquifer. This smaller lens of freshwater is the result of several factors: the narrow width of the North Fork; the low profile of the land, and; the isolating effects of the saltwater bays that divide our freshwater lenses into several separate pieces. In reality, the fresh water under Orient, – called the "Orient flow system" – is completely isolated from the Greenport flow system by Dam Pond. Similarly, the Greenport system is isolated to the southwest by Hashamomuck Pond. The Cutchogue flow system is isolated by Mattituck Creek and James Creek.

Residents in the westernmost portion of Town are a part of the Long Island mainland flow system. Not surprisingly, the fresh water aquifers of Fisher's Island and Plum Island are each completely isolated from the North Fork. Throughout Town, the aquifer is thinner and more vulnerable to salt water intrusion in outlying peninsulas and low-lying shoreline areas.

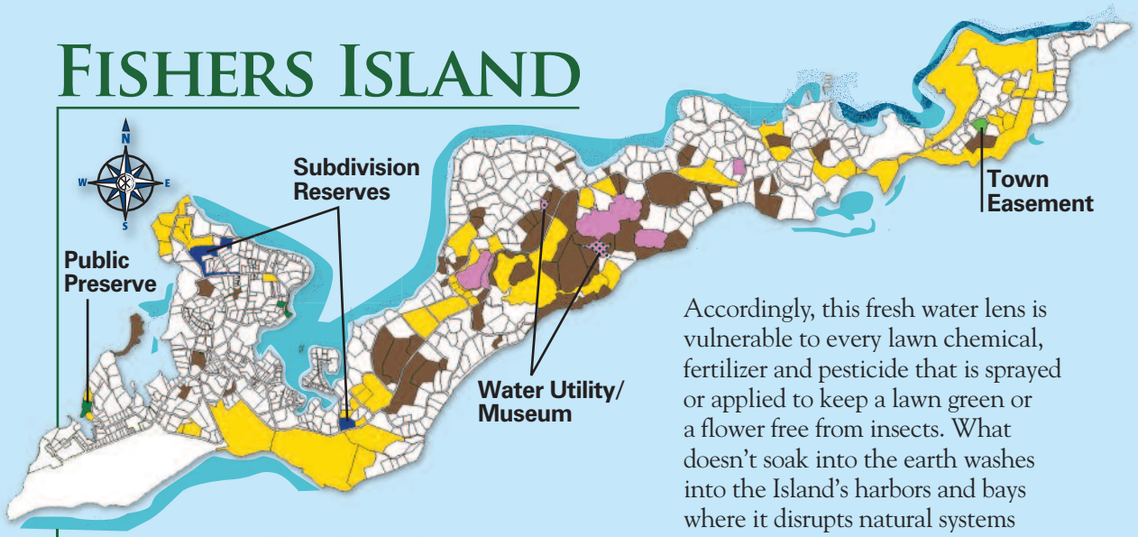
The Development Cycle

When farm fields and woodlands are turned into subdivisions and strip malls, the need for infrastructure and services increases. Existing roads must carry additional traffic. New roads, stoplights and intersections must be built and paid for. Schools must chose between increasing class sizes or hiring more teachers and borrowing money to expand buildings. Either way, budgets and taxes rise. Municipal and emergency services are forced to do more with less or to expand their budgets, personnel and facilities.

After these hard choices are made, upgrades and maintenance for sewage treatment, stormwater filtering systems and land protection frequently go unfunded, compromising the environment and its critical economic value. Over time, more money is needed to restore degraded resources and bring back the economic value of our fisheries and farmlands, and sustain the value of our local recreation and tourist-based economy.

As the development cycle continues, property owners will bear all the long-term costs of infrastructure, services and environmental restoration. Yet, ironically, more development is still offered by some as a means of lowering taxes and making housing more affordable. Successfully planning for a sustainable future must break the development cycle, incorporate an understanding of the true costs of development over time and address these costs in making the land-use decisions that shape our future.

Fishers Island



- **Private Conservation Lands***
- **Unprotected Natural Areas**
- **Water Utilities**
- **Developed or Divided for Development**
- **Eel Grass Beds 1930s**
- **Eel Grass Beds 2009**

**Henry L. Ferguson Museum Land Trust*

While Fishers Island remains a place unto itself, many of the most pressing ecological issues facing these 3,000 acres are familiar to residents of the North Fork — coastal erosion, control and eradication of invasive plants, and drinking water quality. However, the very nature of the Island brings additional challenges and magnifies the impacts of our land and resource management decisions.

For example, every drop of water that flows from a faucet or hose on Fishers Island comes from the isolated aquifer — the saturated layers of earth that underlie the Island.

Accordingly, this fresh water lens is vulnerable to every lawn chemical, fertilizer and pesticide that is sprayed or applied to keep a lawn green or a flower free from insects. What doesn't soak into the earth washes into the Island's harbors and bays where it disrupts natural systems by triggering explosive plant growth or poisoning the plants and animals that form our food web.

Island residents wanting to learn more or get involved can contact either the Fishers Island Conservancy at **www.FishersIslandConservancy.org** or the Henry L. Ferguson Museum and Land Trust at **www.Ferguson-Museum.org**. Both organizations have been critical to documenting and restoring Fishers Island's precious natural resources. There is also plenty of great info at the Group's web site **www.EastEndEnvironment.org**.

Test Your Drinking Water

The Suffolk County Department of Health recommends property owners test private wells at least every two years. County or State certified labs can test your water. The county tests for over 100 potential contaminants, including microbes, metals, inorganic chemicals, volatile organics, and petroleum derivatives. If your well is near a former agricultural area, they may test for carbamate pesticides. County testing costs $100 while commercial testing costs over $300. Samples must be collected by a professional. Should testing reveal problems, the health department recommends possible remedies including relocating or altering the depth of your well.

Call **(631) 852-5810** or visit **www.co.suffolk.ny.us** to request a county test or a list of state approved commercial labs. On the web look up "Health Services" in the Department Directory; scroll down to "Office of Water Resources." Click on this link and then scroll down to "Private Wells;" click on the link to the "Private Water Testing Program."

Do Your Part to Protect Natural Resources

Consider the Source

Learn where your water comes from. If you have a private well, have it tested every two years, see "Testing Your Drinking Water." Water Authority customers can locate their pump station and read annual reports at **www.scwa.org**. For community well field customers, their well operator is required to file annual testing reports with the EPA, copies of which are usually available through your homeowners' or neighborhood association.

S.T.O.P. "Stop Throwing Out Pollutants"

NEVER discard toxics — gasoline, oil, paints, aerosols, cleaners or lawn care products — into the soil or the drain. Call the Southold Recycling Center at **(631) 734-7685** for S.T.O.P. dates and details. Residents can always drop off florescent and compact fluorescent (CFL) light bulbs and electronics, which require special handling and should never be mixed with regular trash. Visit **http://southoldtown.northfork.net/collection_center.htm** for details.

Prescriptions

Proper prescription disposal limits the levels of medication in our drinking water supply. Southold Town does not yet accept medications at their S.T.O.P. Days, as some L.I. towns do. Until then, Eastern Long Island Hospital in Greenport is the closest accepting facility. Call (631) 477-5191 for details on their Safe Medication Disposal Program or go to **www.elih.org**, click on "services" then "Community Resources" then "Medications" and then click "Medication Disposal."

Eat for the Estuary

Local finfish and shellfish are fresher, have fewer "food miles" and help support local producers. Sustainability guides are online: **www.edf.org/seafood** and **http://blueocean.org/seafood/seafood-guide** or visit our office for a free wallet sized copy.

Buy "Water Sense" Products

The EPA now labels everything from kitchen fixtures to irrigation equipment. More information at **www.epa.gov/watersense/index.html**

Pick Up Pet Waste

It's easy to do the right thing and it has a big impact. Bacterial contamination from untended pet waste can pose a threat to human health and the health of our local waterways. Visit **www.EastEndEnvironment.org** to view our Pet Waste Fact Sheet.

Upgrade Oil Tanks

Replace buried home heating oil tanks with an indoor or a contained above-ground tank.

Clean Your Pipes

Aging septic systems threaten local water quality. Have your system pumped every three years and replace failing cesspools. Regular maintenance greatly enhances the life of your system. Visit **www.EastEndEnvironment.org** to view our Septics Fact Sheet.

Reduce Shore Hardening

Bulkheads, seawalls, or revetments can contribute to the loss of beaches and may cause additional erosion on neighboring properties. Replant native beach grasses and encourage wetlands restoration to minimize flooding and erosion. More information at: **https://habitat.noaa.gov/restorationtechniques/public/shoreline_tab1.cfm**

Contain Home Runoff

Install and maintain catch basins and drains to keep yard and driveway runoff from washing into the street and into the bay.

Join Group for the East End

Help us protect and restore our critical natural resources. Call (631) 765-6540 x 216 or visit **www.EastEndEnvironment.org**.

Help Shape the Future

Residents are invited to help shape the future of Southold Town. The Town Board has launched **Southold 2020, The New Comprehensive Plan for Southold Town**, seeking residents' visions and ideas of where the Town should be heading and how it can get there. Through a process of public meetings, drafts and revisions, the Board will create a "concise plan for guidance on town policies" aimed at "identifying and protecting important resources" and ensuring "future development & growth are in line with Southold's vision." The process is planned to run for a year with a January 2011 presentation of the final draft document scheduled before the Town Board.

With a dozen topics covering land use, economic development, agriculture, housing, transportation, and more, all residents should find something they care about. Become an informed participant in the public process and speak up for the issues and concerns that are important to your future. For more information on getting involved call the **Town Planning Department at (631) 765-1938 or e-mail TOS2020@town.southold.ny.us** to sign up for regular e-mail updates. You can get a head start on the issues by reading the Local Waterfront Revitalization Plan (LWRP); the Town's last major planning document. It features maps and information on flood prone areas, erosion, archeological, scenic and cultural resources, farmland preservation efforts and efforts to preserve Southold's rural character. The LWRP will serve as a starting point for the new Comprehensive Plan. Local libraries have printed copies or go to **http://southoldtown.northfork.net/Planning/LWRP-2004/LWRP.htm**

GROUP FOR THE EAST END

For more information, or to become a member:
Group for the East End
P.O. Box 1792, Southold, NY 11971
(631) 765-6450 x 216
www.EastEndEnvironment.org

This brochure was prepared by Group for the East End. We protect and restore the environment of eastern Long Island through education, citizen action and professional advocacy. We inspire people to embrace a conservation ethic.

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