Sewage in the Suburbs

LONG ISLAND'S FIRST SEWAGE TREATMENT PLANT REPORT CARD

OCTOBER 2011

CITIZENS CAMPAIGN FOR THE ENVIRONMENT

Contributing Authors:
Adrienne Esposito
Maureen Dolan Murphy
Greg Walbrecht
Tara Bono
Editors: Brian Smith & Sarah Eckel

CCE thanks the Long Island Community Foundation
for their generous support.

OCTOBER, 2011

A WORD FROM THE EXECUTIVE DIRECTOR

Sewage in the Suburbs, Not Exactly a Bed Time Story.

Some would prefer not to discuss the topic of wastewater disposal, and not because it's simply unpleasant but because of the vast and complicated challenges it compels us to face. Disposing of sewage on an island has become one of Long Island's greatest challenges. Antiquated sewage treatment facilities, coupled with aging septic systems, are causing significant degradation of our groundwater, surface waters, beaches and bays.

Sewage treatment plants (STPs) across Long Island discharge into our three estuaries and our groundwater. Two discharge into the Atlantic Ocean. It could easily be argued that discharging sewage waste into our drinking water system and our waterways where we fish, swim and recreate is rather unintelligent. But what else can we do on an island? Well the first thing is that we can make our sewage infrastructure a top priority and craft a plan for the maintenance, needed upgrades and future needs. For the most part, sewers appear to be an afterthought.

As our LI Sewage Report Card points out, our sewage infrastructure is aging and in need of upgrades. Municipality owned and operated STPs discharge into our waterways, causing some significant degradation and potential public health impacts. The Western Bays, a series of embayments in southern Nassau County, has three STPs that discharge over 60 million gallons of treated effluent per day into this system. This results in shellfish bed closures, decreased water quality, over growth of seaweed, reduced fish stocks, and even a "brown foam" covering beaches as reported by community residents. As a result of community outrage, Nassau has been replacing failing parts and providing greater oversight and maintenance.

Northport's STP is in part, responsible for the Red Tide outbreak in Northport Harbor. This is a toxic algal bloom that is fueled by nutrient rich waters. It's the same Red Tide that is responsible for killing seven people in Alaska who ate tainted shellfish.

Long Island needs a sewer plan. We need a plan that protects our waterways, our groundwater, our beaches, and our health. We need to upgrade existing STPs and plan for infrastructure in areas that are degrading. The slow death of the Forge River is driven primarily by nitrogen leaching from cesspools, which has caused oxygen depletion, fish kills and brown tide outbreaks. A sewer system is gravely needed not only to restore the health of the Forge River but also to help revitalize home values and restore this natural asset that provides an essential identity to the Mastic and Shirley communities.

Sewer infrastructure in not a luxury item but rather a necessity. We have to stop planning for more development and an economic recovery without planning for a safe and sane wastewater disposal plan. CCE is hopeful this report card will provide the public and policy makers with greater information to help formulate and advance a wastewater infrastructure plan that will allow us to sustain our island and our quality of life.

Sincerely,

Adrienne Esposito
Executive Director

TABLE OF CONTENTS

Introduction 4

Key Terms.....4-5

Critical Public Health and Environmental
Issues Associated with Sewage Discharge.....6-7
Harmful Algae Blooms
Effects on Wildlife
Threats to Human Health
Effects on the Economy

Sewer Score Card Methodology.....7

Homeowners Guide..... 8

Report Card Grades.....9

Map & Island Outlook.....10-11

Report Card Highlights.....12-13

Plant Profiles
- Cedar Creek.....14-15
- Bay Park.....16-17
- Glen Cove.....18-19
- Bergen Point.....20-21
- Stony Brook.....22-23
- Port Jefferson.....24-25
- Riverhead.....26-27
- Long Beach.....28-29
- Huntington.....30-31
- Patchogue.....32-33

Severe Storms.....34

Recommendations.....35-38

End Notes.....39

Introduction

Many communities throughout Long Island are served by aging sewage infrastructure that threatens public health and is adversely impacting our environment. Over 200 Sewage Treatment Plants (STP's) and pumping stations operate across Long Island to treat wastewater. Long Island's larger Sewage Treatment Plants discharge into the watershed of critical water bodies, including Long Island Sound, Peconic Estuary, and the South Shore Estuary Reserve. Many smaller treatment units discharge into groundwater thereby degrading water quality in the aquifer systems. Many STPs are in need of significant upgrades and repairs as they face increasing challenges due to aging infrastructure, population growth, climate change, and the frequency and intensity of storms. State and local budget constraints result in funding for infrastructure to be critically low and federal funding is diminishing, creating problems that go unaddressed.

Increased effluent into Long Island water bodies has resulted in declining water quality, excessive seaweed growth, increased shellfish closures, closed bathing beaches, and a diminished quality of life.
When our sewage infrastructure is not properly operated, maintained, or upgraded; millions of gallons of inadequately treated sewage can be released into the environment. There are several reasons why we need to care and get serious about fixing our sewage in the suburbs problems.

Long Island's groundwater is the sole source of drinking water for almost 3 million residents across Long Island. Our three estuaries provide essential habitat for finfish, shellfish, and wildlife; offer extraordinary recreational opportunities; and support billion dollar industries that serve and enhance our quality of life. Sewage pollution is a significant threat to the health of our valued water bodies, to the quality of water in our sole source aquifer system, to our economy, and to our sustainability.

Terms Defined

Secondary Treatment – The second step in most waste treatment systems, in which bacteria break down the organic parts of sewage wastes; usually accomplished by bringing the sewage and bacteria together in trickling filters or in the activated sludge process. Compare primary treatment, tertiary treatment.

Primary Treatment - Mechanical treatment in which large solids are screened out and suspended solids in the sewage settle out as sludge.

Tertiary Treatment - Tertiary treatment reduces the nutrient content of wastewater to prevent algae blooms in the body of water into which the effluent will be released.

Activated Sludge - Biomass produced in raw or settled wastewater (primary effluent) by the growth of organisms in aeration tanks in the presence of dissolved oxygen.

Gravity Belt Thickeners – Receives waste at the dewatering facility and thickens waste to 4 to 5 percent solid concentration to reduce weight.

Sequential Batch Reactor (SBR)- Industrial processing tanks for the treatment of wastewater. SBR reactors treat biosolids, sewage, sludge or other output from aerobic or anaerobic digesters in "batches."

Membrane Bio Reactors (MBR) - The combination of a membrane process like microfiltration or ultrafiltration with

a suspended growth bioreactor, and is now widely used for municipal and industrial wastewater treatment with plant sizes up to 80,000 population.

UV Light Systems - The use of ultraviolet light to kill bacteria and other microorganisms in water and wastewater. It is typically a final treatment step.

Dechlorination - At the end of the wastewater treatment process, chlorine is added to water to kill pathogens. After a contact time, the water is then dechlorinated - chemicals are added to the water to destroy the remaining chlorine. Dechlorination protects the health of the receiving waters into which the treated water is released.

Biological Nutrient Removal (BNR) - Nutrients in wastewater (nitrogen and phosphorus) can be removed by the use of specific groups of micro-organisms by providing suitable conditions for their growth. Systems that are designed and operated to achieve this purpose are called BNR systems.

Hypoxia - Hypoxia means low oxygen and is primarily a problem for estuaries, lakes, and coastal waters. Hypoxic waters are areas of extremely low oxygen concentrations of less than 2 parts per million.

Anoxia - A condition where an estuary is completely without oxygen, commonly caused by an excess of nitrogen and phosphorus. These hypoxic areas occur, in part, because excess nitrogen and phosphorus cause an overgrowth of algae, which consume oxygen as they grow and block sunlight from underwater plants.

Nutrients - Nutrients are chemical elements that are essential to plant and animal nutrition. Nitrogen and phosphorus are nutrients that are important to aquatic life, but in high concentrations, can be contaminants in water.

Eutrophication - Having waters rich in mineral and organic nutrients that promote a proliferation of plant life, especially algae, which reduces the dissolved oxygen content and often causes the extinction of other organisms.

Estuary – A body of water formed where freshwater from rivers and streams flows into the ocean, mixing with the seawater. Estuaries and the lands surrounding them are places of transition from land to sea, and from freshwater to saltwater.

Effluent - The final output flow of a sewage treatment plant.

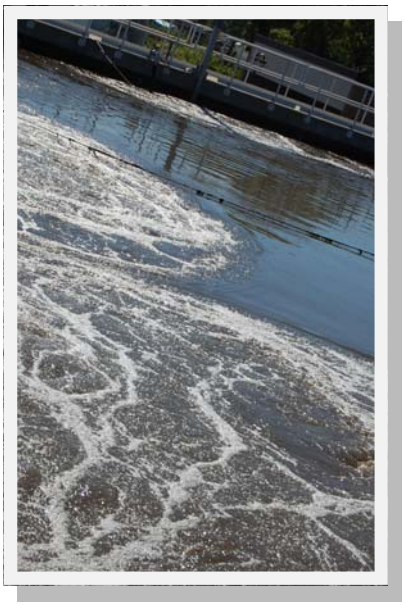
Septic Systems/ Onsite Wastewater Treatment System - Onsite wastewater system (OWS) is a broad term referring to any system for the collection, storage, treatment, neutralization, or stabilization of sewage that occurs on the property.

Aerobic Treatment – The process by which microbes decompose complex organic compounds in the presence of oxygen and use the liberated energy for reproduction and growth. Such processes include extended aeration, trickling filtration, and rotating biological contactors.

Algal Bloom - A phenomenon whereby excessive nutrients within a river, stream or lake cause an explosion of plant life which results in the depletion of the oxygen in the water needed by fish and other aquatic life.

Chlorination - The adding of chlorine to water or sewage for the purpose of disinfection or other biological or chemical results.

SPDES—State Pollutant Discharge Elimination System
PSP—Paralytic Shellfish Poisoning
FOIL—Freedom of Information Law



Critical Public Health and Environmental Issues Associated with Sewage Discharge

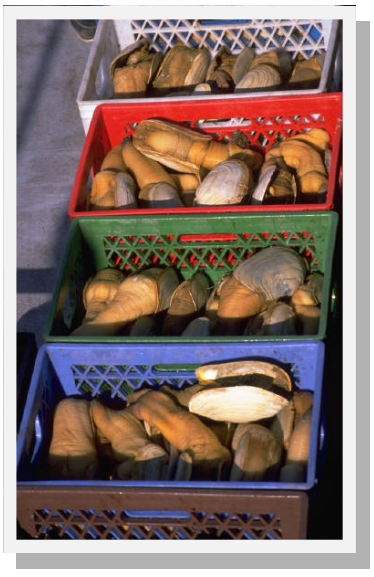
1. *Harmful Algae Blooms*

A nontoxic bloom of the dinoflagellate Lingulodinium polyedrum along the coast of La Jolla, San Diego County. Photo: Kai Schumann

Long Island has been experiencing an increased number of harmful, toxic algae blooms, such as Brown and Red tide. These algae blooms can alter the color of the water they inhabit. **Brown Tide** was first detected in the Peconic Estuary in June of 1985 and has made several significant appearances since then throughout Long Island waters. Suffolk County Health Officials called the 2011 bloom the most intense in recent years. Brown Tide is not directly hazardous to human health, but is detrimental to shellfish, such as hard clam populations and bay scallops, which were nearly wiped out when the algae first emerged in 1985.[2]

Certain species of **Red Tide** can be deadly to humans when ingested. This highly toxic algae accumulates in shellfish species such as clams and oysters. Causes of the tides, or blooms of the algae are still being studied, but they are associated with environmental conditions, which favor rapid growth including warm surface temperatures, high nutrient content, low salinity, and calm seas. These are all characteristics of waters found near STPs. In 2010, Red Tide out breaks occurred in north shore waters of Northport Harbor and south shore in Shinnecock Bay.[3] Consumption of toxic shellfish can result in paralytic shellfish poisoning (PSP). The poisoning is caused by a saxitoxin, a very dangerous toxin produced by the algae. Saxitoxin attacks the human nervous system and cause symptoms from numbing to paralysis. There have been reported and verified human fatalities as a result of suffering respiratory paralysis after contaminated shellfish consumption.[4]

2. *Sewage effluent effects on wildlife*



Because sewage is naturally high in nutrients, it often spurs growth of algae and plant life. Finfish and shellfish struggle for oxygen when waters become full of algae blooms that rapidly deplete oxygen. Eutrophication and Hypoxia can crash complete ecosystems has affected shellfish and finfish in Long Island Sound and Western Bays .

Pharmaceuticals, including antibiotics, are showing up in both our groundwater and estuaries, providing evidence that their source is anthropogenic wastewaters including residential, industrial, and agricultural. These unnatural additives to our coastal environments are causing biological problems including endocrine disruptions that result in the feminization of fish.[5]

3. *Threats to human health*

The two significant public health threats associated with STP's and cesspools are bacteria and nutrients released into our environment. To prevent these threats from becoming realities, municipalities have taken precautions, especially during summer months. They have issued beach closings when degraded water quality is documented and and pre-emptive beach closings when degraded water quality is a potential concern.

According to the Natural Resources Defense Council's (NRDC) annual **Testing the Waters Report,** which tracks beach closure data from across the country, there were 334 total beach closure days on Long Island in 2010 due to high bacteria content. One beach in Centerport Harbor was closed for 365 consecutive days due to high bacteria levels in Northport Harbor near the sewage treatment plant. The adverse health effects associated with polluted beach water include skin rashes, pinkeye, respiratory infections, meningitis and hepatitis. [6]

4. Effects on the economy

Long Island relies heavily on the surrounding waters to sustain many different and diverse industries. A majority of Long Island's revenue is generated through water-reliant industries, including tourism and recreational industries, fishing industries, and coastal real estate. The Long Island Sound generates over 8.5 billion dollars a year for the local economy and the South Shore Estuary Reserve supports over 30,000 jobs. [7] According to a 2010 report entitled, **"The Economic Benefits and Fiscal Impact of Parks and Open Space in Nassau and Suffolk Counties,"** approximately 28% of visitors to Long Island (5.1 million per year) come for the purpose of visiting parks, such as beaches, heritage sites, etc. These visitors spend $615 million annually in the local economy and generate $27.3 million in sales tax. These significant economic drivers in Long Island are dependent on healthy, swimmable, fishable waters.

Report Card Methodology

Long Island lacks a comprehensive analysis at all STP's because they are owned, operated and managed by different municipalities and different levels of government. CCE's ***Sewage in the Suburbs Report,*** provides a more in depth review of ten large STP's on Long Island including site-history, impacts on the surrounding lands and communities, discharge violations, treatment abilities, and upgrade needs. CCE staff identified sewage treatment plants that are representative of Long Island's sewage infrastructure as a whole and that provided geographic diversity. STPs were chosen from the south shore and north shore, as well as Nassau and Suffolk Counties. Facilities chosen are owned and operated by county, town, and village governments; and have discharge locations in Long Island Sound, South Shore Estuary, and Peconic Estuary.

CCE filed Freedom of Information Law (FOIL) requests to the NYS DEC for the ten identified STPs in order to obtain comprehensive and detailed information from SPDES Permits and Discharge Monitoring Reports (DMR). Our team reviewed five years of data for each facility. Once the baseline data was collected, CCE developed a questionnaire to be completed in an in-person interview with representatives from the municipalities operating the STP's. The process obtained significant information on each facility including discharge points, energy efficiency, the use of green infrastructure, a discussion about violations within the last 5 years, types of treatment utilized, public education and outreach programs, and more. The interviews were all compiled and a grading criteria was developed. Each STP was then assigned an appropriate grade.

The scores vary, but what remains consistent, is our need to invest in our sewage infrastructure.

Homeowners Guide

How can homeowners improve wastewater treatment process?

Stay informed:

⇒Know if you are hooked up to a sewage treatment plant, or are on septic treatment.
⇒Know what your community is doing to protect local water supplies.

Dispose of household products safely:

⇒Never flush hazardous waste down the drain or the toilet – bring them to your town's local "Stop Throwing Out Pollutants" (STOP) household hazardous waste disposal day.
⇒Stop using pesticides.
⇒Limit your use of fertilizers – if needed, apply only from April-October.

Practice Water Conservation

⇒Be aware of and limit how much water is used in your household. Visit: www.H2Oconserve.org
⇒Fix leaks and install water saving devices like low flow showers and toilets.
⇒Don't water the lawn on rainy days. Don't over water.
⇒Use a rain barrel to collect water from your roof that can be reused for watering gardens and car washing.

Whether it's septic or sewage, here's a list of what not to flush down the toilet or rinse down the drain:

⇒Pharmaceutical drugs
⇒Cigarettes
⇒Liquid chemicals and solvents
⇒Grease and oils
⇒Paint
⇒Pesticides

Additional tips:

Take proper care of septic systems. If your home was built before 1973, then it has a septic system. If you live in Suffolk County, there's a 70-75% chance you have a septic system. As a homeowner, you are responsible for its maintenance – it should be serviced every few years. [10]

Report Card

STP	Score	Grade
Huntington	97	A+
Bergen Point	86	B+
Patchogue	84	B
Riverhead	81	B
Glen Cove	79	C+
Cedar Creek	73	C
Port Jefferson	71	C
Stony Brook	67	D
Long Beach	66	D
Bay Park	66	D

Scoring Guide

96-100	A+
90-95	A
86-89	B+
80-85	B
76-79	C+
70-75	C
60-69	D
<59	F

Violation Points

1-20-	5 pts
21-40-	4 pts
41-60-	3 pts
61-80-	2 pts
> 80-	1 pt

1. Nassau County—Cedar Creek
2. Nassau County—Bay Park
3. Nassau County—Glen Cove
4. City of Long Beach

5. Suffolk Cour
6. Suffolk Cour
7. Suffolk Cour
8. Town of Hu
9. Town of Riv
10. Village of Pa

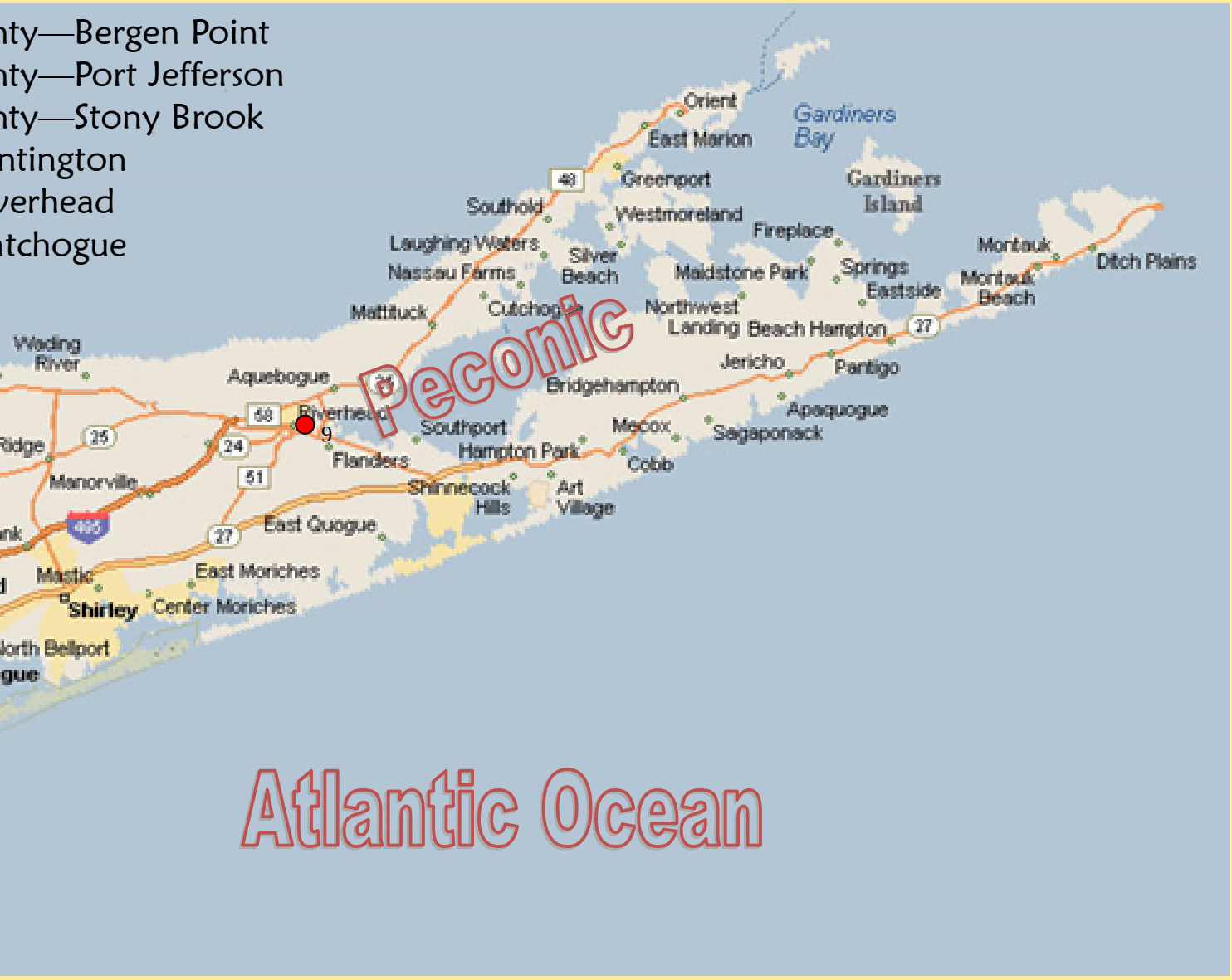
Nassau County operates two major sewage treatment plants (not including Glen Cove) that process 85% approximately 58 million gallons every day. Nassau recently took over operations of the Glen Cove STP stations which serve their respective sewer areas, and ten other independently run STPs within its borders.

In Suffolk County, there are approximately 180 STP's that are located within the county. Each facility is in basis to ensure compliance with applicable effluent limitations. The Office of Wastewater Management En County Sanitary Code. The Bureau ensures compliance through education efforts and violation assessmen violations based on review and investigations.

Suffolk County has created the Sewage Treatment Plant Inspection Program through a $125,000 grant an operators are responsible for inspecting, sampling, monitoring compliance, and investigating all 180 STPs

Suffolk County also has the Sewage Treatment Plant Construction Program, which mandates that OWM s all aspects of construction at STPs within the county. This includes new construction, upgrades to existing

nty—Bergen Point
nty—Port Jefferson
nty—Stony Brook
ntington
verhead
tchogue



of the sewage collected throughout the county. The plants, Bay Park and Cedar Creek, each treat P, which was previously owned and operated by the City of Glen Cove. The county also has 37 pumping , which collectively process 15% of the county's effluent.

spected and sampled by Suffolk County Office of Wastewater Management (OWM) staff on a quarterly nforcement Bureau was created to ensure new building constructions are consistent with the Suffolk t. Engineering staff and Public Health Sanitarians monitor and record data, and if necessary, issue

d an MOU between the OWM and the NYSDEC. The Suffolk County OWM staff and licensed STP within Suffolk County.

staff is responsible for reviewing engineering reports and construction management of systems, and repairs deemed necessary by OWM inspections.[1]

Highlights—Sewage Report Card

- **Riverhead and Huntington** are the only sewage treatment plant operators that support a federal law requiring public notification of sewage spills.
- **No STP operators currently** notify the public if a sewage overflow occurs. On October 20, 2011, Nassau County announced they are launching an informal email notification system.
- **Bergen, Cedar Creek, Glen Cove, Huntington, Patchogue and Long Beach** all have had energy audits conducted.
- **Port Jefferson, Stony Brook, Glen Cove, Riverhead, and Huntington** use ultra violet treatment to disinfect sewage. **Patchogue** upgraded in 2011 and **Bergen** is upgrading in 2012.
- All plants under a Nitrogen (Total Maximum Daily Load) TMDL are meeting the stringent standards. **Patchogue** is the only non-mandated plant removing nitrogen (new upgrades treat Nitrogen to below 10 mg/l).
- **Riverhead** is the only plant without a capital plan or an asset management plan.
- **Riverhead, Huntington, and Long Beach** conduct community educational tours at their plants. **Patchogue** promises tours once all upgrades are completed.
- **Bergen Point STP** is using video cameras in a West Islip and Brightwaters pilot program to detect sewer leaks in the pipes.
- **Huntington STP** is conducting the first of its kind energy efficiency hybrid compressor testing. They are running the Delta-Hybrid and Aerzen models side by side to see which is most efficient.
- **Cedar Creek** is implementing a $500,000 grant from NYS Department of State to install stormwater green infrastructure. They are installing permeable pavement, bioswales, catch basin inserts and constructed wetlands.
- **Riverhead STP** treats for nutrients and contains new technology that removes viruses.
- **Bergen Point** uses solar energy and **Riverhead** has been collecting wind data to install a wind turbine.
- **The top four occurring violations were for nitrogen, Biochemical Oxygen Demand (BOD), coliform, and flow amounts.**

TOTAL VIOLATIONS

Violations 2005-2010

Cedar Creek	**128**
Bay Park	119
Patchogue	93
Port Jefferson	87
Long Beach	78
Glen Cove	28
Riverhead	23
Bergen Point	19
Stony Brook University	18
Huntington	13

OVERDUE VIOLATIONS

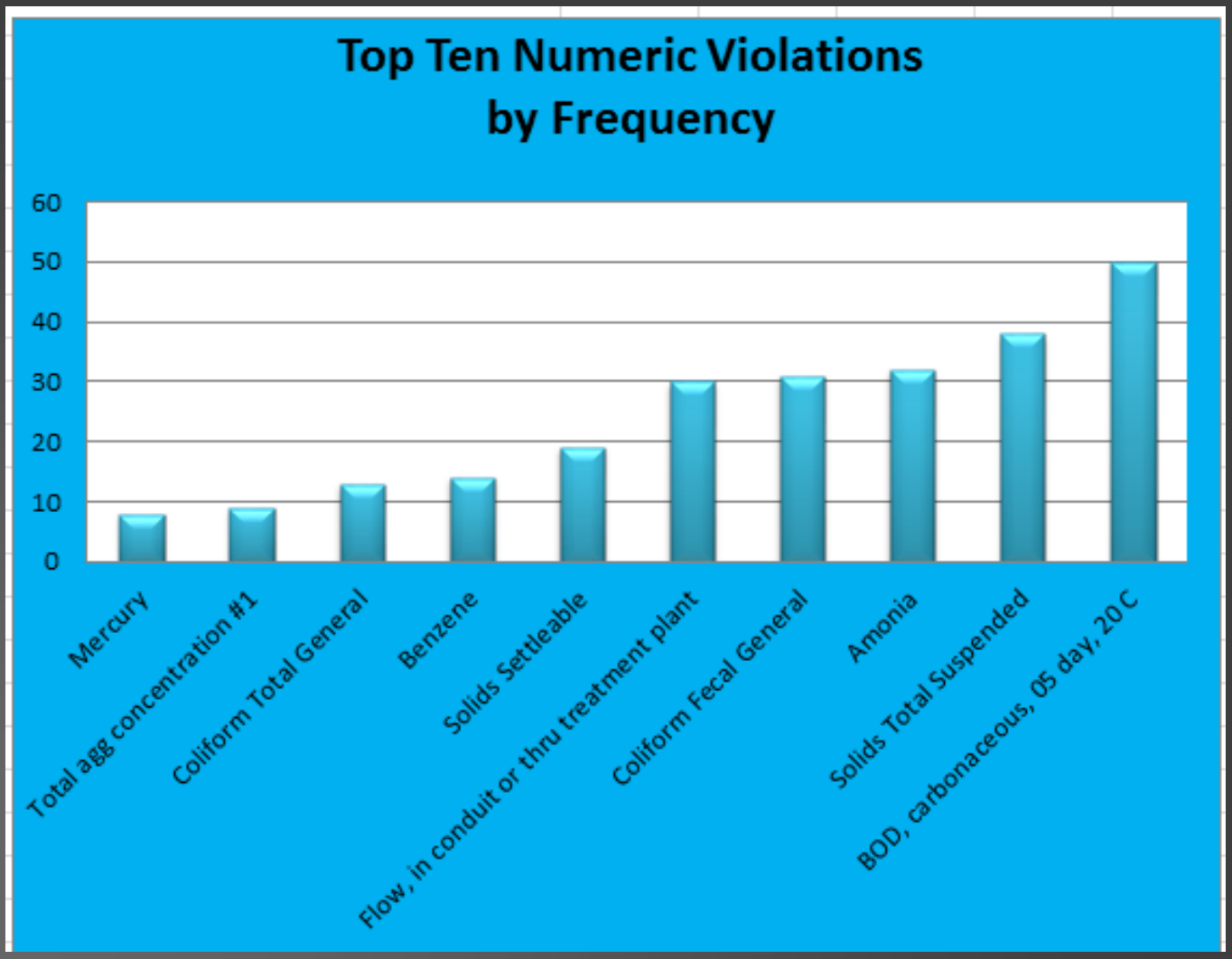
Violations 2005-2010

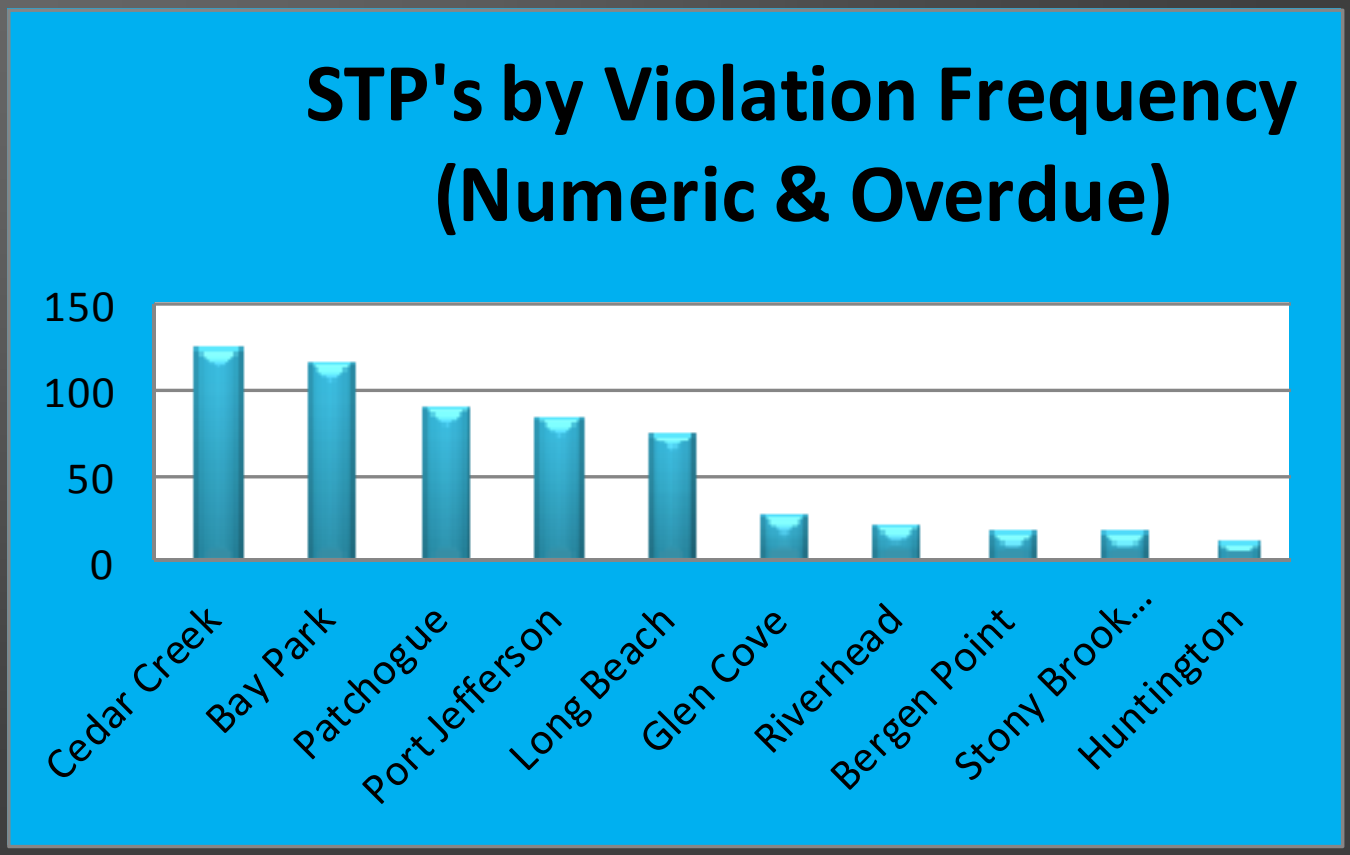
Cedar Creek	**124**
Bay Park	65
Port Jefferson	61
Long Beach	54
Bergen Point	12
Glen Cove	9
Huntington	8
Patchogue	6
Stony Brook	4
Riverhead	2

WATER QUALITY (NUMERIC) VIOLATIONS

Violations 2005-2010

Patchogue	**87**
Bay Park	54
Port Jefferson	26
Long Beach	24
Riverhead	21
Glen Cove	19
Stony Brook University	18
Bergen Point	7
Huntington	5
Cedar Creek	4


Top Ten Numeric Violations
by Frequency
60
50
40
30
20
10
0
Mercury
Total agg concentration #1
Coliform Total General
Benzene
Solids Settleable
Flow, in conduit or thru treatment plant
Coliform Fecal General
Amonia
Solids Total Suspended
BOD, carbonaceous, 05 day, 20 C


STP's by Violation Frequency
(Numeric & Overdue)
150
100
50
0
Cedar Creek
Bay Park
Patchogue
Port Jefferson
Long Beach
Glen Cove
Riverhead
Bergen Point
Stony Brook...
Huntington

Official Name			Cedar Creek Water Pollution Control Plant	
Municipality			Nassau County	
Address			3340 Merrick Road, Wantagh NY, 11793-4341	
Phone Number			516-571-9608	
Contact Person			Richard Millet	
SPDES #			NY 002 6859	
Class			SA	
Year Plant Began Operations			1972	
Year of Last Update			They are currently updating the filter press and sludge thickening, ongoing from 2010	
Capacity			72 mgd	
Average Flow			54 mgd	
Receiving Waters			Atlantic Ocean	
Population Served			500,000 (shared with Bay Park)	
Type of Treatment			Activated Sludge	
	Points #	**Points Max**	**Answers**	**Pts Received**
Violations in last 5 years				
1. Numeric			4	5
2. Overdue			124	1
Public Notification				
3. Does the STP owner/operator notify the public when there is sewage overflow/accidental release?	5	points if yes	No, they follow standard DEC protocols	0
4. Does the STP support federal legislation mandating public notification?	5	points if yes	They can not commit	0
Treatment				
5. Does the Utility fully treat all sewage in wet weather conditions?	5	points if yes	yes	5
6. Is all effluent disinfected?	5	points if yes	yes	5
7. Is the utility using de-chlorination or non-chlorine disinfectant?	5	points if yes	No	0
8. Is pre-treatment is required for industries?	5	points if yes	They follow EPA guidelines	5
Energy Efficiency				

9. Has an energy audit been performed on your plant?	5	points if yes	Yes, NYPA performed audit	5
9a. What type of energy efficiency/energy recovery steps have you taken at the plant?	BONUS- 2 pts per item		They use on-site digesters, methane recovery (30% of power is from methane), combined heat and power, energy efficient lightbulbs, and replaced chillers. No methane is flared.	10
10. Does the utility use green infrastructure solutions to reduce runoff?	5	points if yes	Yes, they are implementing a $500,000 grant from DOS to install stormwater green infrastructure. They are doing permeable pavement, bioswales, catch basin inserts, constructed wetlands	5
11. Do they do public outreach/education does the utility conduct to encourage water protection?	5	points if yes	No	0
Maintenance				
12. Does the utility have an asset management plan? Capital plan?	5	points if yes	Yes, they have a 4 year capital plan.	5
Climate Change				
13. Are they taking steps to prepare for adaptation needs associated with climate change impacts to Long Island including an expected increase in heavy rainfall intensity of storm events?	5	points if yes	They have an ongoing $1 million/ year program to stop infiltration and inflow. This includes lining pipes, stopping infiltration, sealing manholes, and detecting illegal sump pumps.	5
TMDL Compliance				
14. If applicable, does the utility comply with the TMDL?	5	points if yes, if applicable	NA	0
15. Are nutrients removed from the effluent? What technology do you use to achieve this goal?	5	points if yes	No	0
	75-TMDL			51
	70-non TMDL			51/70
				73%

Official Name			Bay Park Sewage Treatment Plant	
Municipality			Nassau County	
Address			2 Marjorie Lane, East Rockaway, NY 11518-2020	
Phone Number			516-571-9608	
Contact Person			Richard Millet	
SPDES #			NY 002-6450	
Class			SB	
Year Plant Began Operations			1955	
Year of Last Update			mid 1990's they did the belt filter presses	
Capacity			70 mgd	
Average Flow			54 mgd	
Receiving Waters			Reynolds Channel	
Population Served			500,000	
Type of Treatment				
	Points #	**Points Max**	**Answers**	**Pts Received**
Violations in last 5 years				
1. Numeric	1-20-5 pts		54	3
2. Overdue	21-40-4 pts		65	2
	41-60-3 pts			
	61-80-2 pts			
	over 80--1 pt			
Public Notification				
3. Does the STP owner/operator notify the public when there is sewage overflow/ accidental release?	5	points if yes	No, they follow standard DEC protocols	0
4. Does the STP support federal legislation mandating public notification?	5	points if yes	They can not commit	0
Treatment				
5. Does the Utility fully treat all sewage in wet weather conditions?	5	points if yes	Yes	5
6. Is all effluent disinfected?	5	points if yes	Yes	5
7. Is the utility using de-chlorination or non-chlorine disinfectant?	5	points if yes	They are using de-chlorination.	5

8. Is pre-treatment is required for industries?	5	points if yes	They follow EPA guidelines.	5
Energy Efficiency				
9. Has an energy audit been performed on your plant?	5	points if yes	No	0
9a. What type of energy efficiency/energy recovery steps have you taken at the plant?	BONUS- 2 pts per item		They are using on-site digesters, methane recovery, combined heat and power.	6
10. Does the utility use green infrastructure solutions to reduce runoff?	5	points if yes	Yes, they have catch basins and bioswales.	5
11. Do they do public outreach/education does the utility conduct to encourage water protection?	5	points if yes	No	0
Maintenance				
12. Does the utility have an asset management plan? Capital plan?	5	points if yes	They have a 4 year capital plan.	5
Climate Change				
13. Are they taking steps to prepare for adaptation needs associated with climate change impacts to Long Island including an expected increase in heavy rainfall intensity of storm events?	5	points if yes	They have an ongoing $1 million/year program to stop infiltration and inflow. This includes lining pipes, stopping infiltration, sealing manholes, and detecting illegal sump pumps.	5
TMDL Compliance				
14. If applicable, does the utility comply with the TMDL?	5	points if yes, if applicable	NA	
15. Are nutrients removed from the effluent? What technology do you use to achieve this goal?	5	points if yes	No	0
	75-TMDL			46
	70-non TMDL			46 / 70
				66%

Official Name			Glen Cove Wastewater treatment plant	
Municipality			Nassau County	
Address			100 Morris Ave, Glen Clove, NY 11542	
Phone Number			Richard Millet	
Contact Person			516-571-9608	
SPDES #			NY 002 6620	
Class			SC	
Year Plant Began Operations			1977	
Year of Last Update			2001 - went to tertiary	
Capacity			5.5 mgd	
Average Flow			3 mgd	
Receiving Waters			Glen Cove Creek	
Population Served			25,000+ - they will check	
Type of Treatment			Tertiary/UV treatment	
	Points #	**Points Max**	**Answers**	**Pts Received**
Violations in last 5 years				
1. Numeric	1-20-5 pts		19	5
2. Overdue	21-40-4 pts		9	5
	41-60-3 pts			
	61-80-2 pts			
	over 80--1 pt			
Public Notification				
3. Does the STP owner/operator notify the public when there is sewage overflow/ accidental release?	5	points if yes	No, they follow standard DEC protocols	0
4. Does the STP support federal legislation mandating public notification?	5	points if yes	They can not commit	0
Treatment				
5. Does the Utility fully treat all sewage in wet weather conditions?	5	points if yes	Yes	5
6. Is all effluent disinfected?	5	points if yes	Yes	5
7. Is the utility using de-chlorination or non-chlorine disinfectant?	5	points if yes+C41	Yes, through UV	5

8. Is pre-treatment is required for industries?	5	points if yes	They follow EPA guidelines	5
Energy Efficiency				
9. Has an energy audit been performed on your plant?	5	points if yes	Yes, by LIPA	5
9a. What type of energy efficiency/energy recovery steps have you taken at the plant?	BONUS- 2 pts per item		Using variable speed blowers and changed light bulbs	4
10. Does the utility use green infrastructure solutions to reduce runoff?	5	points if yes	No	0
11. Do they do public outreach/education does the utility conduct to encourage water protection?	5	points if yes	None	0
Maintenance				
12. Does the utility have an asset management plan? Capital plan?	5	points if yes	Yes, they have a 4 year capital plan. They also have a computerized asset management plan	5
Climate Change				
13. Are they taking steps to prepare for adaptation needs associated with climate change impacts to Long Island including an expected increase in heavy rainfall intensity of storm events?	5	points if yes	They have an ongoing $1 million/year program to stop infiltration and inflow. This includes lining pipes, stopping infiltration, sealing manholes, and detecting illegal sump pumps.	5
TMDL Compliance				
14. If applicable, does the utility comply with the TMDL?	5	points if yes, if applicable	The plant meets the 2014 TMDL standard	5
15. Are nutrients removed from the effluent? What technology do you use to achieve this goal?	5	points if yes	Yes, through Biological Nutrient Removal	5
	75-TMDL			59
	70-non TMDL			59/75
				79%

Official Name			Bergen Point Suffolk County SD#3 - Southwest	
Municipality			Suffolk County	
Address			600 Bergen Avenue, West Babylon, NY 11704	
Phone Number			(631) 852-4204	
Contact Person			John Donovan, Acting Chief Engineer	
SPDES #			NY - 010 4809	
Class			SA	
Year Plant Began Operations			1981	
Year of Last Update			ongoing - $25million sludge improvement in 2009; sludge blending tanks and six belts. In 2013, 10 mgd expansion	
Capacity			30.5mgd	
Average Flow			25mgd	
Receiving Waters			Atlantic Ocean	
Population Served			400,000	
Type of Treatment			Activated Sludge	
	Points #	**Points Max**	**Answers**	**Pts Received**
Violations in last 5 years				
1. Numeric	1-20-5 pts		7	5
2. Overdue	21-40-4 pts		12	5
	41-60-3 pts			
	61-80-2 pts			
	over 80--1 pt			
Public Notification				
3. Does the STP owner/operator notify the public when there is sewage overflow/ accidental release?	5	points if yes	No, they follow standard DEC protocols	0
4. Does the STP support federal legislation mandating public notification?	5	points if yes	They are neutral, do not want to bring up unnecessary public worry.	0
Treatment				
5. Does the Utility fully treat all sewage in wet weather conditions?	5	points if yes	Yes	5
6. Is all effluent disinfected?	5	points if yes	Yes	5

7. Is the utility using de-chlorination or non-chlorine disinfectant?	5	points if yes	No, but they are planning to switch to UV in 2013.	0
8. Is pre-treatment is required for industries?	5	points if yes	Yes, Mostly follows EPA guidelines for pre-treatment.	5
Energy Efficiency				
9. Has an energy audit been performed on your plant?	5	points if yes	Yes, by NYPA	5
9a. What type of energy efficiency/energy recovery steps have you taken at the plant?	BONUS- 2 pts per item		Lighting, pipe insulation, chiller replacement, boiler replacement, solar energy (24kw)	10
10. Does the utility use green infrastructure solutions to reduce runoff?	5	points if yes	Yes, catch basin inserts	5
11. Do they do public outreach/education does the utility conduct to encourage water protection?	5	points if yes	They include envelope stuffers that talk about oils, chemicals, no clean water in sewers, etc.	5
Maintenance				
12. Does the utility have an asset management plan? Capital plan?	5	points if yes	They have a 3 year capital budget	5
Climate Change				
13. Are they taking steps to prepare for adaptation needs associated with climate change impacts to Long Island including an expected increase in heavy rainfall intensity of storm events?	5	points if yes	The $20 million upgrade does include removal of extraneous flow from the system. They are doing a pilot study in West Islip and Brightwaters using video cameras to look for sewer leaks.	5
TMDL Compliance				
14. If applicable, does the utility comply with the TMDL?	5	points if yes, if applicable	NA	
15. Are nutrients removed from the effluent? What technology do you use to achieve this goal?	5	points if yes	No	0
	75-TMDL			60
	70-non TMDL			60/70
				86%

Official Name			Suffolk County SD #21 - SUNY	
Municipality			Suffolk County	
Address			Loop Road, Stony Brook, NY 11794	
Phone Number			(631) 852-4204	
Contact Person			John Donovan	
SPDES #			NY 0206644	
Class			SA	
Year Plant Began Operations			1989	
Year of Last Update			Minor Ongoing; pump station improvements. Major upgrade will come because of TMDL compliance	
Capacity			2.5 mgd	
Average Flow			2 mgd	
Receiving Waters			Port Jefferson Harbor	
Population Served			32,000; university, hospitals, other SD's are connected	
Type of Treatment			oxygenation disk, tertiary treatment	
	Points #	**Points Max**	**Answers**	**Pts Received**
Violations in last 5 years				
1. Numeric			4	5
2. Overdue			4	5
Public Notification				
3. Does the STP owner/operator notify the public when there is sewage overflow/ accidental release?	5	points if yes	No, they follow standard DEC protocols	0
4. Does the STP support federal legislation mandating public notification?	5	points if yes	They are neutral, do not want to bring up unnecessary public worry.	0
Treatment				
5. Does the Utility fully treat all sewage in wet weather conditions?	5	points if yes	Yes	5
6. Is all effluent disinfected?	5	points if yes	Yes	5
7. Is the utility using de-chlorination or non-chlorine disinfectant?	5	points if yes	They use UV (shared system with the Port Jefferson Plant	5

8. Is pre-treatment is required for industries?	5	points if yes	They follow EPA guidelines.	5
Energy Efficiency				
9. Has an energy audit been performed on your plant?	5	points if yes	No	0
9a. What type of energy efficiency/energy recovery steps have you taken at the plant?	BONUS- 2 pts per item		None. They plan to do energy efficiency by the end of 2014.	0
10. Does the utility use green infrastructure solutions to reduce runoff?	5	points if yes	No	0
11. Do they do public outreach/education does the utility conduct to encourage water protection?	5	points if yes	They include envelope stuffers that talk about oils, chemicals, no clean water in sewers, etc.	5
Maintenance				
12. Does the utility have an asset management plan? Capital plan?	5	points if yes	They have a 3 year capital budget.	5
Climate Change				
13. Are they taking steps to prepare for adaptation needs associated with climate change impacts to Long Island including an expected increase in heavy rainfall intensity of storm events?	5	points if yes	This plant is not effected by heavy rains because there are no illegal sump pumps connected and it is not located in a low-lying area.	0
TMDL Compliance				
14. If applicable, does the utility comply with the TMDL?	5	points if yes, if applicable	They are meeting 2009 TMDL standards. The plant will need to upgrade to reach 2014 standards. The plant currently discharges 80 lbs/per day of Nitrogen and needs to reach 40 lbs/per day. To reach this they must do a split discharge, where half of the Nitrogen is discharged into groundwater and half to surface water.	5
15. Are nutrients removed from the effluent? What technology do you use to achieve this goal?	5	points if yes	Yes	5
	75-TMDL			50
	70-non TMDL			50 / 75
				67%

Official Name			Suffolk County SD # 1 Port Jefferson STP	
Municipality			Suffolk County	
Address			Beach Street, Port Jefferson, NY 11777	
Phone Number			(631) 852-4204	
Contact Person			John Donovan	
SPDES #			NY - 002 1750	
Class			SA	
Year Plant Began Operations			1918	
Year of Last Update			Jul-07	
Capacity			1.15 mgd	
Average Flow			800,000 gd	
Receiving Waters			Port Jefferson Harbor	
Population Served			12,000 +	
Type of Treatment			Sequential Batch Reactor	
	Points #	**Points Max**	**Answers**	**Pts Received**
Violations in last 5 years				
1. Numeric	1-20-5 pts		26	4
2. Overdue	21-40-4 pts		61	2
	41-60-3 pts			
	61-80-2 pts			
	over 80--1 pt			
Public Notification				
3. Does the STP owner/operator notify the public when there is sewage overflow/ accidental release?	5	points if yes	No, they follow standard DEC protocols	0
4. Does the STP support federal legislation mandating public notification?	5	points if yes	They are neutral, do not want to bring up unnecessary public worry.	0
Treatment				
5. Does the Utility fully treat all sewage in wet weather conditions?	5	points if yes	Yes	5

6. Is all effluent disinfected?	5	points if yes	Yes	5
7. Is the utility using de-chlorination or non-chlorine disinfectant?	5	points if yes	Yes, UV since 2007	5
8. Is pre-treatment is required for industries?	5	points if yes	Follows EPA guidelines	5
Energy Efficiency				
9. Has an energy audit been performed on your plant?	5	points if yes	No	0
9a. What type of energy efficiency/energy recovery steps have you taken at the plant?	BONUS- 2 pts per item		Variable frequency drives	2
10. Does the utility use green infrastructure solutions to reduce runoff?	5	points if yes	No	0
11. Do they do public outreach/education does the utility conduct to encourage water protection?	5	points if yes	They include envelope stuffers that talk about oils, chemicals, no clean water in sewers, etc.	5
Maintenance				
12. Does the utility have an asset management plan? Capital plan?	5	points if yes	They have a 3 year capital budget.	5
Climate Change				
13. Are they taking steps to prepare for adaptation needs associated with climate change impacts to Long Island including an expected increase in heavy rainfall intensity of storm events?	5	points if yes	They are installing water-tight manhole covers in the downtown region and have removed 20 sump pumps.	5
TMDL Compliance				
14. If applicable, does the utility comply with the TMDL?	5	points if yes, if applicable	Yes, they are meeting 2014 standards	5
15. Are nutrients removed from the effluent? What technology do you use to achieve this goal?	5	points if yes	Yes, through the SBR system	5
	75-TMDL			53
	70-non TMDL			53/75
				71%

Official Name			Riverhead Sewer District, AWTF	
Municipality			Town of Riverhead	
Address			River Ave, Riverhead NY 11901	
Phone Number			(631) 727-3069	
Contact Person			Michael Reichel, Superintendent	
SPDES #			NY 0020061	
Class			SC	
Year Plant Began Operations			1936	
Year of Last Update			2000	
Capacity			1.2 mgd	
Average Flow			800,000 combined sewer and scavenger .1mgd	
Receiving Waters			Peconic River	
Population Served			8,000 - 10,000	
Type of Treatment			Tertiary treatment, Sequential Batch Reactor (SBR), UV light	
	Points #	**Points Max**	**Answers**	**Pts Received**
Violations in last 5 years				
1. Numeric			21	4
2. Overdue			2	5
Public Notification				
3. Does the STP owner/operator notify the public when there is sewage overflow/ accidental release?	5	points if yes	No, they follow standard DEC protocols.	0
4. Does the STP support federal legislation mandating public notification?	5	points if yes	Yes, with discretion. If public health is endangered.	5
Treatment				
5. Does the Utility fully treat all sewage in wet weather conditions?	5	points if yes	Yes	5
6. Is all effluent disinfected?	5	points if yes	Yes	5
7. Is the utility using de-chlorination or non -chlorine disinfectant?	5	points if yes	Yes, plant uses UV	5

8. Is pre-treatment is required for industries?	5	points if yes	There are no big industries hooked up to plant. However, there are pre-treatment for restaurants, car washes, dentists, barbers, and laundry.	5
Energy Efficiency				
9. Has an energy audit been performed on your plant?	5	points if yes	No	0
9a. What type of energy efficiency/energy recovery steps have you taken at the plant?	BONUS- 2 pts per item		They are hoping to install a wind turbine, all wind studies completed	2
10. Does the utility use green infrastructure solutions to reduce runoff?	5	points if yes	Yes, using catch basins	5
11. Do they do public outreach/education does the utility conduct to encourage water protection?	5	points if yes	Yes, they have an educational booklet, do tours of the plant, and send out letters to urge residents not to hook-up illegal sump pumps.	5
Maintenance				
12. Does the utility have an asset management plan? Capital plan?	5	points if yes	No	0
Climate Change				
13. Are they taking steps to prepare for adaptation needs associated with climate change impacts to Long Island including an expected increase in heavy rainfall intensity of storm events?	5	points if yes	They work to prevent water from entering into system from rain events by internal pipe inspections using cameras, smoke testing broken pipes, etc. They hope to release RFP for fixes to pipe collection system.	5
TMDL Compliance				
14. If applicable, does the utility comply with the TMDL?	5	points if yes, if applicable	They are in the process of upgrading. Currently at: 10mg/l of nitrogen need to meet: 4 mg/l.	5
15. Are nutrients removed from the effluent? What technology do you use to achieve this goal?	5	points if yes	Yes, with SBR and membrane bio-reactors (virus removal). Looking to remove phosphorus.	5
	75-TMDL			61
	70-non TMDL			61/75
				81%

Official Name			Long Beach Water Pollution Control Facility	
Municipality			City of Long Beach	
Address			National Blvd and Bay Drive	
Phone Number			(516) 431-1011	
Contact Person			Kevin Mulligan	
SPDES #			002-0567	
Class			SB	
Year Plant Began Operations			1951	
Year of Last Update			Last major: 2000	
Capacity			7.5mgd	
Average Flow			4.7mgd	
Receiving Waters			Reynolds Channel	
Population Served			35,000	
Type of Treatment			Secondary Treatment	
	Points #	**Points Max**	**Answers**	**Pts Received**
Violations in last 5 years				
1. Numeric	1-20-5 pts		24	4
2. Overdue	21-40-4 pts		54	3
	41-60-3 pts			
	61-80-2 pts			
	over 80--1 pt			
Public Notification				
3. Does the STP owner/operator notify the public when there is sewage overflow/ accidental release?	5	points if yes	No, they follow standard DEC Protocols	0
4. Does the STP support federal legislation mandating public notification?	5	points if yes	Not against it and would comply	0
Treatment				
5. Does the Utility fully treat all sewage in wet weather conditions?	5	points if yes	Yes.	5
6. Is all effluent disinfected?	5	points if yes	Yes.	5

7. Is the utility using de-chlorination or non-chlorine disinfectant?	5	points if yes	No.	0
8. Is pre-treatment is required for industries?	5	points if yes	Grease traps for restaurants	5
Energy Efficiency				
9. Has an energy audit been performed on your plant?	5	points if yes	Yes, by NYPA.	5
9a. What type of energy efficiency/energy recovery steps have you taken at the plant?	BONUS- 2 pts per item		They have a digester and some methane recovery	4
10. Does the utility use green infrastructure solutions to reduce runoff?	5	points if yes	No.	
11. Do they do public outreach/education does the utility conduct to encourage water protection?	5	points if yes	Yes, they do community tours of plant.	5
Maintenance				
12. Does the utility have an asset management plan? Capital plan?	5	points if yes	Yes, 5 year capital plan.	5
Climate Change				
13. Are they taking steps to prepare for adaptation needs associated with climate change impacts to Long Island including an expected increase in heavy rainfall intensity of storm events?	5	points if yes	Yes, they are rebuilding bulkheads built to FEMA 150 year flood levels.	5
TMDL Compliance				
14. If applicable, does the utility comply with the TMDL?	5	points if yes, if applicable	N/A	0
15. Are nutrients removed from the effluent? What technology do you use to achieve this goal?	5	points if yes	None	0
	75-TMDL			46
	70-non TMDL			46 out 70
				66%

Official Name			Huntington Sewage Treatment Plant	
Municipality			Town of Huntington	
Address			Creek Road, Huntington NY 1174306991	
Phone Number			(631) 351-3242	
Contact Person			Superintendant John Pavlik	
SPDES #			NY 002 1342	
Class			3a SA	
Year Plant Began Operations			1915	
Year of Last Update			2008	
Capacity			2.5 mgd	
Average Flow			2.2 mgd	
Receiving Waters			Huntington Harbor	
Population Served			3,500 homes/residents	
Type of Treatment			Sequential Batch Reactor, UV Light	
	Points #	**Points Max**	**Answers**	**Pts Received**
Violations in last 5 years				
1. Numeric	1-20-5 pts		5	5
2. Overdue	21-40-4 pts		8	5
	41-60-3 pts			
	61-80-2 pts			
	over 80--1 pt			
Public Notification				
3. Does the STP owner/operator notify the public when there is sewage overflow/ accidental release?	5	points if yes	No, they follow standard DEC protocols	0
4. Does the STP support federal legislation mandating public notification?	5	points if yes	Yes	5
Treatment				
5. Does the Utility fully treat all sewage in wet weather conditions?	5	points if yes	Yes	5
6. Is all effluent disinfected?	5	points if yes	Yes	5
7. Is the utility using de-chlorination or non-chlorine disinfectant?	5	points if yes	Yes, they are using UV.	5

8. Is pre-treatment is required for industries?	5	points if yes	Yes, the biggest users are scavenger waste and they have pre-treatment in the plant that works well. There is also a program for restaurants, dentists, etc.	5
Energy Efficiency				
9. Has an energy audit been performed on your plant?	5	points if yes	Yes, performed internally	5
9a. What type of energy efficiency/energy recovery steps have you taken at the plant?	BONUS- 2 pts per item		Replaced all light bulbs (savings of $11,000/year), testing delta hybrid blower (result in a $70,000/year saving), digester on site, some methane recovery	8
10. Does the utility use green infrastructure solutions to reduce runoff?	5	points if yes	No	0
11. Do they do public outreach/education does the utility conduct to encourage water protection?	5	points if yes	Yes, educational brochures on stopping grease from going down the drain, gives tours of facility.	5
Maintenance				
12. Does the utility have an asset management plan? Capital plan?	5	points if yes	They have both an asset management plan and a 5 year capital plan	5
Climate Change				
13. Are they taking steps to prepare for adaptation needs associated with climate change impacts to Long Island including an expected increase in heavy rainfall intensity of storm events?	5	points if yes	They use SBR technology which gives them flexibility in the holding times and an ability to switch to "storm mode".	5
TMDL Compliance				
14. If applicable, does the utility comply with the TMDL?	5	points if yes, if applicable	Yes	5
15. Are nutrients removed from the effluent? What technology do you use to achieve this goal?	5	points if yes	Yes	5
	75-TMDL			73
	70-non TMDL			73 out of 75
				97%

Official Name			Village of Patchogue Wastewater Treatment Plant	
Municipality			Village of Patchogue	
Address			1 Hammond Street, Patchogue, NY 11772	
Phone Number			631-475-4300	
Contact Person			Joe Dean	
SPDES #			NY 002-3922	
Class			SC	
Year Plant Began Operations			1951 - there was a sewer collection system back to the 20's	
Year of Last Update			ongoing, 2010	
Capacity			.5mgd, will be .8-1.2 mgd soon	
Average Flow			225,000 gd	
Receiving Waters			Patchogue Creek	
Population Served			4,000 - 5,000. Half residential, half commercial	
Type of Treatment			Rotating biological treatment with chlorine disinfectant	
	Points #	**Points Max**	**Answers**	**Pts Received**
Violations in last 5 years				
1. Numeric			87	1
2. Overdue			6	5
Public Notification				
3. Does the STP owner/operator notify the public when there is sewage overflow/ accidental release?	5	points if yes	No, they follow standard DEC protocols	0
4. Does the STP support federal legislation mandating public notification?	5	points if yes	No, but they would support legislation that let the DEC decide whether public should be notified.	0
Treatment				
5. Does the Utility fully treat all sewage in wet weather conditions?	5	points if yes	Yes	5

6. Is all effluent disinfected?	5	points if yes	Yes	5
7. Is the utility using de-chlorination or non-chlorine disinfectant?	5	points if yes	They are switching to UV in 2011	5
8. Is pre-treatment is required for industries?	5	points if yes	Yes, on a case by case basis.	5
Energy Efficiency				
9. Has an energy audit been performed on your plant?	5	points if yes	Yes, NYSERDA	5
9a. What type of energy efficiency/energy recovery steps have you taken at the plant?	BONUS- 2 pts per item		They have installed energy efficient lighting, motion censored lighting, energy efficient "STM Aerotor motor" and flow paced UV technology.	8
10. Does the utility use green infrastructure solutions to reduce runoff?	5	points if yes	Yes, stormwater is sent to a interceptor, sediment is separated out and then discharged.	5
11. Do they do public outreach/education does the utility conduct to encourage water protection?	5	points if yes	Not currently, plan to do tours once upgrades are finished	0
Maintenance				
12. Does the utility have an asset management plan? Capital plan?	5	points if yes	Yes, plant has an asset management plan	5
Climate Change				
13. Are they taking steps to prepare for adaptation needs associated with climate change impacts to Long Island including an expected increase in heavy rainfall intensity of storm events?	5	points if yes	The new upgrades meet FEMA 100 year flood specs and will withstand a Category 3 hurricane. They have minized water infiltration by repairing the collection system.	5
TMDL Compliance				
14. If applicable, does the utility comply with the TMDL?	5	points if yes, if applicable	NA	
15. Are nutrients removed from the effluent? What technology do you use to achieve this goal?	5	points if yes	Yes, Nitrogen below 10mg/l	5
	75-TMDL			59
	70-non TMDL			59/70
				84%

Extreme Storm Events

Extreme storm events can overwhelm sewage infrastructure and cause raw or partially treated sewage overflows. In August 2011 there were two extreme events; on August 14th ten inches of rain fell on parts of LI and on August 28th Hurricane Irene hit. These events resulted in sewage treatment plants across Long Island to experience various violations. The **Bay Park STP** exceeded their **weekly effluent limitations** on 8 different occasions. Their permit limit is 40mg/L; 23,000 lbs/day. The highest exceedance was reported at 89mg/L; 64,479 lbs/day. The Bay Park plant more than doubled their monthly Carbonaceous Biochemical Oxygen Demand (CBOD) limits. The Village of Lawrence STP exceeded their 7-day average **fecal Coliform** and 7 day **total suspended solids** (TSS) 7 times in August.

Storm events not only overwhelm sewage treatment plants but also the related pipe line infrastructure. On August 14, 2011 a raw sewage backup caused effluent to rush into homes and onto the roadway on Barns Ave in Baldwin, NY. Manholes, which were bolted down, were lifted several inches above the road allowing raw sewage to spill on to roads and lawns; and in gardens and basements. Ultimately, the sewage discharged into Parsonage Creek, a tributary into the South Shore Estuary Reserve.

A number of Long Island's major STPs reported a bypass or sanitary sewer overflow due to Hurricane Irene. They include **Bay Park**, **Great Neck Water Pollution Control District**, **Village of Lawrence** and **Long Beach STPs** . The Bay Park STP, Lawrence STP, and Long Beach STP all discharge into the Western Bays, an already stressed sensitive portion of the South Shore Estuary Reserve.

These types of severe storms are expected to continue and worsen with our changing climate. The effects of climate change throughout the northeast include more heavy rain events. Increased heavy rain coupled with sea level rise will lead to substantial increases in the extent and frequency of storm surges, coastal flooding, erosion, property damage, and loss of wetlands.[8] From 1958 to 2007, the northeast experienced a 67% increase in rain classified as "very heavy precipitation." [9]

Recommendations

1. New York State Needs a *Sewage Pollution Right to Know* Law.

The public has a right to know of any non-permitted release of untreated, partially treated or excessive amount of sewage. Too often, lack of public notification results in members of the public needlessly being exposed to health threats when they are swimming, fishing, crabbing, kayaking, waterskiing or engaging in other recreational activities in an area that recently had a non-permitted release. Currently no law requires municipalities or the DEC to notify members of the public when sewage enters our waterways or neighborhoods. STP owners and operators are simply required to notify DEC of these releases and also submit monthly reports to DEC documenting what permit parameters were violated. **This is not acceptable. The public deserves to be notified.**

Hurricane Irene caused sewage treatment plants throughout Long Island to discharge untreated or improperly treated wastewater—yet few residents knew that waters were contaminated. They include Bay Park STP, Great Neck Water Pollution Control District, Village of Lawrence STP and Long Beach STP.

The Bay Park STP had several mechanical problems in 2010 that lead to multiple violations and numerous sewage overflows. In one March 2010 event, over 3,500,000 gallons of sewage overflowed, creating a distinct brown plume, visible and documented by residents. Since beaches were closed, the health department did not issue any notifications to the public.

In 2010 and 2011, several releases of treated sludge occurred from the Bay Park STP into the Western Bays. Nassau County contacted the DEC each time an overflow of treated sludge occurred and therefore, complied with all existing laws but the public was not sufficiently protected. In fact, residents have video of unsuspecting residents fishing in the brown plumes. CCE also received numerous reports of members of the public fishing, crabbing, boating and swimming in impacted waters. These are incidences that can and should be avoided by providing a simple notification to members of the public.

On September 12, 2011, 162,000 gallons of sewage spilled into the Long Island Sound in Westchester County. The Westchester County Health Department issued a public notification urging people to avoid direct contact with the waters until further testing. In the past, the health department only released notifications during beach season, when swimmers were active. This practice changed because the Westchester Health Department recognized that there are people that use the waters year-round for other purposes besides bathing.

Spills or discharges of: sewage; waste; substandard effluent or wastewater; contaminants and pollutants; sludge; suspended and settable solids; chemicals such as ammonia and chlorine; excessive nutrients, pathogens, bacteria or toxins such as mercury; and non-indigenous compounds should all trigger a common sense public health and safety notification measure. Any related violations or suspected violations of presiding environmental law all raise public health, safety, and environmental concerns. Prompt notification of such spills or discharges should initiate proactive measures to alert the public that water activities - including commercial and recreational fishing, shellfish harvesting, and recreational uses such as swimming, diving and water skiing - carry risks. Notification is a common sense step that allows for the public to make choices to protect themselves and their families.

2. Require all Sewage Treatment Facilities to Reduce Nitrogen from their Effluent

The Long Island Sound has a Total Maximum Daily Load standard, or TMDL, for nitrogen. This important standard was established because nitrogen has been identified as the primary pollutant causing low dissolved oxygen conditions, otherwise known as hypoxia. A TMDL establishes the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. The Long Island Sound TMDL requires sewage

treatment plants to upgrade to reduce nitrogen from effluent. As is reflected in the sewage report card, many plants on the north shore of Long Island have upgraded as required by the TMDL while those on the south shore have no such requirement and therefore are not reducing nitrogen.

Most STPs on the south shore – with the exception of Patchogue STP – have not upgraded to reduce nitrogen because they are not legally required to do so. This is particularly true for the Western Bays, where numerous problems have been documented, yet there is no planned upgrade to reduce nitrogen. The entire South Shore Estuary Reserve has been designated an impaired water body for excessive nutrients.

New York State has the opportunity to implement numeric nutrient standards for nitrogen statewide. Statewide numeric nutrient standards would put a baseline in place to achieve higher water quality. Statewide numeric nutrient standards should be used in conjunction with other clean water tools to achieve the best possible result for clean water and healthy communities. CCE strongly supports New York's implementation of statewide numeric nutrient standards for nitrogen and phosphorus.

3. The Federal Government Needs to get Back in the Business of Funding Wastewater Infrastructure

The conservative cost estimate of repairing, replacing, and updating New York's municipal wastewater infrastructure is $36.2 billion over 20 years. Traditionally, sewage and drinking water infrastructure are funded through state revolving funds through the EPA. Additional non-traditional federal funding streams are available and are another option for municipalities who are seeking other pathways to upgrade infrastructure. New York State provides an online project assessment tool for help with identifying both federal and state funding streams at www.nycofunding.org or http://www.nycofunding.org/Default.aspx?tabid=55

Federal funding is essential to continue critical upgrades to sewage infrastructure. Dedicating funds that protect public health and the environment are investment of dollars not an expenditure or dollars. The US Conference of Mayors notes that each public dollar invested in water infrastructure increases private long-term GDP output by $6.35 -- creating more jobs than in any other type of infrastructure. In addition, the US Department of Commerce estimates that each job created in the local water and sewer industry creates 3.68 jobs in the national economy and each public dollar spent yields $2.62 in economic output in other industries.

CCE strongly supports full funding for programs that help municipalities sustainably upgrade their sewage infrastructure.

The adoption of the Clean Water Act resulted in substantial investment in our nation's clean water infrastructure and yielded significant improvements to local water quality. However, almost 40 years later, many sewage treatment plants are failing and contaminating rivers, lakes, bays, and estuaries. Since 2004, federal funding for vital wastewater and stormwater infrastructure has significantly decreased, shifting the burden to local governments. While federal funding has continued to decline, the nation's clean water infrastructure needs continue to grow. The US Environmental Protection Agency assessed national clean water needs at $388 billion. Projects to fix and improve antiquated sewage treatment and collection systems in New York State are estimated at $36.2 billion over the next 20 years. Investing in the nation's clean water infrastructure yields significant environmental and economic and benefits.

In 2009 there was record funding for both the Clean Water and Drinking Water State Revolving Funds (SRF). Since then federal funding levels have continued to decline even though needs for improved water infrastructure has continued to increase. In 2010, the federal budget for both was $3.5 billion and in 2011, the budget was reduced to $2.45 billion. New York received $322 million in 2010 and $226 million in 2011. **We need to ensure that the Clean Water and Drinking Water SRF's are fully funded so that New York State is receiving adequate clean water funds, with funding resources available for cost effective and environmentally friendly green infrastructure solutions.** ***All levels of government need to be in collaboration with our federal House and Senate members to work to ensure full SRF funding.***

4. Sewage Treatment Plants Need to Use Green Infrastructure

Green infrastructure — a network of decentralized stormwater management practices, such as rain gardens, green roofs, trees, and permeable pavement; can effectively capture and filter rain. Through absorption, re-use, and evapotranspiration; green infrastructure deals with stormwater where it hits the ground. Illicit sewage hook ups into storm water systems can be and are a problem in Long Island communities. EPA regulations require that municipalities inspect and assess their stormwater infrastructure for these illicit sewage hook ups.

By avoiding the need to invest in more expensive gray infrastructure solutions such as stormwater filtration devices and stormwater piping, green infrastructure saves communities money. Across the nation, communities are addressing stormwater management with cost effective green infrastructure solutions. Green infrastructure investments have saved the City of Philadelphia, PA over $170 million, Indianapolis, IN more than $300 million, Chicago, IL $100 million annually in energy savings alone, and Portland, OR saved $250 million through a $8 million investment in downspout disconnection.

The benefits of green infrastructure are particularly accentuated in urban and suburban areas where green space is limited and environmental damage is more extensive. Additional green infrastructure benefits include: preventing polluted runoff, reducing flooding, creating jobs, saving energy, increasing green spaces and habitat, increasing property values, and community beautification.

CCE recommends that all municipalities use available green infrastructure funding to offset the costs associated with traditional grey infrastructure. The NYS Environmental Facilities Corporation has allocated $20 million for this important and cost savings program. Additionally, CCE believes that green infrastructure set-aside should continue to be a part of the Clean Water State Revolving Loan Fund program.

5. Energy Efficiency and Renewable Energy Generation

Energy costs can account for up to 30 percent of the total operation and maintenance costs of STPs. Energy efficiencies, energy conservation, and on-site renewable energy generation can result in increased treatment efficiency, along with the potential for increased treatment capacity, an increased ability to meet effluent limitations, reduced operation and maintenance requirements, and reduced energy costs.

Increasing energy efficiency and generating renewable energy on-site at energy intensive STPs will reduce dependence on fossil fuels, thus providing public health and environmental benefits and helping New York State meet clean energy and efficiency goals.

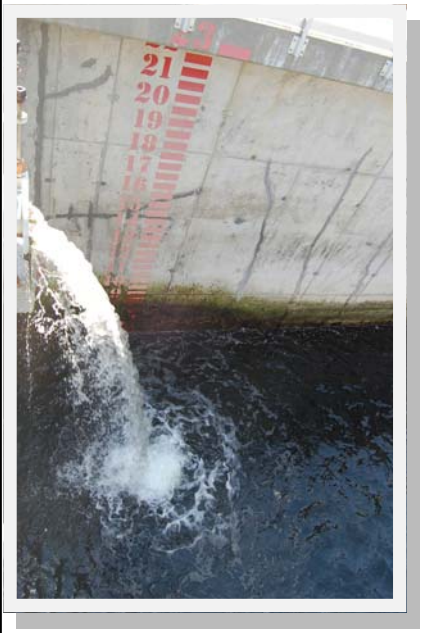
Numerous processes can be upgraded to improve the energy efficiency of STPs, including:

- Replacing surface aerators with subsurface aerators.
- Installing high-efficiency influent and effluent pumps, high-efficiency motors, and variable-frequency drives.
- Tying in pipes on gas recirculation blowers to allow one blower to service two mixing tanks.
- High rate diffusers.
- Variable Frequency Drives enable pumps to accommodate fluctuating demand, resulting in operating at lower speeds and conserving energy while still meeting pumping needs.
- Auxiliary and Supplemental Power sources such as bio-gas fueled internal combustion engines, microturbines, wind turbines, fuel cells, and solar cells.
- Biogas generated from digesters can fuel Combined Heat and Power (CHP) systems, which can generate energy on-site.
- Rehabilitating damaged or deteriorated sewer lines and eliminating improper connections to the system, the overall flow to the STP is reduced, thus reducing the amount of energy required to treat the flows.

6. Sewage Treatment Plants need to be Proactive in Addressing Climate Change

Extreme storms are expected to continue and worsen with our changing climate. The effects of climate change throughout the northeast include more heavy rain events. Increased heavy rain coupled with sea level rise will lead to substantial increases in the extent and frequency of storm surges, coastal flooding, erosion, property damage, and loss of wetlands.[8] From 1958 to 2007, the northeast experienced a 67% increase in rain classified as "very heavy precipitation." [9]

Current sewage infrastructure was not designed for frequent heavy rain events and sea level rise. Most of the sewage treatment plants are located close to our shores or on rivers, lakes, and estuaries. Sewage collection systems are old and in need of repair. Cracked, leaky pipes allow stormwater to infiltrate, overwhelming the capabilities of the sewage treatment plant, causing sewage overflows. Annually, Nassau County allocates $1 million to stop infiltration of inflow into its pipes. The program includes lining and repairing existing pipes and stopping infiltration through manholes. ***But it's not enough.*** Still problems occur.



On August 14, 2011—during an extreme rain event-- there was a raw sewage back-up into the homes and on to the roadway on Barns Ave, Baldwin, NY. Manholes, which were bolted down, lifted several inches above the road, as raw sewage pushed through the road, onto lawns, in gardens, and through basements. Ultimately, the sewage discharged into Parsonage Creek, a tributary into the South Shore Estuary Reserve.

All of the STP operators that CCE interviewed identified sump pumps as one of the main problems during a storm event. During heavy rain events residents will use sump pumps to prevent flooding in their homes. Sump pumps that are illegally connected to sewer lines cause an influx of water to the sewage treatment plant and can aide in overwhelming the plant's capacity.

The town of Huntington's STP did not have an overflow during Hurricane Irene, despite the fact that all roads surrounding the plant were flooded. Town workers at the plant took several steps before and during the storm to prevent an overflow. This included sandbags surrounding structures and important equipment, the use of additional holding tanks, and tweaking of treatment chemicals and processes.

CCE recommends that New York State incorporate a robust climate change adaptation plan in the final New York State Climate Action Plan, and provide resources for implementation. A comprehensive plan that assesses current clean water infrastructure needs, along with climate vulnerability assessments that consider a changing climate with increased severe weather events should be developed. State and local agencies must consider climate change impacts in clean water infrastructure design and permits.

7. Increase DEC Staffing in the Division of Water.

DEC staffing levels are at an all-time low. It is necessary that sewage treatment operations receive careful oversight, regulation, and enforcement to protect groundwater and surface waters.

The DEC Division of Water, which is responsible for testing sewage effluent, has seen its responsibilities double while its staff has continued to shrink. In 2008, DEC tested 94% fewer effluent samples than in 1990. In certain parts of the state the DEC is not inspecting wastewater treatment facilities at all. The result is a gap of knowledge verifying that these facilities that are responsible for treating raw sewage are operating properly. The DEC must have the ability to respond and take action when illegal sewage overflows occur.

Works Cited

1. Suffolk County Department Office of Waste Water Management, 2009. *Waste Water.* Accessed at: http://www.co.suffolk.ny.us/departments/healthservices/environmentalquality/wastewater.aspx

2. Smith, Jennifer. July 27, 2011. *Officials: Brown Tide Spreading in LI Bays.* Newsday.

3. Smith, Jennifer. July 29 2010. *Red tide arrives on East End early, spurred by heat.* Newsday.

4. Massachusetts Department of Public Health. *Red Tide Fact Sheet.* 2010. Accessed at: http://www.mass.gov/?pageID=eohhs2modulechunk&L=4&L0=Home&L1=Provider&L2=Guidance+for+Businesses&L3=Food+Safety&sid=Eeohhs2&b=terminalcontent&f=dph_environmental_foodsafety_p_red_tide&csid=Eeohhs2

5. McElroy, Anne. 2006. *Estrogenic Compounds in Urban Waterways.* Stony Brook University

6. Dorfman, Mark., Sinclair Rosselot Kirsten. 2010. *Testing the Waters.* Natural Resources Defense Council.

8. "Global Climate Change Impacts in the Untied States." US Global Change Research Program. 2009. www.globalchange.gov/usimpacts

9. Smith, Jennifer, "Global Warming, Turns Up Heat on Long Island", Newsday August 14, 2011.

10. LILWA, 2010. Long Island Liquid Waste Association. http://www.lilwa.org/

11. NYS DEC. 2008. *Wastewater Infrastructure Needs of New York State Report.* Accessed at: http://www.dec.ny.gov/docs/water_pdf/infrastructurerpt.pdf

Citizens Campaign for the Environment
225a Main Street
Farmingdale, NY 11735
(516) 390—7150
www.citizenscampaign.org

CITIZENS CAMPAIGN
FOR THE ENVIRONMENT