NEW YORK STATE SENATE

STANDING COMMITTEE ON HEALTH

STANDING COMMITTEE ON ENVIRONMENTAL CONSERVATION

NEW YORK STATE ASSEMBLY

STANDING COMMITTEE ON HEALTH

STANDING COMMITTEE ON ENVIRONMENTAL CONSERVATION

PUBLIC HEARING

Water Quality and Contamination

Long Island

Legislative Office Building

725 Veterans Memorial Highway, Smithtown

Monday, September 12, 2016

11:00 A.M. -- 10:30 P.M.

ASSEMBLY MEMBERS PRESENT:

ASSEMBLY MEMBER STEVE ENGLEBRIGHT
Chair, Assembly Standing Committee
On Environmental Conservation
ASSEMBLY MEMBER RICHARD GOTTFRIED
Chair, Assembly Standing Committee
On Health
ASSEMBLY MEMBER CHARLES LAVINE
ASSEMBLY MEMBER MICHELLE SCHIMEL
ASSEMBLY MEMBER FRED THIELE, JR.
ASSEMBLY MEMBER STEVEN OTIS
ASSEMBLY MEMBER EDWARD RA
ASSEMBLY MEMBER ANDREW RAIA
ASSEMBLY MEMBER JOSEPH SALADINO
ASSEMBLY MEMBER ALFRED GRAF
ASSEMBLY MEMBER THOMAS McKEVITT
ASSEMBLY MEMBER BRIAN KAVANAGH
ASSEMBLY MEMBER THOMAS ABINANTI

SENATORS PRESENT:

SENATOR KEMP HANNON
Chair, Senate Standing Committee
On Health
SENATOR TODD KAMINSKY
SENATOR KENNETH LAVALLE
SENATOR JACK MARTINS
SENATOR MICHAEL VENDITTO

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(The public hearing commenced at 11:00 A.M.)

ASSEMBLY MEMBER STEVE ENGLEBRIGHT, CHAIR, ASSEMBLY STANDING COMMITTEE ON ENVIRONMENTAL CONSERVATION: All rise. We're going to have a Pledge of Allegiance.

ALL: [RECITE PLEDGE OF ALLEGIANCE]

ASSEMBLY MEMBER ENGLEBRIGHT: Please be seated. Thank you all for being here today to examine water quality and contamination issues. My name is Steve Englebright. I Chair the Assembly Environmental Conservation Committee. Let me begin by introducing Members of the Assembly and then yield to the same introduction regimen from our Senate colleagues. To my left is Assemblyman Gottfried, the Chair of the Health Committee; Legislator Schimel, Legislator Chuck Lavine, Legislator Thiele, Legislator Ra, and Legislator Raia. Senator Hannon?

SENATOR KEMP HANNON, CHAIR, SENATE STANDING COMMITTEE ON HEALTH: Thank you. Senator Jack Martins, the North Shore of Nassau County; and Senator Todd Kaminsky of the South Shore of

Nassau County. I of course have no shoreline.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. As many of you know, this is the second joint legislative hearing regarding water quality. Here on Long Island we've also learned the hard way about contamination. All of our drinking water literally comes from beneath our feet in the form of groundwater. Unfortunately, Long Island also has a strong industrial legacy, which has brought its own history of contamination. More recently the contamination has been exacerbated by illegal dumping.

In addition Long Island is the location where pesticides were first detected in ground water. Aldicarb, used on potatoes, had been authorized for use in 1975. In 1979 the pesticide which laboratory and field testing indicated could not reach ground water was discovered in Long Island groundwater. It was essentially banned from most uses by 1980 but the groundwater concentrations continued to increase even 20 years after its initial use.

Long Island's population of

approximately four million people has helped contribute to contamination as well, especially in the form of nitrogen. Excess nitrogen not only poses a problem to drinking water but also contributes to surface water contamination, including algal blooms. Excess nitrogen puts an additional burden on waterbodies that are already struggling with invasive species and other challenges.

These are just some of the things that I am hoping to talk about and hear about today. At the last hearing, I mentioned that several weeks ago the Assembly had requested specific information, including documents and correspondence from the Department of Environmental Conservation and the Department of Health in order to better prepare for the hearings. We had been promised those documents would be provided.

Friday evening, DOH provided some documents and we're in the process of reviewing them. And I'm led to believe that there were some additional documents provided last evening.

Clearly, providing us with documents in the darkness of night the day before or the night before the hearings is not timely.

And I'm disappointed that we don't have all of those documents ready for us to examine them in a manner that was timely for this hearing. So we do reiterate again that we would like to see and actually expect the information that we've requested. But I also want to say that we do appreciate the efforts that are being made to supply those documents and information.

I expect that today will be a long day and appreciate your patience. We'll look forward to hearing from each of you. But first a few items of housekeeping. Each witness will be sworn in by Mr. Gottfried. And please try to limit your comments to no more than ten minutes. Your written testimony will be included as part of the public record; so you should feel free to summarize your testimony rather than reading it to us word for word. Please also be sure to state your name for the record prior to speaking.

Those of you who did not have the

opportunity to testify and would like to submit written testimony should submit your testimony via E-mail or mail as soon as you can but please no later than two weeks from today. It will be added to the written hearing record. Senator Hannon?

SENATOR HANNON: I just want to point out that this entire hearing will be webcast; so it will be there for the record for everybody and just be cognizant of that as you're speaking.

ASSEMBLY MEMBER ENGLEBRIGHT: Mr. Gottfried has some technical observations.

ASSEMBLY MEMBER RICHARD GOTTFRIED, CHAIR, ASSEMBLY STANDING COMMITTEE ON HEALTH: Just the mechanics on swearing in: step up, take your seat. You don't have to stand up and raise your hand. I'll just ask if the testimony you're about to give, if you swear or affirm that the testimony you're about to give is true. You say yes; then you get to talk.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Mr. Gottfried. Unless there are others who want and insist, we'll proceed to do what this is

actually called: a hearing. Let's go to the testimony of the first panel: the Honorable Steven Bellone, County Executive of Suffolk County; the Honorable Bridget Fleming, County Legislator, Second District, Suffolk County Legislature; the Honorable Ed Romaine, Brookhaven Supervisor, the Town of Brookhaven -- welcome back Ed; and the Honorable Al Krupski of the Suffolk County Legislature. I say welcome back Ed because Ed and I were elected to sit in this chamber in the same election in mid-Jurassic time but it was the same day, the same event. It's wonderful to see you again. Let's begin with our County Executive.

ASSEMBLY MEMBER GOTTFRIED: And just before you do, do you each swear or affirm that the testimony you're about to give is true.

ALL: Yes.

ASSEMBLY MEMBER GOTTFRIED: Yes? Okay.

[WHEREUPON, THE WITNESSES, MR. STEVEN BELLONE, MR. EDWARD ROMAINE, MS. BRIDGET FLEMING AND MR. AL KRUPSKI WERE DULY SWORN.]

ASSEMBLY MEMBER ENGLEBRIGHT: County

Executive Bellone, the microphone is yours. We have a desire to be as clear as possible. I think some adjustments have been in the microphone. Please proceed.

MR. STEVEN BELLONE, COUNTY EXECUTIVE, SUFFOLK COUNTY: Thank you. Again thank you Assemblyman Englebright, Chair of the Committee on Environmental Conservation; Senator Hannon, Chairman of the Committee on Health. Thank you to all the Members of the Senate and the Assembly who are here. Today I'm here to talk about the County's comprehensive efforts to reclaim our water. While we are confronted with a variety of water quality challenges from legacy impacts resulting from defense industry manufacturing to pesticides and emerging contaminants such as personal care product, my remarks will focus on the needs and our efforts to address nitrogen pollution from cesspools and septic systems.

It's easy to understand how this problem was allowed to worsen over the course of decades. One editorial noted that water pollution isn't a very spectacular menace. It builds slowly but

kills quietly and it is easy to ignore until it is too late. This quiet killer has destroyed valuable shellfish beds and health officials at both State and federal levels have warned the pollution could menace human life.

Contaminants from cesspools are filtering into the underground water supply. In the face of this mounting danger, the County has no choice: it must have sewers. Those words came from *Newsday's* editorial board three months before I was born on June 19, 1969. When that editorial was written, more than half of the clams eaten in the United States were harvested from the Great South Bay and more than 6,000 Long Islanders worked the Bay. Today that iconic industry is largely a memory. Back then the editorial board called it contaminants. Today we know it as nitrogen pollution. The vast majority of nitrogen pollution comes from septic systems and cesspools on residential properties.

Despite what we knew back in 1969, the reality is that today nearly three out of four homes in Suffolk County are still unsewered. At

the time the editorial was written, Suffolk County under strong pressure from State and federal governments was undertaking a comprehensive and bipartisan effort to address the need for sewers Countywide.

Sadly and in large part because of significant problems that arose when the County constructed the one regional sewer district that does exist here, those efforts were pretty much abandoned in the 1980's. And the impacts that were predicted if there were a failure to act have in fact materialized. So we know the problem but it is not enough to identify the problem. Our job is to implement solutions.

There are some areas primarily in western parts of the County where we can connect people to existing plants where sewering is a practical solution. But there are also vast areas of the County where sewering is not a practical or economic solution. And in those areas the solution lies in the use of individual active treatment systems that treat for nitrogen instead of cesspools and septic systems which do not. And

we are involved in an aggressive multifaceted effort to set the stage for an evolution away from the use of the systems that pollute to those that will reverse the decades of nitrogen pollution that we have seen.

In the past two years alone we have made more progress than has been made in the prior several decades: pilot testing of individual treatment technologies to confirm their effectiveness, so that they can be certified for use in Suffolk County; our work with the DEC, the Long Island Regional Planning Council and the rest of the Long Island Nitrogen Action Plan team to delineate sub-watershed boundaries so that sound science-based decisions can be made about priority areas that should be targeted for the installation of these systems; working with industry to ensure that it evolves and is positioned to provide trained and certified staff to install and maintain these new systems, to take advantage of the economic activity that will result.

The worst thing we could do is to

implement new technologies, put them in place and not have the contractor base ready to maintain and assist homeowners in the utilization of those systems. The quickest way to kill any program that we would put forward would be to launch something that is impractical or unworkable. That would immediately I think set us back in the same way we were set back with the Southwest Sewer District back in the '70s and early '80s.

Enacting changes to the County sanitary code to create the responsible management entity required under the State health code in order for the County to regulate these new systems. All of these efforts are necessary to prepare for the historic change that we must make to begin reversing decades of nitrogen pollution. But it will not be easy. Policymakers will face some tough choices and difficult decisions. Requiring the use of these active treatment systems in new development will be the first decision to be made and we will begin those discussions later this year.

What to do about the more than 360,000

systems already in the ground and whether some property owners should be required to replace those old systems will be a more challenging issue. These discussions will not be for the faint of heart. Regardless of whether the solution for a particular community is connecting to a sewer plant or replacing ineffective individual systems with new technology, the cost to the individual property owner or making the necessary improvements is a significant obstacle that must be overcome.

A cornerstone recommendation of both the IBM's Smarter Cities Challenge Report and the County's Comprehensive Water Resources Management Plan is the establishment of a new, stable and recurring revenue stream to offset the direct cost to homeowners of the improvements to make them affordable. Unless we make these technology enhancements workable and affordable for homeowners who we are asking to help us take a major step forward in addressing a regional problem by them individually acting; unless we make it workable and affordable, we will not make

progress on this issue.

A recurring funding mechanism could also help to advance long-stalled sewer projects in Smithtown and Kings Park, projects in Huntington, Oakdale and Sayville to fund additional new sewer connections; to protect Northport Harbor, to support Supervisor Sean Walters work to protect to Peconic Bay and the effort to protect environmentally sensitive areas let by Supervisor Romaine and the East Hampton Supervisor Larry Cantwell.

Among the potential funding streams proposed in both reports is a fee based on water usage. Based on that recommendation earlier this year, I along with a broad cross-section of stakeholders proposed a public referendum on the creation of a water quality protection fund. The fund would be derived from a surcharge placed on water usage, collected by water suppliers for the specific purpose of funding wastewater infrastructure to halt nitrogen pollution, both advanced onsite septic systems and sewers.

By collecting just one dollar per one

thousand gallons of water used for the water quality protection fund, we would generate $74 million each year that could be used for one purpose and one purpose only: to expand clean water infrastructure in Suffolk County, to clean up our waterways and protect our groundwater. Even after adding this ability to protect our natural resources, Suffolk County water rates would still be 40 percent below the national average.

And to be clear, even an annual $74 million revenue stream would not provide the resources necessary to solve on its own what the IBM reported is an $8 billion challenge. But what it would do is allow us to make progress on this most critical issue for our region and for our future, to make progress, each and every year. To do the reverse of what has been happening over the last several decades, where we have been declining every year; we could turn that around and be improving every year.

Now I'm not saying that this is the only way to solve the problem nor are all the

organizations and stakeholders who have supported this effort saying that. But we believe that this is one reasonable approach to the issue given the magnitude of the challenge. This is not a problem can be solved, as I alluded to earlier, with one-time grants of five, ten or even $100 million.

There may be other approaches that may realistically generate a recurring annual revenue stream of the same magnitude. And I have made clear that I'm willing to discuss and am open to any alternative to this proposal that anyone believes is a better idea. What we are not willing to do is just pretend that the problem is less significant than it is; that it doesn't threaten both our environment and our economy, in short to just continue on the course that got us here.

I'm ready to continue this discussion, engage our partners and hear any alternate plan to take strong and decisive action. I am willing and eager to discuss any constructive suggestion to improve what this broad coalition has proposed to protect water quality. I'm asking State

leaders to convene federal, State, county and local partners to develop a working group and issue a recommendation for a clear financing plan by the end of 2016. We cannot wait any longer.

Within my lifetime we have allowed our water quality to worsen and ignored the warning signs that were so plain even in 1969. I don't want to imagine what our Island will look like 46 years from now if we continue to put off this issue. We call this an issue to reclaim our water because what was once great can be again. We know the problem. We know the solution. We have the will. We now need the financing plan.

And to close, I simply want to thank my colleagues who I sit on this dais with and my colleagues that sit behind the dais here for the work that you have done on this issue. And I know that working together we can ultimately implement the policies that will allow us to solve this problem. Thank you very much.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. Give me just one second. Alright, the next testimony will be offered by the Honorable

Edward Romaine, the Supervisor of the Town of Brookhaven.

MR. EDWARD ROMAINE, BROOKHAVEN SUPERVISOR, TOWN OF BROOKHAVEN: Well, first of all, thank very much. I have a lot of notes but I'll try to skip over them because I've sat in those seats and I know sometime how long it can get. I would say other than Assemblyman Gottfried, thank you for being here today. All the other names up here are names known to Long Island, leaders of Long Island who have always fought for Long Island in the Assembly and the Senate and we appreciate that each and every day.

Thank you for having this important hearing. Water quality is a top priority of mine. I've been in elected office for over 31 years. We know. I don't have to talk about Flint or Hoosick Falls to know that people are concerned about their drinking water. We know that providing safe drinking water and clean surface water is an issue that holds no partisan boundaries and has great support.

I represent the Town of Brookhaven. It

is the largest Town by size in this State and it is the second largest by population with over half-a-million people. It has in that Town, we have the Carmans River, a wild and scenic river. We have the start of the Peconic River. We have the Fire Island National Seashore, the Port Jefferson Harbor Complex, Mount Sinai Harbor, Lake Ronkonkoma, large portions of the Great South Bay and a whole host of other natural resources that are too numerous to mention but equally beautiful.

We are in fact surrounded by water on all sides. We live, work and play on top of the sole source aquifer that is our only source of drinking water. Clean water is something that we do not take for granted. I was a Member of this Legislature with Steve when we voted for the quarter percent sales tax to set aside for that purpose for clean drinking water in the '80s. So this is a County and my Town, which was continuously supported taxing ourselves to try to go for clean water. Our residents have supported these.

We created the Pine Barrens for that purpose. I have the good fortune to sit as a member of the Pine Barrens Commission to protect water quality on Long Island. And we're looking to expand the Pine Barrens. And I think Steve and I will be talking to the other Members of the Senate and Assembly, along with Senator Lavalle concerning that.

But we live in a time of change. The population of Long Island has increased by over 50 percent since 1970. Actually the population of my Town has increased by over 50 percent since 1980. A large number of people living in a small area located atop a critical drinking water supply that's surrounded by surface waters: not something that we should take lightly.

I spent a lot of years teaching and I came into government working for the Town as its Director of Community Development in 1980. And one of the first problems we dealt with and it's not in my speech but I vividly remember people coming to Town board meetings holding up jugs of water that looked like something I had just

flushed and in fact it was. They lived in Mastic Beach and Mastic and in Shirley, which has a very high water table. Assemblyman Thiele represents part of that area.

And when you build a house and a lot of them were built on small lots, you got to do two things. You've got to sink a well and you got to sink a cesspool. In areas of high water table with small lots, it's only a matter of time before you're either drinking your cesspool or your neighbor's cesspool. We spent a lot of federal dollars putting water mains in that entire community over the next six years. And then when I went to the Legislature with Steve's support we got County money to help. But we never put sewers in. And that nitrogen that they were drinking is now going into the Great South Bay, Moriches Bay, Forge River.

This is something that we have to address. For a long time we would hear from representatives at our Health Department and others that the solution to pollution is dilution. Well, we can't dilute it anymore. You

look at our bays, you look at our stream corridors and you see that we can't dilute it anymore. We have to start addressing some of these problems.

Just this winter we had to close Mount Sinai Harbor for the winter to shell fishing. So many of our areas are closed. Dr. Chris Gobler, who you're going to hear from later, who's one of the most knowledgeable guys around from Stony Brook University, revealed that dissolved oxygen levels in the Forge River and in the Peconic River are near zero. Over the past decade, a very short time -- ten years, speaking in terms of a resource of such value, we've seen significant increases in nitrate concentrations and other contaminants in the Upper Glacier, Magothy aquifer. Contaminants have also migrated into the sole source aquifer, resulting in the closing of five contaminated wells in 2014 by the Suffolk County Water Authority.

The cost to treat and deliver clean water to the residents of my Town are rising. The economic impact of poor water quality to tourism

and shell fishing have been widely reported in the decline of Long Island shell fish industry is a case study of a collapse of entire industry. There is an urgent need for updated legislation to protect water quality against such threats as unregulated contaminants, nutrients, low-dissolve oxygen.

Using scientific data and analysis, we're asking that the State Assembly and Senate act. What would we ask for? A couple things: increased or restored funding for the State Water Quality Monitoring Programs. We're almost blind now in terms of water quality monitoring. The United States Geological Survey in Suffolk County Health Department once was the leading edge of water quality monitoring. Sadly, this is no longer the case due to funding cuts at every level of government. A region dependent on sole source aquifer must have the very best monitoring programs in place: something for you to consider.

The cheapest and most effective way however to protect water quality is to preserve open space. We request increased State funding

for open space purchases in Suffolk County, particularly in watershed corridors and deep recharge areas.

Recently the Town of Brookhaven funded a study using DNA to identify the source of pathogens that are impacting water quality in Setauket Harbor. The data collected allows us to determine whether pathogens are anthropogenic or originating from wildlife. This study should be expanded to all local waterways, so we can better understand the origins of the pathogens that are forcing the closure of bathing beaches and shell fishing areas.

Data shows that composting and mulching in particular have become potential sources of contaminants to our groundwater. We request continuing data collection and development of standards that would allow organic waste to be recycled without harming water quality. However, Assembly Englebright's bill that was adopted by this Legislature last year would have addressed these issues. Unfortunately, it was vetoed by the Governor.

In its place, New York State Department of Environmental Conservation is working on issuing regulations regarding mulch. We eagerly await the release of these regulations, particularly as they relate to Nassau and Suffolk County, who depend on sole source aquifer for their drinking water. And we would ask particularly for those who are concerned about local control that in these regulations local zoning is taken into account. Many of the mulching operations that exist operate without proper zoning. If that's included in the regulations, we'll move to close down these facilities.

Let me talk about State policies on inlets and breaches to the barrier island. The Town has seen substantial benefit to water quality in Bellport Bay, which is part of Great South Bay from the wilderness breach that took place at what we would call the old inlet, which is now the new inlet, but it used to be the old inlet before it closed up. Currently, State and federal policy does not appear to account for

water quality benefits of the natural processes that result in breaches. We would request a review of that policy so that both flood protection and water quality benefits are weighed when we take a look at future breaches of the barrier beach.

We would ask for State supported funding to expedite the replacement of all sanitary systems with innovative and alternative systems which our County Executives spoke to, capable of removing contaminants. In our Town we passed a law that says beginning on January 1st anyone that builds within 500 feet of water -- industrial, commercial, residential, must meet a standard of 8 mg per liter in terms of nitrogen discharge.

I'm sure we're all aware that if you have a cesspool or septic system you're doing 50 to 60 mg per liter. If you have a properly operating sewage treatment plant and we have about 190 of them in this County and about a quarter of them don't meet standards; but if we have, they meet about 10 mg per liter. Our new

standard is 8 mg per liter and that can only be reached by alternative systems. And we've done that because we're moving to protect our water. But that's another thing and I would ask the State to seriously consider monitoring far more carefully some of our sewage treatment plants.

We need a rapid adoption of the State ecological and numeric nutrient standards for all surface waters. We need funding for tertiary treatment for our public and private wastewater treatment plants. Unfortunately some of these plants currently empty into Long Island Sound, the Atlantic Ocean, Great South Bay, Patchogue River, etc. To preserve water quality we need to upgrade these plants to tertiary treatment or better.

Clearly, we face a rising sea level. We do not need salt water intrusion because we've drained so much water from our aquifer by pumping it out to the Sound or to our harbors or to the ocean or the Great South Bay. We need a robust water conservation effort that includes aggressive implementation of water reuse because

water reuse will help us recharge our aquifer.

Also, given the funding needs to protect groundwater and coastal water quality on Long Island, I urge the Legislature to work with the Governor's Office to explore other sources of funding, long-term funding to help improve water quality.

Lastly, the Town would propose the creation of a single agency responsible for the protection of ground and surface water across Long Island to provide efficient and consistent enforcement. Thanks for listening. I know you have a difficult job. I know it's a long seat. This is an important issue. I thank you all for your public service. I thank you for your leadership and I appreciate all that you do each and every day.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Supervisor. Our next speaker, County Legislator Bridget Fleming from the Second District.

MS. BRIDGET FLEMING, COUNTY LEGISLATOR, SECOND DISTRICT, SUFFOLK COUNTY LEGISLATURE: Good morning. I'm Suffolk County Legislator

Bridget Fleming. I represent Suffolk County's Second Legislative District, the South Fork of Eastern Long Island from East Moriches to Montauk, including Shelter Island.

I thank you for the opportunity to address the Joint Committee and I particularly appreciate the Joint Committee's choice to hold a public hearing here in Suffolk County, where we drink the water from a sole source aquifer beneath our feet and where we are particularly hard hit by red tides, harvest impact and fish kills that have increasingly resulted from contamination. As particularly for the East End community, the vitality of our bays, ponds, creeks and harbors is the primary driver of our economy.

The Peconic Estuary is a designated estuary of national significance. The South Shore Estuary Reserve is a designated estuary of Statewide significance. Long Island's East End if home to some of the most stunningly beautiful and ecologically significant waterbodies in New York State. And yet of the 79 waterbodies with harmful

algal blooms currently subject to DEC notification Statewide, more than ten percent are in my District.

While we must always be vigilant against every contaminant that can threaten our water supply and I'll speak to PFCs in a moment, I'd like to address the Committee first, as have my colleagues, on the critical issue of nutrient loading. By now it's been well documented that the bulk of Long Island's waterbodies are either impaired or under threat of impairment by nutrient overload. The East End is home to a number of academic institutions, estuary programs and environmental advocacy organizations; who will no doubt provide comprehensive evidence of the dire condition of our surface waters and the ultimate threat that could be imposed on our sole source aquifer.

The problem of nutrient loading is currently upon us and it poses a growing threat. Its impacts are currently seen in recurring harmful algal blooms, resulting in brown and red tides, cyanobacteria contamination, loss of

submerged aquatic vegetation and wetlands; which degrades marine habitat and leaves our shorelines vulnerable to coastal erosion, declining populations of shell fish and other marine species and closure days for beaches and marine-based recreation.

The primary culprit of the nutrient overload is widely recognized as inadequate septic treatment. While all sources of pollution are concerning, nitrogen pollution from septic systems has clearly emerged as the most widespread and least well-addressed of the region's growing list of water pollutants. With a few small-scale and important exceptions, sewers are by and large unworkable and not desired on the East End.

In part because of the immediacy of the threat and its dramatic impact on East End communities and the threat to our economy, towns have already devoted significant time and resources to the issue in recent years. Indeed, many jurisdictions at all levels of government on Long Island have begun to respond with various

initiatives. It should therefore be a key goal to achieve cooperation and coordination among all levels of government in order to arrive at outcomes that are optimum because of the result of mutually supportive and interdependent roles.

Within the interdependent structure, Suffolk County serves as the regional regulatory agency for wastewater management. In March 2015 the County adopted a comprehensive Water Resources Management Plan and is aggressively undertaking recommendations of the Plan. The County is currently working on a Sub-watersheds Wastewater Plan that will set specific nitrogen load reduction targets and nitrogen concentration targets to meet water quality goals tied directly to our current conditions.

On Long Island we're truly appreciative of the support of the New York State Legislature, all of you on these Committees and the Governor for recent efforts that stem from a recognition of the critical nature of the water contamination threat to our economy and well-being. The Long Island Nitrogen Action Plan, the LINAP, which is

currently being formulated by the New York State DEC and Long Island Regional Planning Council, sets a framework for management strategy that wisely draws substantially from local input.

DEC staffing must be adequate to fully realize the promise of this excellent initiative. And I would note Supervisor Romaine's important points with regard to water quality monitoring when it comes to the adequacy of DEC staffing.

Additionally and critically important to my District on the East End is the recent enactment of Chapter 551 of the laws of 2015, which if approved by a popular referendum in November this year will extend the Community Preservation Fund through 2050. The law provides that funds that are raised through a two percent property transfer tax be used to protect open space, farmland and historic resources in support of community character. If approved, the extension will allow towns to use up to 20 percent of the revenues of the CPF program toward water quality projects.

The law extending the CPF requires that

each of the five towns adopt an implementation plan to support the initiative. The East End towns in District 2 -- that's East Hampton, Southampton and Shelter Island, have accordingly adopted thorough water quality plans which serve as blueprints for action based on the thoughtful input of town planners, engineers, attorneys and others who have hands-on experience with the challenges that threaten our way of life. Anyone who's interested in understanding the water quality concerns of Eastern Long Island would be well-served to review each of the plans, which can be found on the websites of the towns.

The goals of the towns include: watershed plans for safeguarding groundwater resources, reducing nutrient loading, preserving ecosystem diversity, protecting marine habitat, restoring wetlands that serve in part as buffer zones to coastal resilience and pollution prevention programs. All plans focus on updating septic treatment systems at residential and commercial locations.

Priority areas have been identified for

the upgrading of sanitary systems including: locations with no public water, older communities served by cesspools instead of septic systems, small lots, sites that have shallow depths to groundwater, sites under threat of flooding or storm surge, areas where groundwater reaches surface waterbodies quickly and sites near impaired waterbodies.

The needs are great and the towns have shown the willingness to attack them intelligently. And with approval of the popular referendum, the CPF will provide some funding. But the ability of local towns to implement programs to remediate and restore water quality are necessarily subject to county action, as the county serves as the regulatory agency regarding wastewater, providing approvals based on performance requirements and evaluation of performance standards. Once systems are installed it will be critically important, as the County Executive has pointed out, to monitor and ensure proper maintenance of them; a responsibility that'll likely be borne by the county.

A recent revision of the sanitary code, which added a new Article 19, enables the County to act as the responsible management entity for advanced nitrogen removing onsite residential treatment systems. Technologies for residential use are currently being piloted and with approval of particular systems expected soon. Further revisions of the sanitary code are being developed in order to regulate midsize systems.

It can't be overemphasized that New York State support for the Suffolk County Department of Health Systems staffing needs has been appreciated and in fact critically important to these advances. As the County continues to experience extreme financial constraints, State support for Department of Health Services will be increasingly necessary as municipalities roll out planned rebate and incentive programs by the towns for septic system upgrades; placing additional strain on an already stressed staffing level at the Suffolk County Department of Health Services.

Consideration should also be given to

assisting local governments with modernizing information management and streamlining and clarifying interrelated roles of various actors and agencies. CPF funding if approved will be available only to the five East End towns.

A 2014 IBM study mentioned by the County Executive estimates that the cost to achieve necessary septic upgrades countywide will be $8 billion; as County Executive Bellone mentioned, the 680,000 systems that are currently in the ground. A regional funding source, including all levels of government and we look to you for support on that, must be developed for countywide replacement programs to meet the need.

I'd also like to note that with regard to the prioritization of goals and target projects it can't be overemphasized that population density must not be the only or even the primary consideration. It would be a grave mistake to fail to prioritize the East End, where our resort and marine based economy depends so heavily on water quality; or to consider our needs less pressing than those of Western Suffolk

and Nassau County because our population is less dense.

MR. ROMAINE: I used to represent the East End. I used to represent three of those towns.

MS. FLEMING: And so you appreciate it. Thank you, Ed. If we're going to continue to be a world class resort destination, an area of nationally and State-recognized environmental significance, a source of pride Statewide and to continue to generate significant economic benefits for the region as a whole; we must find a solution to the degradation of our marine resources and we need your assistance.

Of course water quality considerations must continue to include: contamination from other sources, including fertilizer application, pharmaceuticals, pesticides, road runoff and saltwater intrusion from sea level rise. These additional concerns continue to be addressed at the State and local level. And State support for infrastructure planning and staffing have been and will continue to be necessary to successful

efforts to address and emerging threats.

Homes served by local water authorities currently enjoy excellent water quality in Suffolk County. It should remain a goal to maintain drinking water standards. A challenge exists however in the region based on the number of homes that are private wells and do not have access to public water supplies.

The recent discovery near Gabreski Airport in West Hampton of contaminant PFCs recently listed by EPA was quickly neutralized in the public water supply. However, eliminating potential concerns for homes on private wells posed more of a challenge. Outreach is ongoing and individual upgrades of private wells may not be feasible. Extending water mains to vulnerable areas on private wells must be an immediate priority.

In summary, the primary challenges we as local government face in addressing what the scientists in the natural world are clearly telling us requires bold action are twofold: First, coordination that takes advantage of the

vast body of hands-on knowledge at the local level. And second, in marshalling the funding to act quickly and effectively to implement programs and importantly to ensure adequate staffing of the New York State DEC and the Suffolk County Department of Health Services.

The State's efforts to date have been greatly appreciated and continued mutual support and collaboration has the potential to yield invaluable results for our region. I thank you very much for your time and attention.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Legislator. We've been joined by several of our colleagues: Assemblyman Al Graf from Center Reach area, Assemblyman Tom McKevitt from Nassau County, and Assemblyman Joe Saladino. And let me just point out that Assemblyman Saladino has indicated he would like to offer testimony. So if you could, Joe, there's another chair as part of this panel of elected; if you could grab that seat after we hear from Mr. Krupski, who is next. But we have some Senators who have joined us also.

SENATOR HANNON: Yes. We have Senator Kenneth Lavalle of the Eastern End of Long Island and Senator Mike Vindetto, South Shore of Nassau and Suffolk.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Senator. We've also been joined by Assemblyman Brian Kavanagh and Assemblyman Steve Otis. Welcome to all. Our next speaker is County Legislator Al Krupski from the 1st District.

MR. AL KRUPSKI, COUNTY LEGISLATOR, DISTRICT 1, SUFFOLK COUNTY LEGISLATURE: Thank you. Good morning everyone or close to good afternoon. And thank you for having these hearings. One of my first things I did this morning, I checked with some of the people who work in my building out in Riverhead and asked them if they were going to attend these hearings. And they apparently weren't notified. I sit as a Director on the Suffolk County Soil and Water Conservation District. You'd think if we're talking about water quality hearings, there's a group that works exclusively on water quality issues. They weren't notified of these hearings.

I contacted Cornell Cooperative Extension. For decades they've been working on water quality issues as they relate to agriculture. And they were not notified of these hearings also. I think it might be fruitful if you wanted to have greater input an awful lot of the people on the East End and because our East End economy is really based on the environment, people really have great ownership of what they eat, the water they drink, the water they swim and fish and crab in.

And I think if you had a round of hearings on the East End with proper notification, I think people would appreciate that. I think that's something that you might want to consider in the future. There's a great part of the economy on the East End is based on agriculture. And if you look behind you, the seal of the Legislature is a plow and the seal of the County itself is a bull: two very strong agricultural symbols. And I think if you want to have meaningful discussions on anything on the East End, you should include the industry that is

so important to us out there.

As far as the water quality issues, there's two things here: There's water quality and water quantity. One of the things that I think you need to consider when you talk about water quantity: When you have an aquifer, you need to make sure you collect all of the rainwater that falls on Long Island. And we've had an odd summer and I've talked to a lot of people. Even on the North Fork area that I represent, there's a huge disparity in rainfall. And we've had five inches in Cutchogue and nothing in Mattituck. You know, there's that kind of difference.

If you have good drainage, instead of all the roadways were designed to drain the water into the wetlands historically; it's cost us a lot in the past three decades to try to correct that. New York State has certainly been a leader in that: New York State DOT, Suffolk County DPW and all the towns and villages have tried to accomplish that. But it's really critical if you're looking at it from a quantity issue to

collect that clean rainwater and recharge the aquifer.

There's also something that should be considered when you talk about water quality and contamination. The amount of freshwater that's pumped out of the ground and when I say treated as sewage because it's treated at different varying levels and then dumped overboard into the saltwater; Nassau County historically now has saltwater intrusion because they pumped so much water out of the ground and dump it overboard into the Bay. Now when you put that treated sewage into the Bay, people are surprised when obviously there's degradation of surface waters. So you really have to look at as a quantity issue: How much freshwater is being pumped overboard?

There are a number of water quality committees. And this is something that some of my colleagues here have mentioned also: there's LINAP and LICAP. I think there should be more of a comprehensive approach to how we handle; I think the DEC has got a track record and an

infrastructure there to handle these water quality and quantity issues. And I think they should be under one umbrella and not be spread out. Unfortunately when you talk about water quality and water quantity, there are an awful lot of different opinions. I think New York State should be represented as one voice.

One thing that no one brought up this morning that's very important on the East End is the impacts that wildlife have on water quality. You see the reports in the paper: Well, there's blue-green algae here and there's blue-green algae there and it's very dangerous. Don't go swimming in Marratooka Lake. Well, when you have thousands of Canada geese using the lake as a bathroom every day, you're going to have a significant and extreme amount of nutrient and pathogen loading. There's no way for those nutrients or pathogens to leave the lake. They're going to accumulate there. And it's no surprise you're going to have a problem there. So that's something that the State regulates, the DEC regulates: the hunting season and also the bag

limits. There's something that could be changed very easily.

The Canada geese are also a big problem on the farm fields in the Fall. Right now we're planting cover crop. So the cover crop -- generally rye, small grain; it starts to sprout. The whole purpose of the cover crop when it grows in the Fall is to protect the soil in the winter from soil and water erosion. But it also takes up the excess nutrients from the cropping system. When you have a Canada goose season that starts at the end of November, the geese have all of October and November to walk across the farm fields and de-vegetate them. And then when the wind blows and the ground freezes in the winter, that soil blows right off the farm fields and the cover crop doesn't get a chance to take up those excess nutrients. So the Canada goose is a problem that you could address here without spending any money on. You could just increase the bag limits.

There's another problem with wildlife is of course the deer population that is really

greatly affecting our natural environment. As a Town, as a County, and as a State we've spent a lot of money preserving open space. The overpopulation of deer are de-vegetating the understory. Not only are they disrupting the whole natural environment but they're leading to a lot more runoff from those areas into surface waters causing pathogen loading, nutrient loading and also increased sedimentation. And that's something that New York State I know has been moving forward on but we need to move forward a little bit faster.

As far as land preservation and open space goes, it's well-documented the five East End towns have spent over a billion dollars and committed to five very different but successful programs for this. And I think the County Executive said how much the State has committed hundreds of millions of dollars to increase sewers. If you put more sewers in, they're not welcome on the East End because they do spur growth and we're committed towards land preservation and quality of life issues. I think

if you committed half that hundreds of millions of dollars towards land preservation, it would go a lot further towards water quality improvements on the East End.

I'd like to thank the State, in this case the DEC, for committing to work on the MS4 Program and to working with the towns and the County on the MS4 regulations. That's a really important step as the towns and the County and the State commit towards water quality projects, to be able to focus that limited amount of money towards those projects that are going to actually improve water quality and that's positive news that we recently got.

And the shoreline hardening, we're faced with these coastal storms on a fairly regular basis. I was first elected in 1985 and part of my responsibilities there were coastal erosion issues. When you harden the shoreline, you're pretty much committed to losing your beaches, as if shown in Montauk this past weekend with the storm that came up the coast. The amount of money that was spent by the Army Corps of Engineers to

truck sand in and sand on the beach of course isn't going to last long. Once you harden the shoreline, you're going to accelerate the erosion and you're going to accelerate your beach loss and beach elevation.

So I would just encourage the State to have a firm policy against shoreline hardening, especially on the Atlantic Ocean. The Army Corps is working on these FIMI and FIMP plans. And when you harden the shoreline, you're going to lose the shoreline. And I hope that the State works towards a policy not to enable that sort of behavior. So, thank you for this opportunity. Thank you for having these hearings. And we would look forward to having a similar hearing on the East End.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Legislator Krupski. I just have to make an observation that I have been alerted to the reality that as a matter of policy we do not want to have Members offering testimony because we really value having them sitting in the hearing and listening. However, I do want to underscore

that we really respect, all of us, the kind of crisis that Joe Saladino's community has been subjected to by water deterioration. And so if my colleagues would allow, I would like to within the context of the Electeds offering thoughts, to allow you to offer some thoughts; not in the form of testimony but as a statement.

ASSEMBLY MEMBER JOSEPH SALADINO: Thank you, Chairman. Would you like me to do it from my seat here?

ASSEMBLY MEMBER ENGLEBRIGHT: Yes, I would.

ASSEMBLY MEMBER SALADINO: Thank you. Well, I appreciate the help and the work of all of my colleagues. They are very committed people who understand the problems in our environment and are trying to deal with the balance of all of the multitude of projects that have to be paid for to remediate the problems in our State and balance that out with the money that we have to work with.

The reason why I pushed to make a statement today and I thank you so much,

Chairman, because of the timing. We passed a law with each and every one of your help to force the DEC to put together a report on how to best respond to the Grumman-Navy plume. This has been a tremendous problem in New York State, if not the worst, and I appreciate your time for that purpose.

As the senior and veteran Member of the New York State Assembly Environmental Conservation Committee, I am responding to the Henningson, Durham and Richardson Architectural and Engineering Remedial Options Report of July 2016. I was the initiator and sponsor of legislation A9492, which passed the Assembly with all of your help -- thank you very much -- unanimously and passed the Senate almost unanimously with the help of our sponsor, Senator Kemp Hannon, who has proven over and over again that he cares tremendously about the quality of our water and the health not only of his constituents now but people who will be living there long after we're all gone.

It came from a law that was signed by

Governor Cuomo and this legislation mandated that a report be created to delineate the method options of hydraulically containing and remediating the Grumman-Navy plume of contaminants in a matter which entirely stops its underground migration along the southerly edge, that front edge, and keeps it from contaminating any more public supply wells, including those of the Massapequa Water District. It must also provide solutions how to filter out those contaminants and return the treated, clean water back into the aquifer and the environment.

Now the Grumman-Navy plume is a continuous and growing migrating pool of chemicals, including the carcinogens TCE, PCE, vinyl chloride; as well as unregulated contaminants that we will have to be dealing with in the very near future, such as 14-dioxane -- very dangerous chemicals. Radon has also been found in this water. The plume as it now stands and the area in its path contains approximately 30 public supply wells, serving over 250,000 residents in the central and south portions of

Eastern Nassau County and in the southwestern portion of Suffolk County. Now in comparison, Flint, Michigan's contamination affects approximately 100,000 people. This is 250,000 people.

The Grumman-Navy plume is the largest and the highest concentrated of its type in a sole source aquifer anywhere in the United States -- anywhere in the U.S. The U.S. Navy sentinel wells have recorded concentrations of contaminants at over 14,000 parts per billion. New York State and Nassau County's Health Departments limit the consumption of potable water to no more than five parts per billion. And yet we found 14,000 parts per billion of these contaminants, not just at the location of the source in Bethpage but at the furthest out fingers of this contamination. We were promised by the DEC that their work is based on their assumption that the contaminants would dilute. They have not diluted.

Numerous studies conducted over the past 20 years and provided to the DEC have detailed

and confirmed that this plume should not be resolved with wellhead treatment. These studies provided to the DEC are the key resource in designing and modeling an effective infrastructure to fully contain and clean up this dangerous and certain threat to our sole source aquifer and to the Great South Bay in its path. Nassau County's Health Department has limited that consumption as we said to five parts per billion. This is 14,000 parts per billion, affecting 250,000 New Yorkers. This is a major policy issue that's got to be cleaned up.

Now one of the things I wanted to talk about is to present a letter, to make sure that the DEC understands the position of many in the Legislature. We put this letter together back in June. It was signed by the Assembly Environmental Conservation Chairman, Steve Englebright and I thank you for your concern and your hard work and for the Senate Environmental Conservation Chairman, Tom O'Mara and then by 130 Members.

I won't read the whole thing but I do want to let you know that it says: This dangerous

plume of chemicals and contaminants is continuing to migrate through Long Island's sole source aquifer and will reach and contaminate more public supply wells and the estuarine environment of the Great South Bay unless it is stopped. It can only be stopped one way: hydraulic containment.

And quite frankly the most important part of the letter: Our intention in passing this bill and sending it to your desk for approval was to timely facilitate stopping the plume's migration and fully removing these toxins, including the carcinogens: TCE and PCE. This letter calls for a report to be created, which must focus on the utilization of hydraulic containment and state-of-the-art remediation practices to remove these contaminants without utilizing wellhead treatment.

And I point this out because the DEC has continued to push for wellhead treatment. And when our water districts and you'll be hearing from many of the water suppliers, both public and private today, who have a plethora of very

interesting and important information; when they need to get the money to build the wellhead treatments, many times they have to hire attorneys and sue to get that money. That's the wrong policy approach. We cannot throw this back on the responsibility of the taxpayers. It's got to be paid by the responsible parties, including the United States Navy and Grumman.

We urge you to encourage the Departmental of Environmental Conservation to expedite completion of this report and to build the facility. The design, construction and operations before the plume reaches and contaminates additional public supply wells and the freshwater intertidal and shallow subtidal habitats that help define Long Island's shore communities. Thank you for the support of the law. And we hope that this correspondence clarifies our intentions and ask that this plume be fully remediated and removed from the Long Island aquifer system without compromise.

This is the intention of the New York State Legislature in our letter to the Governor.

And we stress that the DEC begin that process immediately. The amount of money that has been spent thus far on testing and it's been very important and it has been paid for by the DEC, by Grumman and by the Navy to their credit; but the amount of money that has been spent over decades is enough to have hydraulically contained this if they went forward with that method in the beginning when they first discovered the plume.

So we've already spent enough that would have cleaned it up. And as we wait and drag our feet on this, the plume gets larger and wider. Many of my colleagues who advocate for their communities, including New York City and have done a wonderful job, pass bills in the Environmental Conservation Committee to utilize Long Island's aquifer water for their ever-growing needs.

Now we understand that. We are all working together to provide this life-sustaining resource. But it makes no sense to contaminate more wells that can be shared with others. We've worked with the water suppliers and they are

amenable to a discussion whereby they utilize the water in the uncontaminated areas and share it with those in the contaminated well areas while we work together to get this cleaned up.

It's important to know that the extraction wells and basically in response to a report should be a combination of extraction wells. We've been told they're very expensive to do the taking and buying of this private property. You don't have to do that. You set up the extraction wells on the Southern State Parkway right-of-way; pump the water in a westerly direction to Route 135; utilize that public property of the right-of-way of Route 135; pump that water up to Bethpage. And then site a facility, an activated carbon facility much like the fish tank filter on the side of your children's fish tank on the property at Grumman's facility on Bethpage. I've driven by there many times. There's space there.

If Grumman does not want to do that, I've spoken with County Executive Ed Mangano, who has expressed interest in placing that facility

on County property in that Bethpage industrial park area and then reinjecting that clean water back into the aquifer where it belongs; so we can maintain the hydrodynamic balance in our aquifer system.

We can utilize a combination of injection wells and the many recharge basins. We're looking at 19 million gallons a day of that water and it can be done. And if we approach this creatively, we can also utilize that treated water to irrigate the greens at the Bethpage State Gold Course. And we can attract businesses because my colleagues are experts at economic development. And we can attract businesses that utilize water: chip manufacturers is one of many examples to have no cost or low cost clean water for their manufacturing and boost our economy in the process.

I'll just close out by stating that it's very important to provide for the most sensible, thorough and environmentally sound process for the extraction, containment, delivery and remediation and disposal of this treated water

and design a system that must have the least impact on private property and thus cost. It must also call for both injection and recharge of the treated water, introducing it back into the aquifer and to help with the underflow pressure to drive the contaminants to the extraction wells and the experts suggest should be along the Southern State Parkway. And in short that we strongly advise that a hybrid of option one in that report, which returns treated water to the aquifer via the injection wells and recharge basis be adopted.

But it also must be noted that one of the concerns the report suggests regarding hydraulic containment in the DEC's report suggests that removal of this significant amount of water from the Long Island aquifer would be detrimental to our sole source of potable water. Nothing could be further from the truth. And I speak directly to members of the DEC when I say: Nothing could be further from the truth. This water is contaminated. And it makes me question the motivations for why that would be included in

this report. It doesn't seem like they want to do the hydraulic containment.

I've spoken with the Governor and the Governor's staff, who say the Governor is interested in hydraulically containing this; obviously doesn't want New York residents to be stuck with the entire cost: $70 million to construct and $500 million over 35 years.

So the significant data is here to support. You'll hear from others today in their testimony and that if this plume is left uncontained, it will not only contaminate more public drinking wells but will significantly affect the negative impact of the Great South Bay, where we are spending millions of dollars to reduce nitrogen; where we've denied so many different access and so many projects because of its effect on the Great South Bay, only to let it be destroyed by the Grumman-Navy plume. This is very important and it should be priority one.

I want to close by thanking my colleagues in leadership, thanking all of my colleagues in the Assembly and the Senate because

you have been extremely supportive of this issue and now is the time to act without wasting another moment. Thank you, Mr. Chairman, for letting me speak to this issue and I hope that we can partner with all of the parties and get a hydraulic containment facility built as soon as possible.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you for your statement. We have some questions. Let me begin with Legislator Schimel.

ASSEMBLY MEMBER MICHELLE SCHIMEL: Thank you, Mr. Chairman and thank you all for your testimony. And I have to tell you, I'm a Nassau County resident but we watch Suffolk County. We watch what you do in the Legislature in terms of your environmental initiatives on the State level and also on the Nassau County level. And you should be very proud of what you do.

I want to talk to Legislator Krupski. Your words sang, like singing softly, beautifully. You were one of the first people to put the word quantity and quality together in a sentence. That's something, you know, I always

say: Geology is destiny when it comes to water. And Nassau County, we have our own issues in terms of the way the aquifer system stuck. I'm on the northwest corner and we have a lot of problems with impending. We already have saltwater intrusion.

But one of the questions and I don't want to put you on the spot but you're talking about -- I'm a proponent of LINAP; in fact I'm losing a staffer to LINAP from my office is going to work for LINAP now. So, I get it. I'm for it. But my concern is this: You need sewers, no doubt. But what order smart growth? In other words, often with sewers, you have a lot of virgin land; with economic development there's going to be -- usually what follows is increased land use. And I'm concerned about the quantity of water that will be used. I know right now it's not a problem in Suffolk County in terms of what water. I hear: Oh, plenty of water. I'm not so sure because the studies are not that conclusive. We don't know yet. And that's why -- thank you, Governor Cuomo for putting forth that Long Island

study looking at quantity.

But I've never heard of smart growth. When I go to conferences it talks about affordable housing, transportation infrastructure. In my mind it doesn't really talk about water use in terms of consumption. So, I'm asking you and I don't want to put you on the spot and I would be putting my County Executive on the spot if he was here, to talk about smart growth: Does it include water quantity and usage? And I'm going to ask the same thing to the DEC. Is that part of that discussion when you're looking to economic development; is water part of that discussion?

MR. KRUPSKI: I could just make a comment, if I could? So I think, you know, land use and planning really is the towns' responsibilities. So any kind of growth like you're talking about, whether it's development or redevelopment, you should coordinate with a local municipality. And you certainly should -- we know we have an average rainfall on Long Island; you really should factor that in. Especially when you

look at that kind of intensive development, you should factor water usage into it.

And you should have really a water budget at that point. You have so much rainfall. Anything that you lose into the saltwater, whether it's a creek or the Bay or the Sound, that's a loss that's not going to be recovered. So you really should consider all those things. Long-term, you know, the next generation will appreciate it.

ASSEMBLY MEMBER SCHIMEL: In your estimation, who should be looking at that? I love the water budget. Is it the State's responsibility to look at the override in terms of issuing permits or is it conjunction with the town? And the county also does a lot of development as well, which doesn't have the same zoning requirements that the towns do.

MR. KRUPSKI: Certainly. And part of that is with the Suffolk County Health Department and thanks to the leadership of County Executive Bellone is doing a great job trying to develop these alternative systems. And I think the

alternative systems will be used for a lot of redevelopment also, not just new development. But I think then the townships and the county and the State are all going to play a role there in trying to figure out how to; and in the end it's going to be a limit because of the amount of rainfall we have. And you look at other parts of the country and other parts of the world, how they're impacted by the lack of potable water. There's some tough lessons to be learned there.

MR. BELLONE: I think we understand there are significant benefits to smart growth development, connecting land use planning and transportation planning, particularly in our region where it's very difficult to get around now. It's relation to our ability to be a region that is again attracting young people, bringing them back; creating that environment that would allow us to grow our economy in a sustainable way. So, there are a credible number of very important benefits associated with that kind of development.

But I think looking at and understanding

the impacts on water and the quantity issue I know is an issue that Supervisor Romaine has talked about as well; it is an important issue and again is an issue that is definitely deserving of more analysis in the discussion.

ASSEMBLY MEMBER ENGLEBRIGHT: Senator Hannon.

SENATOR HANNON: I'm going to let Senator Martins.

SENATOR JACK MARTINS: Thank you. Good afternoon. It's great to see everyone here. What a great opportunity to bring different levels of government together for such an important topic. And I want to thank obviously the County Executive, the Supervisor and the two Legislators for being here. When we discuss water, now obviously surface water denitrification; when we talk about groundwater, different issues but also and equally as important, I just wanted to make a couple of points.

I represent Northwest and Western Nassau County in the New York State Senate. The Assemblywoman and I overlap in our districts and

certainly we've worked hand in hand over the years to prioritize water quality and especially drinking water. And so I heard a couple of comments regarding monitoring and USGS studies having not been properly funded over the years.

The good news is that was in this year's budget. So, some five months ago, six months ago through the efforts of the Assemblywoman and I and Governor Cuomo, there is over $6 million placed into a fund to do just that: go out there and find out where the saltwater interface is between the Sound and our sole source aquifer; be able to monitor plumes as they travel on our groundwater and be able to coordinate efforts. Because we should have that kind of analytics at our disposal.

The good news is it's there. The commitment we're asking for is: Once it is there and once we've created that baseline, which is going to take a number of years, that we have the wherewithal to continue to provide that monitoring; so we don't just take a snapshot and then watch it disappear. So that's the

groundwater portion of this. And I think with all the providers, whether it's Suffolk County Water Authority or whether it's the various water providers in Nassau County; working together to develop this plan is extraordinarily important.

But the point regarding denitrification and where the State and federal government interfaces with local governments in terms of putting a plan together I think is equally as important. Because for too long I've heard us discuss this issue in terms of what someone else should be doing. And so I heard in a number of points during everyone's testimony today discussions about what the State and federal government should be doing, how we should be coming up with financing plans and different ideas as to how someone else should be doing something.

And I think it's important that we all look at this issue collectively and look at how those programs should start locally; whether it's on a county level. I've heard great testimony from the Supervisor about what they're doing and

1 certainly from the Legislator as to what they're
2 doing in towns in Eastern Suffolk County. But
3 there has to be a plan. And although we're aware
4 of these programs and these opportunities, there
5 is a place for the State. There is a place for
6 the federal government. But it starts locally
7 with political will and the decision to actually
8 stop studying and start doing. And so I would
9 encourage that we take that step.
10 You know, I have a firm belief that we
11 don't inherit the land from our parents; we
12 borrow it from our kids. And so if we take that
13 as our mantra going forward, we should understand
14 that it is our responsibility to make it better.
15 So, it starts today. It starts with those
16 efforts. It starts with things like LINAP, which
17 the State put $5 million -- in advance $5
18 million. The Governor came up with three million.
19 The State Senator came up with two million. And
20 we have a plan in place to deal with
21 denitrification and we're moving forward.
22 It starts with this monitoring system,
23 where we put $6 million in place from the State.
24

And we're hoping that we're going to have partners at a local level to do the same thing. And so I'm encouraged by our discussion. I'm looking forward to the further testimony today as we address some of these issues.

But let's work together and looking at the State and federal government as a resource to help and not necessarily as the source of all of the answers for how these issues are going to get resolved. Because I think we're better off working together. And with that, Chairman, I thank you for the opportunity to intervene. Thank you.

MR. BELLONE: Mr. Chairman, may I just make a comment?

ASSEMBLY MEMBER ENGLEBRIGHT: Yes, Mr. Bellone.

MR. BELLONE: Thank you very much, Senator. I couldn't agree more -- thank you, Mr. Chairman -- about the need to work together on this issue. This is multigenerational problem that developed over decades. And I think you heard the Supervisor and my other colleagues talk

well about the incredible investments that have been made over the course of the decades that have helped us; the preservation of open space being a very large one in Suffolk County.

But there have been a number of local efforts that have gone on and the CPF effort, I applaud Assemblyman Thiele and his leadership and I know Senator Lavalle on that issue. That is the local community saying: We want to step up and use the resources that we're generating locally to address this problem. Working with those colleagues, we have again locally developed ideas on how we can actually make progress in solving the problem; as you say, Senator, not just studying the problem more but actually implementing solutions.

The most important of those has been to say we want to give the public the right to vote on whether they want to create a fund dedicated to water quality infrastructure that would allow us on a local level to implement a lot of those plans that have been developing together over the years and that we've worked on with the State.

And we think that's very important. So, I would ask the Senate and the Assembly and all my colleagues here if we could move that forward?

And again as I've indicated, we're open to other ways of looking at creating that funding source or adjusting it or changing it in different ways. But it is important that we think the public here and I think as the Supervisor has said as well, we have time and again when it has come to protecting water quality in this region, we have time and again said the voters have said that: I will invest resources into doing that, so we can preserve these precious resources for our kids.

So, I would just ask on that issue in the spirit of working together if the Legislature would allow us here in Suffolk County to vote on that issue and give voters the right to decide whether they want to create that water quality fund that's dedicated to investing in infrastructure and allow us to advance on this issue each and every year? Thank you, Senator.

SENATOR MARTINS: Thank you, Mr.

Chairman. Thank you. I appreciate that.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Senator. Assembly Member Thiele?

ASSEMBLY MEMBER FRED THIELE: Thank you. Well, first of all, thank you for all of your testimony and all of your good work with regard to water quality. I have recently heard Town Supervisor Ed Romaine and it's such a good quote I repeat from time to time and that is: that all decisions that we make are decisions about money. Money is important to all of us now. And I don't think there's anything that is more of a case for that than this right now. When we were in Albany last week, I think we heard Statewide, we heard estimates of water quality infrastructure; updates of water quality infrastructure and we need $36 billion. We heard the number for I think just for Suffolk or for Long Island, it's $8 million.

MR. BELLONE: Suffolk.

MR. THIELE: So, that's billions with a B. And I've gone to a lot of schools and I explain to kids what we do and pass the budget

and what a billion dollars is. A billion dollars, if you had a billion dollars on the day that Christ was born over 2,000 years ago and you spent a thousand dollars a day every single day from the day that Christ was born until today; you'd still have $250 million.

MR. BELLONE: That's pretty good.

ASSEMBLY MEMBER THIELE: It's a lot of money. And right now, you know, I want to kind of go through the list here. Let's start with the County proposal with regard to the dedicated water fund. I'm supportive of that proposal. And I'm supportive but I think the devil is in the details. And I just want to discuss a couple of those details if I could.

MR. BELLONE: Sure.

ASSEMBLY MEMBER THIELE: First of all, I think it's imperative because of the past history of the Suffolk County government that people have to be ensured that that money is going to be in the proverbial locked box and a dedicated fund that can be used for no other purposes, even on a temporary basis, but for the assigned purposes of

water quality. And I think the specifics of the legislation have to make that clear.

MR. BELLONE: I share your concern on that as well.

ASSEMBLY MEMBER THIELE: The second part of that I think that is equally important is: How are decisions made about who gets the money?

MR. BELLONE: Mm-hmm.

ASSEMBLY MEMBER THIELE: And I think there's a particular concern on that on the East End, where, you know, we're only eight percent of the population. Our two county Legislators are here. So, I would hope that when we --

MR. BELLONE: They're a hundred percent of the county Legislators right here.

ASSEMBLY MEMBER THIELE: But we need to have assurances that -- I mean, I know that politics is in everything but a very deep sleeve. But we still need to have some assurance that there will be a meritocracy with regards to where the money gets spent and that it's not all going to go, you know, for sewers. Sewers are important. But it's also important that the

issues of alternative septic systems, etc. be addressed.

All of you are elected officials. You all have a sense of your community. I want to ask you a question about something that would be primarily our responsibility and that is the timing and the need for a State Environmental Bond Act that would be focused primarily on water quality. The last Bond Act in the State of New York was in 1996: the Clean Water/Clean Air Bond Act. That money was spent, most of it, 99 percent of it probably ten years ago. We now have a more robustly filled Environmental Protection Fund. But it simply isn't enough to talk about the kind of infrastructure improvements. What is your sense of what the public view would be with regard to a State Bond Act?

MR. ROMAINE: Fred is my Assemblyman and someone I've known for many years and served in this body with. I would say that a Bond Act might be successful if the public asks the same questions you just raised: Locked box, where is it going to go? How is it going to be

distributed? What's the meritocracy behind that? Because oftentimes we see with Bond Acts, the distribution hasn't been always to need.

And I would refer you to some previous long ago because I don't want to; Transportation Bond, where I think we could say that it always wasn't based on need or merit. So, the questions you raise, if they were addressed in a Bond Act, I think people would be more willing to accept that; particularly if it was for water. Because we know in Suffolk people have voted almost repeatedly to tax themselves for the purpose of preserving open space, preserving clean water or doing water quality type projects.

MR. KRUPSKI: I'm going to agree with Supervisor Romaine. I think if it's for specific purposes for water quality, you know, you're looking at if it's going to fund the State to help the EPA rewrite the TMDLs. I think if you're going to fund Ag Environmental Management programs. I think if you're going to fund brick-and-mortar drainage improvements for all the municipalities. And I know the MS4 program is

moving forward on some of that.

I think if you help some of the towns that need help with land preservation. I know some of the towns are well-funded and are well-managed but some of the other towns do need more help for land preservation. There's an awful lot of unprotected farmland on the North Fork that I represent in Riverhead and in Southold. Those programs while they're ongoing we don't have the resources that, you know, the South Fork has to protect that.

And if you look at all the people on Long Island, so the fresh food that's produced on the North Fork, it's going to be that much more important in the future. If you look at the aquaculture program that -- I see DeWitt Davies in the back here; that Suffolk County is running the underwater leasing program in Peconic Bay. So if you look at that and the water quality in the Bay; you look at the way that it contributes to the economy; if you had specific things like that, certainly a Bond Act would resonate very well on the East End.

MR. BELLONE: Assemblyman, one of the things that I became very familiar with right away in becoming County Executive is that I am what they call an Up Islander because I come from Babylon on the Western End of Suffolk County. But right from the start in exploring the East End and getting to meet with you and other colleagues on the East End and people of the East End, understanding the importance of the East End to Suffolk County as a whole and to Long Island as a whole and the preservation of that is absolutely vital in every regard.

We talk about the importance and this is one of our top priorities is bringing young people back to the region; the first step in doing that is making sure we preserve what we already have and a key part of that is water quality. So in terms of the distribution of resources, I think it is and I've stated this publicly many times: absolutely critical we do everything that we can to support the efforts on the East End, particularly in the area of water quality.

I think with respect to a Bond Act, I think that would be well-received by the public. Again, I would agree with my colleagues in terms of the specifics and as you said, the devil's in the details of course. But I would at the same time not want to see us unable then to move forward with creating what I think is absolutely essential and that is a recurring funding source.

A Bond Act I think would allow us in many ways if done correctly to take a giant leap forward on a lot of these issues. A recurring funding source will allow us ultimately at the end of the day I think to solve the problem. The last thing I would say on that is, in terms of the federal government as well: You know, we are at this point and obviously we're talking about local and State government here; the reason we think the recurring source even though it's not nearly enough to solve the problem in and of its own right, what it would allow us to do is to start making progress on the issue.

And at some point I do believe the federal government, our national government will

get back into the business of investing in the nation's infrastructure. And I believe when that day does come and I hope it's sooner rather than later, we hope to be in a position in Suffolk County to be able to really take advantage of that by already having so many of these different programs in place and operating.

ASSEMBLY MEMBER THIELE: Okay. I just one last question, Mr. Chairman, and that is: There's so much interest, particularly -- well, I think across Suffolk County with regard to the use of alternative and more modern septic systems that remove nitrogen. You had a leadership role in doing pilot projects across the County. You've updated your sanitary code. My question is: Do you have a timeframe where you think that these technologies can be approved by the Suffolk County Department of Health Services on a regular -- on a grander scale? What is the timetable for that?

Because I said, you know, parroting what Ed says a lot about all decisions being about money; but if you have the money and the five

East End towns might have money and after the referendum and all of that, there has to a provable technology and that the County Health Department is going to provide approvals for that. What is your sense of what the timetable is for all of that?

MR. BELLONE: You hit the nail on the head there, Assemblyman. Having a provable technology, you know, at the same time that I have really felt the sense of urgency that exists in improving the technology; I've been at meetings where I've directly felt that sense of urgency. I'm also very mindful of the fact that once the County puts its stamp of approval onto a technology, we are essentially communicating that we think this technology is the one that works, that is right, that is a good investment for the homeowner, that is the right investment.

And when we do that because I certainly think it's the right thing to do; we want to make sure that we can back that up and say that with a hundred percent certainty; but in a larger sense it's important that when we do put that stamp of

approval on that we're confident in what's going to happen, as well as confidence in the surrounding contractor base that we've been working to build up at the same time.

Because I have seen this many times: When you launch a program, the surest way to kill it is problems and issues right from the start. And then word of mouth gets out that this is a program the government is putting forward that doesn't work: I had all these problems. The system is expensive. I can't get it repaired. All of those things could effectively kill. And I don't know any elected official that at that point is then going to want to say -- to take the next step forward and say: You know what? We're now going to start mandating that we use utilize systems of that.

So, my hope -- what I expect is that we should be able to approve the technology soon. I am loathe to put an exact timeframe on it. But we will continue to work with you on that, Assemblyman. And I know the team is working as hard as they can on that issue right now.

ASSEMBLY MEMBER THIELE: Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Mr. Thiele. We've been joined by Assembly Member Tom Abinanti and Legislator Kara Hahn, who is the Majority Leader of the Suffolk Legislature, the Chair of the Environmental Conservation Committee of the Suffolk Legislature and my Legislator. If you would, let's come back to you in just a moment because I know that Senator Hannon has a Senator who wants to offer some questions.

SENATOR HANNON: Yes, Senator Lavalle.

SENATOR KENNETH LAVALLE: Thank you, Senator Hannon. It's great to be part of this group. To Legislator Krupski, we will have some sort of forum out in the East End, so that East End individuals can weigh in. And with great pride, I always think that we in the East End come up with a lot of the environmental remedies because we have great environmental folks out there that tee the ball up for those of us who are in elective office. And you're going to hear from them later on and I think they'll get into the weeds a little more, in greater detail about

a plan.

So, I need to know when Mary Smith and John Jones comes to me and says: Well, the County wants me to pay some more money in some way. What am I getting it for it? I just put in a brand new septic system. Is that going to be good or do I need to meet one of a higher standard?

We have the East End, if you talk sewers, it's heretic talk. The West End is a different animal. So, I think people need to know in greater detail what is the plan. I believe the water issue is going to be the number one issue for a generation. It is so important and we are going to find more and more spots like Gabreski, like Bethpage, on and on. We've just touched the surface. And so we need to have a plan. We can't rush that plan. It needs to be integrated with the County, the towns, the villages. And we need to make sure at the end of the day that everyone, like Assemblyman Saladino, has signed a letter saying: This is our plan. This is what we're going to do in Mattituck, in Babylon and Smithtown and so forth.

So, I'm all for this, talking about raising additional revenue. But as Assemblyman Thiele said: The devil is in the detail. And we as elected officials have to communicate directly to our people. But County Executive, I know you have been terrific on this issue, as everyone at the table.

But I think we need to move in a very deliberate, cautious way; so that we could sign off on a plan and look people in the eye and say: We're preserving your water and protecting your family. And like with the CPF, I believe the East End in five towns will lead the way by voting on five separate propositions; leading the way for the County, coming up with a plan. It's something I know Fred Thiele, Assemblyman Thiele and I are very proud to be a part of. So, thank you for your input.

MR. BELLONE: And I appreciate, Senator, your work on that issue and so many others related to the water quality issue. And I would look forward to working with you and certainly Assemblyman Thiele and Assemblyman Englebright

and others on fleshing out those details, very much so. So, thank you, Senator.

ASSEMBLY MEMBER ENGLEBRIGHT: We've been joined by the Chair of the Environmental Conservation Committee for the County Legislature and I'd like to yield to Kara Hahn at this time. You have to be sworn in.

ASSEMBLY MEMBER GOTTFRIED: Before you speak, do you swear or affirm that the testimony you're about to give is true?

MS. KARA HAHN, COUNTY LEGISLATOR, DISTRICT 5, SUFFOLK COUNTY LEGISLATURE: I do.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you.

MS. HAHN: I apologize for being a little bit late. My daughter broke her leg -- not today; but we had a very important follow up appointment with her doctor that she wasn't willing to miss and needed me to help get her there. So, I apologize on that. And so I'm at a slight disadvantage not having heard what everyone has said before me.

MR. ROMAINE: All good things.

MS. HAHN: I certainly agree with what

I've heard. and I would like to thank Senator Lavalle and especially thank my Assembly Member, who is here Chairing this meeting, for this opportunity. But Senator Lavalle, I did hear you say that the water issue will be the number one issue for at least a generation. And there's no question and in my mind it certainly has been for at least a generation.

So, we have to do a little bit better. And I think we are. I really need to commend our County Executive. This is now my fifth year in office. And when I first thought about trying to get here, I talked about innovative alternative onsite systems. And never in my wildest dreams would I think that we would pass our Article 19 so quickly. I think it's clear evidence that government was able to move so quickly on this; that we're taking this incredibly seriously. I'd like to thank Sarah Lansdale and all the folks in the Health Department and the Planning Department, everyone who worked on this to make it happen so fast.

But we are taking this very seriously

here at the local level. I know you all are taking this seriously at the State level. We need to work together, continue to work together in a way that we can continue this momentum we have. Because we are making a difference. We are doing what it takes. But clearly because the problem is so large: 360,000 homes that are not sewered and, you know, again a lot of them don't necessarily want to be. But because of the nitrogen problem, we need to do something other than centuries old technology that just kind of digs a hole in the ground, clearly.

And whatever fund and finances we come up with though, however, I believe needs to be multifaceted in our approach. As you said, sewers are not appropriate everywhere. Innovative alternative systems, we're working on figuring which ones work where; if you sit in the water table or not, depending on the soil type. But we can't forget open space, funding for open space. We can't forget funding for projects for storm water runoff. We can't forget our traditional water quality projects.

We still have a tremendous amount of open space to protect and farmland to protect here on the Island. Whatever we package, we come up with cannot leave that out. Our money has been dwindling and we can't find ourselves in this position again, where we cannot and where we're losing our precious open space to development.

I do think we also need to think of other revenue ideas. I think we need things like polluter penalties; things that I've referred to in the past, where if there are contaminants of interest and consumers are using them, maybe they should either be banned or people should pay more for using them and money goes into a fund to clean them up. For instance, we've recently noticed 1,4-Dioxane, how that's increasing in our water supply. We need to find where it's coming from, find if there are consumer products that contain it. And that's a potential source of revenue if it's not able to be banned; if we can charge a surcharge on things that people use.

Residential pesticides, residential fertilizers, possibly another source; where if

people feel the need that they must use them, maybe they should pay more to use them, so that we can continue to work on this. I hope I'm not repeating what others have said here.

One more item and I apologize for taking so much time. I do believe we need a responsible entity to oversee our aquifer protection. Quality and quantity Island-wide, having real teeth and authority; that's incredibly important as we move forward. We do have clearly differing layers of government that are responsible for different things. We need one entity: an Aquifer Trust maybe but one entity responsible, truly responsible with real authority as we move forward. That's just off the top of my head. Of course I could go on for a very long time and you don't want me to do that. But thank you for the opportunity.

ASSEMBLY MEMBER ENGLEBRIGHT: Bridget Fleming has a further observation.

MS. BRIDGET FLEMING, COUNTY LEGISLATOR, SECOND DISTRICT, SUFFOLK COUNTY LEGISLATURE: Mr. Chair, if I could just respond briefly to Senator

Lavalle's point and I think it may respond a bit to Senator Martins' point as well. I certainly appreciate the need to know what is the plan. Look, we're in as they say the big bathtub. It's a regional issue and it needs a regional solution.

I think that LINAP is an excellent beginning for that. And one of the strengths of the LINAP is that it relies so much on input at the local level. We shouldn't forget that we've been dealing with this problem for quite some time and there is an investment at the local level. So, you've got engineers and municipal attorneys and planners and scientists looking at this problem for over a decade now with very real solutions. The County has undertaken pilots in conjunction with the local municipalities, has made considerable investment to the extent that we can.

We do have pilots in the ground at the moment at 19 sites. We're waiting for a long enough time of steady data in order to ensure that we don't enter that kind of dangerous water,

so to speak -- excuse the pun, that the County Executive was talking about. But they're very real, these pilots.

We have on Shelter Island, Sylvester Manor is piloting what's called a constructive wetland, which is a system that we're looking to use elsewhere to remove nitrogen. And that's being done in conjunction with the County and of course County staff is supported in part by State dollars. So there is already a multifaceted effort happening. It's obviously not funded adequately at this point.

But I hope you don't walk away thinking that local municipalities haven't made an investment because we do feel very -- I'm saying we because I was on the Southampton Town Board for so long; but during that time there were a number of very real efforts. And the CPF has shown that our taxpayers are willing to agree to tax themselves.

The County Exec offered this referendum, which hasn't yet happened but that it was a proposal that would ask people. So, I do think

you will find that there's a great deal of investment and a great deal of knowledge at the local level.

But as Senator Lavalle says, we need to martial all that with a larger plan. And I think the State would be well-suited to lead a multileveled approach that would include not only the investment but also the knowledge and experience of folks at the local level.

ASSEMBLY MEMBER ENGLEBRIGHT: Senator Hannon?

SENATOR HANNON: Senator Venditto.

SENATOR MICHAEL VENDITTO: Chairman, thank you and thank you of course to our panel and to all of our speakers today who have joined us, as well as the many residents who I see out in the audience who've taken time out of their busy schedules to be a part of what is about as important a discussion as we can have in local government. I want to first extend my apologies. I do have prior commitments in my District that I need to attend to. But I just wanted to make a very quick statement and commend everybody for

this discussion that we're having today.

I think a general theme is being crafted and we're doing a lot of talking about communication, very basic communication but very important communication that has to continue to take place between our local municipal leaders and our leaders at the State and federal levels.

And to the extent that this forum will be able to catapult us into other discussions that will help us get a concrete plan going forward; I think we have taken a major step that we need to build on in important ways. We're going to continue on with the proceedings. I just want to attach my thoughts and comments to those that Assemblyman Saladino has made and will continue to make and questions that he is going to present as we proceed on.

I'm a resident of Massapequa who lives just blocks away from the Assemblyman. And we are asked I think as much as we are about any issue by the residents of the South Shore who we represent: What is going on with the Grumman plume remediation? And we're certainly hopeful as

we talked about before that some sort of concrete plan, working with the DEC, working with the federal government and working with leaders of all of the different municipal levels will start to materialize as we head on in the weeks and hopefully months ahead.

So, Assemblyman Saladino, I want to thank you for your continued efforts and once again say thank you to each and every one of the people who has joined us today. With that, Mr. Chairman, I will send it back to you. I appreciate a couple moments of the panel's time.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Senator. Assemblyman Steve Otis?

ASSEMBLY MEMBER STEVEN OTIS: Thank you, Mr. Chairman and thank you all for your testimony. I'm especially interested in County Executive Bellone's testimony about the problems faced by individual homeowners and the water quality issues are attended to that. As I think you are aware, the Governor and the Legislature in 2015 established the Water Infrastructure Grant Program. And in the round this year two,

villages in Suffolk County are getting some grants. But that program, which is very valuable and Chairman Englebright was a leader in that and both Houses of the Legislature making that happen; that's to deal with centralized systems, drinking water or wastewater systems.

The problem of individual homeowners and how you deal with that in a decentralized setting but is a huge problem in Long Island. I want to make a request not for necessarily to provide today but what would be helpful is to sort of ballpark what are the average per homeowner cost estimate would be, to try and flesh out really what that's going to cost.

The second thing is in terms of a recommendation, I represent the Village of Portchester, who had an EPA consent decree to do some of their centralized sanitary sewer system upgrades. And they came up with an innovator proposal. They went to the Public Service Commission and asked for permission to attach to water bills a fee to help fund that centralized program that they developed. And it has been

successful in helping pay for part of the work that they need to do.

But that opportunity is available to local governments, villages or the County to consider approaching the Public Service Commission in the water bill regulating rate approval process and at least fund part of that, maybe an individual homeowner program through the water bills, as you described, in that way. We're going to need a lot of options in terms of trying to fund these very expensive propositions: federal, State, county and local. But that is one tool that I would suggest looking into and I think could be helpful. And certainly as you've heard from our colleagues here: Everyone in the Legislature is keyed in a variety of water issues and we're doing good things and we want to do more.

MR. BELLONE: Thank you, Assemblyman. I think that the discussion that we've had both internally and with our colleagues here at the State level regarding individual advanced wastewater treatment systems is about: How do we

make them workable for homeowners? I would not support advancing anything that simply from a practical level is not going to work.

So, we need to have a program in place that is first, practical and affordable for homeowners that we are asking essentially and this is where the incentives don't necessarily align, that classic issue; where homeowners are being asked to do something that is very costly, that will help the region as a whole, will help them individually of course but most of the benefits go to all of us as a region. When you have that kind of scenario, to me that is the classic case where those costs should be regionalized as well, to a certain extent. So there should be some homeowner investment for the investment they are making but there also needs to be some sharing of those costs, even on the individual system; just as there would be with the sewer system.

So a program in place that would involve a combination of grant and financing of those systems I think is the solution that we have been

discussing here and mechanisms like that are exactly the type that we would be looking for and contemplating.

ASSEMBLY MEMBER OTIS: Thank you. It makes sense. Thank you, Mr. Chairman.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Mr. Otis. Do we have other questions from any of the Members? Mr. Abinanti?

ASSEMBLY MEMBER THOMAS ABINANTI: Thank you, Mr. Chairman. And I just want to thank the panel of local officials. Having spent, like several of my colleagues have, a lot of time; I was in local government for 25 years, town and then county. It's important that the community, our agencies and our State Legislature understand the implications of what it is we do on the local officials who have to make it happen. So, while I wasn't here for everything you said, thanks to the wonders of modern science and communications, I was listening to it on the way out here. And I think you're right on target highlighting the challenges and the need for cooperation and help from the State and federal government.

I'm particularly intrigued by the concept of having one Czar, if you'll use that term, which I heard the Supervisor mention first and someone else echoed. In fact, I'd like to see the State take a look at a similar type of approach. I know California has gone to a Water Board or something like that and maybe we ought to look at it from a State point of view within regional operations under it.

And I think your emphasis on quantity, quality and I would add, somebody touched on cost is very important. Because these are issues that as Mr. Otis pointed out are everywhere. I've got some communities where there's a problem with quantity of water. I have other communities where the cost of water is outrageously expensive. So, thank you for coming forward and giving us a better understanding of what actually happens on the ground when you try to deal with these issues. Thank you, Mr. Chairman.

ASSEMBLY MEMBER ENGLEBRIGHT: You're welcome. Other questions? Then at this point I'd just like to say thank you to the panel. Thank

you for your very thoughtful comments and testimony. I'm sure we will have additional dialogue as we go forward on these important issues.

MR. BELLONE: Thank you, Mr. Chairman. Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Our second panel is at the federal level: Christopher Schubert, the Supervisory Hydrologist for the U.S. Geological Survey. Is Mr. Schubert here? Is that Mister or Doctor?

MR. CHRISTOPHER SCHUBERT, SUPERVISORY HYDROLOGIST, UNITED STATES GEOLOGCIAL SURVEY: Mister.

ASSEMBLY MEMBER ENGLEBRIGHT: Mr. Schubert.

ASSEMBLY MEMBER GOTTFRIED: And before you begin, do you swear or affirm that the testimony you're about to give is true?

MR. SCHUBERT: I do.

ASSEMBLY MEMBER GOTTFRIED: Thank you.

[WHEREUPON THE WITNESS, MR. CHRISTOPHER SCHUBERT, WAS DULY SWORN.]

MR. SCHUBERT: Thank you to the Chairs and to all Members of the Assembly and Senate here for the opportunity to participate in a discussion of issues related to water quality and contamination today. I would like this opportunity to provide an overview of ongoing USGS studies that are being conducted to help us better understand these issues. During the past year, the USGS has begun several projects focused specifically on addressing key water quality concerns.

Although each is motivated by one or more specific issues, they contribute collectively to improving our system-wide understanding of groundwater quality and its role in sustaining human and environmental needs. At the federal level, the USGS has allocated resources to develop a new Island-wide groundwater flow model. This model is being developed by a team from our National Water Quality Assessment or NAWQA program, as part of its ongoing water quality assessments of the nation's principal aquifer systems.

One of the main objectives of this study is to assess the vulnerability of the quality of water at aquifer depths relied on for public supply. To help do so, we are in the process of sampling supply wells across Long Island to better understand the ages of water they capture. This will enable us to identify the depths that water affected by human activities have traveled in the aquifer system and ultimately better understand the vulnerability of our water supply to contamination introduced at land surface.

You can expect to hear and see more about this multiyear study, one of only a few like it currently being done across the country, in the near future. The development of this new Island-wide groundwater model by our national program has uniquely positioned the local USGS office to explore opportunities to address other priority concerns not considered as part of this larger study.

These concerns include the need for a comprehensive delineation of all the areas that contribute groundwater recharge to surface waters

across Long Island to aid in nitrogen loading studies under LINAP, the Long Island Nitrogen Action Plan, and other uses.

These recharge areas are often referred to as groundwater sheds. And defining them for all of the key streams, ponds, wetlands and other coastal waters across the Island is the focus of a project begun in October 2015 in cooperation with the New York State Department of Environmental Conservation. This 2-1/2 year project is delineating the groundwater sheds and groundwater travel times and alpha rates to upwards of a thousand receiving surface waters, including all those in the State's priority waterbodies list. Partners providing technical assistance to the USGS on this project include: Nassau and Suffolk Counties, the Nature Conservancy and other stakeholders.

Another concern that will be addressed with this new groundwater flow model is the sustainability of public water supplies derived from the Long Island aquifer system, which is the focus of a project begun in April of this year in

cooperation with the DEC. This 5-1/2 year project will involve an ambitious, exploratory drilling program to locate the boundary between fresh and salty groundwater along the coast and the deepest parts of the aquifer system.

This information, along with an improved understanding of the subsurface geology derived from the drilling effort, will be used to refine the groundwater model, which will then be used to predict how the aquifer system may respond to a range of future changes in pumping conditions. The study's being coordinated with a number of partners, including: the Nassau County Department of Public Works, Suffolk County Water Authority and other agencies with drilling expertise.

In addition to this modeling effort, we are also addressing concerns regarding widespread contamination from past and present uses of pesticides with a project we began in April of this year in cooperation with the DEC. This project will include up to three years of sampling in the shallow groundwater system to better understand the presence and distribution

of current and legacy pesticides; pesticide breakdown products and other constituents associated with agriculture and with residential turf maintenance.

Samples are being collected from an existing network of shallow wells in areas of primarily medium density residential and mixed land use, for which we already have over a decade worth of data. These data will be augmented by additional samples collected from shallow wells in areas of mostly agricultural land use, as part of a separate cooperative program between the USGS and Suffolk County Department of Health Services. Together, these results will provide a much more comprehensive understanding of the vulnerability of the aquifer system to pesticide contamination.

Looking ahead we see additional opportunities for the USGS to provide assistance in addressing the water quality and contamination issues of the future. One of these would be to leverage the newly developed groundwater flow model to explicitly track nitrogen contamination

as it moves through the aquifer system, using modeling techniques developed by the USGS for the similar aquifer system on Cape Cod. This proposed project, designed in consultation with the Peconic Estuary Program, would account for changes in nitrogen loading to the aquifer system through time and predict when the effects of human actions would reach coastal receiving waters.

Another opportunity would be to build on the new pesticide network to sample for a more comprehensive suite of water quality analyses, including those for pharmaceuticals and other contaminants of emerging concern to better understand contaminant threats to supply wells on Long Island. This proposed monitoring project, which has been designed in consultation with the Suffolk County Water Authority and others, would help provide advanced warning of potential contamination before it is drawn downward into the aquifer system and threatens supply wells.

Ultimately the results of all of these efforts: the data, models, scientific reports and

other products are tools accessible to all parties to inform wise decision making. If you have any questions or comments about the information I have provided, please do not hesitate to contact me. Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. Among my colleagues I see that there are some questions. Let's start with Assemblyman Raia and work back toward the Chair. Mr. Raia?

ASSEMBLY MEMBER ANDREW RAIA: Thank you, Mr. Chairman, and thank you for your testimony. This is obviously an issue that anyone in government has been following for many, many years. And over the years I've heard different assessments about the recharge rate of our aquifers. And that usually comes up when we're talking about whether to drill in the Lloyd or not to drill in the Lloyd. Obviously as we see nitrogen infiltration into our drinking water, the choices are either: hook them up to public water or do a denitrification plant, which as we know is very costly; not to mention the impact of all those tractor-trailers removing the affluent.

And I bring this up because there is a concern in a portion of my community in Northport by the VA, where we're starting to see a lot of nitrogen intrusion. In the past I've heard that the Lloyd is filling up faster than we could ever drain it; so are the other aquifers. Is there a general rule of thumb? What's the latest on that? Are we starting to see a water deficit? Or are they being recharged on a regular basis?

MR. SCHUBERT: I think the point about recharge is a good one. And the way I've kind of heard it explained is: You generally get an order of magnitude reduction in recharge as you go further and further down into the aquifer system; to the point where by the time deep flow recharge reaches the Lloyd aquifer, we're getting on the order of about one percent of recharge to the Long Island aquifer system. And that recharge is generally infiltrating the line along a fairly narrow spine along the highlands of the Island, if you will.

The opportunity that the Lloyd affords is that it represents the oldest and least

affected by human activity water on Long Island. In some cases that water is millennia to several millennia old. The challenge with the Lloyd is because recharge is so finite and limited, it is much more easily stressed to the point of impairments, such as landward movement of saltwater than the other aquifer systems.

And that is going to be one of the main topics of focus for the new groundwater sustainability study. The water supply sustainability study is to ultimately understand: To what extent is the Lloyd able to sustain our current water supply practices? And perhaps a more important question is: What are some of our alternatives in the future to ensure that we get the quantity and quality that we need?

ASSEMBLY MEMBER RAIA: Thank you, Mr. Schubert.

MR. SCHUBERT: You're welcome.

ASSEMBLY MEMBER ENGLEBRIGHT: Senator Hannon.

SENATOR HANNON: Senator Kaminsky.

SENATOR TODD KAMINSKY: Good afternoon.

Just I want to take you through some elementary questions. My questions come from the fact that a lot of people who care about water, mostly all of whom are in this room, talk to you about it being an extremely important issue. But in the public it's never even close to a top issue that resonates; which doesn't mean that we shouldn't be taking it seriously. But I just have some questions about the intensity about which we should be thinking about the issue.

And I want to talk about the Lloyd in particular. I live in Long Beach where it's obviously that's our water. And it's very important to me and I'm grateful for the study that will be coming our way. Is the study going to help us determine to the extent that the Lloyd aquifer is in danger? Or is it already the case that we have issues that need to be dealt with there?

MR. SCHUBERT: I think the jury is a little bit out on an answer to that. If you had asked me this perhaps a couple of years ago, I would have said that it appears we still have

some time. We don't appear to be seeing chloride concentrations, measures of saltwater encroachment that would necessarily give us alarm to say the writing was on the wall.

But more recently as part of kind of a wider, more system wide consideration of the threats to the aquifer system that we've been involved with, we are starting to see signs of saltwater encroachment. So timing is everything. It's great that we're going to make this a chief focus of our sustainability study. And one of the prime targets for that exploratory drilling program identified I mentioned earlier is to identify where that boundary or that transition zone between fresh groundwater and salty groundwater in fact is in areas like Long Beach that depend critically on the continued supply of potable water from that system.

SENATOR KAMINSKY: Okay. And is there a relationship between the amount of water being used and the sustainability of the aquifer? Meaning, you drive down the street in the middle of the night and there's sprinklers on on every

block, on every day. Is that something that should give us pause when looking out for the future of the Lloyd? Or are pesticides, saltwater intrusion, are they connected in some way?

MR. SCHUBERT: For the Lloyd because it takes so long for water to get down there, our immediate concern in terms of the current generation and probably several to come is going to be a quantity issue for the Lloyd. With the exception of perhaps a few places more toward the middle or the Northshore of the Island where direct recharge occurs and where some of the geology layers are perhaps thinner, there is some increased vulnerability to contamination from human activities. But by the time you get down to Long Beach and the other coastal communities for which we reserve the Lloyd aquifer for public supply, it's mainly a quantity issue. And the main stressor or determinant on that continued availability is water use for human needs; so it's pumpage.

SENATOR KAMINSKY: Okay. And what are some examples of conservation measures that

you've seen work in other places or you suggest might be considered by State and county authorities going forward?

MR. SCHUBERT: I think there are a variety of measures. I'll just preface that by saying that the USGS is non-regulatory. We're policy neutral. We're non-advocacy. Other coastal communities have been rather creative and somewhat ambitious when faced with imminent threats to their system. I can point out one that was in the news a few years ago but at this point it's been kind of put on a back burner and that's aquifer storage and recovery. And that is perhaps taking water from where it's available in a greater surplus and injecting it into a deeper confined aquifer that is relatively recharge limited to push the salty water out seaward for shall we say rainy day needs.

Certainly water conservation. And there is also perhaps some greater efficiency that can be had in optimizing our water supply system; that is making it available from areas that have a somewhat greater abundance and quality to areas

with lesser abundance and quality.

SENATOR KAMINSKY: Okay. And lastly, what is your understanding about the water districts and municipalities observing the limits that are placed on them, whether they're adhered to and whether those limits are sufficient in light of the conservation needs you've addressed?

MR. SCHUBERT: I would have to defer that to others, since we are non-regulatory. We inform ourselves on the regulatory limits in the context of carrying out investigations on behalf of society. At this stage I really can't talk to enforcement issues. But suffice to say, this is under a much greater microscope and so certainly what those limits ought to be is going to be a chief focus of this sustainability study.

SENATOR KAMINSKY: Okay. And what's the timeline on this?

MR. SCHUBERT: We've begun this past April 1 and it's going to be running for the next 5-1/2 years; so, I believe until September of 2021. But we expect to be giving presentations and updates on the project between now and then.

And probably over the next three to six months I would expect that we'll probably be asked to give a talk to LICAP, perhaps some other public forum to lay out some of the objectives of the study and some of the early results.

SENATOR KAMINSKY: Okay. To the extent I could be helpful amplifying some of that or bringing partners to the table, please enlist me.

MR. SCHUBERT: Will do, thank you.

SENATOR KAMINSKY: Sure. And if I could just conclude by thanking Assemblywoman Schimel and Senator Martins for their leadership on the study. It's critical.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Senator Kaminsky. Assemblyman Lavine?

ASSEMBLY MEMBER CHARLES LAVINE: Thank you, Chairman. And thank you, Mr. Schubert and many of the others for what the USGS does and has done. What brings us together today sadly is a crisis in Hoosick Falls, New York and in Newburgh and Petersburgh, New York as well.

But this is not unique to New York. We have these crises in places like Sebring, Ohio;

Washington D.C., Durham and Greenville, North Carolina; Jackson, Mississippi; St. Joseph, Louisiana and Flint in one of my old home states of Michigan. So I understand USGS is now involved or is overseeing this Island-wide ground flow model -- map, so to speak. But this is only one of the mapping systems that USGS is doing nationally. Do you happen to know where else this is taking place?

MR. SCHUBERT: I believe we're in the process of doing this in the Southwest. I suspect it's somewhere in Southern California or perhaps it might be in a neighboring state. I believe we also have a project going on in the Southeast and perhaps one in the Upper Midwest. If you'd like more information on that, I'll gladly provide it.

ASSEMBLY MEMBER LAVINE: Is it primarily restricted to estuaries?

MR. SCHUBERT: No, no. It's focused on the nation's principal aquifer systems, which are relied on for public supply. But certainly where there are other issues that can be better addressed through a system-wide approach, we

consider them.

One of the recent studies we wrapped up for the Northern Atlantic Coastal Plain, which is kind of the larger geologic setting that Long Island is in and that stretches from say the Virginia/North Carolina area up to Long Island, was look not only at what we're doing with respect to drinking water quality and our groundwater reservoir but also what that means for the coastal receiving waters. So, we are certainly a poster child for those concerns here. And I think we're very fortunate that we were able to garner that federal allocation to do this more detailed modeling and mapping study on Long Island.

And I'll just add a comment about what you remarked about earlier with regard to some of the quality challenges that have been faced around the country. Unfortunately, you know, many of these are examples of where we've relied on the public water supply system as kind of our main line if you will for detecting threats to that water supply system. And I think these are

clearly cases where we've done that are our own peril.

And so that speaks to one of the proposed efforts that we've been identifying with some of our partners, like the Suffolk County Water Authority, and that is: Let's take the burden of that off of our water supply wells and perhaps monitor a little bit more smartly near the top of the water table. We won't be able to monitor everywhere. But if we can at least start to detect where some emerging concerns appear to be emerging and where they may be threatening individual well fields or portions of our aquifer system, we can then be more proactive.

ASSEMBLY MEMBER LAVINE: There's a wonderful book called *Bold Endeavors* by Felix Rohatyn, the financier who was one of the engineers of saving New York in financial crisis, emphasizing how extraordinarily important it is for us all to make a national commitment to protect our public assets.

Last question for you -- a mechanical question. So, USGS is partnering with various

authorities and agencies in Suffolk County and Nassau, including the Nassau County Department of Public Works, Suffolk County Water Authority and other agencies that have drilling experience. How do you make the determination? How does USGS make a determination with respect to who to partner with when it comes to this mapping system?

MR. SCHUBERT: Well, certainly when it comes to undertaking something as ambitious as this drilling program to really finally pin down where saltwater is in our deep aquifer systems, it's really looking to some of our partners and also looking in terms of our own institutional capacity: Who has the demonstrated ability to do this? And yet we will kind of cast a somewhat wider net and speak to other partners who may have assets and resources across the country; whether that's within USGS or other agencies, like the US Army Corps of Engineers, who we're also having discussions with.

So, it's really making sure that we get the most bang for our buck in being successful on this exploratory drilling program because we have

a lot riding on it quite frankly.

ASSEMBLY MEMBER LAVINE: Thank you.

MR. SCHUBERT: You're welcome.

ASSEMBLY MEMBER ENGLEBRIGHT: Senator Hannon.

SENATOR HANNON: First of all, I am impressed with the vast number of studies you're going through because while you may not be a regulatory agency, I think the facts that you'll uncover will have great implications for those who have to do both regulation and remediation. It's kind of not what you testified to but we've already gone through, at least I have, two full days of hearings in regard to Hoosick Falls. The geology of that is totally different. You're dealing with instead of an outwash plain with aquifers, you're dealing with much more of a folded in and of itself geology. Does your Service have other studies going on that would address that type of geology? Which is actually more typical of the acreage in New York than we have here in Long Island.

MR. SCHUBERT: You're absolutely right.

And it is different and frankly it's quite a bit more complex. It's a lot more difficult to be able to understand the pathways of water flow because often that is taking place in fractures in the bedrock, whether those are due to faults or other types of malformations in the bedrock. You also because it was a glaciated area, you've got a lot of variability in the sediments that make up your valley-fill aquifer system.

While I can't really speak in too much detail, hopefully not enough to get myself in trouble here about the Hoosick Falls issues with PFOA and similar compounds; I do know that some of our specialists working out of our Troy, New York office have consulted with the DEC and others to help inform them moving forward on some of the opportunities and challenges with respect to getting a better understanding of this issue.

And so I would certainly offer them up as a resource and will facilitate continued dialogue there however I can. We certainly have the resources in Troy, throughout New York and across the country to bring to bear to better

1 understand that issue.

2 SENATOR HANNON: Thank you. I'd

3 appreciate that. And just one last comment. With

4 all these studies that you're doing: the 2-1/2

5 years and the 5-1/2 years and the pesticide

6 travel; how will you be promulgating the results

7 of those studies?

8 MR. SCHUBERT: Through a variety of

9 means. Perhaps the most visible one will be

10 periodic presentations to meetings such as this.

11 We already have a project webpage that we've

12 rolled it. It's fairly simple at this point. We

13 don't have a lot of bells and whistles on it. But

14 that's really to start putting the word out about

15 the project: What is the problem? What's

16 motivating it? What are our objectives in the

17 study and how do we propose to get there? And

18 also some indication of the types of products

19 coming forward.

20 Certainly there will be the usual final

21 technical report that USGS is often known for;

22 these scientific reports that include a lot of

23 information and take some time to produce.

24

1 There'll be one that summarizes the results of
2 the exploratory drilling. And there will be
3 another one that summarizes the results of the
4 simulations, the analyses of the different water
5 supply alternatives.
6 But I think we see the need for some
7 earlier products. And one of the ones we're going
8 to be working on probably starting October 1 is a
9 fact sheet; say a one-pager or a two-pager that
10 summarizes for the lay audience the need for this
11 work, what we're doing and incorporates perhaps
12 some of the other efforts that are going on in
13 parallel. And so expect to see that sometime next
14 year.
15 SENATOR HANNON: I think I'll call your
16 office and make sure we're on your mailing list.
17 MR. SCHUBERT: Very good.
18 SENATOR HANNON: Thank you.
19 ASSEMBLY MEMBER ENGLEBRIGHT: Thank you,
20 Senator Hannon. Assemblywoman Schimel?
21 ASSEMBLY MEMBER SCHIMEL: Thank you, Mr.
22 Schubert. Clearly, you are very busy and I
23 couldn't be happier. I know in our little neck of
24

the woods in the northwest corner of Nassau County, we did our best to keep you busy. And it seems thanks to a lot of different events that's happened: one with Jamaica Wells, etc. etc.; the Governor has stepped up and we're thrilled that the State is giving you even more work.

And one thing I want to again impress is the term: quantity and quality; that they are both interrelated; they're both important. And the fact that we're studying both hopefully will drive policy. Because oftentimes we look, we're silo'd, we look at the quality. We work on contamination and other forces and then we look at quantity. And hopefully those two points will intersect and it will drive policy.

I also want to thank the Chairman of Environmental Conservation. Because he recognized early the need for USGS to do studies early because of the platform you use is nonproprietary; that all your information can be shared by everybody. And oftentimes studies are done by engineers, etc., you know, to no fault of their own -- am I right? If you could speak to

that a little bit, that we need data that could be understood by everyone? Because you build upon those data points through the years, do you not?

MR. SCHUBERT: Well, we are an open book. I mean, since ultimately all of our activities are funded by the taxpayers one way or another, we are the poster child for open government even before that became sexy, if you will.

ASSEMBLY MEMBER SCHIMEL: So, I thank you. And thank you, Mr. Englebright, for recognizing that early. Some concerns that we have and it was brought up before, in terms of this is clearly and someone said it, I don't know, one of the colleagues said it about a generational problem. I have it's just a generational problem. To no fault of anyone in this room, this has been going on in Long Island certainly since the '30s. But that being said, studies are studies and they build upon each other.

One of the things we have in Nassau County is funding. In other words our concern is

Nassau County at best in the last few years have been cutting back on their funding, although thankfully they did for the last years, they did fund for I believe 2015 and '16. Going forward though, you know, the study that we're looking at, the groundwater study, let's see the 5-1/2 year study, I'm hoping that there will be continual monitoring, that it will not begin and end with that.

And my question to you is number one: Because Nassau County seems to be -- and I'm not judging -- cutting back for funding in terms of the team they have. They used to have a robust team that did hydrology in the system. It's been cutting back. They're doing a lot of contract work. Who is going to be overseeing the wells in Nassau County? I know right now I think it's going to fall under Nassau County. But going forward is there discussion with them in terms of the contracts, how it's going to be working in Nassau County in terms of the drilling? Who's going to be reviewing, you know, taking care of the wells? Because they are inspection wells,

they have to be protected, correct?

MR. SCHUBERT: Absolutely. And just covering the monitoring part of this before I get to the maintenance end of it: While we've got quite a bit in the way of resources for a quite ambitious study -- $6 million; when you spread that out over 5-1/2 years and you're drilling wells that are going to eat up actually more than half of that project budget, it's important that we monitor those wells but that we not stop monitoring all the other sites we're currently collecting information. The project does not have the resources to pick up the tab for all the other ongoing monitoring activities that are going to be critical to the successful completion of this effort.

With regard to maintenance, one of the reasons why we are partnering early on with Nassau County Department of Public Works is because we had a longstanding program with them, not only for monitoring but also for exploratory drilling. And they as well as the Suffolk County Water Authority have provided much of the deep

aquifer information we have as USGS because we don't always have our own resources or capabilities to do that deep drilling.

So they've got a tremendous institutional capacity at the Department of Public Works in particular. And we really are eager to leverage that in our study. So to the extent that we can kind of put our heads together and find a way for their activities to provide continued benefit to us and to Nassau County in general, I think would be a win for all of us.

ASSEMBLY MEMBER SCHIMEL: Who though will be overseeing the wells? Is part of the contract the maintenance going forward, even beyond this study? Is that discussed?

MR. SCHUBERT: I don't think we have really identified the mechanics of that after the end of the study. But that I think is going to be one of the outcomes we're going to look for is to provide some thoughts, some suggestions moving forward as to how we retain this investment and leverage it in the most efficient fashion to continue to keep tabs on -- our finger on the

pulse of the aquifer system.

ASSEMBLY MEMBER SCHIMEL: Along with scenarios and I know you're going to do various stresses to the system in terms of scenarios, if you will -- well, I'm going to pass. I'm going to save it for the next.

MR. SCHUBERT: On the topic of scenarios, we're going to look at a fairly wide range, really spanning the full range of potential water supply scenarios moving forward from very conservation minded to those that are looking at a ratcheting up considerably above business as usual. And of course considering potential scenarios with redevelopment of the City's former Jamaica Water Supply System wells.

ASSEMBLY MEMBER SCHIMEL: Right. Well, that's my questions. Are you allowed -- I know you're scientists, pure scientists, but can you make suggestions in terms of helping with policy? What I mean by policy based on scenarios, in terms of development, in terms of monitoring, in terms of over-pumpage; or is that enough to drive the bus in terms of making policy determinations?

MR. SCHUBERT: We certainly can't make policy or decisions or issue strident recommendations toward them. But we could certainly provide the information and cast it in a fashion that helps inform wise policymaking and decision making. And many of the scenarios that we evaluate are going to be ones that we formulate in close coordination with decision makers and policymakers.

ASSEMBLY MEMBER SCHIMEL: Excellent. Thank you so much.

MR. SCHUBERT: You're welcome.

ASSEMBLY MEMBER ENGLEBRIGHT: Mr. Gottfried?

ASSEMBLY MEMBER GOTTFRIED: Thank you. So I'm a city kid. I know some physics and chemistry. But I have no idea what it means and how one goes about recharging an aquifer. If there is a short way to describe what that means, if you could tell me? If not, I'll Google it.

MR. SCHUBERT: All groundwater on Long Island under natural conditions originates from precipitation. So, it originates from rain,

melting snow, fog percolating into the ground. And we have a fairly good understanding of how much occurs in different areas based on different soil types, different elevation, distance to the water table, things like that.

When humans come along and develop an aquifer and develop a landscape, there are mechanisms where they can obviously take water out of the ground and we've focused some of our discussions here today about that, about that pumpage; but they can also actually allow some water to go back into the ground. Whether it's taking some of the rainfall that might have been lost from the system if it had fallen on roadways and other impervious surfaces and like back in the old days allowed to kind of run to tidewater; we would lose that recharge.

We're fortunate in that much of Long Island, particularly in Nassau County, had the foresight to put in recharge basins to capture a lot of that rainfall that falls on impervious surfaces and give it a mechanism to recharge the aquifer system. So that's one way for water to

get back in the ground.

Another way is for onsite wastewater disposal systems. So despite the water quality challenges we face from onsite systems, one opportunity to provide is that the vast majority of water that goes to those homes actually makes its way back into the groundwater system to recharge the quantity. That's to say nothing about the water quality impairments that come along with it but that speaks to why many folks are looking for ways of recharging treated wastewater back into the aquifer system; so that we can replenish what is taken out rather than allow it to go to tidewater.

ASSEMBLY MEMBER GOTTFRIED: So, if you have treated water and then you want to put it back into the aquifer, how do you get it there? Do you pump it into a pond with a porous bottom or what?

MR. SCHUBERT: Well, typically you would use things like injection wells. You could use recharge basins. But the point here is to not allow the water that you're pumping out of the

ground for water supply to be permanently exiting the system, which is the case unfortunately for much of Nassau County where it is sewered.

You know, in solving one problem and addressing the water quality impairments that came along with onsite systems and perhaps some legacy agricultural land use as well prior to the Post War II building boom; we've removed water from the aquifer system and are no longer allowing it to recharge that to recharge the system.

So we've encountered over the decades long-term declines in groundwater levels and long-term declines in the amount of water that goes deeper into the aquifer system under natural conditions because we've removed that recharge. We've prevented a certain amount of water from making its way back into the aquifer system. And so that has impairments of its own.

ASSEMBLY MEMBER GOTTFRIED: Thank you.

MR. SCHUBERT: You're welcome.

ASSEMBLY MEMBER ENGLEBRIGHT: Other questions from my colleagues? I have a couple of

1 questions. I'm particularly intrigued with the
2 policy questions that relate to the Lloyd
3 aquifer. We don't have enough time to go into all
4 of them today. But I'll mention one right off the
5 top that is something that I've been looking at,
6 which is that this is for the most part a sealed
7 aquifer. Not entirely. You mentioned that there
8 is erosional discontinuity in some areas. I want
9 to come back to that. You mentioned there was
10 direct recharge that would require an erosional
11 nonconformity. But for the most part, it's my
12 understanding that the Lloyd is a sealed aquifer
13 by the Raritan clay in particular, of which it is
14 the lower unit.
15 And the issue that I'm fixated on is
16 that as recently as yesterday and the day before
17 our news was dominated with tests of nuclear
18 materials by North Korea and some pundits are
19 worrying that North Korea as a terrorist state
20 could be allowing all sorts of terrorists to have
21 access to nuclear weapons. If a dirty bomb, I
22 have wondered about this -- I'm not suggesting
23 that this is going to happen; but I wonder if
24

there was a dirty bomb or a nuclear device of some sort that was exploded either on shore near our great City of New York or in the reservoir area upstate, that we could have all of our surface waters contaminated instantly. In which case the Lloyd would be a unique asset for strategic purposes to sustain our biggest population.

And so from that perspective, I am wondering a lot about polices relating to the Lloyd. So let me start and there are more, even without such a catastrophic event, the Lloyd is the purest water that we have simply because it's the most remote. But even in the case of progressive deterioration of our larger water supply, the Lloyd for mixing purposes is very, very important. And of course our current policy I think is pretty wise, which is to use it primarily for our coastal communities with intercept wells.

It used to be that we didn't have very many data points because very few wells went down to the Lloyd in Suffolk. Has that changed in

recent years? Do we have more information? Is this still our knowledge is based upon a relatively few wells?

MR. SCHUBERT: Our knowledge is based basically on the production wells, on the supply wells and on the monitoring wells. The outposts are interception wells that are drilled for water supply purposes. There's very little exploratory drilling done for say science's sake down to the Lloyd. There's probably a handful that have been drilled across all of Long Island in modern history. So much of what we know revolves around where it's been developed and used for water supply. So certainly that speaks to the need for a more comprehensive understanding of the Lloyd across Long Island, both in Nassau and Suffolk County to better understand the extent to which our understanding of it, that is a fairly pristine and remote aquifer system that is in large part sealed off from human activities at land surface and whether that truly bears out across the Island.

The results that we have seen in recent

years suggests that that assumption may not apply in all areas, that there may be some local exceptions to that. Certainly along the northern shore where we have examples of where during past Ice Ages, ice came in and removed much of the surficial sediments and eroded down through the Magothy, through the Raritan clay into the Lloyd and in some cases even reached bedrock; that we know that there are places where we've got younger sediments in contact with the older sediments.

In a lot of those areas, the Lloyd still is for the most part effectively sealed off. Because those sediments with which it's in contact, those younger sediments, are fairly fine grained. We had glacial lakes occupying those lowlands after the glaciers receded. But we also appear to have some examples of where that deeper glacial aquifer that's in hydraulic connection with the Lloyd and/or the Lloyd in those areas shows some evidence of being affected by anthropogenic activities. Specifically, we see modern chemicals down there. So that speaks to

perhaps the water finding a shortcut, finding a pathway through there; perhaps accelerated by the pumping which accelerates the downward movement of water in the aquifer system.

Another area where we have seen some evidence that perhaps the Lloyd isn't fully confined from the overlying aquifers in the way that we've always assumed that it's been has been in the area surrounding the investigations as part of the Grumman-Navy plume. And a lot of the vertical profile borings that have been done throughout the area do encounter that Raritan confining unit separating the Magothy from the Lloyd and effectively protecting the Lloyd from human contaminants. But we've seen at least one; I'm pretty certain it's a vertical profile boring and not a well drilled for other purposes that shows either an absent Raritan confining unit or a much coarser Raritan confining unit that no longer serves as that effective seal for the Lloyd.

So, this is an issue that I think we're going to come back to as we carry out our

exploratory drilling program to perhaps look for some areas where the Lloyd may be more vulnerable from a water quality standpoint and not just a water quantity standpoint.

ASSEMBLY MEMBER ENGLEBRIGHT: That's a South Shore phenomenon that you're describing. So the glacier never went that far, we think.

MR. SCHUBERT: Well, at least not the most recent ones. And it's not a glacial issue because there's Magothy in place over it.

ASSEMBLY MEMBER ENGLEBRIGHT: So this is a face that's changed.

MR. SCHUBERT: Exactly. So this would be a variation in the environment that put down that Raritan confining unit.

ASSEMBLY MEMBER ENGLEBRIGHT: Fascinating. That's the first I've heard of anything but ubiquitous and thick clay.

MR. SCHUBERT: And the final point I'll make about the Lloyd in terms of availability as a potential future water supply is confining units in general and I make this as a generalization and to some extent it's going to

apply to the Lloyd but to what extent we're going to define in this study: confined aquifers in general are more vulnerable to over-pumping than unconfined aquifer systems.

And it is in large part because of their more restricted recharge connection, the more restricted ability of groundwater in overlying systems to flow across those confining layers and reach the confined aquifers; particularly when you concentrate a lot of pumping in one area. And so one scenario that we may look at in the future and in a general sense is perhaps not reducing the Lloyd pumpage but spreading it out more laterally; so that we better distribute the stresses on that aquifer system.

ASSEMBLY MEMBER ENGLEBRIGHT: We've seen a real emphasis and we heard it from the first panel here today on really making sure that to the extent that we can that we protect the aquifer, all of the aquifer system, with strategic acquisitions of land. That is a strategy that has been evolved primarily just looking at land use patterns at the surface. I'm

just wondering if we should add going forward additional strategic thinking by looking at well data, such as what you're describing?

MR. SCHUBERT: Well, I do think that that takes place in some parts of the Island where the ability to withdraw a reliable supply of potable water is more limited. And the classic example of that is on the Forks, particularly on the North Fork. And, you know, we've worked with some of our partners, like the Suffolk County Water Authority, over the years to identify specific portions of the North Fork where the Water Authority for example may have had property or been eying property to see to what extent those areas could be relied on to provide a reliable water supply in the future from the various aquifers that contain relatively abundant fresh water resources.

So moving forward that's an issue that we may need to revisit, particularly if the Lloyd continues to be set aside, if you will, primarily for coastal and barrier island communities that have no other alternatives for potable water

supply.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. It's very enlightening. Any other questions? Yes, Assemblyman Saladino?

ASSEMBLY MEMBER SALADINO: I'll make this very brief. But you've been pointing out the issues of the strata of the aquifer and the clay lenses, the Raritan clay and the importance to stop the permeation from one aquifer to the next, specifically from the Magothy to the Lloyd. In your study and I'm assuming you've read the data that I've read, but can you speak to us to confirm that the underflow of the aquifer system reaches the Great South Bay?

MR. SCHUBERT: Well, all fresh water on Long Island under natural conditions ultimately seeps out to streams or discharges directly to the surrounding estuaries or in some cases, water in the deepest aquifers percolates through those confining layers and mixes with salty groundwater above. And it all ultimately makes it way to the our marine surface waters.

Now when we withdraw water for human

purposes, whether that's drinking water or other needs, we will obviously either put it back in the ground or put it back in tide water. But ultimately all water, all fresh water on Long Island makes its way to marine surface waters.

ASSEMBLY MEMBER SALADINO: And when chemicals are mixed with that freshwater in the Magothy or the Lloyd that reaches the Great South Bay, the chemicals would reach the Great South Bay as well as that water?

MR. SCHUBERT: Well, we're fortunate in that we've got a very permeable and a relatively unreactive aquifer system. And that means that when water goes into our aquifer system, it doesn't pick up a whole lot of dissolved constituents, like some other parts of the country. That's the upside. The downside to it is that there often aren't many mechanisms to naturally attenuate contamination in our aquifer system. And so a lot of compounds move through it with little change or little reduction in their concentrations. We call that moving through the aquifer conservatively and that is the other side

to that coin. It's the challenge of it.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Mr. Saladino. Other questions from colleagues? I just have one more question. In North Central Nassau County there's a hole in the Raritan clay. Younger sediments, upper glacial sediments are in direct contact with the Lloyd, I understand; is that correct?

MR. SCHUBERT: Yes.

ASSEMBLY MEMBER ENGLEBRIGHT: How long would it take for rainwater entering this afternoon or tonight into the ground to enter into the Lloyd?

MR. SCHUBERT: I would think about it in terms of orders of magnitude. I would say in the areas that have the most direct communication with the overlying aquifers, where the confining unit is the thinnest or where it may be absent and replaced by younger sediments that are not as tight; they're not as low permeabilities, so they don't restrict the flow of water quite as much; we're probably talking on the order of a century. So perhaps just under a century to perhaps a

1 century or two in that extreme case.
2 ASSEMBLY MEMBER ENGLEBRIGHT: We don't
3 have a Smithtown clay type unit in that area or
4 do we?
5 MR. SCHUBERT: Well, in most of those
6 areas you actually do. Where the existing oldest
7 strata have been taken out, what you have in
8 place is typically the base is some coarser
9 permeable aquifers, materials which kind of
10 collectively refer to as the North Shore aquifer.
11 And then over those we have finer grain material,
12 which we collectively refer to as the North Shore
13 confining unit. And in many areas, that sandwich
14 of an aquifer overlain by a confining unit is
15 more or less at the same horizon as the Raritan
16 confining unit and the Lloyd. Not in all cases.
17 And so functionally in many cases it
18 serves the same purpose and has some of the same
19 opportunities and challenges as the Lloyd but
20 that's in a general sense. Locally there may be
21 areas where we've got conduits where water can
22 recharge much more quickly.
23 ASSEMBLY MEMBER ENGLEBRIGHT: I'm
24

remembering that when the wells were drilled prior to the construction of the Smith Haven Mall that there were 400 feet of periglacial lake clays found -- 400 feet. But it's uneven and there are discontinuities laterally.

MR. SCHUBERT: And that can confound water quantity and water quality management. Because obviously you're not going to get a lot of water supply out of those areas where you've got those fine grained materials that don't yield a lot of water. And it can also in some areas cause water to kind of mound up above it. We haven't had that issue in the last few years. It's been relatively dry. But we only have to look back to about 2010, where we had groundwater flooding and it was pretty unprecedented for many parts of Long Island.

We have parts of Long Island that were developed in the 1960's and '70s when groundwater levels were lower and we saw just how high groundwater levels could get. And that might be a little bit of a shape of things to come in the future with a rising sea level because the water

table is going to rise with that sea level, at least near the coast. It'll do so less so in inland areas.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you for your testimony.

MR. SCHUBERT: You're welcome.

ASSEMBLY MEMBER ENGLEBRIGHT: There is a general consensus among the Chairs for a five-minute break. And we will return with the third panel in five minutes, at 2:15 actually.

[WHEREUPON, A FIVE-MINUTE RECESS WAS TAKEN]

ASSEMBLY MEMBER ENGLEBRIGHT: We will resume at this time. And welcome to our third panel: Basil Seggos, the Commissioner of the New York State Department of Environmental Conservation, and Howard A. Zucker. Dr. Zucker is the Commissioner of the New York State Department of Health. And you have brought others with you. I see Dr. Wilson is here, Lloyd Wilson and others. So, I'm going to let you introduce who you have flanking you and then you will be sworn in by Mr. Gottfried. So, why don't we start with

Commissioner Seggos?

MR. BASIL SEGGOS, COMMISSIONER, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION: Good morning, Assembly Member Englebright.

ASSEMBLY MEMBER ENGLEBRIGHT: But don't testify yet. Just introduce who we have.

MR. SEGGOS: I am Basil Seggos, Commissioner of the DEC. And with me, to my right is Carrie Gallagher, who's our Region 1 Director and Martin Brand, who is our Deputy Commissioner for Environmental Remediation. I also have Ken Lynch, who's my Executive Deputy Commissioner, and Julie Tighe you know is Assistant Commissioner for Legislative Affairs.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you. Dr. Zucker?

MR. HOWARD A. ZUCKER, MD, JD, COMMISSIONER, NEW YORK STATE DEPARTMENT OF HEALTH: Thank you. Good morning -- good afternoon actually. To my right, I have the Deputy Commissioner Brad Hutton, who's been with me at the other hearings; and to my left Dr. Lloyd Wilson from the water team. And behind me

are members from the Center for Environmental Health.

ASSEMBLY MEMBER GOTTFRIED: Do you all swear again or affirm that the testimony you're about to give is true?

ALL: Yes.

[WHEREUPON THE WITNESSES, MR. BASIL SEGGOS, MR. HOWARD ZUCKER, MR. LLOYD WISON, MR. MARTIN BRAND, MR. KENNETH LYNCH AND MR. BRAD HUTTON, WERE DULY SWORN.]

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you all. Let us begin with Basil Seggos, the Commissioner of the DEC.

MR. SEGGOS: Good morning, Senator Hannon, Assembly Member Gottfried, Assembly Member Englebright, Members of the Senate and Assembly Health and Environmental Conservation Committees. My name is Basil Seggos and I'm the Commissioner of the New York State DEC. I'm here today with my colleagues Ken Lynch, Martin Brand, Carrie Gallagher and Julie Tighe. Thank you for the opportunity to discuss the critical water quality issues facing New York State today.

Ensuring access to clean water is one of the most important issues of our time. Long Islanders know this better than anyone. Here, with the sole source aquifer beneath us, water is life. Nitrogen pollution impairs our waterways, causes algal blooms and destroys tidal waterways. Our industrial past has left behind a toxic legacy impacting our environment and our water supplies. Climate change and sea level rise threaten our shorelines and could exacerbate water intrusion. Pesticides and fertilizers also jeopardize our drinking water. And the Island needs enough clean water to sustain its 2.8 million residents and its vibrant economy for manufacturing to farming to tourism.

Over the last five years we've had strong bipartisan leadership, cooperation and focus on the common fight to protect water resources on Long Island. Governor Cuomo, the DEC, the DOH, the Legislature, both County Executives, the many water districts, the business community and the environmental community have been uniquely and thoroughly

coordinated on the issue of water.

We've accomplished much but we continue and we must continue to work together to protect this resource for the future. I'm going to detail some of the critical initiatives we're working on. Last week we called upon the EPA to expand their UCMR program to cover public water systems with less than 2,000 people. Their current program requires only large public water systems to test for unregulated contaminants, leaving at risk the approximately 2.5 million New Yorkers served by small systems. If the EPA does not act, we will advance legislation to require all public water systems to test for unregulated contaminants, regardless of their size.

We also announced our intention to advance legislation to better serve the four million New Yorkers who rely on private wells for their drinking water. This bill will require the testing of private wells upon construction or sale and it will also require landlords to periodically test wells and disclose the results to tenants. We thank many of you in the

Legislature for your leadership on this and look forward to your partnership moving forward.

Today we're taking two new steps to protect Long Island water. First, we listed the Gabreski Air National Guard Base as a State Superfund site. I informed Suffolk County today that the DEC would pay for the County's work to connect 66 homes threatened by PFOS to municipal drinking water systems. The Air National Guard is committed to addressing contamination but they cannot move quickly enough. Until they step up, the State will fill that void and assist the community.

Second, I'm very excited to announce that we will be providing $5 million to SUNY's Clean Water Center for Technology to conduct research on removing contaminants from drinking water and to administer grants to water suppliers for pilot programs. This will expand the Center's focus into the critical field of toxic contamination and build upon the work that we're already doing to develop new technologies to address contaminants like 1,4-Dioxane.

As you heard today, nitrogen pollution is one of the biggest threats to water quality in Long Island. The main sources of nitrogen pollution are wastewater, polluted runoff and fertilizer. While many of the wastewater plants have installed nitrogen treatment systems and discharge limits; nearly 70 percent of Suffolk County's wastewater is managed through these 360,000 septic systems. And these systems do very little to remove nitrogen from wastewater.

To address this we're investing millions to upgrade outdated systems and hook more communities into sewer lines. In Suffolk, the Governor committed $388 million to advance four major sewer extension projects. Just last week, the County executed contracts for the design of these critical projects. We're investing another 40 million for the Bergen Point Wastewater Treatment Project.

Over the last three years, the Environmental Protection Fund has provided $5.5 million to support County Executive Bellone's Septic Upgrade Program. Suffolk County is

inventorying critical areas under a comprehensive plan. And the County is also funding 19 demonstration projects for new technologies.

In Nassau County, we spent nearly a billion dollars to repair the Bay Park Sewage Plant after Superstorm Sandy. But we're going further in order to prevent the impaired situation in Western Bays. We've committed over $155 million towards the diversion of treated effluent from the Bay into an outfall. This will build on Nassau County's commitment to install two separate nitrogen reduction systems.

The State must continue to invest in our water infrastructure to address the enormous Statewide backlog. The $400 million investment that the Governor and the Legislature have made in water grants is a critical first step. But the federal government needs to step up too. We call on the federal government to return to the level of investments they made in the early years of the Clean Water Act in the 1970's.

So we're not only investing in our infrastructure for today; we're proactively

planning for the future. DEC and our partners in the Long Island Regional Planning Council and Nassau and Suffolk Counties are working on the Long Island Nitrogen Action Plan, or LINAP, and you've heard about that today. And we're doing this thanks to the $5 million provided by the Legislature. And together we're building out the full scope of the Plan and prioritizing short-term projects to advance its goals.

We've invested 3.5 million in EPF funds into the Center for Clean Water Technology. The Center is focused on developing and commercializing affordable, reliable and effective onsite wastewater systems to reduce nitrogen. The Center is leveraging these State funds to apply for National Science Foundation grants. As I mentioned earlier, we'll be dedicating new funding to the Center to expand its scope into contaminant research.

Working with USGS, the Governor, along with many of you, launched a comprehensive Long Island groundwater study. This $6 million 5-year study will examine saltwater intrusion,

groundwater flows, contaminant transport and sustainable aquifer yields for potable water supplies.

The result will be a groundwater flow model, which is the international standard for understanding and managing groundwater impacts. We've made tremendous progress already. And as USGS testified, we will be providing regular updates as the study advances. I'm grateful for the leadership of Senator Martins and Assemblywoman Schimel, who have long advocated for such a study.

Pesticides also threaten Long Island's drinking water. Working with partners including Cornell Cooperative Extension in 2014, we adopted the Long Island Pesticide Pollution Prevention Strategy and are implementing its recommendations. The goal is simple: develop best management practices in pesticide pollution reduction strategies.

Our initial focus has been on three pesticides found in groundwater. We've conducted and extensive education outreach program to share

the best management practices, replacement treatments and promote alternative pest control strategies with over 2,000 growers, distributors and associations.

Recent monitoring indicates that groundwater conditions have improved from a decade ago, with these pesticides detected infrequently and at very low concentrations. Using $200,000 per year from the EPF, we're building on Suffolk County's groundwater monitoring to include Nassau County. Sampling for all types of pesticides is being collected from over 300 wells across the Island and this will help us measure the success of our program.

Certain commercial operations also are threatening our groundwater. DEC has proposed to regulate mulch operations for the first time. The mulch industry plays an important role for the local economy and the environment. But runoff from these facilities can endanger local water supplies.

Illegal dumping also is another major problem for Long Island, particularly concerning

construction and demolition debris, as we saw at the Roberto Clemente Park in Islip. We are aggressively pursuing illegal dumpers. And we've also proposed to strengthen regulatory requirements for these waste transporters.

Contamination from hazardous substances is indeed a major threat to the environment. As we discussed last week, the recent finding of PFOA and PFOS in drinking water prompted the Governor to establish the Water Quality Rapid Response Team, co-chaired by Commissioner Zucker and myself. DEC is actively responding to PFOA and PFOS contamination around the State, including right here in Westhampton near Gabreski Air National Guard Base.

When the Rapid Response Team reviewed EPA's UCMR data, we learned that several public water supplies near the Base were tainted with PFOS. The Suffolk County Water Authority had already moved to take impacted wells offline and install treatment systems in late 2015 and early 2016.

After designating Gabreski Airport as a

potential Superfund site in July, DEC immediately mobilized contractors to test soil and groundwater at the site. The County then moved to quickly test nearby wells -- private wells, out of an abundance of caution. Because of today's Superfund designation, the State will now pay to connect impacted and threatened private well users to the municipal supply free of charge. We expect the Air National Guard to reimburse the State for those costs. But we refuse to wait for the federal procurement process to play out.

As part of the Rapid Response Team, DEC initiated a Statewide review of former landfills, starting right here on Long Island. These landfills, closed prior to 1998 and 1988, have the potential to impact groundwater and drinking water supplies. We conducted preliminary evaluation, including 85 landfills in Nassau and Suffolk.

Nassau County is also home to one of the State's largest if not the largest and most significant hazardous waste site in the State: the U.S. Navy-Northrup Grumman Superfund site in

Bethpage. The Grumman groundwater plume is over a mile wide and three miles long. Cleanup has been moving at an unacceptably slow pace. And since becoming Commissioner, I have pushed the Navy and Grumman to expedite the cleanup of this massive plume.

Last month we announced that we have begun the process to pursue a natural resource damage claim against these polluters for the harm they caused our environment and our communities. Also last month we released an independent study on the feasibility of hydraulic containment of the Grumman plume. And I want to thank Assemblyman Saladino and Senator Hannon for the legislation requiring this study. We're grateful that Senator Hannon was able to secure funding for its completion.

Given the magnitude and complexity of this issue, I want to make sure the public had an opportunity to comment on the report. That comment period closed Friday and we are now reviewing those comments. Soon, DEC will take the next major step in this remediation. Make no

mistake: New York taxpayers should not and will not be on the hook for any part of this cleanup.

New York has one of the strongest sets of environmental protections of any state in the U.S. We have robust laws to prevent and regulate the discharge of pollution: the Clean Water Act, the Environmental Conservation Law, the Research Conservation and Recovery Act. We also have laws to regulate how much water is used from the Long Island Well Drilling Law to the very stringent limits on using the Lloyd aquifer to the water withdrawal of 2012.

We're also the envy of most states and the federal government to have such an advanced remediation law in the State Superfund, as well as the Brownfield Cleanup Program. And we thank you for your work on that. We're also fortunate that the Governor and all of you over the last six budgets have secured near record environmental funding through the $300 million EPF, the $400 million Water Infrastructure Improvement Act and another billion dollars for Superfund; not to mention $120 million for New

York Works, which is helping to improve our State. I offer sincere and continued thanks to Senator O'Mara and Assemblyman Englebright and the entire Legislature for their leadership on these programs.

After strong laws and robust funding comes enforcement. We must do all we can do to educate our businesses to ensure compliance. But when something goes wrong, we'll enforce the law vigorously. Lastly, effective management is the lynchpin. Through the Water Quality Rapid Response Team, we are improving the ways in which the DEC, the DOH and other State agencies coordinate and respond to water pollution incidents around the State. Within my own agency, we're tearing down silos and building cross-divisional teams to address contamination, namely in the divisions of water and environmental remediation.

Working together with you, the County Executives, all local leaders and all stakeholders, I'm confident that we will be able to tackle these difficult water quality concerns

for all New Yorkers and all Long Islanders. We must do this now, as the health of our residents, our environment and our economy depend on it. Thank you for the opportunity to testify.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Commissioner. Dr. Zucker?

DR. ZUCKER: Thank you. Good afternoon, Chairpersons Hannon, Gottfried and Englebright and Members of the Health and Environmental Conservation Committees who are joining us here today. I am pleased to be here to discuss New York's aggressive approach to monitoring for and eliminating contaminants in our drinking water in Long Island and around the State. Access to clean drinking water is one of the defining issues of our time. The development of clean drinking water enabled the growth of cities, reduced mortality and is one of the greatest public health accomplishments in history.

At the same time, the rapid rise of manufacturing created the economic success of our State and of our nation, employing citizens, enabling us to provide for our families and

building our country into a powerhouse. But it has also left us with a trail of significant environmental pollution, the consequences of which we are only just beginning to understand.

Over the past two weeks, I have testified twice before the Legislature to present the way the federal government regulates or does not regulate contaminants in drinking water and how the State enforces these guidelines. Today, I am going to focus on how the Department of Health identifies contaminants and reduces and eliminates exposure in the water supply. I will also discuss the specific water quality issues Long Island is facing.

Across this State our proactive, complex multi-barrier system ensures water quality and removes regulated and unregulated contaminants. Its central components are: one, the source of the water; two, the pumps and pipes that convey the water to the treatment plant; three, the treatment plant; and four, the distribution system which often includes water storage facilities.

As water moves through the system from the source to your tap, built-in protections are at work. Disinfection removes microbes and biological contaminants. Corrosion control measures, such as adding orthophosphate, reduced lead leeching from lead service lines and internal building plumbing. Minerals are removed for taste and color. As we all now know, filtration systems such as granulated activated carbon -- GAC, are used to remove chemical contaminants.

Here on Long Island, surrounded by beautiful shores on three sides and New York City on the fourth, we have two county health departments and multiple public water systems serving residents. Long Island has a unique geography: a sole source aquifer, a highly sensitive ecosystem and natural intrusion of saltwater. And also it has a long history as the home base for military operations and a rich history of agriculture that includes extension use of pesticides and fertilizers.

In addition, dependent upon a sole

source aquifer presents unique challenges to the Island. That's why the Department works closely with the Department of Environmental Conservation and the local health and water entities to protect the drinking water, reduce or eliminate contaminants and respond to Long Island's specific challenges.

When we discover an organic or inorganic compound in the drinking water, it's a red flag. And it signals to us that we must spring into action, immediate action regardless of the level of contamination. The action is always the same: We seek out the source of the contaminant and we take action to fix the problem. Sometimes it means connecting to a different well or at another location or drilling a new well. But that is not always an option, especially in Long Island given its unique geography. Thus, treatment of the drinking water using state-of-the-art water treatment technology is a must.

But technology changes so quickly that even filtration methods that today might be the most modern, top-of-the-line systems on the

market will not be effective in addressing all of the emerging contaminants we're facing and we're learning more about them every day.

For instance in Hoosick Falls, the village in Upstate New York, received millions in State funding to upgrade their filtration system in 2009; only to learn later that the new system would not remove PFOA, a contaminant which was discovered in the water supply years after the system was installed. On Long Island, some contaminants such as 1,4-Dioxane are not easily treated by existing systems. So we need to explore the newest innovative developments in technology to ensure we're being proactive in addressing these challenges.

That's why Governor Cuomo today announced a significant investment in Long Island's economy in the future treatment of its drinking water. This is an investment the whole State will benefit from: $5 million for SUNY Stony Brook Center for Clean Water Technology to develop state-of-the-art treatment systems to address emerging contaminants in drinking water.

These funds in addition to the $3.5 million from the Environmental Protection Fund that the State previously committed to support the Center for Clean Water Technology will allow the Center to continue to develop new technologies to improve both drinking water and wastewater quality on Long Island and throughout this State through grants for water supplies, to develop and conduct pilot projects to test cutting edge contaminant filtration and treatment technologies; research needed for the development, evaluation and advancement of these technologies and the commercialization of viable technologies to create economic development opportunities for the region and the State.

Through partnerships like this, New York is leveraging technologies to stay ahead of emerging water quality issues. Last Friday, my Department informed the Suffolk County Water authority that it will approve the use of an advanced oxidative process or AOP and this is a cutting edge drinking water treatment technology to remove 1,4-Dioxane. This unregulated

contaminant has historically been used in industrial solvents on Long Island and is not readily removed by traditional water treatment technologies.

Use of AOP for drinking water and other developing technologies means that our treatment technology systems will begin to catch up with our ability to monitor, to detect and to identify unregulated contaminants. Perhaps one day our water treatment technologies will be able to remove contaminants before we even know they are in there. Thanks to our partnership with groups like the Center for A Clean Water Technology, it's possible. As we continue developing these new technologies, my Department will continue to emphasize monitoring and testing of drinking water for contaminants because this along with the treatment and action is the cornerstone of our drinking water system.

New York is a national leader in testing and monitoring. Our Wadsworth Lab up in Albany is one of the most sophisticated in the nation. Wadsworth Lab developed a testing methodology

used in Vermont for PFOA and continues to receive requests from the Federal Centers for Disease Control and Prevention and other states to test their drinking water for them.

As you heard from Commissioner Seggos, another way we are staying ahead of these challenges is through the Water Quality Rapid Response Team that was established by Governor Cuomo in February. This multi-agency effort co-chaired by Commissioner Seggos and myself was established to quickly identify and address critical drinking water contamination concerns in our communities.

The mandate is simple and it's important: First, we are developing a comprehensive action plan to enhance the State's existing drinking water, groundwater and surface water protection programs. And second, we have established protocols to enable us to immediately and effectively address site-specific water quality issues wherever they arise.

The Water Quality Rapid Response Team has identified several communities in Suffolk

County with PFOA and/or PFOS levels of potential concern. In Westhampton Beach, the UCMR showed data that PFOS has been detected in public water supply wells near the Gabreski Air National Guard Base. And the wells in question were taken offline. However, this data suggests that there might be more widespread contamination in the area; so DEC listed Gabreski as a potential Superfund site in July and the County began sampling nearby private wells just weeks later.

My Department provided technical assistance throughout this process and commends Suffolk County for their swift action. And today, Commissioner Seggos officially listed Gabreski as a State Superfund site. And the State will now be holding the Department of Defense responsible for funding the connection of impacted private wells to the public water supply. If DOD fails to comply, the State will cover these costs and seek reimbursement from the responsible party.

In addition due to the relentless efforts of the Department and my colleagues at DEC, local, state and federal officials, water

distribution representatives and community members; Northrup Grumman has committed to aggressively implementing and completing remedial activities by 2017 to address a host of hot spots of groundwater contamination in Bethpage Water District Plant 4. We along with the residents are pleased that remediation has finally begun.

And the Department will continue to work with the County and representatives to actively monitor the public and private water supply. Last week we announced that the Administration will advance legislation to require the sampling of private wells upon construction or property sale. This legislation will also require landlords to sample wells and inform renters of the results.

It is important to note while we are here in Smithtown that Suffolk County is one of the few places that has local regulation for private wells and has worked collaboratively with my Department and DEC to connect homes on contaminated private wells to the public water supply. Over the past 20 years the Department and the Environmental Facilities Corporation have

provided hundreds of millions of dollars in financing to more than 150 projects.

I wish to turn for a moment to other types of water issues that Long Island experienced along with the rest of the State. On July 6, 2016 the Department's permanent regulations to reduce Legionella risk through the registration, maintenance, monitoring and inspection of cooling towers and to monitor and address Legionella risk from premise waters in hospitals and nursing homes went into effect.

So as you recall, the Department issued emergency regulations in August of 2015 in response to the 138 cases of Legionella, which was identified in the South Bronx. Since then the Department has been promoting cooling tower registrations, improving coordination between the State and local health departments during investigations and expanding education, technical support and surveillance efforts.

Also, as we all know, children's growth and development are affected by lead; particularly when there's lead poisoning. Lead

has been identified in fixtures in 20 percent of Long Island's schools. And last week Governor Cuomo signed landmark legislation and we issued a regulation that will help fix that problem and protect children from lead poisoning by requiring all school districts in the State to test by the end of October.

Together the initiatives Commissioner Seggos and I have spoken about today and over the past two weeks amounts to the largest annual investment in water infrastructure of any type in any state in the nation. The purpose of all the actions we've outlined and all the funding the State is providing is to find the next emerging contaminant sooner, identify the sources more quickly and eliminate it faster. And whether it's a regulated or unregulated contaminant, a bacteria like Legionella or a metal like lead; we are committed to identifying it and getting it out of New York's drinking water. And I will repeat that: We are committed to identifying it and getting it out of New York's drinking water.

That is what we are doing here on Long

Island and what we are continuing to do to protect the residents of New York State. I hope we will look back at these hearings as turning points in our Statewide commitment to quality water. I look forward to answering your questions and thank you very much.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Commissioner.

SENATOR HANNON: Commissioner Seggos, I just wondered what the program was that was the source of the funding for the Stony Brook contaminant study and how it fits into an overall program in the State?

MR. SEGGOS: Right. Well, this year for certain the money we've identified will be coming from EFC.

SENATOR HANNON: Environmental --

MR. SEGGOS: Environmental Facilities Corporation.

SENATOR HANNON: And how is that -- is that an ongoing program? Is it going to be a one-shot? Are we going to review other sources of contaminants that will also fund from the EFC?

MR. SEGGOS: I think what we've looked at is EFC's capable of handling certainly this year, our commitment this year right out of the box. We get into an annual contribution; we would look to either return to EFC or come up with some other means. But we have more than ample funds at EFC to handle this.

SENATOR HANNON: What would be the total amount that we have available from EFC?

MR. SEGGOS: We're making a $5 million commitment and that will be spread over several years.

SENATOR HANNON: The significant thing that we did in the Legislature this year was to increase the EPF -- the Environmental Protection Fund to a level of $300 million a year -- $400 million a year.

MR. SEGGOS: Three hundred -- unless you have $100 million of new money, which is great.

ASSEMBLY MEMBER ENGLEBRIGHT: Just wishing I guess. Go ahead.

SENATOR HANNON: I'm more concerned with though we've added a number of different

enterprises this year prior to this hearing: things like the pesticide prevention, open space land acquisitions, smart growth; continued the Pine Barrens Commission, continued the South Shore Estuary Reserve; the Peconic Bay Estuary Program was new. These are exciting things and I know that past there were budgetary constraints but now we are trying to endeavor to address them. But I'm more interested also in getting in a relatively quick fashion a sense of the turnaround: What are the difficulties in getting the money out the door? What are the chances of success?

And the reason for a quick turnaround is we're already in regard to forming the budget for next year. It's supposed to be adopted by next April 1. But we know that conversations of that are starting. Probably you've already started; you've already probably gotten a call letter from the State Division of the Budget. So, I'm wondering to what extent can we get some early view as to our success or lack thereof in any of these different endeavors?

MR. SEGGOS: Well, Senator, we'd be happy to share with you updates on all of our spending in EPF. We've had a robust year. We've as you noted lost a number of very critical projects within the EPF, many of them here on Long Island. So, we'd be happy to share detailed reports on where we are with all of those lines.

SENATOR HANNON: Okay. I'm sure the Members of the actual Environmental Committee would be severely interested in it.

MR. SEGGOS: They would.

SENATOR HANNON: I switch to Commissioner Zucker. We're into a whole new endeavor in regard to the policy we with discuss with water. It used to be we talked about hospitals and nursing homes and home healthcare and Ebola and Zika and you remember those calm nonviolent things.

I thought that your announcement today about informing the Suffolk County Water Authority of a new process to deal with 1,4-Dioxane is a really important step. Because that ingredient again it's a contaminant but it's not

a scheduled contaminant and yet has been pretty thorny. But maybe you could talk about what about what is this AOP process that your Department has approved?

MR. ZUCKER: Sure. So the details, I'm going to ask Lloyd to just give you the details of the actual process of how this advanced oxidative processes work. Lloyd?

MR. LLOYD R. WILSON, PH.D., RESEARCH SCIENTIST, BUREAU OF WATER SUPPLY PROTECTION, NEW YORK STATE DEPARTMENT OF HEALTH: I'm going to bring in Dr. Sokol as well because he's worked more directly with it. But basically this has been a joint effort, working with our engineers and with the Suffolk County Water Authority. They ran a pilot test of it to see if it would work and it did. And so now we're moving onto the next phase. And it's basically adding hydrogen peroxide and some energy to the water. And through those additions you get oxidation of the 1,4-Dioxane.

The concern is any time you add a new treatment you got to make sure that you don't do

1 something inadvertently that's harmful. And so
2 one of the things that we've been concerned about
3 is: Well, if we destroy the 1,4-Dioxane, what
4 happens to it? What does it form through the
5 oxidation process? And so that's some of the work
6 that's been going on through this evaluation. But
7 we're expecting to go to a much bigger system to
8 get it up and running.
9 ASSEMBLY MEMBER ENGLEBRIGHT: Doctor,
10 could you state your name for the record and do
11 you swear or affirm that the testimony you're
12 about to give is true?
13 MR. ROGER SOKOL, PH.D., DIRECTOR, BUREAU
14 OF WATER SUPPLY PROTECTION, NEW YORK STATE
15 DEPARTMENT OF HEALTH: Roger Sokol and yes, I do.
16 ASSEMBLY MEMBER GOTTFRIED: Okay.
17 [WHEREUPON THE WITNESS, MR. ROGER SOKOL,
18 WAS DULY SWORN.]
19 MR. WILSON: What Dr. Wilson explained
20 is correct. What's unique about this I think as
21 he said is the formation of what we call these
22 free radicals. So essentially by adding hydrogen
23 peroxide and the energy that Dr. Wilson talked
24

about is actually UV light; what's unique about this is that while this AOP is really not new in the sense for remediation but it has really never been used in drinking water before.

There are a couple other examples across the country where this was used. But this would be the first time here in New York State that this will be approved for the use in a drinking water system. And like anything else, I think as Dr. Wilson was explaining, with the development of any sort of process you start on a very small scale, what we would call a bench scale, sort of in the laboratory. And this is why the Center that we heard so much about is going to be very important to start advancing more technologies like this.

We move from the bench scale to a pilot scale. And what's unique about now what we're just getting ready to approve is what we call a demonstration scale; where this will now actually be installed on a single well within the system. And they will actually be producing water that will be delivered to residents. So that is a very

big milestone achievement I think.

And really a lot of the credit goes to the Suffolk County Water Authority. They're the ones that were taking this initiative. They're the ones that went through the piloting of this. And again on our end, making sure that all the regulatory processes are in place; the appropriate monitoring and quality control will be there. And so this really was a large joint effort with really the Suffolk County Water Authority in the lead and with our partners in Suffolk County as well trying to move this forward.

SENATOR HANNON: Do I presume this will either shorten the amount of time to clear the water or maybe even reduce the cost, where this 1,4-Dioxane has polluted the water?

MR. SOKOL: Well, I think this demonstration project is going to help answer some of those questions. My understanding is is that this can be a quite costly sort of treatment, especially in terms of the energy consumed. As I said, in order to create these

free radicals, they have to use ultraviolet light and an ultraviolet light reactor, which does consume quite a bit of energy. So these are some of the I think answers that will be answered hopefully through this demonstration scale project.

SENATOR HANNON: Thank you. Now Commissioner Zucker, just a little bit before that in the testimony you talked about grants for water suppliers to test projects, cutting edge contaminant filtration and treatment. Is that the same as this AOP?

MR. ZUCKER: Right.

SENATOR HANNON: Because I was also interested in the types of solutions to address what Supervisor Romaine had addressed, which was talking about the number of cesspools which pollute the drinking water. And that's a particularly thorny political problem because those cesspools are usually owned by private homeowners.

MR. ZUCKER: That goes back to the issue of private wells on property. And so we're going

to tackle all of this. And if there's something that comes up, again the Water Quality Rapid Response Team would go out there if we identify something.

MR. SEGGOS: And I can add a little bit of color for that, Senator. We've already funded the same Center we're talking about here on the toxic side. We've funded already $3.5 million for septic research. So in fact the Center for Clean Water Technology is already working with Suffolk County right now and the Town of Southampton to pioneer some of those early R&D projects on septic research. That's been two years in the making.

SENATOR HANNON: I want to bring up another topic totally different; one we are familiar with from a previous hearing and that's Stewart and Newburgh. Maybe I could ask either of you? I notice that you've declared Gabreski as a Superfund site. Is there any thought to trying to address what we're doing at Stewart to help out? Because we heard some eloquent testimony by the City Manager of Newburgh last week, really

overwhelmed by the challenge they have to get a water supply restored for their community.

MR. SEGGOS: Well, I can tell you that while we moved today on Gabreski here in Long Island, we had moved early August up in Stewart with a similar Superfund designation. By that point, by the time we got around to listing the facility as a Superfund site, we'd already started transitioning the City, as you probably heard from the City Manager, away from Lake Washington, which was contaminated with PFOS and still is, over to the New York City aqueduct, which happens to go near the City. So, we've already made that shift over.

We're also at the same time building, using Superfund and really using State resources; we're building a granulated activated carbon system to be online and ready in the event that the Catskill aqueduct, the City system ever goes offline. So the City will have clean water no matter what and they do right now because the Catskill aqueduct is flowing.

SENATOR HANNON: And then Commissioner

1 Zucker, because you know I'd ask this question
2 again on behalf of Senator Larkin who has called
3 me twice since the last hearing, in regard to the
4 request to have the blood testing of the
5 residents of that affected area?
6 MR. ZUCKER: So, since the last hearing
7 I had an opportunity to sit down or to talk with
8 the head of the ATSDR -- Toxic Substance and
9 Disease Registry down at the CDC. And his team
10 and our team had a nice conversation about this
11 and how to move forward. We're going to move
12 forward quickly on this. But the questions that
13 we need to answer is the primary objective of
14 future efforts that we will put forth on: How to
15 monitor this to look at what frequency follow up
16 testing would be indicated and obviously the
17 issues of cost while we pursue reimbursement from
18 the responsible party?
19 So we were discussing this at length.
20 And I would be happy to share more once we settle
21 on that. But there's efforts being made to
22 identify the best steps forward.
23 SENATOR HANNON: Well, on behalf of
24

Senator Larkin, he wants to have a yes; so that the testing will occur. And then of course that yes would hopefully be far sooner than just immediate. So, it's a formal request. Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Senator. Assemblyman Gottfried?

ASSEMBLY MEMBER GOTTFRIED: Dr. Zucker, I have a somewhat different question on AOP or the approval of AOP. What is the Department's role in, quote, approving AOP? By law does a treatment process have to be approved by the Department or what's the legal set up there?

MR. ZUCKER: Roger, do you want to answer?

MR. SOKOL: Very simply, sir, is that any changes to a water treatment plant need to be approved by the Department.

ASSEMBLY MEMBER GOTTFRIED: Okay. And is that in statute or is that a regulation?

MR. SOKOL: That's in regulation.

ASSEMBLY MEMBER GOTTFRIED: Yeah, in regs. Okay. Thank you. Commissioner, you referred in your testimony to the notion that these

hearings may reflect a turning point. And I don't know whether it's the hearings or just the things that have happened in the last I don't know six or eight, nine months. But I do sense in the way the Health Department has reacted to the Newburgh situation and the Gabreski situation and your comment about springing into action if a contaminant shows up regardless of the level of that contaminant; this seems to me a very definite and welcome change in approach. And, A, I would hope that's correct and, B, I do think it would be useful if this in the coming Legislative Session, if some of this gets crystalized into legislation.

MR. ZUCKER: I hear you. But I think the Department always springs into action on any issue that surfaces. I mean, we've sprung into action on issues of Ebola up front before there were any patients or a patient in New York. Similarly with Legionella, we sprung into action. And the environmental health team has worked very hard on some of the issues of algae blooms. And I can go down the list: fracking and many other

1 things that we lead the country on. And we'll do
2 that here with water as well.
3 ASSEMBLY MEMBER GOTTFRIED: Okay. And
4 just finally, there are still some open issues
5 about information that we've asked for. But I
6 think it's probably easiest if we discuss that
7 after the hearing.
8 MR. ZUCKER: Okay.
9 ASSEMBLY MEMBER GOTTFRIED: Thank you.
10 ASSEMBLY MEMBER ENGLEBRIGHT: Mr.
11 Thiele?
12 ASSEMBLY MEMBER THIELE: First of all, I
13 think I can confirm what Assembly Gottfried --
14 what Chairman Gottfried had said in that I just
15 wanted to take some time to commend the
16 Department of Environmental Conservation and the
17 Department of Health as well. I know he was
18 wandering around out there somewhere but also
19 Peter Scully from the County Executive's Office.
20 I represent Westhampton and the Gabreski
21 area and I just want to say how thankful and how
22 impressed we were with how quickly all of the
23 involved government agencies acted with regard to
24

this particular situation of contamination. Not only was it quick but it was also very, very transparent. And I think all of this goes much, much better when elected officials and the public have the information as to what's going on in the community.

Again Suffolk County, DEC, Department of Health, it was really much appreciated how this was handled. And I know you don't always hear that; having been in Albany last week. So, I wanted to say that this new Rapid Response effort is something that I think is working very well and I agree should probably be institutionalized perhaps with legislation.

I had a few questions with regard to Gabreski. And that is certainly the fact that now by declaring a Superfund site, that will -- to use a bad pun -- will open the tap for funding to get the water mains done. My question is: How many homes are going to be connected? What's the cost? And what's the timetable? How quickly can homeowners expect that they'll be able to be hooked up to the public water?

MR. SEGGOS: Well, Assemblyman, it's actually a small handful of homes that are actually seeing hits. But the total universe of homes that we will be connecting will be about 66. So, we're not taking any chances. We're going to hook them all up. Suffolk County is already planning for it. I can let Martin detail or Carrie detail the actual timeframe but it's going to be quick. I think the point of our announcement today is the State's going to step in because the federal procurement process simply just takes too long. So, we're lucky to have Superfund. We're lucky to have a County that's working really well with us; that can get the project rolling very quickly. So, we'll make a demand on the feds. If they step up in the next five days or ten days, great. If not, we'll pay for it now. Then we'll hold them accountable for those dollars.

ASSEMBLY MEMBER THIELE: This is something that hopefully would happen during the current construction season before winter --

MR. SEGGOS: Very shortly.

MR. ZUCKER: Yes, sir, we're going to take advantage of Suffolk County and the Suffolk County Water Authority's existing contractor capability. And they've discussed that with us and they think they can mobilize contractors almost immediately upon getting word they can start the work. I also want to commend you and the Governor for the $5 million for the Water Technology Center. So much so that I'm going to urge the Chairman of the Committee to schedule a hearing again next week so you can make more announcements.

MR. SEGGOS: We're coming.

ASSEMBLY MEMBER THIELE: But just on this, I'm glad to see that the original focus of this Center when it was really the brainchild of former Southampton Town Supervisor Anna Throne Holst was particularly to look at nitrogen removal and new technologies for septic. But the idea now of expanding this to look at emerging contaminants I think is an outstanding expansion of the original idea of the Center.

Not only that, I mean, obviously there

is grave environmental issues and problems that hopefully new technology can help to solve; so from an environmental point of view, very important. But also from an economic point of view, I know that Supervisor Throne Holst's idea was perhaps that this would generate incubators and new jobs for these new technologies that hopefully will provide a great deal of economic development for Long Island. So, I'm pleased to see the level of commitment.

I just had one last question. And that is that when we had the local government panel up here and also from my own experience when we were looking back before the money was appropriated for the Long Island Nitrogen Action Plan; one of the questions that came up during then was: Well, who's going to do this Plan, number one? And then this morning I think it was Supervisor Romaine or somebody mentioned that maybe there needs to be some sort of czar or Long Island water czar.

Now with the existing nitrogen study, the DEC is partnering with the Long Island Regional Planning Council and that's how this is

being done. But as we go forward, I mean, I guess my first question would be: Do we need a single entity responsibility to provide accountability as to whether or not we are implementing this and are we having success? And second, should that entity be the DEC or should there be a separate entity that's created to do that?

MR. SEGGOS: That's a good question. I'll tell you this. As I mentioned in my testimony I think, we are fortunate right now to have some of the strongest laws on the books. And that's been very effective in the last 40 years in keeping the State protected. We have two agencies right now that have been charged with protecting our water in one way or another, between Dr. Zucker and I have sort of overlapping jurisdictions in some places; but very thorough protections.

And as we heard this morning, we've got plenty of local protections, local bodies that cover these things. I think the point of the Rapid Response Team and what we're doing right now as we go through one issue after the next and

sort of hone our efficiencies even further; I think we're at the point where our agencies frankly with the laws that we have are close to where we need to be in order to ensure for the protections.

Now that's not to say that work isn't done; it obviously isn't. We've got a USGS study that we're just launching this year. We've got the LINAP that's underway. We've got the pesticide strategy. We've got $400 million that we're rolling out through wastewater. I think the point is we have the tools right now. I think you clearly see from what we're doing we have the will to carry it out. And I can just talk about Rapid Response Team go beyond that, looking at efficiencies between agencies, which is very important. And frankly the Governor's been doing that since day one: breaking down silos between agencies.

I'm also breaking down silos within my own agency. You know, I don't say that lightly because I don't want to get in trouble when I return to my office. But there are certain silos

that just happen over time within agencies and my approach is one of a team focus: make greater use of regional directors, strip apart divisions to a degree and let them work as teams a bit better.

That's borne out significant results already this year. We noted Gabreski, how quickly that came together. Noted Stewart Air Base in Region 3; that came together very well. And I think that's a part of us picking things apart and putting them back together as they should be. That was a bit of a longwinded answer. I'll leave it to others to determine whether or not there should be one. But I think we could do it with what we have.

ASSEMBLY MEMBER THIELE: Okay, thank you.

MR. SEGGOS: Thank you.

ASSEMBLY MEMBER THIELE: Thank you, Mr. Chairman.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Mr. Thiele. Legislator Kavanagh?

ASSEMBLY MEMBER BRIAN KAVANAGH: Okay, thank you. First, let me apologize, I'm a bit

1 under the weather; so this is going to be a bit
2 raspy and perhaps intermittent series of
3 questions. For Commissioner Zucker, I just wanted
4 to clarify in response to the question from our
5 Senate Health Chair, you said that you have
6 reached the CDC with respect to the question of
7 blood testing in Newburgh. My colleague, Senator
8 Skartados is not here today. But there is a
9 decision that there will be blood testing in
10 Newburgh?
11 MR. ZUCKER: So what I spoke to them
12 about is what the next steps on biomonitoring are
13 in general. You know, this is a big issue. This
14 is not just an issue for New York. It's an issue
15 across the country. And so we are looking at
16 what's the best way forward in how on a
17 population health level to monitor and figure out
18 what is needed and exactly what that information
19 will provide.
20 We're working on this rapidly and by
21 rapidly I mean this is not something that's going
22 to drag on for months. We're going to sort this
23 out and figure out where we are and to figure out
24

what the best steps are forward on biomonitoring in general. So I can't give you an answer specifically on the exact next step. But I could tell you that this is an issue that CDC and our State are working on closely.

ASSEMBLY MEMBER KAVANAGH: I'm not necessarily asking for the exact next step. But are you saying that there is not a decision whether there will be biomonitoring in Newburgh?

MR. ZUCKER: Well, the issue is that we need to turn to the CDC to find out exactly sort of: What is the objective? When we do biomonitoring obviously it looks at the exposure to PFOA. And we need to figure out exactly what the next steps are regarding: If we do sampling, how many people does one need to sample to understand what the exposure is? And we're working on that and we're working on frequency of follow up as well. So if somebody's been exposed -- it's brings back some of the other areas in the State; how often do you test for PFOA down the road?

ASSEMBLY MEMBER KAVANAGH: Okay. I

1 understand that all of stuff hasn't been worked
2 out. But what I'm hearing is you have not decided
3 whether to test the residents of Newburgh for
4 exposure to PFOA.
5 MR. ZUCKER: So what I'm saying is that
6 we're trying to get the guidance from our federal
7 partners about exactly what would be the best way
8 to move forward on biomonitoring in a community
9 that's been exposed to PFOA.
10 ASSEMBLY MEMBER KAVANAGH: So the answer
11 is we don't know whether we're -- just a quick, I
12 don't want to take up too much time; is it an
13 accurate statement that the State Health
14 Department does not know whether there will be
15 biomonitoring of the residents of Newburgh at
16 this point?
17 MR. ZUCKER: At this point in time we're
18 still looking at that, yes.
19 ASSEMBLY MEMBER KAVANAGH: Okay. And is
20 there a timeframe to make the yes; I mean, you
21 keep saying: we have to decide how to do it. We
22 have to decide what the frequency of follow up
23 is. There's a lot of decisions to be made. It
24

seems to me there's a threshold decision on whether you're going to do it. Is there a timeframe within which you expect to have made that decision?

MR. ZUCKER: Well, this is where we're working with our colleagues down at CDC to determine. you know, they have looked at this and they and us are trying to figure out what is the best step for sampling and to figure out exactly from a population health standpoint when someone's exposed to PFOA: how many people and what is the best step for our community in general on this? I know you're asking for a timing on this. But as I mentioned in the last hearing --

ASSEMBLY MEMBER KAVANAGH: I'm asking for a decision. I mean, Frank Skartados said that his takeaway from the last hearing is he has to tell his constituents that they may or may not get tested because it's unclear whether they've been poisoned enough. So, I understand that's not what you're today.

MR. ZUCKER: That's not correct. That's

not correct. I mean, what we're trying to do is look at this from a public health standpoint. And as we know that biomonitoring evaluates your exposure and we're working with the CDC to find out: Okay, how do we look at a community and determine about exposure? And that's something which we have to answer and obviously that's not an answer to be made rapidly.

ASSEMBLY MEMBER KAVANAGH: How long has it been since we determined that the water in Newburgh was contaminated with PFOA?

MR. ZUCKER: March.

ASSEMBLY MEMBER KAVANAGH: Okay, so March. So, we're talking about five months. Again, I'm not suggesting this is a decision that gets made overnight. But it's perplexing to a lot of people that there's no decision on whether; doesn't the level of PFOA decline in --

MR. ZUCKER: It has a half-life of two to four years, so PFOA. So if you monitor someone now and this is what we were talking about also with CDC: At what point is there a future follow up, the frequency of follow up?

ASSEMBLY MEMBER KAVANAGH: It doesn't seem that frequency of follow up needs to be decided in order to begin and do some baseline testing of some of the residents of the Town. I don't want to belabor this. But again, I think the Senator was suggesting that he and other Senators are interested in this and certainly myself and other Assembly Members are interested in a clear sense of what the standard is. And I understand you want to consult with other professionals. But it's been a long time now and it's surprising that there isn't a --

MR. ZUCKER: Let me just clarify one thing because we were mentioning PFOA. But it's the PFOS in their community and so that has a half-life of five to seven years. So, it's even longer than the period of time that we had before.

ASSEMBLY MEMBER KAVANAGH: And would it not be helpful to know what the level of exposure --

MR. ZUCKER: So that comes back to this issue of what I'm saying is that looking at a

population in a community to try to determine the exposure to the community. I understand the concern of one individual. But I think that we want to be sure that we have the correct science on this and I understand there's this sense of anxiety about it. I understand that. But I think it's important to recognize what the window of what we're talking about on a level that if you were to measure the level in September versus October, it's not going to suddenly be a difference. And let's look at the science and speak with our national colleagues on that. That's all.

ASSEMBLY MEMBER KAVANAGH: Right. But your testimony is that you may -- that the Health Department may decide that this should not be measured at all and that's very perplexing.

MR. ZUCKER: So the thing is that we still need to get more information about PFOA and PFOS on issues of biomonitoring. And we're working with others about that.

ASSEMBLY MEMBER KAVANAGH: Okay. Again, this is --

MR. ZUCKER: And I'm not sure -- I understand what you're asking. You're asking whether we are going to draw a sample from everyone in the community.

ASSEMBLY MEMBER KAVANAGH: No, I'm asking if you're going to draw a sample from anyone in the community, for starters?

MR. ZUCKER: Well, yes, when the CDC with ATSDR are looking; and that's what I'm saying about looking at population health to determine what samples and what do you need to do to determine in a community how to move forward on biomonitoring. At some point --

ASSEMBLY MEMBER KAVANAGH: So you are definitely going to do biomonitoring of the population of Newburgh?

MR. ZUCKER: So, I'm getting caught in some of the phrases here because if you look at it from the standpoint of what could be done in a different community; I don't want to go down the path of saying anyone could walk in and they will get a level of PFOS. I'm saying we would look at the community and we will talk with CDC to figure

1 out: How many people need to be sampled? How many
2 people you need to monitor to figure out, looking
3 at the population in general of what could be
4 done moving forward?
5 I want to be clear about this. I don't
6 want you to walk away and then say: Well, the
7 Department said that everyone in the community is
8 going to be sampled. We're working with our
9 colleagues to determine what is the best way
10 forward.
11 ASSEMBLY MEMBER KAVANAGH: I know. But
12 the best way for you -- you say you're getting
13 caught up in a phrase. what I'm hearing is you
14 haven't decided whether to test anybody at all in
15 Newburgh. If that's not correct, it'd be helpful
16 for you to clarify that. If you intend to sample
17 blood in some percentage of the population,
18 determine what that tells you about the situation
19 and then sample on an ongoing basis; it sounds
20 like you've decided to do biomonitoring. I
21 haven't heard you say that yet in the past 15
22 minutes.
23 MR. ZUCKER: What I'm saying is I don't
24

1 want to confuse what has been done in other areas
2 and have one think that everyone is going to be
3 monitored. Alright?
4 ASSEMBLY MEMBER KAVANAGH: I didn't ask
5 you if anybody's going to be monitored.
6 MR. ZUCKER: So, ATSDR has said that
7 they will move forward very soon with what the
8 strategy is for anyone exposed to PFOA or PFOS in
9 a community. And I asked them when and they said
10 relatively quickly.
11 ASSEMBLY MEMBER KAVANAGH: Could you
12 hazard a guess as what relatively quickly means
13 in this context?
14 MR. ZUCKER: Well, I spoke to them on
15 Friday and we will follow up with them. And as I
16 mentioned to the Committee on Wednesday, I said
17 that I will speak with them and we will follow up
18 them and I will follow up with them in the coming
19 week or two to find out where they are. They're
20 looking at the science on this. They're working
21 with us closely on that. So, I hope that helps
22 answer the question.
23 ASSEMBLY MEMBER KAVANAGH: Barely, but
24

I'll leave it there. I used to have in another life had an opportunity to do depositions, where people were paid by the hour and it could be very profitable for a lot of people.

MR. ZUCKER: Right. So I guess to the question, the answer: Yes, there will be biomonitoring. When? Soon. And how we're going to do this? I can't answer the specifics. Is that helpful?

ASSEMBLY MEMBER KAVANAGH: That's helpful and distinct from everything you said until just this moment. So I appreciate it.

MR. ZUCKER: Alright.

ASSEMBLY MEMBER KAVANAGH: Yes is a good answer. Okay. Let's leave it at that. Thank you. Commissioner Seggos, I also just want to follow up. I apologize for those who were not in the room last Wednesday. This may feel like a sequel of a film you didn't see the first installment of. But I want to just follow up on a conversation, a brief exchange we had about fracking waste. And I asked you whether fracking waste was being used for deicing roads anywhere

in the State and you said unequivocally no; and that anyone who's suggesting that is misleading people.

And I just want to follow up and make sure I understand the situation. There are websites, official websites that purport to track waste leaving Pennsylvania from their high volume fracking industry there, which we know is very robust. And those sites indicate that a great deal of waste from that industry is coming to New York and getting disposed here. Are you familiar with those sites?

MR. SEGGOS: I have not been on the websites but I'm familiar with it.

ASSEMBLY MEMBER KAVANAGH: Okay. And are you familiar with the fact that they assert that waste from that industry is coming into New York?

MR. SEGGOS: If I can, can I explain the industry and the issue of what comes into the State and what doesn't and how it's used? Because I think it'd be helpful.

ASSEMBLY MEMBER KAVANAGH: I would appreciate that.

MR. SEGGOS: So, New York State does not accept high volume -- the question was about road salt last week, brine and road salt. New York State does not accept brine from high volume hydrofracking from any state, much less Pennsylvania. So that's not happening, okay. There is brine used in New York from conventional drilling, which has been going on for a hundred drills, under the so-called beneficial use determinations. Those beneficial use determinations started to be issued in 2008 from the Department. That effectively allows for brine, which is one of the byproducts of this process, to be applied on certain Upstate roads.

ASSEMBLY MEMBER KAVANAGH: And just to clear, that is liquid that is deep within the earth that is being --

MR. SEGGOS: It's saltwater.

ASSEMBLY MEMBER KAVANAGH: It's saltwater?

MR. SEGGOS: Right.

ASSEMBLY MEMBER KAVANAGH: Meaning sodium chloride and water?

MR. SEGGOS: It's briny water.

ASSEMBLY MEMBER KAVANAGH: Can you talk a little bit more about what might be in that water?

MR. SEGGOS: Sure. Well, it's like rock salt, right. Rock salt we apply to our roads and brine is an alternative to it. They both contain sodium chloride. And the advantages of one, rock salt in one area might be one thing, brine in another. They are designed to reduce ice on the roads.

ASSEMBLY MEMBER KAVANAGH: I understand that. I mean, salt is a term that means; I mean, I'm concerned that I had a conversation last week that I got a one-word answer: absolutely, unequivocal no. So, I want to explore this. You're saying brine is chemically equivalent of rock salt?

MR. SEGGOS: Brine contains sodium chloride, which is effectively what salt is in its solid form.

ASSEMBLY MEMBER KAVANAGH: And a lot of things contain sodium chloride and we can spread

them on the roads. Are there other components of this liquid as it comes up from fracking wells?

MR. SEGGOS: Well, just so you're clear because the words are important: Fracking, there's conventional drilling and then there's high volume hydrofracking. So again, brine from fracking, like as we think of it in Pennsylvania, which is banned in New York, is not used here. Conventional drilling also produces brine, which is used in certain parts of the State.

ASSEMBLY MEMBER KAVANAGH: Right. So, then it is fracking in many cases; it's just not high volume hydraulic fracking --

MR. SEGGOS: Correct, it's conventional drilling.

ASSEMBLY MEMBER KAVANAGH: -- and not the horizontal method.

MR. SEGGOS: Right.

ASSEMBLY MEMBER KAVANAGH: So there's brine coming up from oil and gas drilling wells in New York, that is dried out and spread on roads? Or just spread --

MR. SEGGOS: It's still in its liquid

form. I don't want to get into the advantages of one versus the other.

ASSEMBLY MEMBER KAVANAGH: Actually, I'm not interested in the advantages honestly.

MR. SEGGOS: But I will tell you that it is important. You can put less salt on the road in its wet form. That's effectively all I know about it. When you put rocks down, rock salt, they bounce everywhere and you have to apply more. And that's the sum total of my knowledge on it.

ASSEMBLY MEMBER KAVANAGH: So, we have confidence that there are not toxic substances in this brine?

MR. SEGGOS: I don't know if toxic substance would be a word we would apply to it. It's salt effectively and salts contain natural minerals which are in some cases damaging to the ecology of the environment. I mean, we know that from our salt --

ASSEMBLY MEMBER KAVANAGH: And some of them are highly toxic.

MR. SEGGOS: Possibly.

ASSEMBLY MEMBER KAVANAGH: Cadmium, lead are naturally occurring minerals.

MR. SEGGOS: Possibly.

ASSEMBLY MEMBER KAVANAGH: Okay. So, do we have confidence that this --

MR. SEGGOS: Like dirt roads for example; I mean, dirt roads also contain minerals.

ASSEMBLY MEMBER KAVANAGH: Right.

MR. SEGGOS: Right.

ASSEMBLY MEMBER KAVANAGH: I'm just explaining why it's mineral and if it's natural it doesn't help me understand what's in it that much.

MR. SEGGOS: Right.

ASSEMBLY MEMBER KAVANAGH: Do we have confidence that we know what is in these fluids and we know that it is safe to spread them on roads?

MR. SEGGOS: We have a beneficial use determination, as I mentioned. So to obtain permission to spread brine from conventional well drilling in New York, you've got to go through

the beneficial use determination process. And it's an extensive process --

ASSEMBLY MEMBER KAVANAGH: And that involves testing the content of the fluid?

MR. SEGGOS: I'm not sure if it involves testing. At this point, we do an extensive scientific analysis of the what and the where and the volumes to determine if it's appropriate.

ASSEMBLY MEMBER KAVANAGH: Okay. And are there other products of the gas drilling industry that are coming from Pennsylvania into New York?

MR. SEGGOS: There is no fracking waste coming into New York. What is coming into New York is drill cuttings. So when you drill a well, whether it's for water or for monitoring or for fracking, the first step is to stick a drill under the ground and the byproduct of that is a big hole; so you got to move the dirt somewhere. What comes into New York is that dirt, the dirt and the rock. And it goes to four landfills in the Southern Tier, all strictly regulated landfills and all of them equipped with radiation detection equipment.

Because one of the concerns we always had was with any drill, any drill you stick in the ground and you pull up rock, it contains naturally occurring radioactive minerals or norm. That is expected. It's expected at background levels all over the place. We put in place the radioactive monitors to ensure we weren't seeing any exceedances, which we're not. And the material comes in and is effectively applied at these four landfills.

ASSEMBLY MEMBER KAVANAGH: And that's what would be commonly called cuttings?

MR. SEGGOS: Cuttings, correct.

ASSEMBLY MEMBER KAVANAGH: Okay. And there's nothing else besides cuttings that are coming from the oil and gas industry in Pennsylvania into New York?

MR. SEGGOS: We're not aware of any. I see where you're going with this.

ASSEMBLY MEMBER KAVANAGH: I'm just asking the questions.

MR. SEGGOS: There are definitional issues between what Pennsylvania puts on their

website and what's the reality of what's coming into New York. We see rocks and mud -- rocks and dirt coming into New York. There's no waste from the fracking process coming into New York.

ASSEMBLY MEMBER KAVANAGH: So-called drilling mud, what would that be?

MR. SEGGOS: Well, that's again when you create a well in the ground and you pull up rock, sometimes you pull up watery rock as well, like mud.

ASSEMBLY MEMBER KAVANAGH: And you are currently promulgating some regulations about various products of the industry and they call them -- you refer to production water and that's just the brine?

MR. SEGGOS: Yes. The Part 360 Regs you're referring to?

ASSEMBLY MEMBER KAVANAGH: Yes.

MR. SEGGOS: Yes, they're very extensive and that includes some of that.

ASSEMBLY MEMBER KAVANAGH: And the way you use the term fracking, you would define that not as fracking waste?

MR. SEGGOS: Well, high volume hydrofracking produces an enormous amount of waste. Right?

ASSEMBLY MEMBER KAVANAGH: Right.

MR. SEGGOS: So we're not accepting the waste from that process, other than the preliminary drilling dirt.

ASSEMBLY MEMBER KAVANAGH: And the 360 regulations also refer to flowback waters?

MR. SEGGOS: Right.

ASSEMBLY MEMBER KAVANAGH: And what are those?

MR. SEGGOS: Well, flowback water and I'm going to reach the limit of my technical knowledge soon on this, so I'm going to turn to Martin; but flowback water is what you put in the ground to help create the well after you've already drilled it. So the water will flow back literally to the surface. Which is one of the reasons why DOH and DEC saw such a significant problem with fracking -- the proposal to frack in New York years ago, because it produces such great volumes of water that has to be brought in

and then taken out. So that water is high volume hydrofracking water; flowback water is not being used or brought into New York State from Pennsylvania.

ASSEMBLY MEMBER KAVANAGH: And is it impermissible under current regulations to bring it in?

MR. SEGGOS: I believe so, yeah. I think the ban -- the effective ban between that and the Part 360 Regs would prevent it. If there was any flowback water that any producer wanted to bring into New York, they would have to apply and do a headworks analysis on that; which is effectively a scientific survey of the material before it's put into a sewage plant.

ASSEMBLY MEMBER KAVANAGH: But the 360 Regs are in place already?

MR. SEGGOS: We've had Part 360 Regs on the books for years. We're proposing amendments to those Regs to strengthen many aspects of --

ASSEMBLY MEMBER KAVANAGH: But isn't the amendment the thing that would add these particular elements?

MR. SEGGOS: I don't think so.

MR. MARTIN D. BRAND, DEPUTY COMMISSIONER, REMEDIATION AND MATERIALS MANAGEMENT, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION: Let me talk a little bit about that. So, there are existing regulations in place, the Part 360 Regs; the solid waste management regulations we've had in place substantively since the late '80s. As the Commissioner noted --

ASSEMBLY MEMBER ENGLEBRIGHT: Could you state your name again for the record please?

MR. BRAND: Sure. Martin Brand, Deputy Commissioner for Remediation and Materials Management for DEC.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you.

MR. BRAND: So there are already prohibitions in place for the high volume hydrofracking waste, for example, solid wastes that are generated from fracking and the production process waste. Anything that's concentrated in any of the residues from that process are already prohibited to be disposed of

in New York State landfills.

In addition to that, any liquid waste and the production wastes and the flowback waters from high volume hydrofracking are already prohibited under existing regulations. Now as the Commissioner noted, there are certain conventional drilling wastes that can go to landfills, such as drill cuttings. In the new regs, the Proposed Part 360 Regs, we're going to beef up some of those requirements. We mentioned already the use of production brines from conventional well drilling that can be used under the terms of a beneficial use determination on the roads. We're actually going to increase the requirements on that. Already they're tested. Those brines are chemically tested before we approve the BUD; so we know what's in those brines before we approve the beneficial use determination.

In the new regulations, we're going to add some additional testing in there and actually set limits on what can be in that brine. So there will be minimum amounts of certain things that

could be in there and there are going to be some maximum amounts of other things that can be in there. So the new regulations will go a little bit further than the current ones.

ASSEMBLY MEMBER KAVANAGH: But you are testing the components?

MR. BRAND: We are, under the beneficial use determination program for brines.

ASSEMBLY MEMBER KAVANAGH: And currently finding substances that you think exceed standards that you're expecting to put in --

MR. BRAND: If we find substances of concerns, we don't allow that brine to be deposited on the roads.

ASSEMBLY MEMBER KAVANAGH: But you're tightening those restrictions.

MR. BRAND: We are.

ASSEMBLY MEMBER KAVANAGH: So there are some things that are currently permitted that won't be permitted once you promulgate the new regulations?

MR. SEGGOS: Yeah, we're going to add to the list and add some definitive numbers to other

things.

ASSEMBLY MEMBER KAVANAGH: Okay. I think just in the interest of time and my colleagues here and this being the third of many panels, I'll leave it at that. But is fracking waste being brought into the State no? I think the answer to that question at the hearing the other day was based on a fairly narrow sort of legalistic reading of the word fracking.

MR. BRAND: Well, certainly regulations have definitions. So with our definition of what a high volume hydrofracking waste is, there's none of that accepted or allowed in New York State.

ASSEMBLY MEMBER KAVANAGH: I got it. But my question didn't say: Is high volume hydrofracking waste being used? I asked if fracking waste was being used and I was told: No fracking waste is coming in. I think you called them a production waste and other things. But in most people's minds what happens at a site where people are drilling and using fracking, the wastes from that process would I think commonly

be understood as fracking waste. And so just a fully answer last week would have been appreciated. But I think I'll leave it there.

MR. SEGGOS: I think your question was about brine, not about the whole industry.

ASSEMBLY MEMBER KAVANAGH: The question was about whether fracking waste was being used on roads and you chose to give a much broader answer than asked and said: No fracking waste at all was coming in from Pennsylvania and again when you drill a big hole for the intent of fracking and you're getting the gas and you're bringing stuff up and you bring it out.

Actually, one more question. You said liquids aren't currently permitted. It's common in the industry I think to mix liquids with solids in order to meet disposal standards at landfills, where you're not allowed to dispose of large amounts of liquid I guess. Can someone from a gas drilling site in New York or Pennsylvania mix fluids -- waste fluids from the fracking process with solids and dispose of them anywhere in New York?

MR. BRAND: If the liquids are derived from the high volume fracking process, they wouldn't be allowed even if they were solidified. If they were other process wastes, other process liquids that could meet the percent solid requirements for disposal in a municipal solid waste landfill, it's possible they would be allowed.

ASSEMBLY MEMBER KAVANAGH: So a low volume fracking site in New York, which would be permissible, or in Pennsylvania, that mixed used fracking liquid with solids --

MR. BRAND: Depending on the process where that was derived, it's possible that would be allowed.

ASSEMBLY MEMBER KAVANAGH: So you can dump used fracking fluids in landfills in New York, as long as you mix them with a solid first?

MR. BRAND: No, I didn't say that. I said depending on the process from where that waste originated, it's possible it'd be permissible.

ASSEMBLY MEMBER KAVANAGH: It sounds

like, to summarize, you can do it in some circumstances.

MR. BRAND: If you meet the regulations, you would be allowed to do it. If you're outside the regulations, again certain materials from fracking processes are not allowed to be disposed in New York. So if you meet that definition of those processes, you wouldn't be allowed to. If you meet the regulations, we would allow you to do things under the regulations.

ASSEMBLY MEMBER KAVANAGH: Right. So the current regulations and the current law permit disposal of fracking of what we would call fracking waste. You bring fluids to a site. You drill. You bring fluids. You pump in the fracking fluids. You get lots of things out of the well. Some of those things, including some of the fluids, some of the toxic chemicals that we've talked about that the Health Department and the Governor and your Agency in their good judgment in my opinion decided to ban the high volume version of that in New York. But there are fracking fluids that are chemically somewhat

similar to the much higher volumes of fluids that are used in that, that are used in lower volume fracking wells, right?

MR. BRAND: You're asking me for a hypothetical on some waste that was generated. So --

ASSEMBLY MEMBER KAVANAGH: I'm asking if I'm running fracking operations, the low volume --

MR. BRAND: If you're producing fracking fluids as we define in 360, it wouldn't be able to be disposed of in a landfill in New York.

ASSEMBLY MEMBER KAVANAGH: Even if I mix it in with a solid?

MR. BRAND: Even if you mixed it with a solid; as we define the hydrofracking wastes.

ASSEMBLY MEMBER KAVANAGH: Okay. And that sounds inconsistent with what you said to me a moment ago. But I think I'll leave it up and maybe we can review the transcript and maybe we can have this conversation further offline.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Mr. Kavanagh. Mr. Thiele has a follow up

1 question. And we have a number of others. But a
2 quick question, Mr. Thiele?
3 ASSEMBLY MEMBER THIELE: Yeah, in light
4 of the discussion with regard to Newburgh and
5 previously in Hoosick Falls, I neglected to ask
6 you with regard to Gabreski in Westhampton
7 whether any biomonitoring will be done by the
8 Department there?
9 MR. ZUCKER: As we move forward, we're
10 going to look at everything in all the
11 communities. If there's any exposure, we'll
12 figure out what we need to do.
13 ASSEMBLY MEMBER THIELE: Okay. So you're
14 looking at it and you haven't made a decision
15 yet?
16 MR. ZUCKER: We haven't made a decision.
17 ASSEMBLY MEMBER THIELE: Okay, thank you
18 very much.
19 ASSEMBLY MEMBER ENGLEBRIGHT: Mr. Raia?
20 ASSEMBLY MEMBER RAIA: Thank you very
21 much. I'll be brief, as they say. First off,
22 Commissioner Zucker, thank you for being
23 proactive. When I saw that Albany number pop up
24

Saturday night, you were probably the last person I expected to be on the other end of the line. But thank you for being proactive and seeing if I had any questions and I really do appreciate that. I got nothing for you.

MR. ZUCKER: Thank you.

ASSEMBLY MEMBER RAIA: Well, other than the things we talked about: the importance of the heroin epidemic in Suffolk County and small business group insurance; But that's a conversation for another day. Thank you for coming down as the ranking member of the Health Committee and a member of the Environmental Conservation Committee. It's always nice to ball this all up and I hate to use the expression kill two birds with one stone because I'm sure I'm going to get phone calls but I'm using it anyway.

Commissioner Seggos, thank you. Both Julie Tighe and Regional Director Gallagher are always very accessible, get me answers to questions almost immediately. I do get a lot of phone calls about people waiting for DOC permits and other permits issued by DEC. I do know that

-- I won't use the word woefully understaffed in the regional office but I know as a result of some of the Governor's policies we have some cutbacks that in my opinion hurt services. And maybe we can take a look at adding staff to those areas that generate revenue in many instances, which is a big conversation here in Suffolk County these days. So, I'm making a pitch to beef up staff at the Regional Director's Office. No, Carrie didn't put me up to that, alright; so don't take it out on her later.

I do have one quick question. I know I've corresponded with the DEC about it in the past and it's regarding Deutsch Relays in East Northport, a Superfund site. I guess the EPA has labeled it as a dormant Superfund site. But I think there's still things going on. I know the Greenlawn Water District has raised concerns in the past with me about potential plumes. And I believe they've had to shut down a well, as well. Obviously it's a very local issue. When you can get a response to me, it'd be greatly appreciated. I'm just trying to look to find out

where we are with the status of that. And that's pretty much it.

MR. SEGGOS: Great, absolutely. We'll get you a follow up on that.

MR. RAIA: Thanks so much.

MR. SEGGOS: Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Mr. Abinanti?

ASSEMBLY MEMBER ABINANTI: Good afternoon, gentlemen.

MR. SEGGOS: Good afternoon, sir.

ASSEMBLY MEMBER ABINANTI: I think I started this question about the water czar and I'd like to continue it and maybe have an answer from both of you. In the brief time that I've been a Member of the Assembly, I've noticed that we give more and more work to your two Departments. And I frankly am very concerned of how you're going to be able to continue doing the work, that as my previous speaker just said, with the constant cutbacks.

So I'd like your thoughts on the possibility of setting up a narrow department on

what is an ever-increasing problem of clean drinking water throughout the State. It's quantity, quality and cost. And it seems to me this cuts across your Departments. It goes into what we discussed the other day: the Public Service Commission, because we have private companies that charge a lot of money. And we have it all over the State. Is there any possibility that we can have some discussion as we start talking about budget of a czar who comes from both of your Departments or a totally separate department? Somebody who's just dealing with the question of making sure there's enough drinking water out there throughout the entire State?

MR. ZUCKER: I think what Commissioner Seggos mentioned before, I just want to reiterate, is that the Governor's Water Quality Rapid Response Team is a key step forward on exactly what you're asking about. It is an ability to have someone look at the issues of drinking water, tackle them, work with the community. You have a commitment from the State and I know the counties and the towns and

villages are all committed to making sure that the water no -- or we've looked at all the contaminants and what rises to; that we identify that and we will have our team out there. So I think the Water Quality Rapid Response Team is the way to move forward on that.

ASSEMBLY MEMBER ABINANTI: Now, we had a discussion last week about the different standards that the Health Department has for regulated and nonregulated contaminants. I'm not an expert in this but I'm trying to learn as fast as I can. But I'm understanding that your Department basically has a default level for unregulated contaminants and it's 50,000 parts per billion. Is there any way that your Department can take a look at that? Because it seems that that sets an approach from your Department that unless something rises to a very high level, it doesn't get a second look.

MR. ZUCKER: That's not true. I mean, any time there's a contaminant, that becomes the red flag. And the minute that there's a contaminant, we look into this. So, this is a

whole objective that we have is to move forward looking at all the contaminants out there. So in a number of that nature, we would look to see: Okay, what's going on?

ASSEMBLY MEMBER ABINANTI: As I'm understanding, we've been quibbling over whether the EPA was wrong in not raising the standard with respect to PFOA because they were at 400 parts per billion. At the same time, your Department was using the standard of 50,000 parts per billion for the same contaminant.

MR. ZUCKER: The first thing is that it's per trillion.

ASSEMBLY MEMBER ABINANTI: It's per trillion, not per billion?

MR. ZUCKER: Four hundred parts per trillion.

ASSEMBLY MEMBER ABINANTI: Okay.

MR. ZUCKER: And 50,000, parts per billion -- sorry, per trillion.

ASSEMBLY MEMBER ABINANTI: Alright, so it's per trillion rather than per billion. Okay, whatever. What we're dealing with though is their

standard is 125 times stricter than yours. I mean, is there some way that you can review? I'm not arguing with you now. We had the discussion last week and you heard my view on it. Now I'd like to go to the next step and say: How do we get you to review your standards; so that you have a little bit of a different approach to all of what's turning out to be a lot of unregulated contaminants?

MR. ZUCKER: Lloyd?

MR. WILSON: I think we need to have a little more global perspective on this. The value of 50 parts per billion or 50,000 parts per trillion is still a very low amount when you think about what that concentration means. New York State has this catch-all standard. And I know some of you have heard this. I don't think you did. I think I talked about this in the first hearing. That New York State catch-all standard was put in place in 1989. It was a very far-reaching thoughtful process. The idea behind it was: What can we do to deal with overt contamination?

ASSEMBLY MEMBER ENGLEBRIGHT: I just want to insert quickly: This is Dr. Lloyd Wilson who's speaking. Please continue, thank you.

MR. WILSON: Thank you. So, it was put in place to deal with overt contamination. And the way that they did that is they did a tox evaluation of roughly 200 chemicals. And when they got done with that tox evaluation, they realized that there were six chemical classes that seemed to have sort of a common toxicity and they set a value of five parts per billion. And they called them the: principal organic contaminant, otherwise known as the POC.

For all of the other organics, for which there are many, they said: We're going to set the standard at 50 parts per billion to deal with overt contamination. This methodology was so significant that under Lisa Jackson's Administration at EPA, they asked that we come down and detail and discuss our standard. For the simple reason that we've all talked about 80,000; I'll say the number is much greater of contaminants that are potentially in our drinking

water. And I say that because that 80,000 is what's registered with TSCA and what is produced but there is natural chemicals all over the place.

So, Lisa Jackson and the EPA, you know, this was probably I don't know six years ago at this point, something like that, said: We know that setting standards one at a time is not very efficient. We have about a hundred at this point and we're talking about the unregulated contaminant world of being hundreds of thousands. So, what way, what processes can we put in place to give us better regulation? And the significance of the regulation is once the regulation is tripped, then we have authority to do something about it. For those things in which they don't trip a regulation and are unregulated in its fullest sense, we don't have authority to do much.

ASSEMBLY MEMBER ABINANTI: Well, should we be reexamining that process? Should we be giving you more authority, as a legislative body, to segregate out a whole new group? I mean, again

I'm not a chemist but I'm hearing a lot about PFOA, PFOS. And it seems to me that these are contaminants that are now causing a problem. Should there be a third group out there? Or should we be giving you some authority? How do we deal with this? With PFOA it seems to me that that's no longer in that background group; that that's now something we've identified. And yet we haven't changed our standard on it. Are there others like that and should we be changing the standard?

MR. ZUCKER: The issue is that we need to look to the science and we need to look for the numbers and that's what we're working on.

ASSEMBLY MEMBER ABINANTI: So, could we hope to get from you some requests for legislation in the near future to deal with this third category of nonregulated contaminants?

MR. ZUCKER: Well, we are going to look at all of this. As we've mentioned, there's a commitment about evaluate unregulated contaminants and we'll move forward on it.

ASSEMBLY MEMBER ABINANTI: Okay. Another

category. We were talking before about the techniques for water purification. And you were talking about a new approach with oxygenation or something like that. I'm not familiar with that kind of thing but I'm familiar with swimming pools. I mean, swimming pools, you use ozone and ultraviolet. How's this different? And why can't we use some of the techniques that we presently use for purification? I mean, I don't know specifically what's going on in Long Island but I hear there's a lot of problems. And why can't we just use some of those systems that are out there?

In Westchester County we had to do some; there was a problem I think with Water District 1 and they needed some purification; so we went to ultraviolet. At least that was the plan when I left the County Board six years ago. I haven't with what they were doing since. But why can't we use some of those techniques?

MR. WILSON: A very short answer to that is the UV light that you're talking about is most likely dealing with microbial contamination.

What's being done here for the advanced oxidative process: hydrogen peroxide, H202, and you zap it with the UV light. It breaks it down into the free radicals that Dr. Sokol was talking about: OH minus groups. They go ahead and attack the molecule and break it down.

So the question is: What happens when you hit that Dioxane molecule, which has got two oxygens with some carbons in between it for a circular thing; what happens to it? And what does it produce? And so you have to spend some legwork up front to figure out what other chemicals are produced. Everybody here agrees climate change is an issue. Everybody agrees that reducing our carbon footprint's a good idea. And that includes the water sector. The water sector under President Bush, there was a directive to try to reduce the carbon footprint of the water sector. And now we're going to be talking about adding a process that adds energy, which increases our carbon footprint.

But right now it looks like the only feasible way, especially for Long Island, which

has this sole source aquifers -- the Magothy and the Lloyd for the most part; and you don't really have many other options. So we got to figure out a way to treat it. So, by the way, this process has been used in other realms, much like you're saying about the pool processes. There's work going on all the time trying to explore whether we can take processes used in pools and other environments as to whether they're applicable on a largescale for producing drinking water, which is used one time. In a pool environment, it's being circulated. So it goes back and forth, back and forth. That's not true in a water drinking plant. It goes out the plant and it gets consumed. So there's a little bit of difference in the inherent.

So the answer is: yes, we need to explore those things. I think that's probably part of what the Governor's announcement today about Stony Brook will look at. But it's not a simple, you know, just transfer something over because we don't want to cause another issue.

ASSEMBLY MEMBER ABINANTI: What's your

plan to deal with contaminated wells? I mean, you've jumped on board a piece of legislation and we applaud you for doing that; that the Assembly has passed several times. And we had this discussion last week. Ellen Jaffee passed it in Rockland County. I passed it in Westchester County. A process for identifying polluted wells: number one, who's going to pay to clean those up? That's always been an issue at the local level.

I mean, you heard a lot this morning about the challenges of local governments. They can only do so much. So now they identify a problem. Where do we come up with the money to solve the problem? Because if you have a community that has a hundred contaminated water wells, what do we do? They're on wells because there's no public water system available to them. And now they're without water. So what do we do?

MR. ZUCKER: So, a couple things. One is we're happy to work with the Legislature during the budget session to look at some of these issues. Another thing that we've spoken about and I mentioned previously in the last hearing was

some of these wells you'd like to put onto a public water system. I'm not saying all but that was something that we raised. So that's another thing that we need to move forward on.

ASSEMBLY MEMBER ABINANTI: But I'm hopeful that in your budget proposals you look at some ideas on how to provide some monies locally for communities that are doing the right thing and are identifying problems. I know it's a big ask but I would hope that we could somehow move towards that. I know my colleague here, Mr. Otis, is talking about environmental bond acts and other ways of working with local governments. And I would just hope that you would be able to respond in some way at budget time; so that we can move forward to help the local governments.

The other thing is in the same area: Do we ban the use of phosphates Statewide in fertilizers? Is phosphate a contributor to the algae blooms?

MR. SEGGOS: The levels are restricted, I know that.

ASSEMBLY MEMBER ABINANTI: Because I

know in Westchester County we have a zero tolerance for phosphates. Again, that was a bill that we passed when I was Chair of the Environment Committee. And I'm wondering if it's not now time for your Departments to start to review some of our laws, see what's working locally and seeing if; like the algae bloom problem for example is a major, major problem. And should we be looking to see if there are ways of going Statewide with legislation that has worked locally?

MR. SEGGOS: Can I have Julie Tighe answer that for you?

ASSEMBLY MEMBER ABINANTI: Sure.

MR. SEGGOS: Julie, swear in.

MS. JULIE TIGHE, ASSISTANT COMMISSIONER OF INTERGOVERNMENTAL AND LEGISLATIVE AFFAIRS, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION: I promise I will tell the truth in my testimony.

ASSEMBLY MEMBER ENGLEBRIGHT: State your name for the record, thank you.

MS. TIGHE: Julie Tighe.

ASSEMBLY MEMBER GOTTFRIED: Thank you. And do you swear or affirm that the testimony you're about to give is true?

MS. TIGHE: I do.

[WHEREUPON THE WITNESS, MS. JULIE TIGHE, WAS DULY SWORN.]

ASSEMBLY MEMBER GOTTFRIED: Thank you.

MS. TIGHE: So, we actually at the State Legislature adopted a law a few years ago that prohibits the use of basically phosphorous in fertilizer for your lawn. We also at the same time we adopted a bill that restricts phosphorous in your dishwasher detergent. A number of years ago actually the Chairmen of both of these Committees sponsored those bills and we have restricted that. I do believe that phosphorous is necessary for the production of vegetables and crops. So, it would be difficult to prohibit it from agricultural purposes and for starting a lawn. But for existing lawns for the most part it's not necessary. And we already have adopted legislation not that long ago that addressed that issue.

ASSEMBLY MEMBER ABINANTI: What about nitrates?

MS. TIGHE: Nitrates are a little bit more challenging.

ASSEMBLY MEMBER ABINANTI: It wasn't a problem in Westchester, so we didn't deal with it. But I'm understanding it's a problem in Long Island.

MS. TIGHE: And I believe that it's something that they're looking at through the Long Island Nitrogen Action Plan.

MR. SEGGOS: Right. So under the Long Island Nitrogen Action Plan that's underway right now, some of the study that we will be doing with that will be designed to understand the existing levels of nitrates in certain sub-watersheds. The purpose for which is to effectively develop a pollution budget for that watershed. If you're familiar with the total maximum daily load, sort of the TMDL program, it's a little bit like that. What we would be wanting to do is effectively develop a clear understanding about how much a watershed could sustain and then craft

restrictions around that. So that's very much in our sights right now and that would be fairly groundbreaking.

ASSEMBLY MEMBER ABINANTI: To either one of you, what is the impact of storm water on all of these efforts? Is storm water a problem? I'm particularly concerned about the algae blooms. I'm not sure what we're doing about them.

MR. SEGGOS: Well, storm water is obviously a major problem environmentally everywhere. So, in New York State we've got a storm water control program. We talked earlier about the MS4 program, which has been very successful. But storm water carries with it all numbers of problems from road issues to animal -- geese action and so forth. So that really impairs watersheds.

ASSEMBLY MEMBER ABINANTI: I'm going to go to one of my favorite topics and that is: We need to do more Statewide to buttress local efforts. I'm sure Mr. Otis could talk -- I don't want to speak for him but he has a communal need that's underwater quite often. So, do I; I have

Elmsford. And we need to deal with the Sawmill River. And if you were talking about storm water and the impacts and I can't speak for Long Island -- I'm sure they have similar types of problems; but I would really like to see again, budget time, as we're talking about clean water and the impacts of storm water, I'd really like to see; I know in Westchester County five -- six years ago now, we got the County involved for the first time. And they're supposed to be doing studies on a watershed basis.

But the question then becomes: Okay, what do you do with the studies? Once you've identified where the biggest problem is and where you should be spending money, now it's such a big problem that locals can't afford it. And that's where we need to look to the State to come in, almost with a program of incentivizing counties and local governments to do exactly what we set up there, which is: Go spend some money. Go identify where we can get the biggest bang for the buck and we'll help you. We'll partner with you. We'll give you a grant. We'll do something

to solve that problem to deal with the storm water issue.

Just one other thing, I want to clarify something. Doctor, you were talking about blood tests in Newburgh. And I thought I picked up a distinction that you were making between community health and individual health. And I think you're mixing both of them and I think that may be confusing us. Because I'm hearing from the community that they want and I think Mr. Skartados made it clear that from individuals who could not afford to go to a doctor and didn't know what to ask a doctor to test them for, they're looking for guidance and for some help and for you to test them.

What I'm hearing your answer as is that from the community point of view, from the public health point of view, you haven't figured out how many people you have to test and how often to figure out what the community health is. Am I correct that there's a distinction there?

MR. ZUCKER: It's the issue of population health and to try to evaluate how many

1 people would need to be tested to determine what
2 the follow up would be for biomonitoring.
3 ASSEMBLY MEMBER ABINANTI: Right. But
4 what about the individuals, parents who are
5 worried their kid now has been poisoned and they
6 want to take him to a doctor and get some process
7 to reverse the poisoning?
8 MR. ZUCKER: Well, this is not something
9 which is going to reverse, the PFOA or the PFOS.
10 It will slowly come out of your body with time,
11 as long as your exposure decreased or eliminate
12 your exposure. You know, I had mentioned this in
13 previous testimonies that when you measure these
14 PFOA or PFOS in the blood, it tells you about
15 exposure. We can't make a prediction about what
16 your level in the blood is looking forward and
17 what that will mean, at this point in time. And
18 so we're working to try to figure out what the
19 best kind of program would be.
20 ASSEMBLY MEMBER ABINANTI: One of the
21 concerns I have with the answer you just gave me
22 is the normal, typical body might shed itself of
23 certain chemicals. But from what I have seen in a
24

lot of kids, particularly kids with developmental disabilities, whose bodies don't shed them and who need additional -- now this may be getting into alternative medicine and we can have a discussion about that; but there's a theory out there that some of those bodies need additional help to shed what the normal body would shed. And so by taking the general population approach, we may very well be ignoring some people who can't shed that. And I would just hope that you would keep that in mind as you look to develop a response here.

MR. ZUCKER: So, as a pediatrician I will tell you I'm aware of some of the challenges of children with developmental disabilities and I truly recognize that. But from the physiology and the way this is removed from the body, it will be removed from the body over a period of time. And as I mentioned before, the half-life of PFOA is two to four years and the half-life of PFOS is five to seven.

ASSEMBLY MEMBER ABINANTI: Thank you.

MR. SEGGOS: Assemblyman, can I just

correct one thing for the record003F

ASSEMBLY MEMBER ABINANTI: Sure.

MR. SEGGOS: You mentioned at the beginning that DEC staffing has gone down; there have been cuts. I just want to clarify that. Actually DEC staffing over the last five years has gone slightly up. I don't want to leave that for the impression that there's been cuts under this Governor. In fact, it's been the exact opposite. Particularly with this funding, it's been very exciting.

ASSEMBLY MEMBER ABINANTI: But the challenges we have given you though, every time we turn around we're asking you to do something else. And I don't think the Legislature, from what I've seen, doesn't take it lightly. Every time we want you to do something -- either Department, it's because we really think that something should be done. And I'm not sure that your staffing levels have kept up with the amount of work. And what I'm seeing here with this water issue, I mean, this is a major, major issue that could consume one of your Departments all by

itself.

At least from my point of view, I'm very concerned that the State just doesn't have the resources in place right now to be able to deal with the issues. I'm sitting here listening and I'm learning a lot about the Long Island issues. And I'm hearing this is a major, major problem out here because of the single source. And as I said the other day in my District, you know, there's different pieces of the problem in different places, which really need someone to understand the bigger picture.

MR. SEGGOS: Understood. And to that I would just say we've had a great partnership with you over the last five years. Frankly on the budget side, which is helping us to do more than almost ever, between the $300 million EPF, the $400 million WIIA, which didn't exist two years ago, a billion dollar Superfund and New York Works, which also didn't exist prior to this Governor. So, we are doing a great deal with the tools that you've given us. So, we're thankful for that.

ASSEMBLY MEMBER ABINANTI: Okay, thank you, Mr. Chairman.

ASSEMBLY MEMBER ENGLEBRIGHT: Commissioner Zucker, I have a couple of follow up questions, legal questions really on the 50,000 parts per trillion question. If you discover that a public water supply has 55,000 parts per trillion of X,Y,Z; legally what can the Department do about that? What are the consequences of that?

MR. WILSON: So, the way -- and this is derived from the federal government; the way this works is that we have what we call three tiers of notification. Tier 1 notification requires within 24 hours an immediate notice to the general public that there's a contaminant in the water. And that is 95 percent of the time a microbial contaminant. Alright? So I just want to make that that clear that there is the microbial contaminant -- MCL, maximum contaminant level. So that's what we're talking is an exceedance of an MCL by a standard that exists in our Part 5 Regulations: this little Blue Book over here.

So when it comes to chemicals and this comes down from the federal government, we have what we call Tier 2 notification. Which means within 30 days the public has to be informed about the presence of that chemical. And what we have to do is now that that water system is violating an MCL, the regulatory standard for maximum contaminant level, that system has an obligation to come back into compliance and to figure out a way to bring the levels below the MCL. And the various actions that take place in the normal are the system blends the water with a different well or a different source. It can be a surface water. It can add treatment. Those are probably the two most common. Take the well completely offline. So that's what happens once the regulatory standard is exceeded.

ASSEMBLY MEMBER ENGLEBRIGHT: And when you say that they are required to come into compliance, is that a matter of State law or is that the State acting as the implementer of the federal --

MR. WILSON: It's in our regulation

adopted from the federal government.

ASSEMBLY MEMBER ENGLEBRIGHT: Okay. Which means if the federal government were to repeal their law tomorrow --

MR. WILSON: We would still have it.

ASSEMBLY MEMBER ENGLEBRIGHT: Well, you'd have it in a regulation but does that regulation have State statutory authority behind it?

MR. WILSON: My understand is yes. I'm not a lawyer -- yeah, a point of clarification. I wasn't saying that it was EPA statute that we were acting on. It is in our regulation. It is adopted from the feds. But it is our regulation, so it would still be there.

ASSEMBLY MEMBER ENGLEBRIGHT: Yes. But we're not clear at this point whether in the absence of federal law, whether there is a State statute explicitly authorizing that regulation.

MR. ZUCKER: There are State statutes.

MR. WILSON: We do have the authority to have that MCL.

ASSEMBLY MEMBER ENGLEBRIGHT: Okay.

Maybe afterwards we can focus in on that after today's hearing. Under both the federal law and the State law, if the Department were to decide that 50,000 parts per trillion of X,Y,Z is not the right level; the right level is 10,000 parts per trillion; does the Department have authority to set that level for New York for that chemical?

MR. ZUCKER: Yes.

ASSEMBLY MEMBER ENGLEBRIGHT: Okay. And is that spelled out in the regs? Do you know?

MR. WILSON: The fact that we have the authority to do that?

ASSEMBLY MEMBER ENGLEBRIGHT: Yeah.

MR. ZUCKER: Yes.

ASSEMBLY MEMBER ENGLEBRIGHT: Okay. Okay. Thank you. Mr. Saladino?

ASSEMBLY MEMBER SALADINO: Thank you, Chairman. Thank you all for making the trip down to Long Island to join with us. I'd like to start with Dr. Zucker. Doctor, can you tell us briefly the effects and dangers of human consumption of PCE, TCE and vinyl chloride?

MR. ZUCKER: The PFCs you're saying. All

1 these PFOAs, PFOS and all these chemicals, I
2 mean, the concerns are obviously liver or kidney
3 problems. There are issues of hypertension,
4 issues of elevation in cholesterol. There's
5 issues with pregnancy, with elevation of blood
6 pressure during the times of pregnancy.
7 ASSEMBLY MEMBER SALADINO: And some of
8 them are known carcinogens to humans?
9 MR. ZUCKER: There's an association that
10 has been found between some of them are to
11 cancers.
12 ASSEMBLY MEMBER SALADINO: Okay. And
13 under State law we allow up to five parts per
14 billion in our drinking water, correct?
15 MR. WILSON: Can I just clarify
16 something?
17 MR. ZUCKER: Yeah.
18 MR. WILSON: Commissioner, he was asking
19 about TCE, which is trichloroethylene and
20 tetrachloroethene and vinyl chloride. So, those
21 are chlorinated solvents. And they do have a
22 standard of five parts per billion is the MCL.
23 That's what I just wanted to clarify. So there is
24

a MCL of five parts per billion.

ASSEMBLY MEMBER SALADINO: So over five parts per billion becomes dangerous to human health and obviously more dangerous the more concentrated it is.

MR. ZUCKER: So, one, let me clarify this. So the others I was referring to are the PFCs. Okay, fine. So, just to be clear on the record.

ASSEMBLY MEMBER SALADINO: Thank you.

MR. WILSON: A lot of the drinking water standards and I'd have to go back and look at the individual ones that you just mentioned, but the concentration that are set at are designed to be protective. That's why you can have an exceedance for some small period of time and have a system work to come back into compliance. They're not set at levels where we expect to find the health effects. But I'd have to look at the individual tox assessments for those specific chemicals. I don't know all a hundred of them.

ASSEMBLY MEMBER SALADINO: But at much higher concentrations over a long period of time,

there's no doubt that there would be a health risk, a definite health risk to human consumption.

MR. WILSON: An increased risk -- yes, that would be an expected thing if you had that for many, many, many years. Lifetime exposure, you would expect to have an increased risk of whatever the health outcome they're trying to prevent. But we set those levels and bring systems back into compliance in the short timeframe.

ASSEMBLY MEMBER SALADINO: And over the course of years working with the federal government and our own folks in the State, we have lowered that threshold. At one point it might have been ten or 50 or 100 parts per billion. And now we're down to five because the more we learn, the more we realize that we need to bring that level down for good public health policy.

MR. WILSON: Those five have been in place since 1989.

ASSEMBLY MEMBER SALADINO: And it was

higher prior to that?

MR. WILSON: I don't know specifically but it's likely.

ASSEMBLY MEMBER SALADINO: Okay, thank you. And Dr. Zucker, one last question. In terms of good health policy and you're clearly one of the experts of that and we greatly appreciate that: Is it good government policy to allow contaminants to continue to move and reach uncontaminated parts of a sole source aquifer? Or is better public policy to stop them, to limit the region that's contaminated?

MR. ZUCKER: Well, the goal is always to limit anything that's expanding.

ASSEMBLY MEMBER SALADINO: And as that moves and expands, we're doing more damage to our environment and more damage to public health?

MR. ZUCKER: We're doing damage obviously. I turn the environment issues over to DEC. But if people are exposed to something, then there's the risk to public health.

ASSEMBLY MEMBER SALADINO: Right.

MR. ZUCKER: And that increases, so you

worry about the public.

ASSEMBLY MEMBER SALADINO: Thank you very, very much. Now I'd like to turn to Commissioner Seggos again. Thank you for coming down with your staff. And I also want to use this opportunity to thank the Governor as well. My big issue, as you know, is the Grumman-Navy plume. And while we have seen quite a bit of foot-dragging for decades, since you've come in things have definitely improved. I believe more has been done in the last two years than perhaps the last 20 years prior to that. And the Governor has made it clear to me and I know to you because we've had these conversations that when it comes to this plume, he wants it cleaned up. He wants it contained.

One of my questions is about the trigger levels in the ROD determinations, the records of decision that have formed the plan on how to clean this up. The Agency has been pushing for wellhead treatment for quite some time. But they have a trigger level of 1,000 parts per billion.

And at that trigger level is where rules

1 change and entities step in, including the
2 responsible parties; especially when it comes to
3 the high costs that our water districts have
4 seen. If we know that more than five parts per
5 billion is clearly a risk to our health, why on
6 earth would we negotiate a trigger of 1,000 parts
7 per billion, clearly a danger to public health?
8 MR. SEGGOS: I'll begin by saying this,
9 Assemblyman: I stand with you. I heard your
10 comments earlier. I stand with you in your
11 anxieties and concerns about the Grumman plume. I
12 think what Grumman and the Navy did to the
13 County, to Bethpage, to the water districts, to
14 the people of Long Island is unacceptable. And
15 they need to pay the price for it. Since I came
16 in November in this job, I've been pushing my
17 staff very aggressively to do everything in their
18 power to advance this strategy. And I'm glad you
19 recognize that there's been a change.
20 ASSEMBLY MEMBER SALADINO: And I do.
21 MR. SEGGOS: Because I do believe that
22 whether it's foot-dragging or just inertia, that
23 the pace of the cleanup has just taken too long.
24

It's been going on for decades. And I want to see this cleaned up as much as you do.

So we have taken a number of very significant steps in the last few months. As you know, we completed the study. We launched and entity process, as I have mentioned in my testimony to all the companies accountable for the damage. And my aim now that I'm in charge of the Department is to make sure this is done thoroughly and aggressively. So I just wanted to make that clear for the record --

ASSEMBLY MEMBER SALADINO: Thank you.

MR. SEGGOS: -- that there's very little daylight between where you are on this, where the community is on this and where DEC is on this.

ASSEMBLY MEMBER SALADINO: Than you. I appreciate that very much. And quite frankly, it's very obvious to me. I'm a guy who's very big on research and I've delving into this for 13 years and it has been very frustrating. But I'm very happy to hear that. And I've very happy to hear we have a Governor who has come to Long Island, who's spoken about that, who's initiated

that suit. So having said all that you've said, our conversations with the Governor, will you reopen the RODs to greatly reduce that number from 1,000 parts per billion as a trigger down to something that's a lot closer to what the experts tell us is safe policy?

MR. SEGGOS: Well, I'll tell you this. Our enforcement posture at this point is going to be guided by the new evidence that we have. We did another study, this third party study, the HDR report, which is starting to show us some new technologies perhaps that could be put in place or new treatment systems that could be put in place to prevent the damages from this spill. As far as I'm concerned, you know, we are still reviewing that. We're still reviewing all the science in our deep dive through all of the RODs. But if there are decisions that need to be made to change the way we approach this pollution plume, we will do that.

I want it to be guided by science. I want it to be guided by our legal authorities. We have strong science and strong authorities. And I

1 believe we can do that. But I want to make sure
2 we can play that out carefully.
3 ASSEMBLY MEMBER SALADINO: Thank you,
4 Commissioner. That comes at great news. Because
5 I've had many conversations with the scientists,
6 people who have been studying this plume, those
7 who have worked on the many reports that they've
8 turned over to the DEC over the years and I hope
9 you'll consider that in the decision as well as
10 the recent report.
11 MR. SEGGOS: Absolutely.
12 ASSEMBLY MEMBER SALADINO: People like
13 those who have taught geology on the college
14 level, experts in water supply and confirmed
15 today again by Mr. Schubert from the United
16 States Geological Survey: We are now very clear
17 that there's an underflow from the aquifer system
18 that reaches the Great South Bay. I hope that the
19 Department has gotten past questioning whether or
20 not the underflow and these contaminants will
21 ever reach the Great South Bay. Are we at a point
22 where we have an understanding that if left
23 unstopped, uncontained, these dangerous
24

contaminants will be reaching the Great South Bay?

MR. SEGGOS: I have no doubt that the groundwater flows towards the Great South Bay. So, that's just gravity to me and it's fairly simple.

ASSEMBLY MEMBER SALADINO: It really is. I'm so happy to hear that as well. I'm glad you mentioned the report because in the executive summary of the report there is some verbiage and I understand that it was prepared by HDR, not by the Department. But what was obviously was explained to us in our meetings including the meeting at the Massapequa Water District; it was explained that they would be sending the initial study results to the DEC and that the DEC would help in crafting the final report.

And there's something in here that says and I'm reading directly from the executive summary on page three of that report and it is in response to quite frankly something that connotes pushing for wellhead treatment and it speaks about the wellhead treatment and it talks about

this approach. It talks about complications with hydraulic containment. And in speaking about wellhead treatment it says: This option although not within Chapter 543s of the laws of 2014 -- which is the law that Senator Hannon and I passed, signed by the Governor; would provide a long-term manageable solution, reduce the overall costs and not result in a loss of Nassau County's precious water resources.

Now that connotes for the layperson reading it, perhaps those in the environmental community, that hydraulic containment would somehow damage the aquifer and our supply of water. Since we are talking about water that is non-potable, water that is contaminated, in some cases 14,000 parts per billion of very dangerous chemicals, as was just confirmed by the Commissioner; how can we possibly have any negative effect of removing that water, especially if we intend on injection and recharge with the clean treated water at the end of the process?

MR. SEGGOS: Very respectfully, I think

your question presupposes the decision that we've made and that's just not the case. I want to make sure that's very clear. This was a third party study. We didn't direct them to include certain conclusions in there. My view is we got a study from them. To me, that wasn't good enough. I wanted to put it out for public comment, which we weren't required to do and we did for 30 days. And we got dozens of comments on it, frankly. You submitted one on Friday. The comment period closed and we got lots of other comments, very technical in nature. We're going to review all of those.

As far as I'm concerned and I'll say it again: We haven't made up our mind about this. We have not been predisposed towards wellhead treatment. We have not been predisposed towards anything. I wanted to see the report, see the feedback to it. And then we can explore our legal authorities and determine exactly how to move forward. But just to be clear, we don't have daylight here. Okay. We have the same interests in mind.

ASSEMBLY MEMBER SALADINO: That's very good to hear because prior to your coming to the DEC, the feeling that many have gotten in the water districts and the community and environmentalists and myself was that the DEC was pushing only for wellhead treatment; a process that many of the water districts had to sue to actually get paid for their studies, get paid for their construction, get paid for their management costs.

In addition to that number of responses, we have some 500 signatures to a petition, which is asking for complete hydraulic containment of the entire Grumman-Navy plume and removal of all these chemicals before they reach any other public water supplies and the Great South Bay. And I'd like to turn that over to you.

MR. SEGGOS: Great, thank you.

ASSEMBLY MEMBER SALADINO: And I'd like you to also consider the 4,000 signatures that were collected over the past three or four years by the Massapequa Water district and delivered to the DEC, which states the exact same issue.

MR. SEGGOS: Thank you, I will.

ASSEMBLY MEMBER SALADINO: The public wants hydraulic containment. So saying all of that, after your reading of that study, would your response and your impression be that the study says that hydraulic containment can and will work if that option is chosen?

MR. SEGGOS: Without a doubt the study lays out options where it is feasible. Now what we have to do is determine exactly how that would be carried out. And that means assessing our legal authority and determining whether or not the polluter would be able to pay for that. And that's something we will weigh and we will do that quickly.

ASSEMBLY MEMBER SALADINO: So, we're talking about weighing the effectiveness of it scientifically versus the cost, which we understand and we all deal with this in Albany and throughout government every day. But in terms of the scientific information, are we on the same page in terms of that daylight, that hydraulic containment can and will work if we put the cost

aside and just look at the science of that report?

MR. SEGGOS: The report gave us three options, three potential options. I see it actually as a series of options that may be hybridized and there in fact may be lots of other potential ways to mix together our approach on it. This is not a cookie cutter approach. There's obviously 19 million gallons of water we'd have to deal with every day, as has been discussed earlier. So we'll apply what we learn from the report and frankly what we learn from all of the other reports and make a decision.

But it is clearly a viable option. Hydraulic containment is done in many other places. Early in my career I worked in a hydraulic containment issue in Brooklyn, which we saw to be very successful through this Governor. So it is possible. It's a matter of engineering. But we need to assess our legal authorities as well. And I don't want to prejudge any of that right now. But as I have said repeatedly to you and to others: all options are on the table.

ASSEMBLY MEMBER SALADINO: That's very good to hear: prior to your coming. That wasn't always the message that was being disseminated from the Agency. And I'm glad to be hearing that this can work. It will work. It now comes down to costs and it comes down to how that design might come about. But I'm very happy to hear that. Are you aware of a letter that I presented, it's from June? It's signed by Chairman Englebright, Chairman O'Mara and 130 Members of the Assembly?

MR. SEGGOS: This is the letter you read earlier?

ASSEMBLY MEMBER SALADINO: Yes, it is.

MR. SEGGOS: Yes, I'm aware of it.

ASSEMBLY MEMBER SALADINO: Okay. And are you aware that the letter specifically lays out that it is the intention of those who have signed it that their intention is to have the plume contained and not allow it to continue to reach other uncontaminated areas?

MR. SEGGOS: Yes, I will read the letter, to read it line by line, but I understand that to be the case.

1 ASSEMBLY MEMBER SALADINO: I happily
2 present that to you as well.
3 MR. SEGGOS: Thank you.
4 ASSEMBLY MEMBER SALADINO: I just wanted
5 to make sure because it's important for the
6 Agency to understand the intention we made in
7 passing the law. But it's also important with my
8 colleagues and I had a very interesting
9 conversation with the Governor, where he said
10 when we talked about the fact that he was being
11 lobbied to veto our legislation and his answer
12 was: Well, I shouldn't be vetoing something if
13 the intention of the Legislature sets forth what
14 they want. And I was very impressed to hear that
15 from him.
16 So we have some 4,000 signatures of
17 people in the public; 500 or so of them I'm going
18 to present today. We have many reports that have
19 been presented over the years that talk about
20 this hybrid strategy, which I'm very happy to
21 hear you embracing it and that was one of my
22 suggestions but more importantly the scientific
23 community. And I think you'll be hearing from
24

them. So it's an issue of the cost, not turning that cost over to the taxpayers and the water districts?

MR. SEGGOS: Exactly right. That's right.

ASSEMBLY MEMBER SALADINO: And finally, when do you think should we decide and I hope it is the case to hydraulically contain this; how quickly can construction begin?

MR. SEGGOS: Well, I don't want to get too deep into the bureaucracy of decision making under Superfund. But there is a process that we would have to go to to amend a ROD. It's not think about one day and do it the next. It is a process and there are polluters to deal with. So, we have to manage both of those. We'd be happy to discuss the ROD amendment process with you. It is something we've done in the past whenever we get new information about a Superfund site that has a ROD. New information comes to light, we can amend it. There is a process to do it. But it's just not an open and shut one day to the next thing. We have to go through it to ensure that it's

bulletproof.

ASSEMBLY MEMBER SALADINO: If it was deemed that we want to have a rapid response to this cleanup, a year, is it reasonable to get through the design phase in a year?

MR. SEGGOS: Well, what do you think?

MR. WILSON: It's possible.

MR. SEGGOS: It's possible. Yup.

ASSEMBLY MEMBER SALADINO: Okay, thank you. I appreciate that because the clock is ticking if we're going to utilize the Southern State Parkway to capture the leading edge. Alright? And one last question because it's also very important to myself and to my constituents. Can we speed up the Willetts Creek cleanup of toxins in that water? The DEC has thus told us we're looking at least two years. Is this something we can speed up? It goes right alongside a school.

MR. SEGGOS: Yes. I think the short answer is yes. We've been very active on that site over the last few months. Martin, do you want to run through? And Carrie? We've had a

number of public meetings on this. Carrie?

ASSEMBLY MEMBER SALADINO: I know time is of the essence. I'm happy to meet with you separately after today to go over the specifics. But we really want to see that time drastically shortened.

MS. CARRIE MEEK GALLAGHER, REGION 1 DIRECTOR, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION: Right. And we've heard that from other Members of the Assembly and Senate.

MR. SEGGOS: This is Carrie Gallagher.

MS. MEEK GALLAGHER: Yes, Carrie Meek Gallagher, Regional Director for DEC here on Long Island. And so, Assemblyman Saladino, we'd be happy to sit down with you and look at the ways that we could in fact speed up the remediation of this Dzus Fasteners contamination in Willetts Creek.

ASSEMBLY MEMBER SALADINO: Very important.

ASSEMBLY MEMBER GOTTFRIED: And do you

swear or affirm that the testimony you just gave is true?

MS. MEEK GALLAGHER: Yes.

ASSEMBLY MEMBER GOTTFRIED: Thank you.

[WHEREUPON THE WITNESS, MS. CARRIE MEEK GALLAGER, WAS DULY SWORN.]

ASSEMBLY MEMBER SALADINO: Now you've got to get it cleaned up quickly. Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you. Legislator Schimel?

ASSEMBLY MEMBER SCHIMEL: Thank you, Mr. Chair. And thank you for your testimony and your presence here today. And I will affirm from my point of view that you are no strangers to Long Island. The DEC and the DOH have had boots on the ground in my District certainly for as long as I can remember since I've been a Member. And of course with Regional Director Meek Gallagher as well. I just have a couple of questions. I'm going to be brief because I know there's a lot more to go. But I wonder, perhaps the DEC can speak to enforcement?

Certainly in terms of management on a

day to day basis, as we look I think the goal for increased sewering in Suffolk County, which is needed, the day to day management in terms of making sure that an entity and not necessarily a municipal entity but any entity: What happens when they violate their SPDES Permit in terms of discharge to groundwater? How is it reviewed? How do you know that? You have so many entities. Now you're going to be taking in more. Is it just done through monthly reports? And how do you do the enforcement on that?

MR. SEGGOS: Right. Well, Assemblywoman, we have a fairly comprehensive management approach to enforcement. We do as much as we can on the education side. And that usually bears fruit because most people frankly want to do right by the environment. Occasionally there are polluters. We get monitoring reports on a regular basis and review those. One of the enforcement opportunities comes up frankly when no one submits a report to us, which for many years probably had gone without much attention.

We've started to put a new emphasis on

issuing violations for failures to report. We had a few this summer. We've actually done a bit of a blitz this summer on that. And then more seriously, when there are significant violations, we get into the consent order phase. Where we effectively show all of our cards and force either some sort of a cleanup or an agreement to come into compliance. We do about 200 fairly major consent orders a year. There are many more notice of violation that go out. And once in a while we refer matters for criminal enforcement and that is a regular occurrence every year.

ASSEMBLY MEMBER SCHIMEL: Unfortunately, I have found that people do what you inspect rather than sometimes what you expect. So you have the capability in terms of staffing through the monthly reports to review them, to see if in fact there are any egregious violations?

MR. SEGGOS: We do.

ASSEMBLY MEMBER SCHIMEL: So you have that ability to --

MR. SEGGOS: We do.

ASSEMBLY MEMBER SCHIMEL: And you do

pick them up? Okay, because that is a concern on a day to day business. And that's looking at everything? I know we focus on municipal sewer systems --

MR. SEGGOS: Right.

ASSEMBLY MEMBER SCHIMEL: -- as opposed to smaller private entities and small businesses.

MR. SEGGOS: We do.

ASSEMBLY MEMBER SCHIMEL: Okay. And my final question really refers to, it's actually just a summary of what I'd seen, you know, right before you had the USGS, who did a great presentation --

MR. SEGGOS: They did.

ASSEMBLY MEMBER SCHIMEL: -- and we're pleased to see that there is so much robust monitoring and studying going on. But at the same token, being from Nassau County, there is a concern that it's not going to be just a snapshot in time. Even though it's five years out, that it's going to be an ongoing program and that this is not a study and Mr. Chair once said: It shouldn't just set on a shelf. And it's up to us

as well and I'm making a statement because I'm not going to be here forever but that everyone has a responsibility to look at that data; not just the regulatory agencies but as well this side has to. And that hopefully working together from this information, we will be able to come up with real policy. And the policy will be focusing and I appreciate the rapid response but again it's a response and the key word here is management.

And you talked about the tools that you have, you know, that crisis is a great thing sometimes because it forces you to grow and to have new tools. But at the same token you need to use those tools on a daily regular basis. So we don't have to respond and again this is going to be long term, that we're not just responding anymore; that we actually have a handle on what's -- we know what's coming our way. And that's something that I hope that we'll have the funding going forward for ongoing monitoring; that it's not going to begin and end with these studies and those studies will in fact drive policy.

1 That the facts and the science, because
2 if you work with climate change, you can't refute
3 the science; that that ultimately will drive
4 policy and regulations and we'll stick to those
5 standards and do enforcement. It seems rather
6 simple. But as Mr. Romaine said, it's about the
7 money. But it's not just the money. It's also
8 political will and energy.
9 MR. SEGGOS: Right. I completely agree
10 with you. I have no interest in seeing studies
11 sit on shelves. Meaning that certainly it's
12 happened a lot in the past all across government
13 and it's just not worth anyone's time frankly. I
14 think one of the good things in terms of this
15 partnership that we have frankly with you and
16 with everybody else on our studies is that we
17 intend to put results out on an ongoing basis. So
18 it's not going to be five years from now all of a
19 sudden a huge series of binders are dropped on
20 your desk. It is every year, at every stretch, we
21 have deliverables.
22 I mean, USGS was talking about that this
23 morning. We will sharing that information in a
24

very transparent way with the public. Because we recognize to truly solve this problem of protecting water, we're going to have to engage in a regular basis with everybody. And we're so fortunate right now I think to have all stakeholders so dialed on this on a bipartisan basis.

ASSEMBLY MEMBER SCHIMEL: And one more thing and I do believe and you said water knows no boundaries and I forgot who said it and it's true. And I think we should be looking for best practices, not only within our own State; because there are and I'm amazed that water and if you're out here, water pollution control district, people don't talk to water districts. I never understood that. You know, you're both handling water. Why aren't you talking to each other? But again anecdotally in my district, they do not. They meet at conferences but they don't talk about best practices.

But also to look at best practices in other states as well: I have to believe there are mousetraps out there that are working, that we

can incorporate into our own and even a regional approach to this is something that had been discussed at the last hearing.

I think this requires like the -- I hate to use that term Manhattan Project but it really is. This is something that is major for this country. And fortunately New York State is very forward thinking on this. We have been a leader. And that's evidenced by the studies and the fact that you're all here. But this is bigger than all of us and it will take at least a generation. So, I thank you and I thank you both, all the Chairmans for putting this together.

MR. SEGGOS: Thank you, ma'am.

ASSEMBLY MEMBER ENGLEBRIGHT: Mr. Otis?

ASSEMBLY MEMBER OTIS: Thank you, Mr. Chairman. Commissioners, thank you for the hearings and the testimony. I was happy to read your testimony from last week and your comments again here today about the new focus on the communities, the smaller water systems that we're going to ask EPA to expand their purvey. But probably we're going to end up in New York State

1 going forward with legislation. I'm very happy to
2 see that. And I think probably we are going to
3 have it go it alone.
4 My question is that when you do your
5 legislation, are you also hopefully going to be
6 looking at what the next steps are going to be
7 upon implementation? I think that it's going to
8 need not just telling the smallish systems they
9 have to comply but also giving them some of the
10 assist in terms of testing expertise, kind of
11 background so that we can get this going as
12 quickly as possible and get those communities
13 protected. So comments on that from either of
14 you?
15 MR. ZUCKER: We will look at all of
16 this, all the points that you brought up. I
17 agree.
18 ASSEMBLY MEMBER OTIS: That would be
19 great. One of the things about the water testing
20 that is an education is it seems that -- I'm
21 learning this, I guess this is science, but you
22 test for things that you're looking for. It isn't
23 like: Let's test to see if that water's clean.
24

And so it's the other way around and that is a necessary challenge and something that you and your experts deal with.

I want to use this opportunity to thank both of you for the great implementation of the Water Grant Program through EFC. Both of you are on that Board and help run that Agency. But we should note: for the first two years, the $250,000 in grants is leveraging over a billion dollars in total project costs. And I'll just say from following this closely: the implementation has been done so well by EFC and with the help of both of your agencies. And so to thank you, thank everyone involved and thank the Governor because it really is an exceptional program that we need. Obviously from these hearings, last week and this week, we need even more resources to make that money go even farther and get more projects done. So thank you.

MR. ZUCKER: Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: I have a couple of questions. Are there other questions from other Members? My first question is relating

to pollinators and whether there is a link between the hive collapse disorder that is threatening our largest industries on Long Island are tourism and agriculture. As Mr. Thiele knows, we have two growing seasons. We're the number one agricultural county in the State. And we feel concerned about whether the disruptions in pollination patterns is traceable back to pesticides. I wonder if you could reflect on that and give us your insights?

MR. SEGGOS: Sure. Assemblyman, it is certainly a shared concern. We, with the Governor, a couple of years ago directed both DEC and AG & Markets to explore the issue of the pollinator Colony Collapse Disorder and other pollinator-like issues. I talk to Commissioner Ball from Ag & Markets about this on a fairly regular basis. And we put out the first plan this year. We wanted to take a very comprehensive look to it because it is a big issue for New York State. It's a big issue for agriculture and tourism and everything else.

There are probably many causes for the

decline in bees and in butterflies. Certainly climate change is having something to do with it; habitat fragmentation, the way we manage our lands. And undeniably there's an issue with pesticides. The report's not at the point, the plan that we put out hasn't yet determined that any particular pesticides need to be banned. But it's an issue that we're fairly aggressively studying this year. And I know that reports that have been coming out of Europe and elsewhere in the U.S. -- frankly on both sides of that, and we're looking at it very carefully. I mean, our interest is making sure that we don't make mistakes now that will inevitably harm our environment more significantly in the future.

ASSEMBLY MEMBER ENGLEBRIGHT: Long Island's been the scene of a number of very high profile illegal dumping cases. I wonder if you could summarize what the DEC is doing to combat this trend?

MR. SEGGOS: Sure. Yes, you've seen the Roberto Clemente Park issue that was on the front pages of various newspapers. That's not the only

one. There's this issue of mine and fill effectively. So a lot of these sand mines around the Island are effectively mined out quickly and then turned into landfills almost in the cover of night. The resurgence in development in New York City in an odd way is driving a lot of this. Because you have a lot of commercial construction demolition debris that needs a home. And sometimes these homes for these places aren't where they should be.

So what we're doing, we've put out a fairly robust set of regulatory changes to Part 360, which we discussed earlier this year during our budget hearing. The Part 360 amendments would tighten the regulatory controls of the C&D business because that's really where all this begins. First and foremost, by making the truckers and the companies that do this register with the State and ensure that there's some tracking that goes on for that waste.

We are very attuned to issues of dumping. We hear about these on a regular basis, whether it's Furrows Road or Roberto Clemente;

we've been working very well with local district attorneys on enforcement. The word on that is getting out. But I think truly the regulatory changes that we've proposed and are now -- I think the public comment period on that ends tomorrow; we would anticipate that that's going to have the most significant impact on this.

ASSEMBLY MEMBER ENGLEBRIGHT: Let me shift over to nitrogen for a moment. It's clearly one of the major issues. Our lead speaker today, the County Executive of this County, spoke to that, as well as many others and we'll hear more. The State has provided approximately $10 million from the Environmental Protection Fund to help address Suffolk County's nitrogen concerns. I wonder if you could explain how that money has been and will be spent and how it might dovetail with the $5 million that the Governor announced today is going to Stony Brook?

MR. SEGGOS: Sure. Well, we've actually put more than that into the area, into Nassau and Suffolk. I mean, I had mentioned earlier and not to belabor the point about infrastructure, but

we've put hundreds of millions of dollars into in particular two big projects: one in Nassau County to take Bay Park and create an outfall into the Atlantic to keep that out of the Bays. That's one major initiative.

The other one is very different obviously: working with Suffolk County in taking unsewered areas -- hundreds of homes, hundreds and hundreds of homes and creating sewer lines. It's a $388 million project that we're doing with FEMA and the County. So that is probably one of our biggest projects. But we realize that there's a great deal more to be done because frankly in many of these areas, there's 360,000 properties that don't have connections. We've been putting money into some of those hookups and also into the study of alternative septic technologies. Because as one of our commenters said earlier: not everybody wants to be hooked up to a sewer line. Some people actually want to have septic systems. So we want to make sure that the septic systems people put in end up being the good ones and that's what the Center for Clean Water

Technology is studying right now.

And between the money we've been dedicated from the EPF to that, plus the money we've been giving to the County for some of those hookups and some of those projects, in addition to some of the larger projects like studying the impacts on the Peconic and working on Peconic issues; there's a very comprehensive approach to it. And I'm confident that the Center is going to develop leading edge technologies really nationally. I know that was one of the original concepts was: Let's give the Center enough money to develop these technologies so that they can be commercialized elsewhere. So, I feel optimistic about the Center's long-term ability to do that.

ASSEMBLY MEMBER ENGLEBRIGHT: My final question is pretty general but let me just frame it, where I'm coming from on the nitrogen issue. A lot of the nitrogen that is now reaching our coastal waters entered into the groundwater system through cesspools at the time that we were inventing suburbia. Groundwater moves roughly a foot per day. Some many years then are required

for a nitrogen load that might come from a cesspool many miles inland to reach surface water bodies, streams that discharge into the Great South Bay or Long Island Sound.

All those years have gone by. The harvest that we are seeing of overdevelopment is now what amounts to a continuous stream of nitrogen-laden groundwater entering our coastal waters. And we're hearing rightfully and appropriately concerns as to how to go about dealing with this. That's a logistic and financial puzzle that the County Executive and others are offering rather courageous I think suggestions on how to get started.

But if we could snap our fingers today and have advanced wastewater treatment systems installed in our 360,000 cesspools, the burden that's already been placed into the groundwater system will take 20, 30 or more years to purge itself; that's if we were able to do it tomorrow morning. Now we have to go to our public. We're elected on two-year cycles. We have to go to our public and say: Invest into something that you

1 won't necessarily see the benefit for.
2 Now, we don't necessarily have to say
3 that but somebody will. There will be some people
4 who will be opposed to going in this direction
5 and so that will be heard. It seems to me we have
6 an education of the public need that is going to
7 require a good deal of information transfer to
8 support whatever policies, whatever financial
9 mechanisms we come up with. I haven't heard
10 anybody talk about public education.
11 I know that you're put forward money for
12 research; that's good and necessary. Money for
13 hardware: pipes and treatments; that's good. I
14 know that we are doing demonstration sites in
15 this County for advanced wastewater treatment;
16 that's good. What are we doing to solve the
17 information transfer questions that relate to
18 whether the public's going to be willing to go
19 forward and join with the forward thinking of
20 voices that we're hearing here today?
21 MR. SEGGOS: Well, let me just say this.
22 I think these hearings are a really solid start
23 to that. There's no doubt there's an enormous
24

amount of work that's been done to date. We've almost put the ball on the tee, right, with all of our forward thinking initiatives. And now we're coming up to hit the ball into the water -- like I usually do.

But nonetheless, look, we are at the point right now where we have all the right pieces in place. And there's a convergence nationally now about the need to think about water, not just for today but for the next generation and the generations beyond. It's not just the climate change thing, which everyone believes I think is real at this point. At least I hope they do. This is the drinking water in people's taps. It's the harmful algal bloom out there. It's the eroded shoreline. It's the things that people can see and touch I think that are positioning all of us with a fantastic opportunity frankly to drive some of these transformational initiatives forward.

So I'm sort of speaking in a grandiose way but I believe that right now we have the opportunity to do that education. I think that

the media is picking up on it on a regular basis. Right? Water is a big issue. It's running front pages of newspapers. Now it's in classrooms. My kids, who are all under seven, now understand water and environmental issues.

So I think we're at a point right now where we can push these initiatives forward on a regular basis, in a very comprehensive way through education. And I believe people will buy into it. I believe people will buy into the fact that we need to make significant investments now because I forget who it was in the last hearing; somebody observed that water is not free. Water is something that we need to invest in and make tough choices about now. So, I'm very optimistic that all the pieces are in place right now to do this. And it's been a good couple of years of planning for that moment.

ASSEMBLY MEMBER ENGLEBRIGHT: Am I hearing that there is a will to invest a part of our public funds into an educational program that would prepare our public?

MR. SEGGOS: I would love to work with

you on any concepts you have on education. I think it's a fantastic opportunity. We've got tools. I'll just talk about DEC. We have an Education Division at DEC, which does lots of really great outdoor work.

ASSEMBLY MEMBER ENGLEBRIGHT: And you have a magazine?

MR. SEGGOS: We have a magazine.

ASSEMBLY MEMBER ENGLEBRIGHT: So you do have some tools at your disposal.

MR. SEGGOS: We've got social media.

ASSEMBLY MEMBER ENGLEBRIGHT: I think we're going to need those tools. I appreciate that the news media are picking up on this and they're doing their part. But I think that we really have a lot of communication that should not be left to the goodwill of the Press.

MR. SEGGOS: Agreed.

ASSEMBLY MEMBER ENGLEBRIGHT: We need to be a little more proactive.

MR. SEGGOS: Agreed.

ASSEMBLY MEMBER ENGLEBRIGHT: You don't hear that often. My final question is a question

about State Superfund. Do we have sufficient assets in the State Superfund to address all potential PFOA and PFOS contamination?

MR. SEGGOS: I think we do. We have a billion dollar ten-year outlook on that. We have drawn upon Superfund a number of times this year, as you know, Statewide, and we've been able to keep up. So, I believe we do.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you. I don't have any other questions. Senator Hannon?

SENATOR HANNON: Yes. Commissioner Seggos, I had been concentrating on the eastern end of my District, which encompasses Grumman. But I am reminded that south of my District on the western end, we have the outfall pipe.

MR. SEGGOS: Mm-hmm.

SENATOR HANNON: And this is probably the greatest unresolved environmental planning problem for Nassau County. It's still after effluence has been treated at the Bay water site; it's disposed of into the Bay. And the idea is to try to dispose of it into the Atlantic. Now, I don't know if there is major environmental

hurdles but I do know there are major funding hurdles. And you did mention something about it. And I know the State has done well in recovering from Sandy to repair the plant. But I don't know where on the drawing boards it might be to try to assist in regard to the outfall pipe into the Atlantic.

MR. SEGGOS: Right. Well, I guess the good news on this is we have been getting very close to solving this. It's been an issue that's plagued Nassau for years. It's plagued the environmental community for years; plagued the fishing community. And it's one of those major issues and the Governor has even talked about solving this aggressively. So, we have identified post-Sandy funds that we believe can be applied to an outfall. We have already funded with your help some of the study and planning that is needed for that.

In our negotiations with Nassau County, they and I give them credit for being very creative about the ways to do this: You either have to build a new outfall pipe right off of Bay

Park or perhaps you take advantage of one that already exists in Cedar Creek. So we're looking very carefully at the Cedar Creek option because that frankly can save us hundreds of millions of dollars. And it's something that we're getting close on.

SENATOR HANNON: Alright. Hopefully you might have a budget request on that.

MR. SEGGOS: Or maybe we'll have a press release before that.

SENATOR HANNON: Thank you.

MR. SEGGOS: Thank you, sir.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you. We appreciate your making the journey. Most of you have made a journey from the middle of the State and beyond. We appreciate your input and your testimony. Thank you so much.

MR. SEGGOS: Thank you very much.

SENATOR HANNON: Thank you for all three hearings. It's been a lot of facetime.

MR. SEGGOS: It has been. Thank you.

MR. ZUCKER: Could I just mention one thing that you mentioned before about the public

1 health?

2 ASSEMBLY MEMBER ENGLEBRIGHT: Yes, Mr.

3 Zucker.

4 MR. ZUCKER: It's also about prevention.

5 And so when you mention about education, the

6 whole premise is about prevention. And we will

7 work forward to address that as well.

8 ASSEMBLY MEMBER ENGLEBRIGHT: Good

9 point. Thank you. And at the budget hearing,

10 we'll get you out before 5:00. Our next panel

11 includes Tyrand Fuller, the Director of Strategic

12 Initiatives for the Suffolk County Water

13 Authority; David Berg, Program Manager for the

14 Long Island Nitrogen Action Plan of the Long

15 Island Regional Planning Council; Stan Carey,

16 Vice Chair of the Long Island Water Conference;

17 Jared Hershkowitz, a Retired Profession and

18 Member of LICAP, Water 4 Long Island. Alright,

19 let's start by allowing you to be sworn in.

20 ASSEMBLY MEMBER GOTTFRIED: Well, if you

21 can each identify yourself for the record and

22 then I'll ask you if you swear to tell the truth.

23 MR. TYRAND FULLER, DIRECTOR OF STRATEGIC

24

1 INITIATAIVES, SUFFOLK COUNTY WATER AUTHORITY: Ty
2 Fuller.
3 MR. DAVID BERG, PROGRAM MANAGER FOR THE
4 LONG ISLAND NITROGEN ACTION PLAN, LONG ISLAND
5 REGIONAL PLANNING COUNCIL: David Berg with the
6 Long Island Regional Planning Council.
7 MR. STANLEY CAREY, VICE CHAIR, LONG
8 ISLAND WATER CONFERENCE: Stanley Carey, Long
9 Island Water Conference.
10 MR. JARED HERSHKOWITZ, RETIRED
11 PROFESSOR, MEMBER OF LICAP, WATER 4 LONG ISLAND:
12 Jared Hershkowitz, LIPCAP, Water 4 Long Island.
13 ASSEMBLY MEMBER GOTTFRIED: Okay. And do
14 each of you swear or affirm that the testimony
15 you're about to give is true?
16 ALL: Yes.
17 [WHEREUPON THE WITNESSES, MR. TYRAND
18 FULLER, MR. DAVID BERG, MR. STANLEY CAREY AND
19 MR. JARED HERSHKOWITZ WERE DULY SWORN.]
20 ASSEMBLY MEMBER GOTTFRIED: Okay, fire
21 away.
22 MR. FULLER: Okay. Good afternoon. My
23 name is Ty Fuller and I serve as Lead
24

Hydrogeologist and Director of the Division of Strategic Initiatives for the Suffolk County Water Authority, a public benefit corporation serving approximately 1.2 million Suffolk residents.

On behalf of the Authority, I want to thank you for the opportunity to provide testimony on water quality concerns facing Suffolk County. But before I address the threats to our groundwater, I want to talk a little bit about the high quality and safety of the drinking water that we do provide, an aspect that unfortunately tends to get underreported.

The Suffolk County Water Authority has a long and proud history of going above and beyond regulatory requirements when it comes to drinking water safety. In 2015 our laboratory produced 171,000 test results and tested for 398 chemical constituents. That's 249 more than required by regulators. We also increased the frequency of testing, the number of sampling locations and the number of parameters tested, including those for emerging contaminants.

We often take wells out of service or begin treatment when just trace amounts of a contaminant are found, even if the levels are below established maximum contaminant levels. This is because our internal standards for water quality are often more rigorous than State and federal regulations. Regulators have frequently cited the effectiveness of our work and methods we've developed.

In addition to our 240 pump stations and 64 water storage tanks, we are responsible for the maintenance of nearly 6,000 miles of water mains. It seems incredible to think of this way but that is the equivalent of a single pipe stretching from here to the heart of Siberia. And it can cost approximately $200 per foot to replace this water main. We, like public water suppliers all over the country facing the challenges of aging infrastructure, need a strong financial commitment from the State to maintain this infrastructure and keep water flowing to our customers.

With the tremendous number of nationwide

headlines in recent years chronicling the various challenges to drinking water quality across the country, we've sought to increase our connection to the people we serve by making sure they are more aware of and thus invested in all aspects of the elaborate system that delivers drinking water to their taps. And I say this to Assemblyman Englebright: We educate thousands of students every year on how the water cycle works. But we realize that given the increased attention to water quality challenges, we needed to greatly expand our public outreach.

It is as you all know the simplest truth about the topics we're here to discuss today and that is this: It is a lot less expensive to prevent contaminants from entering our groundwater than it is to remove them. And therefore educating the public about how to do so is the smartest allocation of our collective resources. And so we've joined together with other water suppliers, civic associations and private companies on a perpetual campaign to alert the public about the dangers of improper

disposal of prescription drugs, a category of emerging contaminants.

We've created an education center to invite the public to view displays and participate in interactive presentations to teach them anything they want to know about how the water cycle works and how water is delivered to their homes. This past summer we launched a campaign to encourage conservation and the judicious use of our water resources; an initiative that is not only an environmental priority but a public safety and financial one as well.

In addition to the environmental importance of conserving the sole source of our drinking water, the initiative bolstered by an extensive media campaign helped our customers understand how changing their water use habits, particularly lawn watering schedules, can help tremendously in ensuring there is sufficient water pressure for fire protection during peak hours.

We emphasize that decreasing water use

during peak hours can help prevent costly infrastructure improvements that would otherwise be needed to meet the higher demand. These cost savings would ultimately benefit our customers. Our conservation campaign will be continual and timed each year to correspond with the beginning of the spring and summer lawn watering season, the time of year that puts the greatest stress on our resources.

In this past June, we collaborated with the Suffolk County Department of Health Services and Suffolk Legislator, Dr. William Spencer, in hosting a forum at our education center on a topic that made national headlines: Keeping the drinking water safe from lead contamination. At the forum, attended by more than 30 public and private school districts, we explained how our optimal corrosion control systems ensure that the water we supply is safe from lead contamination. And we've offered guidance to schools on addressing potential hazards of lead in the drinking water within their facilities.

But there is one important outreach

initiative and another one that's sprung directly from it that I do want to highlight today. In late 2013 the Suffolk County Water Authority proposed the idea for and subsequently joined together with more than 100 utility and non-utility members of the Long Island Water Conference and proposed the creation of the Long Island Commission for Aquifer Protection, or LICAP. It's a Commission consisting of experts on groundwater issues, representing not just public water suppliers but elected officials, health departments, the United States Geological Survey and the New York State Department of Environmental Conservation.

The Commission was created through legislature, supported unanimously by both Nassau and Suffolk Legislatures. LICAP was created with a goal of developing a regional focus on the protection of our greatest natural resource: the sole source aquifer the provides all of our drinking water. Doing so, we realize it would require extensive cooperation between the dozens of public water suppliers on Long Island,

information sharing, public involvement and the development of plans to manage our water resources in a coordinated manner.

In its brief history, LICAP is on track to deliver all of those goals. The Commission has held public hearings in each County to gather input and additional hearings are scheduled for the next month. The Commission's first State of the Aquifer Report, designed specifically to educate the general public about our aquifer system and contaminant threats it faces, has been drafted and will be published this Fall. And the Commission's other primary statutory focus: the creation of a Groundwater Resources Management Plan is scheduled to be released next year.

Perhaps the Commission's greatest success to date though is one that's sprung organically from getting all of the referenced groundwater experts together in the same room; it's called Water Track. And if you have not heard about it yet, you will soon. Water Track is a GIS based contaminant mapping system that will allow officials in the water industry, as well as

the general public to pinpoint contamination threats throughout the region.

Through the use of interactive maps, Water Track allows the user to search for any given compound and have results visually displayed by concentration range and location. In addition, compounds can be searched based on well depth, water district and sample date. The user can search for either raw groundwater or post treatment water we supply to their home. Water Track would not have been possible without the requisite data sharing by public water suppliers contributing to LICAP. Water Track will officially be unveiled to the public soon and should prove to be an extremely valuable tool in protecting our sole source aquifer. It is the first such system in New York State.

As to other emerging contaminants, I referenced above the threat of prescription drugs. Proactively addressing the presence of pharmaceuticals and personal care products or PPCPs in groundwater has been a priority for the Authority for years.

Despite the fact there are no current health regulations for PPCPs in drinking water and that the EPA does not require testing, the Authority in 2015 tested for 47 PPCPs in all of our nearly 600 wells and detected approximately one dozen. It is important to note that the detections were at trace levels and have no known health effects. However, wherever possible we are using granular activated carbon filtration and blending wells to remove those trace levels from the public water supply.

The fluorinated chemical PFOS has been identified as an emerging contaminant of concern. This Committee is well aware of the situation in Upstate Hoosick Falls, involving the similar compound PFOA. In Suffolk we have detected PFOS above the reporting level at eight well fields within our service territory. And at each location treatment is currently in place to reduce any detection below the current health advisory level. We are working closely with officials, as you've heard earlier, to seek ways to hook up those on private wells south of

Gabreski Airport in Westhampton Beach, where PFOS has been detected above the health advisory level to the public water supply.

Another emerging contaminant of concern that we've heard a lot of today is 1,4-Dioxane. 1,4-Dioxane is a synthetic chemical used as a solvent and a chlorinated solvent stabilizer for industrial chemicals, predominantly 1,1,1-trichloroethane. Apart from its use as a stabilizer, it is used in a variety of applications as a solvent, such as in Hangsen adhesives. But it is also found in cosmetics, in detergents, shampoos and deodorants, just to cite a few examples.

In other words, it is important to note it is an issue that reaches far beyond the water supply industry. In fact, you could say it is only an issue for the water supply industry because its presence is so pervasive in everyday household products. 1,4-Dioxane is currently regulated as an unspecified organic contaminant with a maximum contaminant level of 50 parts per billion.

There are other important points I want to make about this compound. First, there is no feasible means to treat for the removal of 1,4-Dioxane from the water supply. And second, levels of 1,4-Dioxane do not appear to be increasing. Detections of the compound have been fairly stable, not trending upward. However, as with other emerging contaminants, the Authority has sought to proactively address this potential threat to the public water supply in various ways. In addition monitoring Authority wells, we conduct distribution sample station testing for 1,4-Dioxane twice a year at each of our 79 stations. And we have launched a pilot program to build and use the State's first full-scale advanced oxidation process, designed to remove 1,4-Dioxane.

Based on that small-scale pilot study conducted five years ago, the full-scale AOP system has been designed to remove at least 97 percent of 1,4-Dioxane present. For three years we have worked closely with State and County Health Department officials to receive permission

to use this innovative technology to remove 1,4-Dioxane.

I'm delighted to say that we've learned that this pilot project has been fully endorsed by the New York State Department of Health and the Suffolk County Department of Health Services; which means that AOP pilot project will become a reality before long. We feel that this system will prove to be a valuable means of reducing levels of 1,4-Dioxane at problem areas. And in closing, I'd like to note that we at the Suffolk County Water Authority are proud of our strong working relationship with elected officials, including those in this room.

We're happy to contribute testimony to the recent hearing in the potential dangers of sand mining to the groundwater supply and have since the hearing developed a methodology to potentially identify illegal sand mining facilities via GIA mapping. And we're proud to have partnered with you on so many initiatives in the past to protect groundwater, including the ban of the chemical MTBE, the Pine Barrens

Protection Act, the regulation of underground storage tanks and hazardous materials and so much more.

We salute the creation of the Water Quality Rapid Response Team and the attention and resources it brings to a topic so important to everyone in this room. The Suffolk County Water Authority has been an industry leader for many decades in not only responding rapidly to drinking water concerns but also acting proactively to prevent them. With so much at stake, we're delighted to see given the grant announced today that we can count on Governor Cuomo to bolster the State's commitment to ensuring our vital water supply continues to be safe for many generations to come. Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. I just want to reinforce what you've said in about ten different ways here, which is that Suffolk County Water Authority has been and continues to be and going forward will be an important part of communicating with our public and validating methodologies that matter. So

thank you for what you do every day in the form of the largest water supplier, in the form of an Authority anywhere in the State. We'll come back though for questions. Let's go through the panel. Mr. Berg, you're next.

MR. BERG: Hi. My name is David Berg. I'm the Program Manager for the Long Island Nitrogen Action Plan, which we'll call LINAP. I'm with the Long Island Regional Planning Council. I want to brief you on LINAP, which is a joint project, as you've already heard, of the Planning Council and the New York State DEC. The DEC and the Planning Council in partnership with both Counties, local governments, area scientists and numerous organizations are in the process of developing the Long Island Nitrogen Action Plan to reduce the level of nitrogen in both surface and ground waters of Long Island.

As I'm sure you're aware, New York State appropriated $5 million in the 2015-2016 State Budget to be utilized by the DEC and the Planning Council to develop a plan with a team of expert consultants. LINAP began in October of 2015 when

the DEC, the Planning Council and both Counties hosted public meetings to solicit input on what the plan ought to be.

Based on input from those meetings and written comments, the DEC, the Planning Council and both Counties developed a conceptual draft scope for LINAP. Three more public hearings were held in February of this year to discuss the scope. And the current LINAP scope incorporates all of that feedback and the comments received. LINAP is led by a project management team composed of staff from the DEC, the Planning Council and Suffolk and Nassau Counties. The management team will seek input from technical work groups, which will be established in the next couple of months and as needed throughout the project.

The management team will also draw from a broad array of regional and national experts. The project scope is broad, yet all items will be investigated in depth. LINAP will not duplicate the ongoing efforts of both Counties, other governmental and nongovernmental entities. Rather

it will work in parallel with those efforts.

The project will fill in information gaps and will develop a robust nitrogen load reduction plan for groundwater and the Island's three major estuaries: the Long Island Sound, the Peconic and the South Shore estuary; along with the bays and harbors that are tributaries to those estuaries. The project will have two tracks: an early action track, 12 to 18 months, which is relatively immediate; and full-term action three to four years out.

Watershed analyses, which are currently underway and I think we heard about those earlier, including groundwater and surface water modeling, will develop nitrogen reduction targets for local implementation in the early action LINAP; in other words within the coming 18 months. No regrets actions -- I like that name -- will be recommended: those initiatives that all agree will result nitrogen loads fairly quickly and can be implemented relatively easily.

Full-term LINAP three to four years will include more rigorous watershed analyses, more

detailed hydrodynamic modeling. Technical mitigation recommendations will be made for individual watersheds of both Counties. And the full-term LINAP will incorporate updated and new management and financial measures to facilitate long-term nitrogen load reduction. The project team will examine how other regions across the country have addressed these challenges and will make recommendations appropriate to Long Island.

Nitrogen reduction means lowering inputs and removing existing nitrogen. LINAP will examine sewering of dense areas and areas adjacent to impacted waterbodies and public water supply wells; also clustered are community sized sewering of 30 to 90 homes, as well as advanced individual onsite wastewater treatment systems. The project will also determine the potential value of actions to remove existing nitrogen from surface waterbodies and perhaps even groundwater.

Those actions may include the installation of in-ground barriers, so called permeable reactive barriers; improvements to water circulation and flushing in the tributary

estuaries; hydro modifications and also bio harvesting, which refers to shellfish and algae cultivation to remove nitrogen.

The capacity and performance of existing wastewater treatment plants will be evaluated along with wastewater reuse regulations. Management actions will include an analysis of a single countywide wastewater management district, at least for Suffolk County. And we will also of course look at fertilizer, which represents a substantial portion of the total nitrogen load in some watersheds. LINAP will estimate the fertilizer nitrogen load contributed by homeowners, landscapers and agriculture and will make recommendations for its reduction.

Storm water is also responsible for a fraction of the nitrogen load. An estimate of its contribution will be included in the sub-watershed modeling. Engineered and green infrastructure solutions will be sought to reduce the nitrogen load from storm water.

The scope for this project was completed in June of this year. We're preparing a request

for proposals now to hire an expert consulting team to complete specific tasks. We're establishing the technical work groups to advise the project management team and will initiate outreach to stakeholders and an educational program in the immediate future. Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you. Mr. Carey?

MR. CAREY: Good afternoon and thank you for the opportunity to address this hearing. I'm Stan Carey, Superintendent of the Massapequa Water District and Vice Chairman of the Long Island Water Conference on whose behalf I am speaking today. With me is Paul Granger, Superintendent of the Port Washington Water District and Co-Chair of the Long Island Water Conference's Legislative Review Committee.

The Long Island Water Conference is an alliance of 47 drinking water purveyors and other industry professionals who supply potable water to more than three million people. Together our members serve 90 percent of the Bi-County area. That's a population greater than 20 states. As

the leading water professional organization, whose mission it is to deal objectively with drinking water issues on a scientific and factual basis, we encourage you to utilize our organization as a reliable technical resource.

A unique feature of the water supply system on Long Island compared with much of the rest of New York State is that it is entirely supplied through the underground aquifers. This presents some unique advantages, such as less susceptibility to periodic drought conditions and little or no concern about disinfection byproducts; a major concern of water suppliers who must rely on surface water as their source. At the same time there are also some unique challenges, which I will be addressing.

The commitment of Long Island's water suppliers in providing the highest quality water possible is best demonstrated by their role in the formation of LICAP, the Long Island Commission on Aquifer Protection. LICAP was formed in 2013 by a group of water utility representatives, elected officials and scientists

to assess the long-term health of Long Island's aquifer system and develop a blueprint for its protection.

In LICAP's initial State of the Aquifer Report, the members determined that the quality of water supplied to Long Island's residents by the community public water suppliers continues to be excellent, meeting or surpassing all federal and State standards. Let me expound on that conclusion. While our finished water quality after treatment remains excellent, water suppliers are very concerned with meeting potential standards for unregulated compounds. Further we are looking to the New York State Department of Health for guidance on how to deal with them in the short term. That would include DOH granting approval for treatment protocols proposed by Long Island water suppliers which have not yet been acted upon.

What we just learned today at this hearing after a lengthy review process that technology was approved. So, we'd like to thank the Department of Health for doing that.

By law, public water suppliers are required to test for 140 different substances including: volatile organic compounds; inorganics such as iron, manganese and chlorides; pesticides and herbicides, at a cost of over $3 million per year. And many water suppliers take the extra step of testing additional parameters on their own. Under the 2013 Unregulated Contaminant Monitoring Rule, we also test for an additional 30 contaminants, 28 compounds and two viruses; so the EPA can collect the information and determine if any of these should be regulated under the provisions of the Safe Drinking Water Act.

Among the as yet regulated contaminants we test for are such compounds as: 1,4-Dioxane, chlorodifluoromethane and bromomethane; not exactly the kind of chemicals that normally receive a lot of attention. Under the same Rule, we also test for compounds that have received a great deal of attention of late: PFOA and PFOS. As you might expect, all this testing provides a significant amount of information about the general quality of the water we serve to our

customers every day. That extensive information is what allows us to say with confidence that the quality of the water supplied to our residents is excellent.

Concerns: This does not mean that there aren't concerns which are being addressed, particularly in specific areas such as with the Grumman-Navy plume of volatile organic compounds, which primarily affects the Bethpage Water District but also threatens many others; salt water intrusion in Great Neck Manhasset Neck, Montauk, the North Fork of Long Island and parts of Southwest Nassau and PFOS and PFOA contamination in the vicinity of Gabreski Airport.

While POFS has been detected in some of the Suffolk County Water Authority's public supply wells near the airport, the water from those wells has been successfully treated by GAC filters. Of greater concern in that area is contamination of many private wells that still exist, which lack treatment capabilities available to the Water Authority. The Authority

is actively trying to connect those homes to the public water supply. And again we learned today and thank you to the DEC for the designation of a Superfund site, which will expedite this process.

On a more general basis, the water supply community is monitoring a variety of potential threats. 1,4-Dioxane: This compound is one of the emerging contaminants that are as yet unregulated but are being monitored as part of the 2013 Unregulated Contaminant Monitoring Rule. It's important to note that 1,4-Dioxane is not a source specific contaminant. It is a chemical used in a large number of industrial processes and is even found in such everyday consumer products as cosmetics, detergents, shampoos and other household products. This means we can't simply identify and isolate a single source and prevent its entry into the environment, as we can with industrial contaminant plumes.

While contaminant prevention is always preferable to removal, sometimes water treatment is the only viable option. Two Long Island water suppliers have already conducted pilot studies

for 1,4-Dioxane removal and are awaiting approval from the State Department of Health. Timely review and approval of these pilot studies for treatment protocol is essential. We urge the approval of these pilot studies be granted expeditiously. But again, thank you; we learned today that this has been approved by the State Department of Health.

Like the Grumman-Navy plume, many of these threats represent legacy contamination by industries which are no longer active or involve chemical storage and use practices that have been curtailed or changed. These include contamination of our aquifers by volatile organic compounds which originally led to the closure of several supply wells in both Counties in 1970's. USEPA has set maximum contaminant levels for these compounds, which all Long Island water suppliers meet. In many cases, suppliers have set higher quality standards for themselves that are also met. In areas were VOC contamination has been found, we have been successful in removing these compounds through such methods as GAC filtration

and air stripping. But it always better to not have to resort to treatment methods such as these.

Pharmaceuticals: An emerging area of concern has been the discovery of pharmaceuticals in personal care products, although in extremely minute quantities in water supplies. These compounds are released into the environment from bodily excretion, bathing and disposal of unwanted medications to septic systems, sewers or trash. In an aquifer system like Long Island, they generally enter the groundwater through septic systems. Where there are no EPA standards for these compounds, it must again be emphasized that they are present in these instances where they are found in extremely minute quantities

For example, the Suffolk County Water Authority entered into a cooperate effort with the U.S. Geological Survey to conduct a four-year study to document the occurrence of 20 pharmaceutically active compounds in groundwater monitoring wells throughout Suffolk County. In no case has testing for these compounds even

approached the Department of Health's unspecified contaminant standard of 50 parts per billion.

These results are for the raw or untreated source water. As for the finished water actually being supplied to homes, GAC filters which many wells have are particularly effective in removing the minute quantities of pharmaceuticals which might be found. But as always, preventing contamination in the first place is always the most effective, as well as cost effective practice. Simple programs like unused drug collection sites, which allow people to safely dispose of their unused pharmaceuticals are a particularly effective method.

Nitrates or compounds that are in the environment all around us: This includes the food we eat, the air we breathe and of course the water we drink. It is only excessive amounts of nitrate that are of concern. Eighty to 90 percent of the nitrate most people consume comes from vegetables. But like anything else, you can have too much. The drinking water standard for nitrate is ten parts per million. This is about one-tenth

the amount at which any health concerns arise.

There have always been measurable amounts of nitrate in the water supply. This has increased gradually as the population of Long Island increased. Despite these nitrate increases, the average nitrate concentration in the sampled public water supply wells remains at less than half the ten-part per million drinking water standard. Nitrates are not a major issue when compared to toxic plumes. And in areas of Long Island where sewers have been installed, testing has shown that nitrate concentrations in the underlying aquifers have begun to decrease. This is particularly true in Nassau, where sewering has greatly reduced nitrate levels over the past two decades.

What LICAP is doing: One of LICAP's statutory missions is the development of a groundwater resource management plan, which is scheduled to be released next year. The plan will identify threats to groundwater quality and quantity; assesses the adequacy of existing groundwater management regulations and recommends

amendments to regulations where needed; as well as recommend an implementation plan for all stakeholders.

Infrastructure: While maintaining water quality is an ongoing concern, there's a far more serious crisis looming for water supply systems: that of infrastructure. Water falls from the sky on a regular basis for free. It's getting that water where you want it, when you want it and with the quality you want that costs money. It costs about $2 million just to drill one supply well. And there are about a thousand supply wells in Long Island. So that's $2 billion right there. Then you need storage tanks to maintain pressure, monitoring and treatment systems to maintain the quality we all expect and underground water mains to deliver it to our consumer.

In short, public water supply is an infrastructure dependent endeavor. Over the course of years -- decades, that infrastructure inevitably breaks down and must be replaced at considerable expense. A great many water supply systems, particularly in Nassau County but there

are also some in Suffolk, are municipal systems which are subject to the State's two percent tax cap. This tax cap inhibits the ability of municipalities to come up with the necessary amounts to invest in expensive long-term projects like this.

We are not talking about operational expenses or routine maintenance but about long-term infrastructure, which is intended to last for decades. We would like to strongly recommend that the tax cap law be amended to provide an exception for investment in projects of long duration, precisely the type of infrastructure required to ensure that the public can depend on a high quality water supply.

Recommendations for State government: Perhaps it would be better to start with what should not be done. Some advocates have proposed a creation of an independent aquifer management agency. This would require statutory authorization by the Legislature and Governor. While well-intentioned, this proposal would be a mistake. The DEC's regional office already

possesses management authority over the aquifer resources. This includes such powers as: issuing well permits, setting up pumping targets and in addition to adopting other water conservation measures.

Any proposal for the creation of a new State level entity to manage the aquifer is premature at this time. This is especially true in light of the fact that LICAP, a voluntary effort of local water supply experts, local government and scientific experts have been actively working to address threats to our aquifer system on several levels. Water suppliers are already spending significant funds to protect public health. We need to have our regulatory agencies properly funded, so that sources of contamination like spills are cleaned up or contained and wellhead treatment remains a measure of last resort.

It would be far better to increase funding for the DEC's regional office, providing it with sufficient resources than to create an entirely separate aquifer management agency, the

first of its kind in the State, to exercise powers the DEC is perfectly capable of exercising.

It is also important to note that the formation of LICAP itself is a cooperative effort between Long Island's water suppliers, local and State government officials and the scientific community. It did not require the formation of a new government entity to exercise broad new powers. We urge you not to interfere with this cooperative process.

We also have specific recommendations for State action: Restore funding for the Department of Health industrial waste inspection to previous levels. This will allow continued identification monitoring and in some cases removal of sources of contamination. Provide funding to develop and expand Water Track, the new GIS based water quality database developed by the Suffolk County Water Authority in cooperation with Nassau County water suppliers for LICAP. This database is not only of value to Long Island but if successful may be a model for a Statewide

system. Thank you for allowing us to present our views on the question of water quality on Long Island.

ASSEMBLY MEMBER ENGLEBRIGHT: Chairman Hershkowitz?

MR. HERSHKOWITZ: Yup.

ASSEMBLY MEMBER ENGLEBRIGHT: You're on.

MR. HERSHKOWITZ: Thanks. I have served in leadership capacities and civic associations in both Nassau and Suffolk County. I am now a citizen advisory board member for the Dix Hills Water District. I'm a member of Water 4 Long Island. I began the new Water Conservation Group for the Town of Huntington. And I serve on LICAP, the Long Island Aquifer Protection Commission. I want you to understand that what I'm going to say today is my thoughts. I'm not representing any group.

Once again, I'd like to thank the Members of the Senate and the Assembly for holding this hearing. This is great appreciated. Thank you for holding it here, where the problems of drinking and surface and coastal water

contamination are profound.

I am glad we're to examine water contamination and assess the effectiveness and implementation of the laws and public policies in protecting the water quality and public health. However, we've been doing just that for decades. And although we have made inroads in bringing our waters back from the precipice, some say we're now in worse shape than we have ever been in before.

Look, I believe that all people are good at heart and if they were informed and rewarded would do the right thing. Politicians don't get into for the money. Public workers work for the common good. Environmental activists do it to advance the future health and wellbeing of the citizens. Give a person some knowledge and an incentive and they will do what's right. Last week on the *Daily Show*, the CEO of Starbucks, Howard Shultz, announced a new program called Up Standards, that recognizes ordinary citizens practicing good neighbor activism.

In a time when vitriolic politics,

government corruption and seemingly little getting done for the public good, it's great to see our business community stepping into the void that the government has seemingly relinquished. And there are many other CEOs, who are husbands, wives, fathers, mothers and sons and daughters who have realized that our government is sometimes at a standstill; and that if they don't do something for our earth, what we leave for our grandchildren will be in no way what our parents left us: a pure and beautiful environment where the water is pure, the air is clean and the food is safe to eat.

We need to reach out to them. A few years ago I proposed a comprehensive P3 Plan, a public-private partnership to address in a comprehensive and long-term way a multitude of problems contaminating our waters. And the cost to implement this plan would be amortized over many years. Public utilities all across the country are partnering with the private sector to encourage the public to do the right thing and offset the costs of the infrastructure

1 improvements and achieve common goals.
2 In an era of challenging economics, it's
3 often difficult to find the money needed to make
4 the necessary improvements and provide the
5 staffing necessary to accomplish those goals. But
6 this is not new. In New York we have encouraged
7 alternative energy sources, clean energy cars and
8 other tax incentive programs to carry out needed
9 policy. We can do the same for the environment.
10 But we cannot listen to the deniers that the
11 piecemeal plan to attack the multitude of
12 problems we have now will work.
13 What we have now is no different from
14 what we have had for four-plus decades. And what
15 are the conditions now? In March of 2015, the
16 Suffolk County Comprehensive Resources Plan
17 called our drinking water at the tipping point.
18 Recently *Newsday* called our surface and coastal
19 waters in crisis. And Dennis Keller, the well-
20 respected President of H2M, the consulting firm
21 for many of Long Island's water suppliers, said
22 the DEC has a skeletal staff. And even though
23 there were two new hires, that in no way comes
24

close to their needs. And even when they were fully staffed, over the last four decades of governance, the mess is still here.

A while ago the DiNapoli report said the DEC does not now have and will not have in the near future funds nor staff to do the job of protecting our water. They have so much more to do; how can they possibly focus on that? Our sole source drinking water in three aquifers, ranging from Kings and Queens Counties through Nassau and Suffolk has no single manager, no single entity necessary to protect, enforce laws and regulations and cleanup water issues.

We cannot go back to the disjointed way we manage our water. We are reactive instead of proactive. A P3 Plan managed effectively attacks the problems at their source. Look, we still find thousands of dead fish and turtles, beaches closed, discover new Superfund sites because of contamination and continue to examine the health effects of even the filtered water we drink. There are those that believe even our filtered water contains contaminants in too high a

concentration for human health.

We know the effects of too much nitrogen on infants younger than six months of age. But what happens to children in the womb exposed to nitrate and pesticides? In an Indiana University study, children conceived in the summer perform more poorly in school than other children. The Indiana research team has linked poor school results to pesticides and nitrate exposure in the early weeks and months of development. The study of more than 1.5 million children grades three to ten found that children conceived in the months when pesticide and fertilize levels were highest achieved significantly lower results in standard math and English scores.

I'm not saying that's the case here. But we've never studied it. We don't know. We don't know what the many contaminants both measured and not are doing to our health. Because it is only in the last few years that we've seen nitrogen and other contaminant levels rising so high as to threaten State standards. And when were those State standards set? They were set almost five

decades ago. And it's time we examined their validity. This is a must.

We also need to examine how we treat our water. Improper blending in our utilities hides from the State the real levels of contamination. And chlorine, a pesticide unevenly used may be responsible for many illnesses. A recent study in Hartford, the first of its kind in North America, found that women with breast cancer have 50 to 60 percent higher levels of organic chlorines, chlorination byproducts in their breast tissue than women without breast cancer. We've studied the effects of pesticide on breast cancer. But to my knowledge we have never done research like this. We need to do it.

The USGS has identified dissolved organics in the aquifer that mix with chlorines, which may product these toxins. Once again, I'm not saying it does. I'm saying we need to find out in a comprehensive study if it does. This is new information. Look, there are water utilities throughout this country and abroad that don't even use chlorine in their water.

But more importantly, we need an all-encompassing entity that brings together all the players in drinking, surface and coastal waters. And we can do this in a cost effective way. Isn't it better now to spend a little and prevent the huge cost of major infrastructure building and health costs? Water 4 Long Island has spent the last seven years developing a plan that costs less than a cup of coffee at Starbucks per person per year. We need to put the DEC, the USGS, the Departments of Health and others at the same table but run by scientists and professional city planners without political influence or interference to independently in an ongoing way comprehensively collect data, model, study, plan, assess, oversee, protect, implement policy, ensure sustainability, foster coordination and cooperation in using the latest scientific information manage our waters regionally.

This kind of management entity is not new and has had success in other areas of the country and around the world. The time for setting up commissions and boards and task forces

is over. We cannot afford to wait any longer.

This is the time for bold action, which will ensure the health and safety of our citizens, which of course is all of our ultimate responsibility. I implore you to meet with scientists, academics and activists to establish a Long Island regional management entity that will ensure the health of our citizens, the beauty of our waters and the tourist and fishing industries that made Long Island a great place to live in and work in and visit.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. Let me ask if any of the Members present here have questions? Let me start with my colleague from the Senate, Senator Hannon?

SENATOR HANNON: Jared, I'm not questioning you. But in the middle of your statement you said that a study in Hartford found that women with breast cancer have 50 to 60 percent higher levels of organic chlorines in their breast tissue than women without breast cancer. We've actually spent enormous amounts of time trying to fight breast cancer and I'm just

1 not aware of that study.
2 MR. HERSHKOWITZ: This is a new one. It
3 began in 2011 in Hartford. It concluded in 2015.
4 SENATOR HANNON: Would you just send me
5 a link to that?
6 MR. HERSHKOWITZ: I can certainly do
7 that, sir, yes.
8 SENATOR HANNON: I would appreciate
9 that. Thank you very much.
10 ASSEMBLY MEMBER ENGLEBRIGHT: Send two
11 links to that. Mr. Raia?
12 ASSEMBLY MEMBER RAIA: Thank you, Mr.
13 Chairman. A couple of quick questions for the
14 Suffolk County Water Authority. Your normal
15 course of testing, do you test for any type of
16 radioactive contamination: radon naturally
17 occurring or non?
18 MR. FULLER: Radium, we test for; radon
19 as well. So, we do test for those.
20 ASSEMBLY MEMBER RAIA: You do. Do you
21 pay special attention to areas like the former
22 Huntington landfill and Northport and the home of
23 the current Resource Recovery Center?
24

MR. FULLER: We do even samples throughout the distribution system.

ASSEMBLY MEMBER RAIA: Oh, you do.

MR. FULLER: So we look throughout our entire distribution system.

ASSEMBLY MEMBER RAIA: Alright. And so that would cover like the Northport Power Plant as well, a very old facility that and have used oil for many, many years and I guess still does when they're not using natural gas?

MR. FULLER: Yes.

ASSEMBLY MEMBER RAIA: Okay. Alright, thank you. I appreciate that. And just on a personal note, Jay, thank you for that riveting testimony and all that you've done on behalf of Huntington residents and residents throughout the County. Thanks.

ASSEMBLY MEMBER ENGLEBRIGHT: Mr. Thiele?

ASSEMBLY MEMBER THIELE: I have a couple of questions for the Suffolk County Water Authority. And first of all, thank you for all of your efforts with regard to conservation this

summer. And thank you for coming to my District in that regard and also for the tour that we got, several Legislators, of your facilities, including your testing facilities. It certainly was eye-opening and comforting actually to see the level of work that's being done by the Suffolk County Water Authority.

MR. FULLER: Thank you.

ASSEMBLY MEMBER THIELE: I have one fairly parochial question. You heard the discussion earlier today about Westhampton and Gabreski and south of there becoming a Superfund site and that the water mains would be extended and people would be hooked up. I think 66 properties were mentioned. I'm going to ask you this question because I have the feeling I'm talking to the people that are actually going to do the work. And my question for you is: When do you think it is likely that that work will begin? And how long will it take to do that work?

MR. FULLER: Well, I would say that we are prepared to do the work. That really comes down to the State. Obviously they made a

commitment today to identify Gabreski Airport as a Superfund site and put resources towards it. So as far as what we need to do, I think we've stated this before that we're ready to address that immediately or we have the resources to do that. So, hopefully that answers your question.

ASSEMBLY MEMBER THIELE: Okay, you just need somebody to write a check basically.

MR. FULLER: Yes.

ASSEMBLY MEMBER THIELE: Okay. My second question for the Water Authority. Again, you have put quite a focus on conservation measures. We talk about quantity and quality but a lot can be done with conservation. My District has I think probably the ten highest water users in the County. And I'm talking about residential, single family situation. In fact, one home I think it was reported uses 25 million gallons per year. And I know you're making voluntary efforts to try to get people to conserve. My question though is: At what point would the Suffolk County Water Authority consider a pricing structure that I would call conservation pricing structure; where

the more you use, the more you pay, as a way to try to focus people to be more conservation minded as far as that goes?

Because some people will say: Hey, if they want to pay to use that much water, fine. But when somebody uses 25 million gallons or thereabouts, I mean, as you've explained when you were out in Southampton, you have to have infrastructure in place for the peaks. And these peaks are much higher when you've got people using that kind of water, whether it's for simple irrigation. So my question is: As I understand your pricing structure, it's kind of a straight line. There's no increase in rates for those that are not conservation minded. Any thought being given to that in the Water Authority?

MR. FULLER: Well, first of all, looking back to the conservation initiative that we did in Southampton when we went out and spoke to the public. I think the education and outreach is very important. The underlying message that we received that day was that people are not aware. They were not aware of that out of the total of

600-plus wells that we have in our public supply system, that roughly two-thirds are in place solely to meet the irrigation demands that come from summertime lawn watering. That's quite a surprise to people. You know, when you consider the electrical costs, the impacts when we speak of reducing our carbon footprint; there's so many factors that go into that.

So when we think of the issues that we face, the first thing we want to do is advise people on ways that they can reduce their water usage. Now have we discussed the methods with changing our rates? We recently conducted a rate study. And this issue comes up and we will address it again. We're looking at increasing rate block structure. But the other thing I want to point out is you do have --

ASSEMBLY MEMBER THIELE: What does that mean, a rate block structure? Could you explain what that means?

MR. FULLER: Just depending on the types of usage, possibly doing that.

ASSEMBLY MEMBER THIELE: So,

1 institutional versus residential versus
2 commercial.
3 MR. FULLER: Exactly. You have to take a
4 lot of things into consideration. Hospitals, you
5 know, can use a lot. So their type of usage is
6 different than let's say a residential. Again
7 with the irrigation, you have other types of
8 usage that come into play.
9 ASSEMBLY MEMBER THIELE: For different
10 classes of users.
11 MR. FULLER: Exactly. So those are
12 things that we have to take into consideration
13 moving forward.
14 ASSEMBLY MEMBER THIELE: Okay. And I
15 have also a couple of questions with regard to
16 the LINAP. And I know you're still at the
17 beginning. You've scoped things out and all of
18 that.
19 MR. BERG: I appreciate that.
20 ASSEMBLY MEMBER THIELE: But with regard
21 to nitrogen, I feel like I heard some differing
22 viewpoints as to the importance of nitrogen here
23 on the panel and how much of a problem it is. We
24

have existing standards with regard to nitrogen. Is the focus of this study to look to establish new, more stringent standards? Or is to look at what strategies we should be using to meet the existing standards?

MR. BERG: Well, we have different standards right now. Obviously, there's a drinking water standard. There's a discharge standard for wastewater treatment. There's really no standard now for surface waters. But going forward, one of the things that LINAP will look at and it's already underway in some place is a total maximum daily load for nitrogen discharge to the estuaries. All the nitrogen in groundwater ends up of course in the estuaries. So, we're really look at a mass balance and in other words: How much nitrogen is discharged to groundwater? How long it takes to get to the estuaries? And then what impact it has on the ecological health of the estuaries?

ASSEMBLY MEMBER THIELE: Are you going to be setting up sub-watersheds for those --

MR. BERG: Yes, that's already underway,

looking at delineating the sub-watersheds and then determining: What are the current loads into groundwater and ultimately into the estuaries and also to try to glean what the legacy nitrogen is? You heard from the Chairman earlier that nitrogen's been there in some cases for several decades. And so how much is that contributing? All of that's really going to go into figuring out what the best management solution is.

In some areas we may find that fertilizer is a greater contributor than wastewater. In some areas that legacy nitrogen from potato farming from the '50s and '60s might be a greater contributor than septic systems today. So we need to understand that. And we should know that. I would say as soon as the next year, we should have the results of some of the modeling that's going on.

ASSEMBLY MEMBER THIELE: Let me just for an example, I represent part of the Peconic region and the Peconic estuary system. If you had a total maximum daily load for that, you've got a number of different municipalities, villages and

towns; amongst those various local governments, I mean, how is that going to be implemented? How are you going to determine who gets what part of the budget? How do you implement this thing? is what I'm really saying.

MR. BERG: That's a very difficult question. And yeah, because the load crosses municipal boundaries of course, it's going to probably require County effort and to some extent also towns. Once we get down to the village level, that's going to be a little more difficult. But that's one of the things that LINAP is going to look at is: How do other parts of the country manage these sorts of challenges? Not only what sort of entity takes charge of this and what sort of regulations are put into place; what sort of I'd like to say incentives to reduce nitrogen loads? But in some cases perhaps fees for excessive nitrogen discharge? So we should know that soon.

ASSEMBLY MEMBER THIELE: Okay. I think it's very important and I understand the difficulty in trying to implement this. But one

of my former colleagues as an elected official when I was on the town level, you know, he used to describe the Peconic estuary like it was a bathtub. And the way he used to describe it is: You remember when your mom put you and your siblings in the bathtub, what one person did in the bathtub really affects everybody in the bathtub.

MR. BERG: Yeah, it was always my sister's problem.

ASSEMBLY MEMBER THIELE: And that's certainly the case with the estuary. And that's why you need a level of cooperation here. You really need the buy-in from all the local governments on this thing.

MR. BERG: Well, I should say that, you know, I mentioned working groups as something that we're starting to set up. And I think probably the most significant one after the scientific and technical ones is going to be the implementation work group. And that's going to be the largest one of necessity because it's going to have decision makers from as many

1 municipalities as are willing to participate.
2 Because ultimately they will be the ones
3 that have to make decisions about land use, about
4 zoning and regulations on fertilizer use and
5 implementation of innovative or alternative
6 systems. Are they going to be mandated in certain
7 areas? Certainly the County has thought a lot
8 about this. But it's a very difficult political
9 decision. I shouldn't have to tell you that.
10 ASSEMBLY MEMBER THIELE: I know. One
11 last question. This $5 million that was
12 appropriated for this study by the Legislature
13 and as we're entering into a new Session coming
14 up and a new budget process; now that you're into
15 this process, we don't want to have an
16 interruption on funding questions. Do you feel
17 that there's adequate resources to do the work
18 you need to do over this three to four-year
19 period?
20 MR. BERG: I think we'll know better in
21 the next month or two because the request for
22 proposals that we're preparing now has got a long
23 list of things for a consultant team to do. And I
24

think that once we get some proposals back, we'll know: Are we in the ballpark thinking about the $5 million?

ASSEMBLY MEMBER THIELE: But you'll be able to report back to us well before the budget process is completed next year?

MR. BERG: Yes. I would hope so, yes.

ASSEMBLY MEMBER THIELE: Okay, thank you. Thank you, Mr. Chairman.

ASSEMBLY MEMBER ENGLEBRIGHT: You're welcome, Mr. Thiele. Mr. Raia had a quick follow up.

ASSEMBLY MEMBER RAIA: Thank you very much. I almost fell out of my chair when I heard Fred's comments with respects to 25 million gallons in a private home. So, I went online and found the *Newsday* article. That individual claims the water usage is as a result of a geothermal heating and cooling system. I know virtually nothing about that. So my question is: Is that water then being basically just pumped back into the ground? Or why does such a system like that require so much water usage? It is a closed

system?

MR. FULLER: That's actually an open loop system. Just to give a little background on geothermal systems and how they typically work: You usually have one well that's in place that'll have a pump. It'll go through a heat exchanger. So basically it's using the temperature of the earth. It goes through a heat exchanger. You'll have a difference in temperature between the surrounding air and the temperature of groundwater. And then that water is returned back into a return well or a diffusion well. That's typically how that operation would work in an open loop system.

A closed loop system normally has a series of coils that are in the ground to deal with the heat elements. That usually requires more of a surface area. But in that system that you saw, it was an open system. The difference is is that it does public water supply in the inlet. And I would say with the Authority, we're in support of open loop systems, how they're typically comprised.

This is a different type of setup and you saw that. And I believe that there was an editorial that came after from a member of the Geothermal Board, where again they pointed out that a typical system requires a well in the beginning and a return well. So that's kind of different than what you would normally encounter in geothermal systems. Obviously that used a lot of water because that particular property may be larger than what an average home is. It's a mansion obviously. But that's definitely a conversation that I would say is going to happen more so in the future. But that is something that's not the norm I would say, how that is set up.

ASSEMBLY MEMBER THIELE: Thank you for the education.

MR. FULLER: Yes.

ASSEMBLY MEMBER ENGLEBRIGHT: Legislator Schimel?

ASSEMBLY MEMBER SCHIMEL: Thank you all for your testimony. I had a question. It's actually going to piggyback on what Assemblyman

Thiele was talking about: water conservation. I wish that the title of this public hearing was water quality and quantity and contamination. Because being from Nassau County, certainly water quantity and pumping is very important. Thankfully up until now, there has been an understanding water quality and the next sentence, the completing of the sentence would include quantity.

One thing and this is not me saying it and I'm glad I have my New York City colleagues, a couple of them are with us; because when New York City DEP was considering up Jamaica wells again, it was going to directly impact my District, which is the northwest corner of Nassau County. And ultimately we pushed back a little bit. We wanted more study. And at the end of the day, they found other routes to find their water.

So I talked to them. Now I'm doing well. You know, guess what? We were able to push back. Let's be friends. Let's have a regional approach. And this is in talking to the City. And their response to me and this is the DEP: Well, I have

to tell you, Long Island is really woefully inadequate in your conservation methods compared to New York City.

And on further study, I have to tell you that I believe it's true. I think Long Island and I'm not as comfortable talking about Suffolk County and I love my Nassau County water districts; but I have to tell you as a rule I think we can do -- both Counties, I can't really talk for Suffolk County but we can do a lot better. One thing I've done anecdotally is I've found out my water districts don't even talk to my water pollution control districts. And when I ask one of them why not, they go: Well, why would we?

And I couldn't believe it because we're both dealing with huge, copious amounts of waters. Why aren't we talking to each other? Why aren't we talking about best practices? Why aren't we talking about low flow toilets, that they're doing when I just came back from California, and showers? These are things that I'm hoping this conference, this public hearing

does; that it makes us uniquely aware how intrinsically interconnected we all are.

And I still don't get it. I feel there's promise. There's hope. But we're still not there. And I urge LICAP, the water districts: talk to your water pollution control districts. Because guess what? You're all using the same water right now -- for now. Hopefully, we'll be looking at recycled water for our golf courses. I'm the land of golf courses. I found out that Mayor Bloomberg comes to my district to play golf. But you know, there's a lot of water usage.

So, I'm asking you a quick question and I know I've gone on too long: Water conservation, throw out something about water conservation. What are you doing for it and enforcement? Other than telling people: I want you to water your lawns Monday, Wednesday, Friday? And enforcement; what other measures are going on on Long Island in terms of real water conservation?

MR. FULLER: Going out and dealing directly with the public, which will happen tomorrow in Southold actually at 7:00 P.M.

Educating the public. People I think, they don't have an idea typically not only where their water comes from but the proper usage of it.

So, yes, even though we talk about something as simple as odd-even usage; some people are not aware because they've been taught that using an irrigation system every day is okay or having low flow showers or having aerators in your systems, having rain sensors. I can't tell you how many times I've driven around and seen people irrigating their lawns in the middle of a rainstorm. You know, those little things, they add up to tens of thousands if not hundreds of thousands of gallons of water savings. And combined with that, as I mentioned earlier, the electrical savings; which is reducing your carbon footprint, which we speak about a lot. So all of those things come in and that starts with education. And I think that's been a theme that's come about.

And I also just want to kind of touch on a point that you mentioned earlier about how the water suppliers, they don't communicate with each

other.

ASSEMBLY MEMBER SCHIMEL: And sewage treatment plants a swell.

MR. FULLER: Right, right. But I'll just focus primarily on the water districts because that's what I'm most familiar with. And on Long Island you have four dozen approximately water districts. And there's been a constant discussion about the lack of coordinated regional approach to sharing information. That's been an issue for decades, you know, 30 years if not more. And as Stan mentioned and I mentioned, through LICAP and the creation of Water Track, we've now developed a system where all the water suppliers have come together and they now have a system with which they share information; not only sharing it but to be able to visually display this information.

We recently sat down with Assemblyman Englebright to give a demonstration of that. And that will be something that a lot of people can see. I'll point out that we're proud of the fact that after all these decades we found a mechanism to share this information and also be able to

educate the public more. I think that's really important.

And I'll also point out that we did this through our own efforts. LICAP has a mechanism for funding. But at the time that we did this, it was unfunded. We would like to see the continuation of Water Track. We would like to see the continuation of all the things that LICAP has done. And we do feel that with some proper funding mechanism that can be done. We've all come together, even Jared standing here on the left; we've come together as water professionals, people from the outside, public officials. And through this mechanism, we've made a lot of differences.

That State of the Aquifer Report is a culmination of all of our efforts. That Groundwater Resource Management Plan is a culmination of all of our efforts. It's a noble thing to be a part of. And seeing all these people come together under this "entity" that is LICAP is something to be proud of.

MR. HERSHKOWITZ: I just want to, number

one, I want to commend Ty because Water Tracks is his baby. He started it on his own. He's being very humble. It's not LICAP. It's Ty that formed Water Tracks. He's the one who's implemented it, researched it, put in hours and hours of work. But I do also want to talk about Dix Hills Water District. And we do have a prorated rate system; so the more water you use, the more you pay; you know, watering every other day, odd and even. And we are now implementing a test in the Town of Huntington in the Dix Hills Water Department.

The EPA has wonderful documentation and worksheets for implementing water conservation. So I urge you if you want to do it in your area and you want to tell your water providers: take a look at the EPA worksheets because they're really, really good. And through these sheets, I've spoken to the EPA, once you fill all of those out, then you can start applying for grants to give out free low flow shower heads, to get rain barrels, to do all the things that you can do; like the State of Maryland does throughout its entire State. Okay.

So there are opportunities. In my P3 Program, there's also water conservation; where we encourage zoning boards as part of their approval process to say: Listen, builders, it doesn't cost anything and it'll cost you less down the road. Do no-flow or low flow irrigation systems. Do flow toilets. Do all the things that you need to do. Do all of the green things that are out there and encourage them to do that.

So it's not just through the water suppliers, who do do a phenomenal job given what they have. But we need to encourage the private sector. We need to get them on board. Okay. And we don't do that at all. We really don't. And they want to do it. They really want to be participants and good neighbors.

ASSEMBLY MEMBER SCHIMEL: I am just somewhat concerned though that again the onus on the public and again it's about enforcement. And there will come a point and again looking down the road and hopefully not to happen but a crisis that we will have to force regulations. And even you speak about zoning, that again I brought it

1 up with County Executive Bellone that when we're
2 doing smart growth, is water considered part of
3 that smart growth infrastructure? And
4 conservation has to be part of that, even in
5 terms of development.
6 And I think this is an opportunity. It's
7 a scary one. But I think we have to start
8 thinking out of the box, that we can't just go;
9 and I agree we have to educate the public. They
10 do not know. But so too the leadership has to
11 take responsibility. And if it means we have to
12 do stronger regs and give you more enforcement
13 powers, then so be it. I know in Nassau County I
14 can speak: We're heading down a cliff in terms of
15 water usage. It would have been impossible,
16 impossible: 33 million gallons if they would have
17 opened the Jamaica wells. No study: Oh, it'll be
18 fine. It'll be fine. It won't be fine.
19 And it led to where we are today to do
20 the study. This Long Island water study came from
21 the loins of that. And we need information but
22 it's not enough to just educate the public. This
23 has to be a hands on, full blown attack to
24

conserve water. And I just don't hear about it enough. I try my own, you know, xeriscape, things like that, changing the fashion of lawns. Maybe that's something also we have to look at. The lawns maybe have to look differently than they always have. But thank you for your time.

MR. CAREY: Member Schimel, if I could just expand on your question towards Nassau County? With overall water conservation, it is a big concern of many suppliers in Nassau. Could we be doing more? I'm sure we could be. Many districts implement their own conservation programs, which may include public education to various schools. Some hand out water saving showerhead devices, leak detectors for the toilet tanks. I know in the Port Washington Water District, they just initiated a pilot program for smart irrigation systems, which could in the near future serve as the model for other districts.

But as a whole, the Long Island Water Conference has been working with the Nassau County Legislature. And I believe at the end of this month there's going to be some proposed

legislation in front of Nassau County to create a local ordinance on irrigation systems. And it is going to have an enforcement component. So that should be out at the end of the month and hopefully it'll serve in doing a better job in conserving water.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you. Mr. Saladino?

ASSEMBLY MEMBER SALADINO: Thank you, Mr. Chairman. I'll keep it very brief in my question to Stan Carey and ask for as succinct an answer as possible because there are still more people would like to speak. You're a licensed Superintendent in a water district, extensive knowledge in your research of the Grumman-Navy plume. It's appropriate to ask this question here and at this time because the report and the DEC are looking for answers.

In your professional opinion, wellhead treatment versus hydraulic containment and treatment; which is the better way to go for this plume? Which is the better way to go for the residents considering cost, the science of what

works and the overall view of the solution?

MR. CAREY: I think everyone would agree that if you could prevent contamination of public water supply wells, it's preferable than allowing the supply to be contaminated and dealing with it afterwards. You just don't know about the unknowns. A great deal of today's testimony was about unregulated contaminants. So they've been found associated with this plume. So, you had mentioned earlier, and we're very thankful for it, the recent -- I don't know if it's a change in policy but shift nonetheless in the DEC and becoming much more aggressive in the remediation of this plume. So we're very thankful for that. But to answer your question in short: Preventing contamination is far better than dealing with it after the wells are impacted.

ASSEMBLY MEMBER SALADINO: And very briefly on cost of all the separate wellhead treatment facilities for all the districts versus one holistic containment; which is less expensive?

MR. CAREY: Our professionals, our

engineering consultants have advised us through numerous studies that we've worked with them on that preventing contamination of all the wells that have not been contaminated would be cheaper than letting the plume continue to migrate south. So to contain it would be cheaper than dealing with it afterward, when you factor in all the operational costs for a 30-year period.

ASSEMBLY MEMBER SALADINO: Thank you for your expert testimony. And thank you, Chairman.

ASSEMBLY MEMBER ENGLEBRIGHT: You're welcome. Legislator Abinanti?

ASSEMBLY MEMBER ABINANTI: Addressed to anyone out there, whoever wants to answer: I want to understand something about the Long Island system. You have all these separate districts. How many of them are private companies? Do we know?

MR. FULLER: I believe most of Suffolk County is serviced by the Suffolk County Water Authority. There are a handful of municipal water districts. In Nassau County, a great majority of them are water districts. And there is one

private company: New York American Water, that serves a fairly sizable amount of the population.

ASSEMBLY MEMBER ABINANTI: So most of Suffolk County, then you've already got one entity. It's Nassau County where you have all these different entities?

MR. FULLER: Correct.

ASSEMBLY MEMBER ABINANTI: And did I hear somebody say they were against the idea of having one overall czar or somebody like that?

MR. CAREY: I had stated in my testimony that it would be premature to create a management entity for all of Long Island when LICAP has not completed their mission.

ASSEMBLY MEMBER ABINANTI: But would it not be a good idea to have Nassau County get together, so at least they have some entity that can; see, the concern that I have is there are lots of things that need to be done. But if every district has to consider it, then you're never going to get everybody on the same page.

MR. CAREY: Well, I think that's a matter of opinion. Some residents in my District,

in Massapequa in particular, they like the idea of local control. You answer to one board that's directly responsible for that community and that goes a long way.

But Nassau County does have a voice. They have two seats on this LICAP Board. So we're very much a part of all the reports and discussions that have been taking place. Again, we feel that it would be premature to do that at this point in time. Let LICAP finish their mission. Look at the reports and look at their recommendations and then move forward from there.

ASSEMBLY MEMBER ABINANTI: Okay. What I was also concerned about was when you have a private entity, it makes money by selling water. When you have government districts, they'd rather sell less water because they don't want to be faced with the issues. But a private entity that sells water, that's what they sell. And they want to sell more water and more water and more water. It's almost a conflict of interest for them to say: Okay, we want people to use less.

So, I personally am very concerned about

the concept of drinking water in the hands of a private company. And I'm asking this question just looking for advice, response to that. Because I've been talking to some people about the concept of passing State legislation which might prohibit future transfers to private companies and finding ways to phase out existing private companies. I'm sure they'll have lots of money against me in my next campaign. But for the very reason I just stated: There's almost a conflict here. You're trying to save water and this is what they sell. This is what they make money on.

MR. CAREY: Before I pass it over to Ty, I mean, there have been numerous studies done about taking private water companies and making them either a public authority and really there's a lot to consider. It's just not the straight cost of water because those private companies, they pay a lot in taxes. They're not exempt like some of the districts are, the State run water districts. They pay full school and property taxes on all of their properties and they

contribute millions and millions of dollars to the local communities.

ASSEMBLY MEMBER ABINANTI: Isn't that passed on to the ratepayers anyway?

MR. CAREY: It is but that has to be considered. It's just not how much water you use and a comparison of rates.

ASSEMBLY MEMBER ABINANTI: If somebody else wants to comment?

MR. FULLER: I just had a question, Assemblyman Abinanti.

ASSEMBLY MEMBER ABINANTI: Sure.

MR. FULLER: Are you from Westchester?

ASSEMBLY MEMBER ABINANTI: I'm from Westchester.

MR. FULLER: I'm actually from New Rochelle. New Rochelle is in Westchester.

ASSEMBLY MEMBER ABINANTI: We have problems with it as well.

MR. FULLER: If I'm not mistaken, United Water is in New Rochelle.

ASSEMBLY MEMBER ABINANTI: It's a private company.

MR. FULLER: Are they a private company?

ASSEMBLY MEMBER ABINANTI: A private company.

MR. FULLER: Right. So it's not something limited to Long Island.

ASSEMBLY MEMBER ABINANTI: No, it's not.

MR. FULLER: Right.

ASSEMBLY MEMBER ABINANTI: I'm using my own experience in Westchester to frame the question here.

MR. FULLER: Again, it's a resource management. I would say on Long Island, you know, we work together with all of these various water suppliers. Now, obviously I represent the Authority. Stan's with Massapequa. But we've all come together. I think amongst the water suppliers on Nassau and Suffolk, they've come together on different entities, such as the Long Island Water Conference, LICAP, you know, different initiatives where they share information with each other. Because I think we all recognize that on Long Island we all extract from this sole source aquifer.

ASSEMBLY MEMBER ABINANTI: Right. Yeah, I understand. The other thing I wanted to ask about was: Where does the water go? If it goes down the street, it goes into a storm water sewer. Where does it go from there? Do you guys recapture that or is that lost?

MR. FULLER: At times in recharge basins, it depends. Some, I guess it's known as positive drainage, where it goes into a recharge basin or it's just a drainage ring that's in the --

ASSEMBLY MEMBER ABINANTI: That's some. Do you have any idea what quantity? Would it be worthwhile to explore through zoning perhaps encouraging people to capture the water that comes off of their roofs and the impervious surfaces? I personally did some construction on my house. And my zoning board, my building department made me put in a recapture system. And I don't have this big huge house. But you know what? It works. So, I don't use water, which is very expensive where I live in mid-Westchester; I don't use the water I pay for to water the lawn

or to do anything else. I have a little pump that takes the water out of this tank that I'm saving water off the roof.

And it seems to me that given Long Island's situation, techniques like that on a large scale might actually be very helpful for people to literally reuse their own water. I wouldn't drink this stuff that comes off your roof. But on the other hand, you can certainly water your garden and water your lawn with it. I'm sure there's lots of other techniques like that. But again it would have to be done on a grand scale for it to be worth anything. And that's why I ask about the whole concept of some kind of a larger entity to try to figure out how to do this and how you'd benefit by these types of techniques.

MR. HERSHKOWITZ: I think I might be able address that. All new development certainly in Nassau County and it's slightly different in Suffolk -- the values; but are required to contain I think up to eight inches of storm water on site. And you also have in both Counties the

soil and water conservation districts, which are promoting just what you're suggesting. So that's going on.

ASSEMBLY MEMBER ABINANTI: Is there a way we on the State level can encourage this type of thing? Is there legislation we can pass or policies we can pass; something we can do to help? Because I think Statewide, not just Long Island; your situation seems to be the most obvious at the moment but I think Statewide we should be doing this.

MR. HERSHKOWITZ: I would encourage you to look at the State of Maryland. They do do exactly what you're talking about and they do it extensively. So there is a model to follow.

ASSEMBLY MEMBER ABINANTI: Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Well, thank you. I just want to ask around the horn here, are there other Members? I just want to say thank you to all of you. You're so very important to the health and well-being, our way of life. I hope that the folks at this end of the table have a chance to talk some more because we hold both

of the perspectives that you have brought in high regard. And I think it's healthy to have this kind of a conversation. So thank you for bringing it to us.

To the Suffolk Water Authority in particular, I just want to say thank you for helping us in our preparation for this hearing today. Your guidance has been extraordinary and we just want to acknowledge that. Thank you. We'll go to the next testifiers. Thank you much.

ASSEMBLY MEMBER GOTTFRIED: While they're coming up, just sort of the scheduling observation for everyone in the room. There are 23 people still on the list. When an Assembly hearing runs at top speed, we go through four witnesses an hour. So, whoever is last on the list should be prepared to be testifying sometime after midnight.

ASSEMBLY MEMBER ENGLEBRIGHT: Our next testifiers: Dr. Christopher Gobler, Associate Dean for Research at Stony Brook University, the School of Marine and Atmospheric Sciences; and Jennifer Garvey, the Associate Director of the

New York State Center for Clean Water Technology. I know that both of you have been very patient here.

I especially just want to tip my hat to Dr. Gobler, who has run back and forth to the University to meet his obligations with his students in between. If misery loves company, you are not alone. There is several other testifiers who have done the same thing today. But I just again want to tip my hat to you and thank you for being so consistently interested in sharing your information with us. And you're the next speaker. Mr. Gottfried will swear you both in.

ASSEMBLY MEMBER GOTTFRIED: Do you both swear or affirm that the testimony you're about to give is true?

MR. CHRISTOPHER GOBLER, Ph.D., ASSOCIATE DEAN FOR RESEARCH, STONY BROOK UNIVERSITY, SCHOOL OF MARINE AND ATMOSPHERIC SCIENCES: Yes.

MS. JENNIFER GARVEY, ASSOCIATE DIRECTOR, NEW YORK STATE CENTER FOR CLEAN WATER TECHNOLOGY, STONY BROOK UNIVERSITY: Yes.

ASSEMBLY MEMBER GOTTFRIED: Thank you.

[WHEREUPON THE WITNESSES, MR. CHRISTOPHER GOBLER AND MS. JENNIFER GARVEY WERE DULY SWORN.]

ASSEMBLY MEMBER ENGLEBRIGHT: Dr. Gobler, please share your thoughts with us.

MR. GOBLER: Okay, will do. I've submitted a written testimony and I won't read it. I'm just going to highlight some of the important points, given the people coming to speak. My remarks will be focusing on nitrogen load in the coastal waters and how that affects coastal waters. And also I think importantly I'm going to highlight some examples where efforts have been made locally to mitigate nitrogen loads and improvements that we've seen in coastal ecosystems.

Regarding nitrogen loads, I'll be brief because I think many of us know the details. We know that in Suffolk County nitrogen levels in groundwater have been progressively rising. The levels now are higher than they were when they were documented in 2005. In 2005 they were higher when they were measured prior to that in 1985.

The levels continue to increase. And in Suffolk County, models indicate that that trend will not decrease, based on current land use models and groundwater modeling. That is we should expect that nitrogen levels will keep going up if no changes are made.

That nitrogen that's in the groundwater of course discharges into our coastal waters, where it affects what's going on there. The next speaker will detail the fact of the matter that most of that nitrogen in the groundwater is coming from wastewater; the second biggest source being fertilizer. As that nitrogen rich groundwater discharges into the coastal zones, the first type of marine ecosystem it often intercepts are coastal wetlands and salt marshes. These are critically important habitats for fisheries that Long Island and much of New York depends on for economy.

But as we learned during Hurricane Sandy, these habitats are extremely important for protecting our coastal communities. That is to say that when we have salt marshes intact, we

1 know that our coastal communities are better
2 protected against storm surge and against wave
3 action. And conversely, we know that when we
4 built over these wetlands or we've lost wetlands,
5 coastal communities are at risk to more enhanced
6 coastal flooding and storm surge.
7 It's recently been established that
8 among many other variables, enhanced nitrogen
9 loading degrades wetlands and it leads to the
10 loss of salt marshes. So specifically on the
11 mechanistic level, high levels of nitrogen causes
12 the root systems of salt marshes and wetlands to
13 wither and the salt marshes thereafter collapse.
14 And we know on Long Island since 1974 that we've
15 lost, whether you look at the North Shore, the
16 South Shore or the East End, somewhere between 40
17 and 80 percent of our wetlands.
18 And of course that has a toll, as I've
19 already mentioned, on fisheries but also on
20 protection of coastal communities. For many years
21 we've attributed this to things like sea level
22 rise, loss of sediment supply. But we now know
23 that excessive nitrogen loading is likely a
24

primary cause to that loss.

Beyond the wetlands, once we get into the water, high levels of nitrogen are known to exacerbate and simulate harmful algal blooms. And in Long Island's coastal waters we have a whole suite of harmful algal blooms. We can call them the colors of the rainbow, from red to mahogany to rust to blue green. Long Island's coastal waters now experiences more than a half a dozen different harmful algal blooms on an annual basis. Some of these are a direct threaten to human health.

For example, blooms of the genus known as Alexandrium creates a toxin known as saxitoxin, which is 1,000 times more potent than cyanide. And when this gets into shellfish, it can lead to the condition known as paralytic shellfish poisoning. On Long Island during the last decade, there've been more than a dozen shellfish beds closed because the shellfish have accumulated high levels of saxitoxin and there was the threat of paralytic shellfish poisoning.

In a similar parallel mode, in

freshwater ecosystems, we have blue green algae that make neurotoxins and gastrointestinal toxins that can be a threat to human health and also animal health. In the last two years we've had dogs get ill from consuming water with blue green algae. In 2012 we had a dog die on Eastern Long Island from consuming water with a blue green algal bloom. In both cases, saxitoxin in these blue green algae blooms; higher levels of nitrogen make these algae grow more and it also makes them more toxic. Because these toxic principles that I'm describing contain nitrogen. So having more nitrogen allows the algae to make more toxins.

And so we're in the situation today where we were not three decades ago. Three decades ago none of these harmful algal blooms were occurring on Long Island. We now have as I mentioned more than a half dozen occurring every single year. And in every case either direct or indirect links can be made to higher levels of nitrogen leading to more intense harmful algal blooms or in other cases that I described more

toxic harmful algal blooms.

In cases where the harmful algal blooms are not directly toxic to humans or animals, they can be toxic to marine life. So for example, the brown tides and rust tides are perfectly harmless to humans, which is good news. However, they are harmful to fisheries. And so with regard to the brown tide, we know that that was responsible for the collapse of the Bay Scallop Fishery, which was the largest bay scallop fishery on Long Island. That was the largest bay scallop fishery on the East Coast of Long Island in the 1970's and the '80s.

And similarly we know that the brown tide is also toxic to hard clams. Our hard clam fishery on the South Shore of Long Island is at about one percent of what it was before we had brown tides. So these harmful algal blooms are also exacting a negative toll on our fisheries.

These algal blooms are also negatively impacting marine habitats. I mentioned salt marshes. Seagrasses are a critically important benthic habitat in our coastal bays as well.

1 These sea grasses are nurseries for our
2 fisheries. High levels of nitrogen are directly
3 toxic to these seagrasses. In other cases high
4 levels of nitrogen stimulate algal blooms that
5 block out the light and kill off these
6 seagrasses.
7 Overall since the 20th century, Long
8 Island has lost 90 percent of its salt marsh
9 habitat. With ten percent remaining, Suffolk
10 County has declared that it's possible we could
11 lose all of this habitat if action is not taken
12 now to reduce nitrogen loading levels.
13 Two other water quality impairments to
14 mention associated with high levels of nitrogen
15 are low levels of oxygen that occur as a
16 consequence of harmful algal blooms and also low
17 levels of PH. In the last years it's been
18 revealed via 24-hour monitoring that at night
19 when in the past people had not been looking and
20 not been monitoring, the levels of oxygen and
21 levels of pH in Long Island's coastal waters get
22 to dangerously low levels; levels that are
23 inhibiting our fisheries.
24

And again whether it be to the low oxygen levels, the low levels of pH, these harmful algal blooms, the loss of seagrasses or the loss of wetlands; this is all having a negative effect on our fisheries. As a consequence our fisheries that are made up of either mussels, clams, scallops or oysters have all declined between 70 and 90 percent today compared to 1980.

And finally, beyond our fisheries we all know that our tourism, a billion dollar industry in Suffolk County alone, relies on clean water. Our fisheries in Suffolk County are both recreation and commercial fisheries are worth a billion dollars each. And a recent study out of Stony Brook University has found that home values in coastal areas are directly linked to water quality. And that is to say: lower water clarity can decrease home values by up to two percent. Now that may not sound like a lot of money. But if your home is worth a half-a-million dollars, that's something. And so in that case, every homeowner in Suffolk County in Long Island has

skin in the game so to speak.

So I think a lot of what I just said about high levels of nitrogen, maybe you knew most or some of that. But I'd like to give you is four quick stories about situations where action was taken locally to reduce nitrogen loading that had a positive effect on coastal ecosystems. I'm going to start across Long Island Sound in a place called Mumford Cove that's in Groton, Connecticut. Mumford Cove was a region where sewage was being directly discharged into the region. As the consequence the area had macro algae and was also having paralytic shellfish poisoning events, such as the ones I had described previously.

In 1987 the proactive decision was made to divert that sewage out of the Cove and to put it further out into Long Island Sound. And as a consequence of removing the strong source of nitrogen, the ecosystem very quickly recovered. Within a year the levels of nitrogen in the ecosystem declined by more than 90 percent. Similarly, the levels of macro algae or sea weeds

went down by 90 percent.

Over time, over the next 15 years, the amount of seagrass in that ecosystem went from zero percent coverage progressively up to covering more than half of that Cove in a matter of just 15 years. And further, in the several decades, almost I guess 25 years since that change was made, paralytic shellfish poisoning never returned to Mumford Cove. So a situation where nitrogen was mitigated, seagrasses came back and harmful algal blooms went away forever.

A parallel story with regards to seagrass is right here on Long Island; specifically in the Southwest Sewer District, a region around West Babylon, where the Bergen Point Sewage Treatment Plant was constructed in the 1970's. When the plant was first put together, it discharged its waste directly into Great South Bay. And of course we know the time period before that, the groundwater was rich in nitrogen and was progressively seeping into the Great South Bay.

In 1981 the decision was made to put in

an ocean outfall; whereby the sewage from that plant was then piped three miles offshore. In the two decades thereafter, that part of Great South Bay was transformed enormously. Specifically, 3,000 acres of seagrass began to regrow in that part of Western Great South Bay following the decline or the removal of the strong source of nitrogen. Further, the levels of nitrogen in the water declined again by more than 90 percent and that contrasts with Eastern Great South Bay.

So just to review what I just said: Western Great South Bay where there's a sewer district, they sent the nitrogen out of the Bay; 3,000 acres of seagrass regrew. That was between 1981 and 2002, so a 20-year period. At the same exact time, the same exact surveys were done in Eastern Great South Bay, where there was no effort to mitigate nitrogen: 5,000 acres of seagrasses were lost. So these are areas that are directly adjacent to each other: one area where they made a change to mitigate nitrogen, seagrass regrew. The other area where they let the nitrogen rise, the seagrasses were lost. So

again, efforts made to mitigate nitrogen improving water quality; in this case habitats on Long Island.

A similar story exists in Northport Harbor. And Northport Harbor was the poster child for algal blooms on Long Island for about an eight-year period. Between 2006 and 2012, every year running the most intense Alexandrium bloom on Long Island occurred in Northport Harbor and Northport Bay. Moreover, it had the largest shellfish bed closures due to paralytic shellfish poisoning. Nearly 8,000 acres of shellfish beds closed because of toxic shellfish.

In 2013 the sewage treatment plant that was discharging into Northport Harbor was upgraded and the levels of nitrogen loading into that region declined by 50 percent. They cut the daily nitrogen load by 50 percent. Since that upgrade was made, paralytic shellfish poisoning ceased to occur in that ecosystem. So that's over several years running: '13, '14, '15 and '16. In each year I expect: Well, maybe this year it'll come back. But it hasn't in the four years since

they've upgraded the plant.

In the same exact region, a beach that had been closed for bathing for seven years continually, to the point where Suffolk County wasn't even going to monitor it anymore, cleaned up and they were able to reopen that beach after seven years of closures; again associated with the upgrade in that sewage treatment plant.

The last example I want to give is for Long Island Sound. I'm sure we're all at least somewhat familiar with the Long Island Sound study that was established in 1994, that set a 20-year goal to reduce nitrogen loading into Long Island Sound by 58.5 percent. So that began in 1994. It finished in 2014. In the first several years of the plan, people were skeptical as to whether this would work and whether it was worth the cost, as it was going to cost billions of dollars.

However, in 2002 and every year thereafter, the size of the dead zone in Long Island Sound, which is really the motivation for the Long Island Sound study, began to shrink. To

the point where last year in 2015, for the first time ever that science can document going way back into the middle of the 20th century, there was no dead zone in Long Island Sound. There was no area with oxygen levels below 2 mg per liter. And of course that strongly contrasts with before the plan was implemented whatsoever; when every year there were levels of high toxic or anoxic water throughout the Sound.

So once again a very clear example where efforts are made to reduce nitrogen and the outcome may take a while; in this case it was a 20-year plan but the ecosystem responded. And fisheries are coming back to Long Island Sound. We actually have for the first time in many decades humpback whales coming into Long Island Sound and making that their new habitat.

So in summary I would say we've got very clear evidence that higher levels of nitrogen are exacting an unwanted toll on our coastal marine ecosystems. But we also have evidence that when a concerted effort is made to reduce nitrogen loads, we see the ecosystem respond in the ways

that we hope. So I thank you for your time and I'll end my prepared remarks.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. Let's listen to Jennifer Garvey and then we will want to have a chance to ask some questions. So please proceed.

MS. GARVEY: Okay. I did prepare my remarks as well. I will read them but I will maybe ad lib --

ASSEMBLY MEMBER ENGLEBRIGHT: Don't be shy. You can shout into that microphone.

MS. GARVEY: Okay, great. Alright. Well, good evening. Thank you and it's great to be here. And thank you for this opportunity to testify before you. Indeed, my name is Jennifer Garvey. I'm the Associate Director of the New York State Center for Clean Water Technology at Stony Brook University and this is a big day for us. Thank you all very much.

Our Center is charged with developing and commercializing more cost effective technologies to address water quality degradation issues, the issues that our region is facing. And

our initial efforts have been focused on removing nitrogen and other contaminants form wastewater at the household scale; in short, developing affordable high performance systems that can replace or retrofit cesspools and septic systems.

Now as a Center that is funded in large part by the State, together with some philanthropic support, I'd first like to thank you for this investment, which has enabled us in frankly less than one year's time to develop cutting edge analytical capabilities, to recruit top tier scientists and engineers, and to begin implementing a research and development program that has already resulted in the installation of three different full-scale pilot installations at a test center.

Our team is also preparing to install its first set of experimental pilot systems at Suffolk County residences, hopefully this Fall, as part of the Suffolk County Department of Health Services Innovative Alternative Pilot program. And I'll just note that the system that we'll be installing there has been demonstrating

an ability to remove up to 90 percent of nitrogen and as well as the ability to remove a range of other contaminants very efficiently and including pharmaceuticals and other personal care products. And we're just getting started.

Briefly I would like to reflect on some of the fundamental thinking behind the creation of the Center, just simply as a means of framing the challenges and opportunities associated with decentralized wastewater: the decentralized wastewater treatment sector generally and specifically here on Long Island because they are rather integral to informing the path for the future and improved solutions.

First is the recognition that Long Island appears to have the greatest concentration of individual onsite wastewater disposal systems in the nation, with more than 500,000 systems between our two Counties, Nassau and Suffolk. And that is four times the number of onsite systems on Cape Cod and more systems than can be found in the entire State of Maryland. What's more, these are subject systems and cesspools that were not

designed to address nitrogen and deliver nutrient rich effluent directly to groundwater.

Consequently this unique designation represents an unprecedented problem that certainly must be addressed. But it also appears to offer a remarkably compelling market for decentralized wastewater technology. Second is the recognition that the pace of innovation and decentralized wastewater and the onsite scale in particular has been very slow as the result of market challenges of primarily regulatory fragmentation that's coupled with an historic lack of funding for research and development.

The barriers to market entry for innovative alternative systems are very high; often years long and costly, as demonstration requirements vary by state, county or even town. Obviously we see this around the nation. Additionally, market demand for this form of technology is driven entirely by regulation, which has been limited and contingent upon the availability of subsidies and other policies.

In short, the market conditions or

incentives have not been present to drive major industry-led innovation, investment in innovation within this technology sector. And so it has really changed little in decades.

Third is the recognition that significant knowledge gaps that exist as a result of this longtime scarcity in research dollars within the technology sector also represent significant opportunities for improvement. Our team members often say that the lack of research available on these types of systems is downright shocking. By no means have we begun to reach the limits of technology at the onsite scale.

And so these three points really form sort of a core rationale for the idea behind a New York based marshalling of public-private resources to facilitate a coordinated, multidisciplinary and multi-institutional investment in research and development to propel innovation with the clear goal at the offset of developing more cost effective, onsite wastewater technologies that are suitable for widespread implementation.

And of course beyond the immediate goal of delivering solutions to a pressing environmental problem, the approach also sets the stage for important economic opportunity as well and job creation to the cultivation of specialized resources and expertise here in Long Island that can be applied to a range of water technologies. That's what we're beginning to see through today's announcement and expanding the scope and significance of the Center and by facilitating the implementation of a widespread infrastructure upgrade; which is the upgrade we're all talking about that is so sorely needed and that we can be sure will be labor intensive and time consuming.

Suffolk County has already identified 209,000 existing septic systems as priorities for upgrade. And County representatives have repeatedly noted the challenges associated with converting existing development to traditional sewering, which would connect neighborhoods to existing largescale wastewater treatment plants; acknowledging that the cost alone of this

approach will make it unviable for many areas.

This leaves only two options: cluster treatment systems and individual onsite systems. And these infrastructure recommendations will be made based on the cost benefits of either approach in terms of nitrogen removal. Ultimately, improving the cost efficiency of these wastewater treatment alternatives will increase the likelihood that these systems are actually implemented; accelerating the infrastructure upgrades that are needed to reach our nitrogen targets and necessary to achieve water quality improvements. Put another way: It allows us to reach our water quality goals at a reduced price tag.

Now the pace of upgrades in other regions based on existing technology and programming is also a helpful point of comparison as New York formulates its own programs and policies. For example, Maryland has among the highest insulation rates for innovative alternative onsite wastewater treatment systems with an annual high of 1,200 systems per year. In

Rhode Island, which has a very well-regarded extension program, the state has installed 19,000 new onsite wastewater systems in 14 years; an average of roughly 1,300 systems per year. So at these rates consider how long it will take Suffolk County alone to address its 209,000 priority systems.

Across the range of water technologies, opportunities to pilot new solutions and demonstrate their effectiveness is critical to supporting the innovation and commercialization process. However, identifying pilot opportunities and associated funding can be a challenging task, often causing considerable delays in the evolution or commercialization of a technology.

Creating opportunities to support the pilot testing of new water technology can create the dual benefit of facilitating the entry of new and promising technologies into the market to solve problems; as well as creating a strategic attraction for new water technology companies and experts as proximity to opportunities often drive location choices for companies.

Finally in conclusion, as Long Island is poised to become an epicenter for enhanced decentralized wastewater treatment, continued investment by the State to create and support the conditions necessary to propel innovation and improve both the cost effectiveness of solutions are likely to produce significant and lasting results; both in terms of delivering more economically viable solutions for an acute issue and by positioning Long Island as a nationally unique center of gravity for water technology capable of tackling its own infrastructure challenges and providing solutions and expertise with regional, national and international marketability. Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. Senator, did you have any questions?

SENATOR HANNON: Ms. Garvey, you talk about Maryland, Rhode Island doing this. What's the average cost of an individual system per household in those states?

MS. GARVEY: Sure. I mean, the costs in this field always range by site. Site conditions

really determine -- have a huge impact on the cost of systems. I would say that it's fair to say they range from 12 to $18,000 per installation.

SENATOR HANNON: I was just thinking of what would happen if you required upon someone's renovation or renewal of a house or a construction of a house if you required that to be added to it?

MS. GARVEY: Sure. I mean, I think there are trigger points for an upgrade or upon property transfer, for example, that's a common one. Or if you're renovating your home, if you're expanding your home, certainly that's often a common trigger point for requiring an upgrade.

SENATOR HANNON: Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you, Senator. Questions among the panel? First, Assemblywoman Schimel and then we'll go to Mr. Thiele.

ASSEMBLY MEMBER SCHIMEL: One quick question for Dr. Gobler. And I'm embarrassed to say I don't know this. But I know in Nassau

1 County the outflow pipe will be extended to the
2 Atlantic Ocean and that's the goal I guess to
3 reduce local marine nitrogen impact. What is the
4 impact on the Atlantic Ocean over a long period
5 of time?
6 MR. GOBLER: That's a good question. And
7 there's the old saying: Dilution is the solution
8 to pollution.
9 ASSEMBLY MEMBER SCHIMEL: I heard
10 someone said earlier it wasn't. So, you know, I'm
11 just trying to keep my story straight here.
12 MR. GOBLER: I think that there needs to
13 be a little bit more information on that. I'll
14 just leave it at that.
15 ASSEMBLY MEMBER SCHIMEL: So is there a
16 concern? I'm not wrong to have a little concern
17 further down the line?
18 MR. GOBLER: For sure. But just to be
19 clear: There are more than a dozen ocean outfalls
20 in New Jersey that are discharging into the New
21 York bite. So, I don't think it should be done
22 without concern but recognize that the New York
23 bite, that is the waterbody between Sandy Hook,
24

New Jersey and Montauk is already receiving lots of ocean outfall. There's much more that could be said but I'll just leave it at that. I think it warrants further investigation.

ASSEMBLY MEMBER SCHIMEL: Every action has an equal and opposite reaction. So we have to keep that in mind as we go forward with anything of the human condition.

MR. GOBLER: Agreed.

ASSEMBLY MEMBER SCHIMEL: Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Assemblyman Thiele?

ASSEMBLY MEMBER THIELE: Oh, I never get to talk to these two people ever. So, I'll make it brief. First of all, Jennifer, congratulations on today's announcement. If you've had time to think about it, the Center's relatively new; you've been focusing on alternative septic systems and things of that nature. What is the plan that the Center has for the use of these funds that were announced today by the Governor? Do you have an idea of how this is going to roll out?

MS. GARVEY: Sure. I envision a large portion of the funding being geared specifically for pilot installations, particular with water authorities, you know, with water providers. I think we'll have an ability to help guide that process to be resources for identifying the best technology that's out there for the particular contaminants that they're looking to address; so we can provide an essential role as experts and also to facilitate the administration of funds to these water authorities. So, it'll be part expert guidance, part administration. And I think there's an opportunity for us to do some research and development as well where it's appropriate. But I see a lot of this going to actual pilot installations.

ASSEMBLY MEMBER THIELE: So a strong relationship with the water purveyors in both Nassau and Suffolk?

MS. GARVEY: Yes.

ASSEMBLY MEMBER ABINANTI: To Senator Hannon's question of you, the cost of these and of alternative septic systems; I think you said

between 12 and 18 --

MS. GARVEY: Sure. We're talking about Maryland numbers. And I should say because I see a lot of numbers as I read documents throughout the day but that is the number that can be specific to the actual treatment system as well. I mean, there's a lot of parts to consider: Whether or not you have a septic tank? Do you need a new leeching field? What is the actual cost of your actual treatment unit? So bear in mind there's a lot of variability.

ASSEMBLY MEMBER THIELE: Which quite frankly is a lot of money.

MS. GARVEY: Oh, yeah.

ASSEMBLY MEMBER THIELE: And with the number of septics that are out there, anybody who's sitting on this side of the table, you know, if they mandated suddenly to the average homeowner that kind of expense, we would be ex-Senators and ex-Assemblyman. So, I know one of the things we're looking to do with the Community Preservation Fund Referendum this November and the additional 20 percent is to help to provide

incentives and financial assistance with regard to alternative septic systems, basically to provide a rebate or some partial expense reduction; probably based on some sort of means test also.

I guess my question and either one of you could answer this though is that: We're in a dynamic area where apparently technology is going to be changing very, very fast. To use an example, I don't want to be buying this year's flat screen TV for $1,700 to find out that two years from now the new model comes out and you get a better TV for $500. For local governments and towns and counties who want to invest into new technology, they want to do the right thing. But at the same time you're trying to develop a cheaper and better mousetrap basically.

How does local government decide when is the right time? You know, we can't wait because the problem's getting worse and it's going to take a long time to turn this around. In a time, which is always time, where you have finite resources, how do you know you're getting the

best bang for your buck with whatever technology you're looking at?

MS. GARVEY: Sure. Okay. So, I mean, I think that actually it makes sense to implement the technology as it becomes available. I mean, I wouldn't hold back. I don't think we need to. In fact, I think the more we implement these new systems, I think it helps to facilitate the creation of this whole industry on Long Island. This is a major change in paradigm that we're experiencing here as we shift from the systems that we're used to, the cesspools and the cesspits to these very different systems.

Just simply the business of installing these new technologies is helping to facilitate this industry to move forward and to create more opportunities for people and industry to sense that this is a real opportunity, that things are moving along. And so I wouldn't hold back. I think we really have to think of this as that we're all in this together. This is a cumulative problem. No one system in one neighborhood in one home is going to make or break the problem. This

is something we all have to do together.

And so no one should be penalized for going first and installing a system that might ultimately be phased out for example. They're only helping to move this process along. I certainly wouldn't encourage anyone to hold back. I think at this point any system is better than what we have. The systems that are available, they do a much better job of removing nitrogen certainly and so they are enormously beneficial. We'll just, like any technology, look to continually make them better. It doesn't mean wait. It just means: know that there'll be better technologies coming down the pike but please move ahead with this as soon as it makes sense.

MR. GOBLER: And I would agree with all of that. And I would just further say that I've been impressed by the County Health Department in that on the one hand they're pushing to have this happen as soon as possible. But on the other hand, they are also rigorously testing the systems that are going in to minimize the occurrence of any regrets that a system going in

either is not going to live up to expectations or be a poor performer and something that would be regretted down the road.

ASSEMBLY MEMBER THIELE: And should I buy an iPhone 7 too or should I wait?

MR. GOBLER: It might catch on fire, so I wouldn't be first.

ASSEMBLY MEMBER THIELE: Thank you very much.

ASSEMBLY MEMBER ENGLEBRIGHT: Other questions? I have a couple of thoughts. First, congratulations for being validated at the level that you were today. The Governor's very clear vision has recognized the importance of your research for practical purposes pointing us all in the right direction. And receiving an additional $5 million on top of the investments that the Legislature has made this year in particular but regularly for the last several years shows a continuity and a momentum that I think is promising for all of Long Island. So, I just want to echo what Mr. Thiele said in congratulating you and being validated in the way

that you were with this grant.

MR. GOBLER: Thank.

MS. GARVEY: Absolutely.

ASSEMBLY MEMBER ENGLEBRIGHT: Just a couple of thoughts. Jennifer, you're pointing to the State of Maryland and other sites; Cape Cod where they've had terrific success. If we take the rate of their success for the whole State of Maryland, which is mostly coastal plain; not entirely, some of it is piedmont, some of it is riparian ridge but mostly it's a state of similar permeable deep soils. You divide that into the number of priority cesspools -- only the priority ones, at that rate it would take between 150 and 160 years. That's daunting. And you brought it to your attention; so I know that's one of the things that you're going to working on.

Let me just make an observation. The Cornell Cooperative Extension brochures that began to be published in the nineteen teens and '20s, showing people how to do certain types of crop rotation for example, basic ideas; if you can come up with -- I don't know if you have to

have a contest to do this or whether you can design it using university grade researchers? But if you can come up with a "How To Transform Your Existing Cesspool Kit" form and information sheet on a couple of 8-1/2 x 11-size pages and then made that available; I think that would be worthy.

I don't just say that tongue in cheek. I don't know that it's feasible yet. I mean, I hope that it will be feasible to go to really highly advanced commercial designed systems. But as Mr. Thiele has pointed out, there is somewhat of a risk to those of us who are in elected office to go to our public and say: We're from the government. We're here to help. And boy do we have a deal for you. For only about what you pay in taxes this year, we can upgrade the cesspool that you never thought you'd see again after it got installed. It's really a tough sell.

It may be that another strategy may be to come up with a method, such as that which I just suggested, the possibility of having some form of redesign of existing cesspools. It may be

that something would need to be added so that you would have a container just for the urine that comes and that's really a lot worse than the solids.

And it may be that we can make use of all of the pitch pine that we're going to be cutting down because of the southern pine beetle. And it may just be that instead of going to the ultimate, which would take 150 or 60 years; that we go to widespread tens of thousands in a shorter timeframe per year implementation of something that might as simple as adding a couple of simple containers and putting a lot of carbon in the bottom of the cesspool.

I don't know that that is feasible. But I do know that on the timeframe and I mentioned this before: We get elected on a two-year timeframe. And you're talking about something that nobody who we represents will even still be alive by the time that it actually bears full fruit. There may be within that context some benefit to coming up with something that isn't perfect but costs a heck of a lot less and could

be implemented massively in order to gain some, as you pointed out, Jennifer, some short-term immediate benefit.

That in turn, if we could do something in a staged of stepped fashion, like that; I'm just wondering? I'm not saying that this is the case. But I'm wondering if we did that in a staged or stepped fashion, whether it might actually empower the implementation of new rules for the sale of the home, for example? Because we shouldn't have to wait until the homes turnover to achieve the kinds of; I mean, you've outlined a really serious problem for us. And a lot of people like to live in their houses for decades. So waiting until they transform over and so forth timewise is not as effective as having something that people will buy into next year -- willingly, without taking it out on people who look a lot like Mr. Thiele.

ASSEMBLY MEMBER THIELE: And Mr. Englebright.

ASSEMBLY MEMBER ENGLEBRIGHT: So I just want to put that out there as a thought, that I

hope becomes a part of -- if it isn't already, a part of your envelope of thoughts. But we are greatly encouraged that the Governor is making increased investment into the astonishing reality that research really matters and that universities, particularly public universities have an enormous contribution to make for the well-being of our population: in this case, all of the coastal plain of New York.

We are so very proud of you. I'm particularly proud because I represent the main campus but there is a Southampton campus. And I know Mr. Thiele shares in that same pride that I'm expressing. And we hope to stay in touch with you and work closely with you as you make your progress. Thank you for what you do.

MS. GARVEY: Thank you.

MR. GOBLER: Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Our next panel includes: Adrienne Esposito, Amanda Lefton, Patricia Wood. Is Greta Zarro still here? Let's begin by swearing you in.

ASSEMBLY MEMBER GOTTFRIED: Do you each

swear or affirm that the testimony you're about to give is true?

MS. ADRIENNE ESPOSITO, EXECUTIVE DIRECTOR, CITIZENS CAMPAIGN FOR THE ENVIRONMENT: I do.

MS. PATRICIA WOOD, EXECUTIVE DIRECTOR, GRASSROOTS ENVIRONMENTAL EDUCATION: I do.

MS. AMANDA LEFTON, DEPUTY POLICY DIRECTOR, THE NATURE CONSERVANCY IN NEW YORK: I do.

[WHEREUPON THE WITNESSES, MS. ADRIENNE ESPOSITO, MS. PATRICIA WOOD AND MS. AMANDA LEFTON WERE DULY SWORN.]

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you. Adrienne, I wonder if you would lead off?

MS. ESPOSITO: Yes, I'd be happy to, thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you.

MS. ESPOSITO: Well, first I want to say thank you for everyone who has stuck it out for the last eight hours. You deserve extra credit.

ASSEMBLY MEMBER RAIA: It's for you, Adrienne.

MS. ESPOSITO: I know that's partially true, Assemblyman Raia. My name is Adrienne Esposito. I'm the Executive Director of Citizens Campaign for the Environment and thank you for the opportunity to speak this evening. I'm going to be brief. I think you've heard plenty today but I want to talk about what you haven't heard.

The first thing and that is thank you so much for allowing us two years ago and establishing the clean water infrastructure line item in the budget. As you know, over the last two years you allocated $400 million for that line item, which was quickly disbursed and quickly disseminated throughout New York State communities. Why? Because everyone needs more money for sewage infrastructure. We cannot have clean water unless we treat our sewage. This is not just based on science but common sense. So we're asking you today to please make that line item a permanent line item in the budget; so we don't have to continue to fight every year to keep it in. It should be permanent line item in the budget. The Senator is smiling.

ASSEMBLY MEMBER RAIA: I agree.

MS. ESPOSITO: I agree and we will. The second thing I do want to point out also is thank you: In the last two years you've been also allocating some funds for the safe disposal of pharmaceuticals. Two years in a row, the New York State Department of Health received 350,000. And for the first time last year there was $1 million in the EPF. Thank you.

What I want to say is we also now need to implement an extended producer responsibility. What is that? you might ask. I will tell you. That means that the pharmaceutical companies should be chipping in. Safe disposal of unwanted prescription drugs should not only be paid for by the State but by the company that produces them. You probably know but you might not but 4.3 million prescriptions are sold in America each and every year. That equates to $374 billion in sales. It's estimated that 200 million pounds of prescription drugs go each year unused or unwanted because prescriptions change and people just don't take all of them.

We know that flushing is not the answer now. However, what do we do with those drugs? So, some programs have been implemented in New York State. We've made good progress. You may have heard but you may not have heard and Senator Hannon, I particularly wanted to bring this to your attention since it's on Long Island; but the King Kullen grocery store out of their 11 stores that have pharmacies, they now all have safe disposal boxes. And in the first year of that program, 2,000 pounds of drugs were safely disposed of, free of charge to the public because of a State grant. By the second year of the program, 3,000 pounds of drugs were safely disposed of. That's a lot of drugs.

So, this is definitely an avenue or an area that needs more attention. When we first started working on safe disposal practices for unwanted drugs, I was told: Well, that's not the problem. The problem is the public takes drugs and then it enters into the wastewater system through the natural biological process and it's the not the drugs that are not taken.

But now we have data that says that is simply not correct; that this is a problem in the waste stream and this is a problem that's adding to drinking water and coastal water contamination. So we're asking you to help get this funded but by the producers of the drugs. This is not unusual. We do it with the electronics. We do it with tires. We do it with other things. We should do it with prescription drugs.

The next thing, just to point out very quickly, is something you have heard about today and that's 1,4-Dioxane. You may or may not know that 1,4-Dioxane is actually a hundred times more soluble than MTBE. That's a pretty serious soluble, volatile organic chemical. You may also know but nobody said it today that 46 percent -- 46 percent of all personal care products now have 1,4-Dioxane in them: shampoos, lotions, cosmetics, baby shampoos and for God sakes, even baby wipes. It's pervasive in our products.

And so some of the testimony was exactly right: that this is really not a one source issue

but it is a big issue. The issue with it is that the EPA in 2003 declared 1,4-Dioxane as a probable human carcinogen. And since then, 13 years, we don't have a drinking water standard for it. We default to the catchall standard of 50 parts per billion. But, and this is very important, the EPA has a health reference standard of .35 billion. So we're using a drinking water standard of 50 PPB but the EPA has a health reference of .35 PPB. That's a problem.

We're asking you to please -- you don't need legislation but if you could call on the New York State Health Department to come up with a drinking water standard for New York State, so we have a stronger and a stricter and a safer way to go about the 1,4-Dioxane. We are very heartened to day to hear that there will be technology now used to filter it out of the water. But filter it to what standard? If you're filtering it to 50 PPB, that doesn't help us. Frankly, that's not the right thing to do. We need to do better. We need New York State Health Department to have a specific standard for this toxic chemical. And we

need you to please help us do that.

It was a little disheartening too to hear the Suffolk County Water Authority, whom I have great respect for, say that they were happy to see that the 1,4-Dioxane levels were holding steady and not increasing. That's not good news. Forty percent of Suffolk County drinking water wells contain 1,4-Dioxane -- 40 percent. And in a national study done last year of 4,400 public water suppliers, the highest levels of 1,4-Dioxane were found right here on Long Island -- the highest levels.

So, we are at the precipice of having a problem. We want to attack this problem before it becomes one more carcinogen found in a ubiquitous way throughout our aquifer system. Attached to my testimony you'll see two maps. One map is of all the 1,4-Dioxane hits in the Upper Glacial Aquifer, which is the first layer. The second map is a map of all the 1,4-Dioxane hits in the Magothy Aquifer, which is the middle aquifer. That's the aquifer where 80 percent of Long Island drinks from. That's where we get 80

1 percent of our drinking water supply from. And
2 you can see that we have a 1,4-Dioxane problem.
3 The other thing you can do about 1,4-
4 Dioxane, frankly, is there is one source of it
5 and that's laundromats. You might say: Why
6 laundromats? And the reason for that is
7 unfortunately something called Tide Detergent. I
8 don't know why but they love 1,4-Dioxane over at
9 Tide. In fact, Tide Detergent has the highest
10 levels of 1,4-Dioxane than anything else we could
11 find: 89 parts per billion. And for some reason
12 the new product, Tide Free and Clear has even
13 more of that. I guess it's free and clear of
14 everything except the 1,4-Dioxane. I don't know
15 what happened there.
16 I just want to read you this. So the
17 1,4-Dioxane in Tide Free and Clear is 89 parts
18 per million. And in regular Tide it's 63 parts
19 per million. So we think that one good way to go
20 about this is to have the laundromats have to
21 treat their industrial waste for 1,4-Dioxane
22 because we know that they are a source of it
23 entering into groundwater and surface waters.
24

Those are two things that can be done to help combat this: the State has a regulatory number and laundromats have stricter regulations.

Very quickly, we also want to encourage you to pursue this issue of having water suppliers of all sizes test for the EPA's list of up and coming and emerging contaminants. Now some of you -- well, probably nobody in this room, but some people believe that it's just the rural communities that have water suppliers that serve a population of 10,000 or less. But that's not true. Here on Long Island for instance, we have 14 community public water suppliers that service populations 10,000 or above. And they are required to test for this EPA list of emerging contaminants.

However, we also have 21 community public water suppliers who serve populations under 10,000. That includes places like for instance Brookhaven National Laboratory, who has three to 4,000 people every day going to work there. We also have 189 non-community water suppliers. Those are the small ones that service

25 or more. But that includes schools, restaurants, delis, strip malls. All of them should be testing too; not just the big water suppliers but schools and community water suppliers. So we're asking you to expand that mandate. We don't need legislation to do that. We could do it.

A couple of last things. One is you might have seen throughout the day today how much you asked of the DEC. You ask them to do a lot. And those are all great things. You ask them to continue to expedite a comprehensive cleanup of the Massapequa plume or the Bethpage plume. There was a request to have them expedite and cleanup the Dzus, which is the one on Willetts Creek. You asked them to the Long Island Nitrogen Action Plan. You asked them to do other expedition of the other plumes. And we could go on and on. They need staff to do that.

We talked about illegal dumping. We talked about sand mining. We talked about mulching. They can do that with staff. In the past, we were told: Look, the agencies, they're

going to do more with less. I'm sorry, that's not true. You do less with less. You do more with more. So, the agencies need the staff to carry out these mandates of clean water. And we're asking you to be mindful of that when you go to do the budget.

For instance, you know the Ocean Acidification Bill, which all of you voted yes on -- I checked and thank you for that; but the DEC is a little concerned about it because they don't know if they have the staff to implement it. We want to protect water. We want to protect oceans. We want to protect our estuaries, which are also undergoing acidification. DEC needs staff to do that. It's basic and simple.

The last thing I'm just going to say is on the issue of funding for nitrogen and for the Long Island Nitrogen Action Plan and their recommendations. As an activist I have to disagree with some of the things I heard today. We heard that first we need a plan and then we could talk about funding. No, no, no, Legislators. We have to chew gum and walk at the

same time. We are not here today to discuss: Do we have a problem? We're not here today to even discuss the extent of the problem. We have a problem and the extent is far reaching.

But rather we're here to discuss the solutions. And every single one of those solutions will require funding, every one of them. The question is not: Will they require funding? It's: How much funding? Therefore as we proceed to craft the Long Island Nitrogen Action Plan, as we proceed to test new wastewater treatment technologies and look at where we need to upgrade sewage treatment plants and expand existing sewage treatment plants; we need a consistent, reliable funding stream.

We need our Senate, our Assembly and our counties and our towns and, yes, the water companies too, who seem to continue with the theme that we don't have a problem; to come together and agree on what that funding stream is. We're going to support you. We're going to back you but it's not going to happen by magic. Thank you for the opportunity to comment.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you. We'll come back and have some questions for you.

MS. ESPOSITO: Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much, Adrienne. Patricia Wood?

MS. WOOD: Yes, thank you so much. I'm the Executive Director of Grassroots Environmental Education. And thanks to this long hearing today and technology, it allowed me to sit in my office in Port Washington and listen until I was told: Time to get in the car and drive out there. So I appreciate that. I have an opening as Adrienne said that she was going to skip. I'm going to skip that too because much of what I listened to today covered this and by more astute people than myself.

But I am going to talk about one particular issue that I think that we have not discussed yet today. And then while it will take significant time and expense to see the impacts of critical and necessary infrastructure changes, dealing with nutrient-laden wastewater, there is something that we can do right now to address the

issue of excess nitrogen on Long Island; something that will require minimum funding and minimal disruption to businesses and homeowners.

I refer to legislation that would prohibit the sale or use of fertilizer products with a nitrogen content of more than ten percent by weight and require that 50 percent of that nitrogen be water insoluble. It is estimated that six to 11 percent of the nitrogen on Long Island comes from fertilizer use. It comes from excess fertilizer use, improper use of fertilizers. Typical brands of lawn fertilizer sold for use on Long Island contain 18 to 32 percent nitrogen by weight. High nitrogen water soluble fertilizers are a locally controllable source of degradation to the water sources on Long Island, where significant amounts of glacially deposited sandy soils are subjected to rapid water infiltration, percolation and leaching of nutrients.

These soil characteristics mean that normal agronomic practices of fertilization do not necessarily apply on Long Island. Some East Coast regions with similar hydrogeology and/or

marine environments have recognized and attempted to address the fertilizer issue with legislation. But there have been to date no real successes. Notably among them are Nantucket, Martha's Vineyard, several towns on Cape Cod, Chesapeake Bay, Maryland and Pinnellass County, Florida.

Legislation in these other coastal regions typically limit fertilizer application by using a similar formula, just mentioned, that requires homeowners and landscapers to apply no more than the .9 pounds or even .5 pounds in some places of nitrogen per thousand sq. ft. at any one time and no more than three pounds per thousand sq. ft. annually.

So, these laws have failed for two simple reasons: First, few landscapers and even fewer homeowners can accurately determine the precise square footage of their lawns or calibrate their spreaders to deliver a precise amount of fertilizer. This is actually on the Maryland Extension Services website. It looks like a algebra problem. And people are scared of these kinds of calculations to determine how much

--

ASSEMBLY MEMBER THIELE: It is an algebra problem.

MS. WOOD: It is an algebra problem. But I mean, these are the ones that your kids bring home and say: Can you help me with this? Okay. Anyway, these laws are failing. First, few landscapers and fewer homeowners can actually determine, at least based on this measurement of yard. And most people actually buy a bag of fertilizer and apply it until the bag is gone. They buy that bag. They dump it in their spreader and they spread it on the lawn; thinking that fertilizer is a good thing.

Secondly, there is no agency with the ability to monitor and enforce this type of complicated legislation. How can it be determined exactly how many pounds of nitrogen per thousand sq. ft. have been applied to a homeowners property without knowing the size of the bag, the exact product that was used, the amount of nitrogen in that bag, the type of spreader and even the setting on the spreader?

And so with a realization that these laws are inherently difficult to enforce, each region is now grappling with more aggressive education and certification efforts and hoping that the public and the industry will comply. In both Martha's Vineyard and Nantucket, who suffer very similar problems to what we have here on Long Island; they are pursuing the idea of a Martha's Vineyard blend or a Nantucket blend of fertilizer made especially for the Islands.

One of the major fertilizer distributors to the industry on the Islands told them it was absolutely possible to blend a bag of fertilizer with a low nitrogen content. And I had a conversation with a representative of the Nantucket Board of Health, which actually is tasked with the enforcement of their current law, who said that limiting the nitrogen content in a bag would be the gold standard. So why not on Long Island?

Lawn fertilizer restriction is very difficult to accomplish on a local basis. Despite the fact that we have some strong champions here

on Long Island, who understand the issue and support the idea of limiting the amount of nitrogen in fertilizer products sold or used on Long Island; only the State has sufficient power to pushback against industry and enact such protective legislation.

As a nonprofit and that's Grassroots, we have received recognition from the EPA and the New York State DEC for our healthy lawn programs and our work with professional landscapers on best practices for turf and landscape maintenance. And we are aware of the many effective low nitrogen products, mostly water insoluble fertilizers available for purchase and use. And I've attached a list to my testimony, so that you can actually see that there are commercially available products.

We also encourage the use of other sources of healthier nitrogen made available through cultural practices, such as: leaving clippings on lawns; the use of corn gluten meal, which also creates nitrogen as it breaks down; and seed formulas enhanced with the new varieties

of low growing clover, which doesn't have the same flower problems that the clover has which is sometimes the biggest problem when we talk about clover; which actually fixes nitrogen in the soil and is another good source.

So we ask that the Legislature might consider legislation for the counties of Long Island that prohibit the sale of use of lawn fertilizer products with a nitrogen content of more than ten percent by weight and require that 50 percent of that nitrogen be water insoluble. I just want to note there that a family member lived in Halifax, Nova Scotia for about 20 years. And everyone within a certain distance from the shoreline was required to have a non-flush toilet. They were using incinolets, incinerating toilets and composting toilets and this goes back 40 years ago. This is 30 or 40 years ago they were already doing this, already recognizing that you can actually get rid of it at the source and not have to deal with all this complicated and extremely expensive upgrading of sewage treatment and so on.

Just a note that there might be some very sensitive areas on Long Island a pilot might be considered for some of the areas. I know that there are people on the North Fork who are even talking about this at the moment. So anyway, this bold initiative of limiting the amount of nitrogen is that if you're requiring this lower nitrogen fertilizer product, even if it's misapplied or spilled onto an impervious surface, which is typically done -- it's a common occurrence on pathways and driveways and so on; the damage will be far less to our ecosystem. This will allow homeowners and the professional landscaping community to continue utilizing effective products that are protective of our fragile waters and our health while continuing to enjoy their lawns and their successful businesses. We are not asking anyone to sacrifice anything.

So I really want to thank you for this opportunity. And we all appreciate the personal sacrifice of you all spending these very long hours to hear our different perspectives on this

important issue. So thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you for waiting with us through those hours. It's worth it to hear your thoughts and thank you for those thoughts. Amanda Lefton from the Nature Conservancy?

MS. LEFTON: Well, thank you so much. I really do appreciate the opportunity to testify here today. But I'll also note that I know the Nature Conservancy and colleagues in other organizations have worked with a number of you for many years on addressing water quality. And I just want to really express my appreciation for your continued focus on this issue, for sticking out how many hours today will be. So thank you so much and thank you of course to your staff as well for them being here too.

Another huge thank you is of course for our significant budget victories this year. Noted a few times today was the Wastewater Infrastructure Improvement Act. But also thank you so much for a $300 million EPF, which I think we can't forget plays a really important role in

protecting our water quality all across New York State.

ASSEMBLY MEMBER ENGLEBRIGHT: I tried to grow it by a third.

MS. LEFTON: You know, Assemblyman, I think we'd be supportive of that. My written testimony, which I assume you all have, includes sort of a comprehensive view on water quality issues emerging across the State and some of the work that the Nature Conservancy is doing to address it. I will just really try and summarize some of the key points.

My testimony talks a bit more about protective strategies, including open space protection and wetland protection, holistically managing water resources, understanding how quality and quantity interacts together, nitrogen loading from septic systems and cesspools, adequate funding for wastewater and of course staffing capacity at our agencies. But I will just quickly touch on those points.

So the Nature Conservancy in New York is the State's organization of the world's largest

conservation organization. And we are experienced really in managing and restoring marine and freshwater resources.

We work both all across New York State and globally on water issues. We work on Long Island on nitrogen. In the Hudson Valley we are working on completing a restoration plan for the Hudson River. In Central and Western New York we're working on restoring the Great Lakes and dealing with nutrient loading and in certain lakes in the Finger Lakes. And in the Adirondacks we're working to update culverts. And of course we just completed the largest addition to the State's forest preserve in over a century. Globally, we've developed and urban water blueprint that shows how we can best utilize source water protection strategies to secure resources for cities in the future.

And I say all this because as we've worked on sort a diverse set of water quality issues across New York State, we realized two things; well, probably more than that but two that I'll touch on: Which is that New York is a

really diverse State and our water quality issues are different in different regions of the State.

Yet, there are certain themes and certain threads that we see emerging all across New York and one we've talked a lot about today, which is nutrient loading from wastewater. Specifically on Long Island we've talked a lot about onsite septic systems and municipal sewage systems but also runoff from agricultural operations, residential lawns and atmospheric deposition.

Atmospheric deposition is impacting our oceans quite a bit. It's causing bleaching of coral and killing of fish and other aquatic life. In particular, in New York we're really sensitive to this because we have an important shellfish industry but also because we have a lot of land-based pollution like nitrogen pouring into Long Island's bays and harbors from wastewater. And it's really the impacts of climate change, ocean acidification and this nitrogen loading that's creating a killer threat.

So, I want to just sort take a moment to

thank you, Assemblyman Englebright and Senator Lavalle and everyone here today for passing a bill that would establish an Ocean Acidification Task Force. This is really important. And we're urging the Governor to approve this legislation soon. So thank you for taking action. This is an important missing link.

Here on Long Island we've noted quite a bit that nitrogen pollution from septic systems and cesspools has resulted in serious public health and environmental risks. You've heard from a number of people today about what those risks are. And you've heard for a number of years about this issues. And so what I urge us today is to continue our commitment to this issue by really turning our focus to: How are we going to implement solutions to this problem? It is exciting the progress that's happening through the Long Island Nitrogen Action Plan. Thank you for securing funds for this. We commend DEC's efforts.

But we know we need to address large infrastructure, like the Bay Park Sewage

Treatment Facility. We know we need to experience communities that are already dealing with sea level rise, where septic systems are actually sitting in groundwater. And what's really astonishing actually to think about: In New York State in 2016, there are communities on Long Island that cannot flush their toilet during a high tide. This is unacceptable. We know that there are solutions to this problem. And I really urge us to really focus on the funding necessary to achieve that.

And actually I just want to pause one moment. Assembly Member Schimel, you asked a question about Bay Park earlier today. I just want to note that one of the really important components to the solutions of the Bay Park Sewage Treatment Facility is not just to move the outfall but also to install the necessary denitrification at that facility. So it's hopefully we're not just moving the problem but we're also treating it as well. And that needs to be a part of the solution. Good ahead, Adrienne.

MS. ESPOSITO: Well, it is very

important for you to know that it will have a reduction of nitrogen from 35 to 40 parts per million, all the way down to 15 to 17 parts per million; making it the most efficient ocean outfall pipe on the East Coast of the United States of America.

MS. LEFTON: Thanks for that pause. Actually while I'm on the subject, you also talked a lot about how we're managing for water quantity and water quality. And this is of tremendous importance. And you're talking about it in the context of course of the Long Island aquifer and our surface waters. But actually this is something that Statewide is an issue. We often and unfortunately in New York we do not holistically manage our water resources and this is a big problem for our surface water in Upstate communities as well for our streams, for our lakes. We need to really think about how these systems interact and think more holistically about managing for water quantity and water quantity. So thank you so much for raising that.

So another thing that was mentioned and

was noted last week of course is that funds from the federal government to grants to communities for wastewater infrastructure has declined over the years. And we're really so focused now on loans to communities, which are really difficult. And while New York State's investment in the Wastewater Infrastructure Act was significant; unfortunately it's not quite enough to really tackle this challenge. But I think that really presents an opportunity for New York State to lead, partnering with our neighboring states and really calling on the federal government to reinvest in a grant program for communities rather than a loan program.

But in addition to the federal government, we know that every level of government needs to be involved in the solution to this problem. New York is investing in the Wastewater Improvement Act. We also agree this should be something that's made permanent. We also think that we should think about how we can expand that to be more thoughtfully addressing septic systems and cesspools.

But we also need to be giving local communities the opportunity to be a part of the solution. We've heard a little bit about the Peconic Bay Community Preservation Fund and the upcoming vote in November, in which the five East End towns will continue this really important initiative. But perhaps it's time that we give authority to communities all across New York State to be more involved in protecting their water quality and allow them to create their own community preservation funds.

Additionally, we see and we've heard time and time again from communities that the tax cap has been a challenge for maintaining wastewater infrastructure. And we would urge that we remove that burden from them and exempt wastewater infrastructure from the tax cap.

A couple other things that I'll just touch on quickly. We know that our natural resources play a really important role in protecting our water quality in New York State. In order for our wetlands in particular to play the important role that they play in protecting

our water quality, we really need to know where they are.

We need to update our wetlands maps more frequently to ensure that we're using the best available information. We're currently relying on some pretty outdated information that's probably not adequate to protect our wetlands. So we'd really call on some further actions, not only in mapping our wetlands but also suggest to the Legislature that it's time to think about the regulatory loopholes that exist that allow for the continued degradation of our wetlands in New York.

Also another important role our natural resources play and another important program to consider is riparian buffer zones. Our riparian buffer areas are really important. And we would encourage the establishment of a program that would give landowners some sort of incentive for conserving them.

So beyond that we know that we have some opportunities to think about source water protection strategies in New York State more

holistically. We encourage that. I made a couple of recommendations in our testimony about that as well, which you can turn to.

And last, as noted previously, DEC is an agency that's rich in authority and directives but is really starving for the necessary resources to implement them. So as we continue to consider these really important strategies to protect water quality in New York State, we really need to figure out a way to more adequately staff our agencies charged with environmental protection. I tried to go fast.

ASSEMBLY MEMBER ENGLEBRIGHT: You did very well and thank you. Questions? Mr. Raia and we have others. Okay, Mr. Abinanti?

ASSEMBLY MEMBER ABINANTI: Thank you. Just very quickly on that last point about protecting riparian rights, that's an interesting concept. I know there's a -- I'm not sure where it comes from because I know we've used it in Westchester, where we can buy environmental easements. Is anybody familiar with that now? Can we use the same program for this purpose? In the

private sector it's the Transfer of Development Rights. It's similar to the concept that you're talking about: the Transfer of Development Rights. I think we've used it for agricultural properties as well. And I'm just trying to remember where that program comes from.

MS. LEFTON: So there's a land protection program within the Environmental Protection Fund. So the Farmland Protection Program that you're referencing, it's a conservation easement program. So the Environmental Protection Fund, which does a tremendous amount to protect our natural resources, includes land protection. And we encourage the use and the continuation of that program. But I would suggest that we look specifically about how we can encourage land owners for riparian areas and we might want to create a new program that would focus on that specifically.

ASSEMBLY MEMBER ABINANTI: Could we use this as a basis for it?

MS. LEFTON: I think there are great

models out there that we can turn to, certainly.

ASSEMBLY MEMBER ABINANTI: The other thing was I remember that the former Chairman, but I don't remember if it ever became law, had some legislation dealing with wetlands and to expand wetlands and to protect them. And I think the Assembly passed it several times.

MS. LEFTON: You did.

ASSEMBLY MEMBER ABINANTI: I just don't know if it ever went through the Senate.

MS. LEFTON: It did not.

ASSEMBLY MEMBER ABINANTI: Maybe we should take a look at that as well. Because this issue of wetlands on the local level, local governments tend to talk about wetlands and then allow exceptions so people can fill them in. And I've seen some situations even with some of my better communities. I say better: communities that are really sensitive to environmental issues and then they let somebody build in the middle of a flood plain. And then the next thing you know you've got rivers overflowing and all kinds of stuff. And when that happens with a sophisticated

community that's got a full staff and it talks about environmental protection all the time; I actually wonder what's going on in the other communities where they don't have any sensitivity to it at all. So I agree with what you're saying there. And I think we need to work on this wetlands issue as well. So thank you.

MS. LEFTON: That's encouraging, thank you.

ASSEMBLY MEMBER THIELE: Thank you and thank you for sticking it out. Well, first I'd like to thank Adrienne and Amanda for sharing my sentiments with respects to DEC staffing. They say that they have record levels but where they are I guess we'll have to find out. So, I certainly in January when we have budget meetings, I'm going to be pressing for that as well.

MS. ESPOSITO: That's great to hear. Thank you.

ASSEMBLY MEMBER THIELE: Patricia, very interesting listen to the fertilizer and everything else. I'm just curious whether or not

this is on your education list? But I have the greenest lawn in my neighborhood. I haven't fertilized it in five years since I moved in. I haven't put weed killer on it in five years since I moved in. It's called Zoysia grass. It doesn't look good after November. But I have the greenest lawn for eight months out of the year. And they even make this really cool nontoxic, biodegradable green spray paint that's been in existence for 50 years, using on golf courses; that if I'm having a little party in the winter, I'll just get out there and put it on.

MS. ESPOSITO: Do you really do that?

ASSEMBLY MEMBER THIELE: It really works. I'm just curious as to if that's something that we've discussed?

MS. ESPOSITO: We're big fans of using just cultural practices for the amount of nitrogen that's needed for lawns. Having a compost in your yard and using Compost Tea and so on and these are all good things. But the reality is that homeowners and certainly the landscaping industry is using multiple applications of

fertilizers as kind of the base for their businesses. And so a lot of fertilizer gets put on lawns and golf courses and parks and so on. And they're usually fertilizers that have pretty high nitrogen contents and many of them, you know, they're not water insoluble; they just run off the instant you have a rain event. So, it really is a big problem.

I had numerous conversations with people from these other regions. And they all said: How can you get legislation that limits the amount of nitrogen in a bag? I mean, that's just the way to do it. And I'm going to say: Well, why not? I mean, there are already fertilizer products available. And people like the Scott's Company that they really have a very big market share reformulate. This is not a big deal. Blend it for a particularly sensitive area like Long Island and these other coastal areas that have this problem. It's not going to solve all of the problem. But six to 11 percent nitrogen loading and Chris Gobler even will say that there are some areas on Long Island where that number is

higher; so it's worth doing if we can do it. It's not going to cost any money. And why wouldn't we just pick off that low hanging fruit and try to do something?

ASSEMBLY MEMBER THIELE: Okay. I'm sticking with Zoysia grass.

MS. ESPOSITO: Stick with the Zoysia grass.

ASSEMBLY MEMBER ENGLEBRIGHT: Yes, Legislator Schimel?

ASSEMBLY MEMBER SCHIMEL: I actually just want to make a comment to all three of you. This is probably the last time I'm ever going to have a public hearing with you. I really mean it, the three of you, it's ironic you're there, you know, in terms of your advocacy, in terms of your information you've provided all these years; you have been terrific.

MS. ESPOSITO: Thank you so much.

ASSEMBLY MEMBER ABINANTI: This is just the beginning and you hit all the hard points.

MS. ESPOSITO: Thank you for all your hard work and your dedication and your public

service. It's very much appreciated. Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Here, here.

MS. LEFTON: You will be missed, Assembly Member. Thank you so much for your work.

ASSEMBLY MEMBER ENGLEBRIGHT: You will be missed.

ASSEMBLY MEMBER ABINANTI: Oh, she'll be back.

MS. WOOD: You can volunteer for Grass Roots.

MS. LEFTON: That's right. Don't forget my parents live in your town, Assemblywoman.

ASSEMBLY MEMBER ENGLEBRIGHT: I have just a couple of questions and then I want to move because we're going to start to have to carry people out. But thank you for your testimony, each of you really wonderful. Thank you for persevering to offer it to us.

Adrienne Esposito, I've looked at the maps that you attach showing wells detecting 1,4-Dioxane in Suffolk County in the Upper Glacial and the Magothy aquifers. Just adding the hits

1 together, they're very close in the detectable
2 range, all the way through greater than one part
3 per millimeter. For Upper Glacial, it's 126
4 sites. Magothy is 127.
5 I'm astonished really. And by the way,
6 for the highest reading there are ten sites --
7 ten wells in the Upper Glacial and 16 in the
8 Magothy. Is this a sampling error? How do you
9 explain that the deeper aquifer is showing
10 greater -- at the very least overall comparable,
11 almost the equivalent number of detections and in
12 the highest readings, almost 50 percent greater
13 level of readings?
14 MS. ESPOSITO: This data is taken right
15 out of the Suffolk County Water Management Plan,
16 a Comprehensive Water Management Plan. And it was
17 put on these maps by the new Track system, that
18 the Suffolk County Water Authority, Ty Fuller
19 spoke about today. So, all of this data and these
20 maps have been produced by both government
21 agencies and by independent consultants that they
22 have utilized. So, I'd ask for them to explain
23 that. We're here to present to you the data and
24

the maps that they provided. We believe that 1,4-Dioxane is now the new dirty little secret going on in our water supply and it needs to be addressed.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you. Two of you mentioned the DEC staffing issue. And as you can tell listening to Mr. Raia, this is something that cuts across all parts of our Committee and is shared by most of the Members of the Assembly -- I can't speak for the Senate; most of the Members who sit on the Committee. And we are very frustrated. We heard today when Legislator Kavanagh asked the question about staffing, he was aggressively pushed back by the Commissioner who indicated without quantifying; he indicated that staffing levels have increased in recent years. But overall since the Great Recession hit and deep cuts occurred, the Agency is down about a third of its personnel.

MS. ESPOSITO: That's right.

ASSEMBLY MEMBER ENGLEBRIGHT: Which is astonishing. So I don't know, I'm sure that the Commissioner was speaking accurately at some

level about some way of doing the calculation. But the bigger picture, you're both right. Amanda, you also made the same observation. And you're correct and Mr. Raia is also very correct. So, I think it's important to underscore that because we really need the Agency to be able to operate at a level better than what it was able to do before the Great Recession.

MS. ESPOSITO: That's right.

ASSEMBLY MEMBER ENGLEBRIGHT: As we're hearing all day, the issues have become more complex.

MS. ESPOSITO: And you know what, Assemblyman? Right now, as you well know, they are recrafting the Part 360 Regulations for the first time in 25, 30 years. And I really feel that in part those regulations were not as strong, the draft, as they could have been because there's not enough staff to do the needed work.

So for instance, as you know, a lot of the mulch regulations that are in the Horseblock Road investigation, a report put out by the DEC

in collaboration with the Suffolk Health Department; the regulations on mulch in that report were not in the Part 360 draft. The same thing for stopping the illegal dumping of the construction and demolition degree and solid waste material.

The real regulations that we need are not in that draft. And that's not because the DEC doesn't want to do it. I believe they do. But I believe they're afraid they're going to be held to a standard that the staff cannot achieve given their limited resources. So there's some I think insidious unfortunately work at hand here that is holding us back from greater protection.

ASSEMBLY MEMBER ENGLEBRIGHT: Well, thank you again. Unless there are other questions, I'd like to say that we'll be back to you and our doors are open and your input is welcome in an ongoing way, as well as at this hearing. Thank you.

MS. ESPOSITO: Thank you all for your time.

MS. WOOD: Thank you very much.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you. We have a panel of long distance runners, timewise anyhow. I'd like to add one person. I mentioned before that there were several people who have first day of class and are teaching college level class. So if I could, I'd like to call Sarah Meyland, the Director for the Center for Water Resources Management at New York Institute of Technology, who was originally scheduled for Panel 5.

But you will now be part of Panel 7, along with Richard Amper, the Executive Director of the Long Island Pine Barrens Society; Robert S. DeLuca, President of the Group for the East End; John Turner, Conservation Policy Advocate, representing Seatuck Environmental Association; and Keven McAllister, Founding President of Defend H20. Welcome to each and every one of you. Who would like to begin? Mr. Amper? You have to be sworn in.

ASSEMBLY MEMBER GOTTFRIED: Before you begin, do you each swear or affirm that the testimony you're about to give is true?

MR. RICHARD AMPER, EXECUTIVE DIRECTOR, LONG ISLAND PINE BARRENS SOCIETY: I do.

ASSEMBLY MEMBER GOTTFRIED: Okay. Do we hear an "I do" from the rest of you?

ALL: Yes, we do.

[WHEREUPON THE WITNESSES, MR. RICHARD AMPER, MR. ROBERT S. DeLUCA, MR. JOHN TURNER, MR. KEVIN McALLISTER AND MS. SARAH MEYLAND WERE DULY SWORN.]

ASSEMBLY MEMBER GOTTFRIED: Oh, good.

ASSEMBLY MEMBER ENGLEBRIGHT: Alright, please proceed.

MR. AMPER: I'm going to shorten my remarks to allow a little bit of time to react to some of the things that I have heard over the course of this long day. The first role of government at every level is public health and safety. It's essential that those of you on the Committees of Health and Environmental Conservation prioritize and fund the essential endeavor needed for public health and safety, apart from the economy of the region.

Federal, state, county and towns have

all acknowledged the criticality of this challenge but the effort to date has not been up to the magnitude of the crisis. Not that you're not doing anything; it's just that this is an enormous challenge and it has not yet been met. From the Governor to the Legislature, New York State government has acknowledged Long Island's number one problem and has begun funding initial remediation steps.

Governor Cuomo's Rapid Response Team and the State Legislature's creation of the Long Island Nitrogen Action Plan clearly recognized that action is needed. But both Executive and Legislative branches cannot escape the obvious need for funding sources, not in the millions but in the billions. Long Islanders with individual septic systems cannot be expected to replace them without government support in the form of direct subsidies, tax credits or tax deductions.

Despite paying 2-1/2 times the national average in taxes, Long Islanders have repeatedly supported referendums that have generated nearly $3 billion for land and water protection. It's

unprecedented anywhere in the country.

We need a recurring funding source. Assemblyman Thiele said earlier in the day how successful the Community Preservation Fund was. The Legislature authorized that that be placed on the ballot on three occasions. The rest of Suffolk County has to have the capacity to put on the ballot a mechanism to provide for recurring funding source. It doesn't have to be done in any particular way.

But I would want to argue that these people who have voted time and time again, despite paying 2-1/2 times the national average in taxes to support all these referenda; these people should at least have the opportunity that the folks on the East End by putting on the ballot some funding source. If it isn't a water fee, it may be any number of other things and probably all of them before we're done. It's going to be an expensive process.

But they have to be allowed to choose. And what they're choosing is not the conventional: Let's give government money. No,

what they're actually doing is by paying for example if the water fee were the vehicle used, they would be paying $10 a month. But there would be the possibility, depending on the total funding that can be generated by all sources, that it might be a subsidy worth $5,000 that comes back to them in order to meet the responsibility.

And how much will they cost? Well, with 360,000 people, we're told by economists that the price of these systems will come down immediately. We cannot wait until the ultimate in technology is reached, maybe one part some ten or 20 years, because the Island will be destroyed as a functional system economically and environmentally by then. So, the Legislature approved a referendum on the East End. We're asking the Legislature to approve a referendum to let the people decide.

And I have to tell you that the question that was raised about people's confidence that maybe the money wouldn't go where it belongs: litigation brought by our Pine Barrens Society

will ensure that the government will not be able to use money designated by Long Islanders for water protection for any other purpose with subsequent litigation.

The case has gone through the entire court system up to the court of appeals and the State courts have dictated that any action for funding that is done by referendum can only be done by a subsequent referendum. That means the lockbox that you all agree needs to be there; the key to that lockbox is held by the people who vote for it and then expect it to be used as it's supposed to.

Funding DEC, I'm not going to spend too much time. There seems to be universal agreement. I thought that the Commissioner was terrific in advancing and acknowledging the need for all of the things that he advocated. But it wasn't reasonable to suggest that he would come to you and say that the Governor was not providing the money that was necessary. But you know it. And so let's operate on the premise of the things that we really know, the things we believe have to be

done.

And let's not buy the things that we don't believe. We don't believe in what was said by the Long Island Water Conference that there aren't any problems, that's everything's fine and they can treat water and they can provide clean water. Well, the fact of the matter is there are brown tides and red tides and everything that Chris Gobler told you is true and that cannot be denied. And moreover, what about all the people still on private wells? We have an obligation to address this as something that's affecting three million people and the health of their environment. And so we can't pretend that there's no problem. We know it's a big problem and we're ready to address it.

Suffolk County needs the detail how this program will work. Before the person is asked to go and support a tenth referendum over the last 20 years, he or she ought to know what's going to happen and when: When might they be required to upgrade their systems? How much time do they have? Can they get low interest loans? Will the

government pay half the cost or three-quarters of the cost or ten percent? The County has to come forward and do that.

Assemblyman Schimel spoke about the issue of quality and quantity and they are inseparable. We can't do one without the other. And Assemblyman Englebright, you talked about public education and I think a bunch of us up here think we're doing a good job with that. But we'll never separate -- never separate quantity from quality because we don't have a solution if we don't have both.

I was told by some of your colleagues 20 years ago that we couldn't protect the Long Island Pine Barriers but the people of Long Island did that. The people of Suffolk County spent three-quarters of a billion dollars to do that and beneath them lies the purest water anyplace in the State of New York. Long Islanders discovered DNA. They took a whole nation to the moon and are already developing nitrogen reduction technologies that can reverse declining water quality and restore the most essential

1 human necessity: our water.
2 We'll need continued funding at the
3 federal, state, county and local level to clean
4 up our water. New York State must respond to Long
5 Island's crisis not with difference but with
6 affirmative action. You people I know well enough
7 to know that you care. It has taken a long time
8 and the Press, by the way, which has been
9 commended for its coverage has also elevated this
10 issue to the point where no one can deny the
11 magnitude of the problem and no one doubts what
12 needs to be done about it.
13 We are turning to you to help us do
14 that. And for our part, we will run the
15 campaigns, educate the public, encourage the kind
16 of participation in water protection for which
17 Long Island as a whole has an incredible
18 reputation. We want to join with you and solve
19 this problem. Please help us.
20 ASSEMBLY MEMBER ENGLEBRIGHT: Bob
21 DeLuca?
22 MR. ROBERT S. DeLUCA, PRESIDENT, GROUP
23 FOR THE EAST END: Good evening, Members. And out
24

of a sense of mercy, I'm going to go off script and try to keep this as short as I can but hopefully somewhat informative. First, on behalf of Group for the East End, so some of you who don't know us, we're a nonprofit conservation advocacy organization and education organization based in Southold.

And for 44 years, water quality has been a primary concern of ours in a region that is defined very much by its access to water. You can't be from the East End or spend time on the East End or vacation on the East End and not think about clean water. And whether that water is for agriculture or whether that water is for boating or fishing or swimming, virtually every single thing that we do in our region brings us next to the water and we rely on our very shallow freshwater for drinking water purposes.

We also generate a fair amount of revenue for the State of New York because of all the other people who come to enjoy that area. And our economy has proven to be a very durable one in the face of all kinds of unprecedented odds.

Water quality however is something that could create a significant and drastic change. And our members and those of us on the East End are very concerned about it.

So, what I'm going to do is I just have a couple of things I want to go through. And one of them is just a story. I came out here in the early 1980's. And in 1985 I had the experience of seeing a scallop harvest and industry go from probably the best on the Eastern Seaboard down to zero in the course of about two years. And the reason I raise that at the outset is that there's sometimes a sense that we think of the problems in the environment as being linear in nature: they get a little bit worse and a little bit worse and a little bit worse. And if we keep after them, we can catch up.

But sometimes that's not the case. Sometimes the problem is geometric, as it was with and still is with our scallop populations. And now we see things like hundreds of thousands of dead fish washing up on our shores and dead turtles and some of the highest readings for

neurotoxins in red tide that we've ever seen -- out of nowhere, on the North Fork.

So I raise this only to increase the level of urgency that's got to be applied here; and also to recognize that what the State has done for all of us has been very substantial: an expansion of the EPF and the LINAP funding, $400 million for post-Sandy resiliency investments in our coast. All of these things are great achievements for which we all owe you and your colleagues a debt of gratitude. They're a great start.

But the other thing is and some of you know I spent a little bit of time in government and I was there at the time after the 208 Study and Peter Scully and I were just discussing it, one of two or three of us who actually I guess read the thing or still remember it. But there was an era about 35 years ago when we actually started doing this in a way where we thought we were going to have a comprehensive strategy for wastewater management.

And I will tell you that when we did

that and it involved all of those different groups and different agencies; a lot of things happened fairly quickly in the early 1980's through the mid-1980's. And then the fire sort of wore out on the 208 Study and we're back again these years later with a larger problem. And that puts all of us in the position of being able to look back over our shoulder at what could have been and seeing that when we implemented change when we had the chance, we made positive progress. And the longer we waited, the more expensive and complicated it got. And many of the things that we have to do today revolve around that particular issue.

Now I would just like to stipulate that virtually everything you heard from all of the other NGOs we support. Notably, the DEC funding issue, which you're all well aware of and again as a former government employee, there is nothing worse than an agency that has been beaten to death by budget cuts when you ask it to do more and more with less and less. It just doesn't work. And no matter how to try to breathe life

into it, it won't happen.

At the same time we're lucky because we have a lot of local governments here that will try to pick up the slack. But all of us know that DEC has to be up for the challenge that's ahead of it. Now, how do we get there? Well, I basically had three ideas I wanted to leave you with. And they flow along the lines of what you all have done with the Long Island Nitrogen Action Plan and even with LICAP; we see that the integration of agencies and leadership in all of the various stakeholders leads to some pretty good outcomes.

And if I leave you with nothing else, I would like to see you think about some kind of a legislative working group that involves all of you with our elected leadership here at the County level, let's say. So that we can work together and when we go to Albany in January and February and the budget is being done, there's a way to get a unified strategy among all of you who represent Long Islanders on issues that we all know need to be addressed and for which

there's an awful lot of agreement. I'm sure if you could help prioritize the things that need to get done with our elected leaders, we would all be better off.

And the second thing would be that we need to validate that work by bringing these issues to the public in the form of referenda, as we have done on the East End and proven over and over again that the public wants to see its money invested in environmental protection. So if those of you on the Legislature can help our County leaders in Nassau and Suffolk County come up with good ideas that we would all be there to support? We're cutting to the chase, which is: We've got to find some very specific ways to raise real money to get the job done that every single one of these studies is telling us that we need to do and frankly, told us that we needed to do in 1978. So it's time for that. And I think that those two things are critical.

And the final thing is just to the extent that all of you on the Legislature play a role in speaking with agency officials and

working amongst stakeholders: recognize that we all have very different approaches but we have common goals. And when you work with one of us, just respect us for who we are and try to put together the different pieces, as we're all different organizations. But with you in leadership helping us to guide this along, I think we'll get further faster.

And I would just really close by saying this: At the end of the day, Dr. Gobler pointed out that when you take the nitrogen out of our coastal waters, those living systems come back. And we've seen it happen, whether it's the Long Island Sound or some of the other places that he mentioned. We actually have something here that we could fix. And because our transit times to water and groundwater are so quick, we might be able to see those changes happen more quickly than we might imagine.

So I ask you to keep your shoulder in this as you have, and to continue to support these efforts and see what you could do to do your best to work with our leadership, so we can

1 help support all of this funding that we're going
2 to need for years to come. Thank you very much.
3 ASSEMBLY MEMBER ENGLEBRIGHT: Keven
4 McAllister?
5 MR. KEVIN McALLISTER, FOUNDING
6 PRESIDENT, DEFEND H20: Thank you, Mr.
7 Englebright. I'd just like to start by saying
8 thank you for showing such great respect, all of
9 you, this evening in hearing our testimony. Thank
10 you. My name is Kevin McAllister. By training I'm
11 a marine scientist. My experience spans roughly
12 30 years in two states in resource management, in
13 the last 18 as a clean water advocate. Defend H20
14 is a nonprofit organization.
15 My introduction or involvement, direct
16 involvement with nitrogen pollution really
17 originated on the Forge River in 2005, when
18 basically that exploded in a harmful bloom:
19 juvenile eels poking up to try to breathe; blue
20 crabs literally crawling out of the waterbody to
21 try to breathe as well. Again, every color, every
22 odor And for me it was a moment where it's the
23 households.
24

I had petitioned New York State DEC to name the Forge River as an impaired waterbody on a 303D list. In many ways that poster tributary on the South Shore into Great South Bay I think was the impetus for addressing nitrogen pollution from wastewater. I've always been very adamant about water quality standards. The Clean Water Act, the federal government in 1987, they issued a directive to the states, directing the states to move away from a narrative nutrient standard, which reads something like this: none in the amounts that would lead to harmful algal blooms or excessive growth of weeds and slimes. It's very subjective.

EPA was looking for the states to move into a numeric standard: a number, a metric. Again that directive came down in 1987. It's been a slow go across the nation. But it's very important that we do assign these numeric standards. I know DEC in Albany has done some great work. They've assigned or have defined these numbers. We certainly know what they are in the scientific community. But they need to

promulgated and put into law. And I say that because ultimately that will be the catalyst for regulatory oversight and moving into a land base of course.

On the discharge end, we have standards in place. And that really will define nitrogen coming out of the ends of pipes from sewage treatment plants, both on a smaller community scale or commercial scale. The residential side, single family residential is a separate beast. But again the standards are extremely important for metrics.

Now addressing nutrients from wastewater, there's two main thrusts here of course: the individual onsite systems through innovative alternative systems. And there's great promise and certainly with Stony Brook's great work through their Clean Water Technology Center, we are getting down to or defining systems that can achieve very low levels, single digit. And I hope they come onto marketplace in short order. And then of course in the larger scale, community or municipal, now we get into sewage treatment

1 plants.

2 On the individual level and I'm pleased

3 to say as a critic of Suffolk County at times,

4 they have made good progress in starting to test

5 out these innovative systems. They recently just

6 approved Article 19, which assigns a standard of

7 19 for these innovative systems. I believe we can

8 do much better. I hope over time that standard

9 will be evolved into again single digits but time

10 will tell certainly with the testing.

11 To your point, Mr. Englebright, earlier

12 and I'm glad this is drawn out in really a

13 concept you have to understand: It's not about

14 the concentration would come out of a household

15 or even a sewage treatment plant. It is about the

16 mass loading from a watershed into the waterbody.

17 That's what we have to be addressing. So, as

18 these individual systems, I/A systems have great

19 promise; to have for a lack of a better word and

20 excuse the pun, a trickle effect where we are

21 slowly introducing these on a voluntary basis, it

22 will take decades to basically incorporate these

23 systems. And we could have a checkerboard across

24

a waterbody where quite frankly it's meaningless.

So there has to be a real strategy to address what I will describe as the hot spots, areas that we know are entrainments in groundwater for higher nitrogen levels, where we can get into a hundred homes or 200 homes and really have some substantive change in that area. Supervisor Romaine said something poignant today: all political decisions are based on money. And I understand that. And I don't sit in your shoes of course. It's easy for me to advocate in a hard way and not having full recognition of the cost implications of what you do every day as Legislators.

But at the end of the day, unless we have some sort of mandate and I would strongly of course suggest the offset of costs and as the systems come down in price; but again we have to get them in mass. Is it time of property transfer? Is it time certain? You know, is it ten years out? I know it seemed to be that that was done with the gas stations.

I saw the big flurry in the last several

1 years to ultimately get the tanks out and double
2 liners, whatever the regs called for. But that
3 was probably time certain five or ten, 15 years
4 out. I think we have to move in that direction,
5 otherwise we will have the trickle effect, which
6 won't have the impact that we're seeking.
7 Moving onto sewering. I wrote a piece:
8 Sewage Treatment Plants Are No Panacea. And I
9 want to put that into context. Sewering certainly
10 with advanced treatment and the best available
11 technologies, we can get down to very single
12 digit levels of treatment. So on face value,
13 these are extremely important and effective tools
14 for remediating nitrogen pollution. But the flaw
15 here is often they are associated with increased
16 development. Back to the standards: many of them
17 are underperforming where they're not meeting the
18 water quality standards and the enforcement arm
19 is just not there.
20 I want to give you a real specific
21 example because again I call it honesty in
22 sewering and this pertains to the Forge River. I
23 know the Commissioner had described to you
24

several projects that the Governor was involved with along with FEMA. And one being the Mastic-Shirley District, which is being assigned to improving water quality within the Forge Water.

I looked at that analysis. I know the boundaries of the district. There's a good portion that is in a commercial zone: the Montauk Highway. The analysis called for approximately 15 percent reduction in nitrogen. Now we can say that's substantive. But a real flaw in that analysis -- not a flaw per se, but what was acknowledged: It was based on existing conditions. And what had happened in the last two years, the Town of Brookhaven actually has up-zoned the business corridor to include multifamily housing and expansion of wet use businesses.

So I submit to you that 15 percent would certainly contract when we realize full buildout in ten or 15 years of this commercial district down to negligible levels. It could even be a net positive if you consider thousands of new living units associated with it.

So again I think we have to decouple the zoning from the sewer districts to ensure that they are going to in fact be meaningful. Dr. Gobler cited several examples of positive effects. But these were discharges further offshore or upgrades. It did not have a bearing on say new districts that again were coupled with increased development.

And lastly, I'd like to bring to your attention and as we move forward here, we really have to turn the wheel and be very committed to positive change. New York State DEC is the delegated authority under the Clean Water Act to again enforce and implement wastewater standards. That comes in Environmental Conservation Law, Chapter 10, Part 703. There's a standard for commercial developments: a thousand gallons or greater for both Nassau and Suffolk Counties, sole source aquifer area. And what that standard calls for is for advanced treatment not to exceed ten milligrams per liter. That's the drinking water standard.

Suffolk County is an agent of the State.

They are not a sole authority. They do not have the authority to have more lax standards than New York State DEC. And what they have been doing in at least the last decade or not longer, they have been deviating from that standard to issue what's called grandfathering; which is allowances, variances, deviations, exemptions that allow for expansions of these commercial developments. Sometimes expansions and in some cases complete redevelopment, utilizing the existing sanitary system, which is again deficient for nitrogen removal; in some cases actually putting in the similar systems new into the ground to support the expanding development.

Again this is really up to DEC to step in. Unless there is State statute that I'm unaware of, this is certainly not allowable deviation from State law. And I think it really has to end, cease and desist without further continuation. Because again we are asking so much of so many, we have to have our own house in order. So, thank you for your consideration to my comments.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. John Turner?

MR. JOHN TURNER, CONSERVATION POLICY ADVOCATE, SEATUCK ENVIRONMENTAL ASSOCIATION: Thank you, Chairman Englebright. I'd like to wish you all a good evening. My comments originally said good morning. I then thought it'd become good afternoon.

ASSEMBLY MEMBER ENGLEBRIGHT: It almost might be that again.

MR. TURNER: Good late afternoon, but now good evening. I'm going to dispense with most of my prepared remarks, certainly the prefatory comments and just focus on two specific issues that I had in my remarks. And I did want to bring up one other additional issue that's come up today. For the record, my name is John Turner and I serve as a conservation policy advocate for the Seatuck Environmental Association.

My background has been in a variety of conservation fields. Perhaps most relevant to the hearing today is I had the pleasure of serving with both Senator Caesar Trunzo and more recently

with Assemblyman Tom DiNapoli, as Legislative Director of the New York State Water Resource Commission years ago and worked with Assemblyman DiNapoli with the MtBE legislation and some other things.

And one of the bills that we worked on that the Assemblyman got passed and signed into law has to do with water reuse and that's one of the first topics I want to talk with you about. If we could project you out 40 miles, okay, we're going to lift you up and drop you 40 miles to the east at the mouth of the Peconic River.

MR. DeLUCA: I'm not coming back if you lift me out there right now.

MR. TURNER: Fair enough, I don't blame you. Bob gets to work in paradise out in the East End there. I'm stuck in Islip. No, Islip's wonderful. South Shore is wonderful. Anyway, so you go to Indian Island County Golf Course. And right next to the County Golf Course is the Riverhead Sewage Treatment Plant. And if you go there today or tonight or tomorrow, you'll see the sewage treatment plant is discharging

hundreds of thousands of gallons fairly highly treated wastewater into the Peconic River and into the Bay.

Based on the upgrades that have been made, they estimate that the amount of nitrogen that's in that wastewater on an annual basis is about 2,000 pounds, about a ton. Right next door, while that's discharging into the River, the Indian Island County Golf Course staff is irrigating their grass. They're pumping up 63 million gallons of water from stressed East End aquifers to irrigate that grass. It didn't make sense. It doesn't make sense. And so what has happened is actually on September 21st, there will be an event in which the highly treated wastewater from the Riverhead Sewage Treatment Plan will no longer be discharged into the River but be sent next door, redirected to serve irrigation water for the Golf Course.

What are the benefits of that? The benefits will be a 2,000 pound reduction on an annual basis of nitrogen into the Peconic Bay, which his beset with problems. Bob raised some of

them. Certainly Dr. Gobler talked about them in his testimony. And it will result in 63 million less gallons of water being pumped up out of the aquifer; underscoring the fact that water reuse is really unique among water management strategies, in having both water quality and water quantity benefits.

And I want to just put it in context a little bit to you. Water reuse is a tried and true method that officially uses highly treated wastewater for another purpose. Hence, it's reused rather than discharged into the ground or a waterbody. The EPA reports that more than 2.2 billion gallons of water are safely reused every day in the United States, most notably in California, Florida and the arid Southwest. The water, as I mentioned, is used for irrigating golf courses and actually a variety of purposes; certain agricultural crops and certain included food crops.

And most recently, the advent's really been in Florida. It's used on citrus more and more. So the orange juice that you drink perhaps

this morning early may have been the tree got its water from irrigated wastewater from a water reuse project.

As I mentioned, in a little more than a week things are going to change. And when that happens, New York State will have implemented its second and only its second water reuse project in the entire State. There's another golf course upstate I think run by the Onondaga Indian Nation where they use wastewater for golf course purposes too. So we think that water reuse should be a primary strategy, not the only by any means; but a primary strategy at addressing Long Island's water quantity and quality problems.

What we'd most like to see is that in any consideration of funding for these kind of programs that water reuse be considered. The potential of water reuse on Long Island is enormous. Working with the Suffolk County Planner, Sarah Landsdale, we quickly identified 26 golf courses that are within a half-mile of a sewage treatment plant. I think we learned today there 190 sewage treatment plants just in Suffolk

County I think someone said. And you've got about 128 or so golf courses.

So imagine if this strategy was to be implemented aggressively, what kind of major positive changes we could have at reducing the amount of water pumped, as well as improving water quality because of nitrogen. So again we want to just promote the concept of water reuse and put that in the back of your minds as you consider ways to go about protecting Long Island's water supply.

I want to change gears totally and take you out to the coast and talk about breach policy right now. You know that when Superstorm Sandy hit, there were a lot of devastating impacts. One of the effects of the storm was the opening up along the Long Island South Shore Barrier Island. I think three or four breaches, all of which, except one were closed very, very quickly. And the one that was left open and it's still open today is only left open because it is within the Fire Island National Seashore Wilderness Zone, what we call the old inland breach.

Shortly after that breach occurred, there was significant public and political outcry to close the breach. And the concern understandably was the thought that because of the breach existing, that the South Shore mainland would likely be flooded; there being increasing high tides and that would result in adverse impacts to the communities living along the South Shore. And that didn't happen, by the way.

A lot of detailed scientific assessment done by Stony Brook University, Charlie Flagg and others -- the Assemblyman is shaking his head; he knows this from the work that's been done; it turned out not to be the case. But in fact the breach being open has improved water quality in that area of the Bay significantly. From what we understand, eel grass is coming back in that part of the Bay.

And so I guess the message to you here is that we would hope that you would consider State legislation that would provide for a decision making framework that allows for more

nuanced and proactive policies that relates to breaches. Because right now the policy of the State of New York through their 1996 Breach Contingency Plan is that any breach is a bad breach. And that's not the case. This breach has shown us that it can actually have positive water quality and ecological effects. So, we'd love to work with you in formulating that legislation and again we think that that makes sense.

The last thing, if I could just deviate quickly, I want to just talk a little bit about water conservation. What Assemblywoman Schimel was saying before about water conservation is absolutely music to my ears. And again having worked with Tom DiNapoli for a while, he tasked me to work on water efficiency issues. And I think you might hear this testimony shortly from Sarah Meyland: Long Island has a water quantity problem. Don't be mistaken about that. Okay? I think sometimes it's glossed over, understandably for perhaps the more poignant or more alarming water quality issues. But Long Island has a water quantity problem.

And it's not just related to the North Fork and it's not just related to Southwestern Nassau County and Northern Nassau County. It's just an overall problem. And one reflection of that is what we've accepted as normal. Nassau County, for 30 years I've lived in Massapequa Park, next to the Massapequa Preserve. And I used to experience the Preserve that was a compromise, that was degraded. Because the stream of Massapequa Creek that at one time you read historically went much further north than Southern State Parkway, almost halfway up to Bethpage State Park; didn't even make it to Linden Street anyway. It was just a dry streambed.

And so Nassau County, you know, water table elevations have dropped to the point that those surface water features that you get when a water table intersects a land surface -- being a pond, a lake, a stream; have disappeared for a large extent. I mean, I kid around and call it valley no stream and Hempstead puddle state park. I mean, you go there, you go north of Southern

State to Hempstead Lake State Park; there's no lake there. I mean, at best there's just puddles most of the time because of the draw drown of the regional water table.

I mean, Dick's absolutely right. He talks about water quantity and quality issues are inseparable. They're two sides of the water management coin. And we really need to be a lot more aggressive I think in implementing meaningful strategies to conserve water. And I have to really take to task the Suffolk County Water Authority and some of the other water purveyors here that have been giving lip service to the idea of water conservation over the past 20 years.

If you take a look at those programs and ask for their reports and you look at the information that they send out, they have educational programs where they inform you that if you want to put what they call actually a toilet tummy is the expression I learned in the back of your toilet to reduce water use, you can do that sort of thing. That's all feel good

stuff. It's fluff. It's not meaningful. And it's not resulted in any water reduction on a per capita basis on Long Island.

If you really have to have meaningful water conservation, then require all water purveyors in a sole source aquifer area to be mandated to have a water rate structure -- Assemblyman Thiele, you raised this issue earlier; that actually promotes conservation. You don't necessarily have to have higher bills but you'd change the rates where you're going to see water reduction go down without compromising that revenue stream that is of concern to the purveyors. Require water purveyors to have meaningful water audit programs and leak detection and they've got staff that can go out and fix leaks and things like that. That happens routinely in water purveyors in California and other places in the country.

It's really imperative that we become much more I think aggressive about implementing water conservation on the Island. Because if we don't, we're going to see that the water quality

and water quantity issue bump up into each other more and more. And it's going to result in more difficult and more costly decisions that are going to have to be made to try to implement these rather expensive fixes. So we hope that you will consider meaningful water conservation in the days ahead. Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: We will. And we appreciate your offering that perspective and we will examine it. Conceptually, it sounds like something that we ought to be trying to shape into some bills. So thank you. Sarah Meyland, the mike is yours.

MS. SARAH MEYLAND, DIRECTOR, CENTER FOR WATER RESOURCES MANAGEMENT, NEW YORK INSTITUTE OF TECHNOLOGY: Thank you very much. It's a pleasure to be here. And I want to extend my thanks to the Committee Chairs and the Committee Members for still being here late in the evening. And my gratitude goes out to you for being willing to listen to all the information that you're receiving. And I know that you are taking it very seriously.

My name is Sarah Meyland. I'm a Professor at New York Institute of Technology, where I direct the Center for Water Resources Management. I have prepared a lengthy document on water quality and contamination, which I hope you have in front of you. And I'm not going to go through all 16 pages but I do want to touch a few highlights for you this evening. My comments will focus on the status of Long Island's groundwater.

I did start out recalling the Long Island 208 Study, which is now 38 years old. And it tried to call our attention to the problems that we're really talking about now 38 years later and haven't really made that much progress on. And I know a lot has been covered today, so I'm just going to try to hit the points that you may not have heard about already.

I'd like to call your attention to Table 1, which is on Page 3 of my submission to you. There is a table that looks at the groundwater pollutants in the two Counties. And just very quickly, I have listed the causes of groundwater pollution by County and by the severity of the

impact.

And so for Nassau County the list starts with VOCs. Then goes to spills, like from gasoline and other types of tanks and looks at Superfund contaminant issues; then nitrates, then pesticides, unregulated chemicals. I know you've talked about that some already. Saltwater intrusion and then industrial chemical discharges. That's the Nassau County list.

For the Suffolk County list, it begins again with VOCs. Then it goes to nitrate compounds, pesticides, Superfund sites, sewage plant discharges to groundwater, perchlorate, industrial chemical discharges and unregulated chemicals.

So you can see that list is not the same for each County. The priorities and the impacts are different. And that's because the two Counties are at different stages of buildout and growth and they have made different choices over the years. Nassau County is basically a mature, suburban community that has reached basically full buildout and is 90 percent sewered. While

Suffolk County is still growing; it has a substantial amount of open space left. And as you already know, it's less than 25 percent sewered.

So for Nassau the most important and most widespread pollutant in the groundwater is VOCs. These are what we usually refer to as toxic chemicals. Of the 400 public water supply wells in Nassau County, over 25 percent now require treatment to remove VOCs that exceed the drinking water standard. Another 25 percent of those same 400 wells now have detectable levels of VOCs, although they don't yet exceed the standard of five parts per billion. That means that right now 50 percent of all the drinking water wells in Nassau County have been impacted by VOCs. Compare that with 1999 when of all the same wells, only 22 percent even had detectable levels of VOCs. So you can see in the relatively short amount of time the problem has gotten substantially worse.

There is no other major population area in New York State with such a major VOC impact on their drinking water supply. Other than the work that's been done by the Nassau Health Department,

this issue has not received the attention that it needs.

By contrast in Suffolk County, it has a far lower number of wells affected by VOCs. Suffolk has only found that two percent of its 600 drinking water wells exceed the VOC standard for PCE, which is the most commonly found VOC. And only eight percent of wells have even a detectable level in the well water.

Let's look at nitrates. With respect to nitrate contamination, you might be surprised to learn that Nassau County has 21 water supply wells being treated for nitrate contamination; compared to less than five in Suffolk County. The 11 wells are receiving removal treatment, where the nitrates were taken out; and ten wells are being blended with cleaner water to reduce the nitrogen level according to State health rules.

To point to understand here is that although new nitrogen loading in Nassau is much lesser now because of the sewering, we still see the legacy of earlier conditions. And the point here is that the nitrate contamination has

migrated to the deeper parts of the Magothy aquifer, where most of the drinking water is being drawn.

The same process is going on in Suffolk but Suffolk is at an earlier stage. The nitrogen levels in the Magothy average from about 1.4 back in 1987 to 3.4 milligrams per liter today. But the rates of nitrogen in the Magothy are slowly increasing. By addressing nitrogen now and into the future, the long-term impact for Suffolk County may be mitigated.

But there would be one very helpful change that you could help implement and that is to slowly require better treatment performance. And I know you're on that path but you have to go further, for not only nitrogen but other pollutants as well. We need better treatment. For private wells in Suffolk County, ten percent of all the 45,000 private homeowner wells exceed the nitrogen drinking water standard.

Let's take a look at Superfund sites. The Superfund impact of contamination on Long Island is terrible. Of the over 250 sites, the

largest number in New York State, the pollution entering and spreading through the groundwater is larger than most people can imagine. In most cases this is legacy pollution. But at this stage it doesn't really matter because the damage is done and the time and expense will have to take place to fix this problem, which in many sites could take between 100 and 200 years.

So, when you look collectively at all these contaminated sites, we find virtually every type of groundwater pollution that exists anywhere in the country: heavy metals, PAHs, PCBs, VOCs, SOCs and pesticides, radioactive materials, industrial chemicals, asbestos, C&D materials, PFOA, PFOS, Freon, just to list a few. This can hardly be acceptable for a sole source aquifer area. We need to take a fresh, new look; especially at the problems in Nassau County, to think about how we can effectively deal with all this pollution that is already in the groundwater supply.

We need to be seeing the big picture. It isn't just enough to talk about the horrors of

each of the individual sites. And we should be asking, as an example: Where are the maps showing us the full impact of all this pollution? They do not exist. And that isn't because they can't exist. It's because the choice has been made not to create the maps that really show us how bad the problem is.

There is one serious consideration that we rarely talk about when we're talking about cleaning up these sites and that is that the cleanup strategies that we select contribute to another problem: that of over-pumping the aquifers. The DEC has recently acknowledged that in Nassau County the groundwater supply is being over-pumped by at least 15 percent. This is an ongoing depletion that affects the movement of contaminated plumes, speeds them up, pulls the wider and deeper. And this ongoing depletion affects saltwater intrusion as well.

And I'll just as an aside: The people of Long Island have the highest per capita use of any community along the entire East Coast. So this mirrors some of the comments that John just

made about using our water more wisely.

I'm not going into all the details about the Grumman plume that Assemblyman Saladino spoke about earlier. But I will say that the plan that's being recommended is proposing to pump and treat 19 million gallons of groundwater a day and then ultimately dump it into the ocean. The cost of this is proposed to be anywhere between a quarter-of-a billion and half-a-billion dollars for a 30-year period; although they admit that the process will take 100 to 200 years.

So not only can we not afford to do something like that; we can't afford to waste that amount of groundwater. That 19 million gallons of water a day represents ten percent of all the drinking water pumpage annually in Nassau county. To put it really simply: Groundwater, we can't afford to lose that much. And this goes on at Superfunds all over the Island. They make the excuse: We can't get the water back in the ground. We have to dump it as wastewater, after spending millions of dollars cleaning it up.

We need to find a better way to not only

treat this pollution but then reuse that water, either by getting it back into the aquifer or finding a use that eliminates the need to pump additional groundwater.

Let me talk briefly about water quality standards. I know this has been brought up, so let me just hit a couple of points that I think people may not have touched on today. I think we do need to take a new look at the drinking water standards for their public health effectiveness. Many of these standards we're looking at the risk of cancer. And now we know that cancer isn't the only problem with ingesting a lot of these pollutants. So, we need to take a fresh look at that.

I know you've talked about guidelines for new pollutants and that definitely is important. I don't think you've heard about VHT yet. It is a pollutant that is commonly being found in the raw drinking water in Nassau County and I would like to add that to the list of chemicals that are going to be looked at for new standards setting.

And something else that hasn't been talked about today is the issue of multiple chemical exposure. We set our standards chemical by chemical. But we have so much contamination in the groundwater that there are a lot of chemicals that are below the drinking water standards, so they're allowed in our water supply. But if you're drinking multiple numbers of these chemicals, the fallback standard as was already discussed earlier is 50 parts per billion; whereas the individual standard is five. That is unacceptable. We need to have a new look at these cumulative impacts where the chemicals are very similar to one another and yet we allow this very high standard, only because they haven't exceeded individually the drinking water standard.

And then along those same lines I'd like to add chloroform to the list of chemicals that needs to be readdressed with a new standard. Chloroform is regulated as a THM. It's regulated at 80 parts per billion but it's a carcinogen. It's a dangerous chemical and it should be look at, not as a THM but as an ordinary VOC. We are

finding chloroform all over the raw groundwater in Nassau County.

And then with respect to groundwater monitoring, I'd just like to say we need more information. We need broader information. The USGS has been wonderful in doing the work that we need done but their funding is running out. And there is no other funding entity coming forward to fund their work, which is essential. So, we are asking the State to do what it needs to do because the State is not down here collecting water samples on our behalf. So, we would like the State to come down here, fund the work of the USGS to do comprehensive groundwater monitoring, stream monitoring for both quality and quantity purposes.

And along with that we would like the State to up its enforcement activity. We want enhanced enforcement of all State issued permits and programs that deal with groundwater and water resources. Because it's only through advanced enforcement that we're going to achieve protection of our groundwater supply.

So in conclusion I'd like to talk about the status quo. We have serious problems with our groundwater and the trends are headed in the wrong direction. What we are doing needs to be rethought. Not only does so much pollution raise concerns about public health but also the quality of life. Other regions of New York State have agreed to turn over their management of their locally important water resources to professional, full-time water management entities. And this concept has come up today over and over again.

Both the Health Department and the DEC have great amount of experience working with such management entities that oversee river systems along with groundwater here in New York State. We on Long Island need a dedicated water management entity for our shared resource that uses science-based principles and policies. So I ask you to please can we all come together to talk about how we can do a better job for the benefit of all? Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you.

Questions? Assemblywoman Schimel?

ASSEMBLY MEMBER SCHIMEL: Actually, just some clarification. And it's really astounding all of your comments. It's good. I'm getting more intelligent as the day goes on. I'm actually processing more. I'm getting my second wind. I'm going to go from right to left. Ms. Meyland, you talk about and again it's incredible: Annual water pumpage already exceeds safe withdrawal levels by at least 15 percent in Nassau County. So let's start over there. That alone is shocking to me. And when I see remediation using more and more water and one thing that's good about Nassau County is the fact that we're maxed out. In other words, we're not going to be going anywhere. But there is always more development.

I want to talk a little bit about what you had said, Mr. Turner. And I'm a proponent again, an ignorant one, about reused water. I used to call it gray water. I was told I can't use gray water. That's not the right word anymore: recycled water. That seems to be something, you know, taking into effect for

Nassau County.

But now I'm going to skip to Mr. McAllister. When you talk about sewering, one of the things that I'm concerned about in Suffolk County is: Are you eventually, Suffolk County, going to be Nassau County eventually? You talked about separating zoning and development from the facts. And I'm sorry I am a little tired. When we talk about nitrogen remediation that it has to be decoupled from the eventual accompanying -- I wasn't articulate earlier -- accompanying when you have sewering, generally what follows is development. And my fear is again what you had said, Mr. Amper: quality, quantity, I'm just afraid that our treatments are not still looking; now's the time to really look long, long-term.

And my question now to you again is: Let's talk about the 19 million gallons that are needed for the Bethpage remediation. I have had very intelligent people, who I respect, say to me: Forget about you, Michelle, you're in the northwest corner of Nassau County. Geology is destiny. You don't have a lot of water there.

1 That's why you have all these problems.
2 But Suffolk County on the other hand,
3 they have plenty of water -- plenty of water. Is
4 that true in terms of there's an unlimited source
5 of water that they could afford? Let's say they
6 could pump the 19 million gallons of water a day
7 to Bethpage for 30 years and not have a problem
8 of eventual saltwater intrusion as well? Is that
9 a fair question?
10 MS. MEYLAND: It's a fair question and
11 the answer is no.
12 ASSEMBLY MEMBER SCHIMEL: Because I hear
13 over and over again: Suffolk County is fine
14 forever. There's plenty of water.
15 MS. MEYLAND: Well, here's the thing and
16 John already pointed to the reality. Once you
17 start drawing down the water table, which will
18 eventually happen in Suffolk County as well, even
19 though it has a lot of water in storage; it
20 affects things like surface waterbodies. All
21 streams, all surface waterbodies on Long Island
22 are groundwater fed. So what we've already seen
23 in Nassau is the water table has been drawn down
24

so much that the streams don't flow any longer.

The same thing will happen in Suffolk and Suffolk is starting at basically a hundred percent. You start drawing down the system and you're going to be losing your streams, your surface waterbodies in the say way. And the goal of Suffolk County is already stated: They don't want to impact the flow of surface waterbodies. So it can't be both ways. So, the goal for Suffolk is going to have to be to maintain a high water table to sustain the surface water features. And so it's not unlimited. The system has to maintain a balance. And Nassau's system is radically out of balance. At the moment, Suffolk's is in balance but that can change. John, do you want to add?

MR. TURNER: If I could just paint the picture for you. The reason I was saying about water quantity being a concern and Sarah just touched upon it in Suffolk County is that take a balloon and its volume and even if you just reduced that volume by five percent, three percent. So say: Well, I started with 97 percent

of the water that I had before I contracted a little bit. You do. You still have the amount of water that you had before you started this contractioning experiment.

But what you've lost just by that short draw down of just ten, 15 feet of the depth of the aquifer, which can go down in southeastern Suffolk County before you hit, you know, out in the Pine Barrens out in Westhampton it goes down more than 1,000 feet; so all you got to do is contract that ten feet, you're losing all your surface water streams. You're losing your lakes. You're losing your ponds. Or they're significantly diminished or truncated.

And so that's what I was saying before really Suffolk County has lots of water. The Great Lakes have lots of water. But you can't pump anywhere close to the volume that's embodied in that system without having these adverse ecological and actually I would argue public safety impacts.

ASSEMBLY MEMBER SCHIMEL: And that's why it's so disturbing to me when I hear about

conservation. And with all due respect to everyone that spoke today but a lot of it is putting the onus on the public, who is basically uneducated because I'm a Legislator and I'm uneducated. So we have to do a better job, not just with education but in terms of --

ASSEMBLY MEMBER RAIA: You're not running for reelection.

ASSEMBLY MEMBER SCHIMEL: No, even if was running, in all fairness, people that know me I'd say the same thing. I'm the first one to say I'm a jerk. But I'm not kidding you, I'm saying it. But the bottom line is we have to do a better job in everything and it's about management.

MR. TURNER: Well said.

ASSEMBLY MEMBER ENGLEBRIGHT: Can I just amend a part of the question that was just asked? What if there was no ecological damage; what is the possibility that water could be transported given the existing infrastructure from Suffolk, from the Pine Barrens let's say into Nassau? What's the largest diameter pipe? Is there a system interconnect? What would be needed, just

to offer a perspective that's an addendum to the same basic idea of the question?

MS. MEYLAND: Well, during the hearings over Suffolk Water Authority's application to drill into the Lloyd aquifer in Northport, the Water Authority claimed that there was not enough water locally to meet the needs of the community. And then if they weren't given the right to access the Lloyd, they risked the threat of running out of clean water. And so part of the dialogue was: Well, couldn't you bring water in from other parts of the County to this area in Northport?

And so the Water Authority said: Well, the only spot that seems viable for us is in Yaphank. And we could run a pipeline from Yaphank to Northport and it would cost us $18 million to do that and we don't want to spend that much. So if you're looking at a single small pipe from Yaphank to Northport for 18 million; you can imagine the size of the pipeline you would need to bring real amounts of water into Nassau County. There is a 72-inch water main under

Sunrise Highway now that is a remnant of the old New York City collection system; which Nassau County is now proposing to run sewage through.

ASSEMBLY MEMBER ENGLEBRIGHT: That's from the 19th century.

MS. MEYLAND: That's right, the infiltration galleries along the South Shore. So, it's technically feasible. But remember, a lot of people make fun of all the 50-some water suppliers in Nassau County because it's made the water supply infrastructure like a jigsaw puzzle. But in reality the Suffolk County water supply system is just as segregated. You cannot move any significant amount of water from one end of the County to the other because the systems just aren't interconnected that way, even within Suffolk County Water. So it would have to be a single dedicated pipeline running from point A to point B.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you. Other questions? I just want to make one comment. The moment during the hearing when I was asking, pleading almost for us to take a look at public

education relating specifically to the nitrate issue, it was early in the testimony. You folks hadn't spoken yet. It was not meant as disrespect for the work you do at all.

But it was meant to put a marker out there for the State agencies to really start to think about that part of their mission that is public education; especially as we embark upon an intergovernmental cooperative effort to bring the public perhaps to a referendum. We're going to need a lot of communication from those agencies. They're the validators, just as you are, and the validation goes back and forth. And so that's what the purpose of that was. It was not meant to be in any way a criticism of the extraordinary work that you do on a daily basis reaching out.

MR. AMPER: Mr. Chairman, there can never be enough or too much public education. The most informed people on Long Island in poll after poll that the environmental community conducts reinforce the notion that the more they know, the more they're supportive; the more it matters to them. An informed public is an activist public

that is fully engaged in doing the right thing.

And I want to thank you for your leadership in bringing these hearings forward and to Senator Hannon for his commitment at Health and the Senate. There are so many good people. The people who are still sitting here after all these hours, they get points on just for enduring it. But we all have to make the last biggest effort we can because we've got a challenge unlike anything that we've ever faced. And we're up to it if we stick together and we do what's right.

ASSEMBLY MEMBER ENGLEBRIGHT: Well said. Thank you all. The next panel includes: Michael Boufis, the Superintendent of the Bethpage Water District; Brian Bruce, President of the New York American Water; Anthony Iannone, Superintendent of the Hicksville Water District; Claudia Borecky and Dave Denenburg, Co-Directors, Long Island Clean, Air, Water and Soil, also known as Long Island CAWS. And if we run out of chairs, we'll bring some up. But I think we're in the right direction in terms of bringing this panel

1 together. We may have lost on this panel. I don't
2 know if we have everyone? Okay. Of those whose
3 names I called who are here, you've materialized
4 before us. If you would, please raise your right
5 hand and repeat after --
6 ASSEMBLY MEMBER GOTTFRIED: Do you each
7 swear or affirm that the testimony you're about
8 to give is true?
9 ALL: Yes.
10 ASSEMBLY MEMBER GOTTFRIED: Okay.
11 [WHEREUPON THE WITNESSES, MR. MICHAEL
12 BOUFIS, MR. BRIAN BRUCE AND MR. ANTHONY IANNONE
13 WERE DULY SWORN.]
14 ASSEMBLY MEMBER ENGLEBRIGHT: Mr.
15 Boufis, you are the first to speak.
16 MR. MICHAEL BOUFIS, SUPERINTENDENT,
17 BETHPAGE WATER DISTRICT: I would like to begin
18 by thanking all of you for giving me the
19 opportunity to testify in relation to the
20 Bethpage Water District and our experience with
21 the great challenge of reacting to the Northrup
22 Grumman contamination plume; it's significant
23 impact on the groundwater quality of our aquifer
24

and efforts to provide the highest possible water quality to the people of the Bethpage community and our call for action from New York State to lead the protection and restoration of our greatly damaged aquifer.

Once again, my name is Michael J. Boufis. I'm the Superintendent of Bethpage Water District. And I'm here tonight to testify on behalf of the District's Board of Water Commissioners, in addition to 33,000 men, women and children to whom we provide drinking water to on a daily basis. Those 33,000 men, women and children of the Bethpage community, along with our Water District, have had to bear for decades the technical challenges and financial burden caused by a legacy of groundwater contamination with nothing but silence from New York State and this Committee in lieu of the support, guidance and action which were so desperately needed and wanted.

As background, the Northrop Grumman plume is one of the largest and most concentrated groundwater plumes in the entire nation, let

alone New York State. Northrop Grumman, by its predecessor Grumman Aerospace Corporation is responsible for this environmental disaster. Years of dumping harmful industrial chemicals as part of a routine military manufacturing has continually plagued Bethpage residents and our sole source aquifer.

While we are grateful for the recent efforts made by Governor Andrew Cuomo and New York State Department of Environmental Conservation in addressing this massive plume, decades of inaction and oftentimes outright abstinence by New York State have allowed the groundwater contamination to reach new communities and further burden the people of Bethpage and our District and neighboring districts.

This is not a problem that Bethpage caused. This is not a Nassau County problem. It's not a Massapequa problem. This is a Long Island problem. We allow polluters to get away with criminal acts. We did not cause this problem. This is not Bethpage Water District's sole

1 responsibility, although we have been alone on
2 the forefront for decades.
3 This is the responsibility of the
4 polluters, the regulators and our elected
5 officials. This plume is of Statewide significant
6 and it is about time it received the level of
7 attention and engagement it deserves from this
8 Committee. Everyone involved should be ashamed to
9 admit that this plume has been known about since
10 the 1970's. And 40 years later, it is bigger,
11 deeper, worse than ever. This is a complete and
12 utter failure of the system. The Bethpage Water
13 District and the people have suffered as the
14 District tirelessly spends every last resource we
15 have on water treatment processes, including air
16 stripping treatment, granular activated carbon
17 filtration and ion exchange.
18 Over the years, New York State sat idly
19 by and watched as the District completed
20 construction on a brand new well located outside
21 the plume, began construction on a new booster
22 pumping facility and completed a two million
23 gallon ground storage tank, also located out of
24

the reach of contamination at a cost to our taxpayers of nearly $10 million, as our latest reaction to the worsening groundwater contamination continues.

During the time we were getting hit with investigation after investigation, test result after result, hot spot after hot spot; struggling with decisions whether or not to shut down wells; scrambling to find ways to continue uninterrupted service to our customers and grasping for answers to questions of frustration from our neighbors. All without the money, the resources, the time and guidance of the Committee or New York State. The State had the ability to write a check for $25 million to Hoosick Falls, with a population of 3,500 people to respond to that drinking water crisis. And we applaud that.

Where's the financial support for Bethpage? Bethpage, who's supplying drinking water to ten times the number of people in the State and combating significantly greater water quality challenges. Are we the victims of being proactive in protecting the health and welfare of

our community? Should we have allowed contaminated drinking water be provided to our customers to get the State's attention?

The cost of us to produce water is getting very expensive. For instance, we just completed a carbon change, which we put in as a measure to protect our public. That carbon change cost us $250,000. Without us spending $2 million to put in this system, which we call carbon polishing, we would have had a public water supply violation. The systems are very efficient at removing contaminants but require a huge O&M cost at about 75 percent more than a regular well without treatment.

And not to add more insult to injury, the latest unprecedented impact of the Northrop Grumman contamination plume on our District and our community just came in hot off the presses this week. Our insurance carrier who provides all the coverage we require as a municipal government entity sent us a policy change notice to which stated the following and I quote: The following exclusions will be added to the policy effective

10-31-16. No coverage shall be afforded for bodily injury, property damage, personal injury or advertising injury that is based upon, arises from or is in any way related to actual or alleged contamination of any public or private water supply by Northrop Grumman and the United States Navy. End quote.

Have you ever heard of such a thing: an insurance policy inclusion that is based on a single and specific groundwater plume? We're also getting feedback from the local real estate agents. That is they're trying to sell houses and write mortgages, the same inclusion is being added to the policies. So now if a customer wants to sue the Bethpage Water District because his or her tomatoes didn't grow right and they can prove it's because of our water, our insurance company will not defend it. Our taxpayers will be burdened with the cost of defense; like they've been burdened with the cost of remediating this plume for over four decades. That's utterly ridiculous but a prime example of the consequences we deal with every day.

All of us need to be committed and work together to remediate this contamination once and for all and make whole the community that has been most directly impacted. The only way we can be successful at this point is with the leadership, the commitment and the ownership and the resources quite frankly of New York State. To date Bethpage Water District, and I'm going back to 2009, has spent over $20 million and needs to spend over 20 million more on water treatment, replacement capacity and infrastructure upgrades.

We've had absolutely no financial support from the State over the years. Our only course of action has been to legally pursue Northrop Grumman and the Navy and attempt to make them financially responsible for this mess they created. This is an unbelievable, unrealistic and unfair burden being placed squarely on the shoulders of the Bethpage taxpayers. This is truly a David and Goliath battle.

What we ask for is simple: We need your help, your leadership and your commitment. We need financial assistance and ask that the State

pay for or compel Northrop Grumman to pay for water treatment and infrastructure improvements performed by the Bethpage Water District to remove contamination from the water supply and respond to the plume.

We need your support to hold Northrop Grumman responsible for the damage they caused to our aquifer, our environment and our livelihoods. We ask that you help educate our residents on the status of the plume and recent efforts made by the State to remediate it. Furthermore, we ask that you help address the public's concerns regarding delay in responding to the environmental disaster.

We call on you to help bring more attention to this national crisis in order to make its remediation a priority in the minds of authorities and decision makers; to stress the importance of establishing regulations that prevent this from occurring elsewhere and in the future and if it should, to put a clear and enforceable procedure in place for dealing with such a crisis more systematically and swiftly.

In summary, the efforts to correct this situation has plagued our community for decades. It's missing an essential part and that is this Committee's direct involvement. More can be done for the Bethpage community, a community that has been passionately reacting to a crushing environmental burden that they should never have had to shoulder alone. After Grumman's acquisition by Northrop, the Bethpage residents were sacrificed. Their jobs evaporated and all that remained was the residue of an environmental, financial and public health disaster. We deserve better.

We welcome the opportunity to work with you to implement the much needed change that will bring us out of environmental and financial ruin and into a better future. I thank you for the opportunity to address the Committee. And I would also like to thank Assemblyman Saladino, who has actually been a champion and a good friend for the last few years; that I can call him any day or night for advice, to go over the plume and he picks up the phone. Senator Martins has also been

a good friend to the Water Districts and the public water suppliers.

And Commissioner Seggos, for 40 years the DEC has never addressed the Bethpage Water District. Letter after letter written, requests for meetings and it was denied. When Commissioner Seggos took over, he actually came down, addressed the Board of Commissioners, addressed our concerns. And since November the team that Governor Cuomo has allowed him to put together, there's been more done since he's taken over than we've seen in 40 years. We should be all be ashamed of ourselves.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. Mr. Bruce, the microphone is yours.

MR. BRIAN BRUCE, PRESIDENT, NEW YORK AMERICNA WATER: Good evening. Thank you, Honorable Chairs, Senator Hannon, Senator O'Mara, Assemblyman Gottfried, Assemblyman Englebright and all Honorable Members of the Health and Environmental Conservation Committee for the opportunity to testify today. I appreciate you staying late and all those in the audience who

have made it through the day.

My name is Brian Bruce. I am the President of New York American Water. We're the largest investor-owned water company in New York. I'd like to take this time to address the Committee on behalf of approximately 350,000 people we serve in Nassau, Westchester, Ulster, Sullivan, Putnam and Washington Counties.

Our parent company, American Water, is the largest and most geographically diverse publicly traded U.S. water and wastewater utility company, celebrating its 130th anniversary this year. The company employs approximately 6,700 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to an estimated 15 million people throughout 47 states.

Personally, I've spent the last 3-1/2 years in New York. Previously, I spent seven years with California American Water in multiple positions. Before joining this dedicated company, I worked as Water Department Superintendent for the City of Papillion in Nebraska, where I

obtained state grade operator's license there.

I previously worked as a water system operation in Wisconsin and Michigan, where I earned state licensure in both supply operations in surface and groundwater. I started my career with the U.S. Navy. I tested water and boiler water and feed water on board U.S. ships for four years. I ran de-sal plants on board the ships.

Given my prior and current experience, along with currently serving on the Long Island Water Conference Board as Second Vice Chair and as the Chair of the New York Chapter of National Association of Water Companies, I speak for all of our customers and our neighboring water suppliers when I state that the need for increased funding to replace aging infrastructure and protecting our water supply throughout the State is vital to the future of the water supply and the health of all of our residents.

Some background on our systems. We serve over 125,000 connections. We have over 1,200 miles of water main in our areas; over 190 groundwater wells. We own 45 water plants, 13 of

which are iron removal plants. We have an air stripper at one plant for removal of VOCs, TC and PCE. We have a granulated activated carbon filter plant at another Seamans Neck plant that was paid for by the Navy provided. I'll talk more about that shortly. We have over 26 water storage tanks.

Our mission simply is to supply safe and reliable drinking water to all the communities we serve. Our families drink this water. Our employees and their families drink this water. We treat the topic of water quality with the utmost seriousness and importance every day. It's the number one thing we look for every day and deal with every day. Each year we are threatened by new contaminants. Whether it's regulated or unregulated by the State and federal governments, we have a commitment to treat our water supply, keep our residents safe, regardless of the scope of our mandate.

We perform tens of thousands of tests each year to ensure their safety and have met or surpassed all primary federal, state and local

1 health department standards in our service areas.
2 Some of the contaminants that we currently
3 provide treatment for or potentially we'll have
4 to in the near future: I've talked about the
5 VOCs, multiple plants for TCE and PCEs, MtBEs,
6 nitrates, unreg; we've talked about 1,4-Dioxane.
7 And the biggest issue I deal with on a daily
8 basis is the rising iron levels and the current
9 levels that we are dealing with.
10 Talking about the iron levels, how are
11 we addressing this? For the past years 2013
12 through 2016, we have invested over $100 million
13 in upgrading our systems in all of New York. You
14 might ask: Why do we have such an aggressive
15 capex program? Because we are continually
16 monitoring our infrastructure water quality and
17 surface water supply and our customer demands,
18 while upgrading our systems to deal with all
19 these issues.
20 Between 2013 and 2016, we've added five
21 brand new iron removal plants. We have developed
22 the design for a skid-mounted iron removal plant
23 capable of treating two million gallons per day
24

on a single system well system. The design is the first of its kind in Nassau County. And I'm glad to say we pushed and partnered with Nassau County in developing this design.

The benefits of this design was to allow completion of constructing and delivering treated water in under a year; where a normal plant will take us up to 18 to 24 months. We have duplicated this project at three separate well sites in the same year. We have replaced over 40 miles of water main in the years 2013 through 2016.

What's on the plan horizon for the next four years? In the current plan that we have submitted to the PSC, who regulates us and all of our activities; if it's approved we'll spend over 175 million in capital improvements in the next four years. Included in this is over 14 million a year in main replacements. This equals a replacement rate of one percent of our distribution system each year.

We'll add five new iron plants from 2017 to 2020 because of the rising levels of occurring iron that affect the taste and aesthetic quality

of the water every day.

These treatment systems are necessary to achieve the goal are undeniably costly. No water provider in New York State is willing to sacrifice the health of their customers and residents in an effort to cut costs. When it comes to treatment technology you're going to get what you pay for. We need your help in making sure that those companies that pollute the aquifer are held responsible and accountable for the cleanup; so this cost is not passed on to the water providers and ultimately our customers.

As a lot of providers we know, we are the only people who truly understand the cost of water. We don't expect our customers to understand the reality of what we do every day. We would like them to realize the cost of expensive treatment systems, the cost to make those systems aesthetically blend into the community around them, the cost to dig up and install new water mains and then repave the road whenever we complete an upgrade or the cost of the main itself for that matter. That is our job,

not theirs.

We can't possibly explain this in the detail necessary the work that needs to be done, why it needs to be done and how much it will cost in a 30-second sound bit on the local news. So when I say it's our job, I'm including this Committee, our local elected officials in conjunction with the fellow water providers throughout this State. It's all of our responsibility to provide our constituents; the water providers, we all accept sharing these responsibilities.

In closing, New York American and myself hope to continue the strong working relationship we have developed with the DEC, the State and local health departments and to work in tandem with this Committee to safeguard our water supply now and more importantly for the future. I thank you for the consideration.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. I just want to make the observation that we're not a singular Committee. In fact, there are four Committees from two Houses of the

Legislature represented before you. And I just want to be clear on that.

But I also want to take this moment to express appreciation to all of my colleagues, particularly Senator Hannon, who has just been heroic in the number of hours that he has committed to this process. But all of my colleagues, thank you for cooperating and for presenting yourselves to our common public. Mr. Iannone?

MR. ANTHONY IANNONE, SUPERINTENDENT, HICKSVILLE WATER DISTRICT: Thank you. I'd like to first thank the Honorable Chairs of the Health and Environmental Conservation Committees of the Senate and Assembly, Senator Hannon, Assemblyman Gottfried and Assemblyman Englebright; as well as the other distinguished Committee Members for the opportunity to provide you with pertinent testimony regarding water quality.

My name is Anthony Iannone and I am the Superintendent of the Hicksville Water District. I am here today representing the Water District on behalf of District Water Commissioners

Nicholas Brigandi, Karl Schweitzer and William Schuckmann, with the purpose of discussion with you our urgent need for guidance pertaining to unregulated contaminants; as well as the need for improved partnership with regulators at all levels on the mission of providing our community with drinking water of the highest quality.

We thank you for the opportunity to testify and use this platform to discuss our need and frankly, the need for all public water suppliers for direction in dealing with unregulated contaminants. As you know, the United States Environmental Protection Agency under the Safe Drinking Water Act has a program known as the Unregulated Contaminant Monitoring Rule, otherwise referred to as UCMR.

Essentially this rule was created so that the EPA can conduct and manage nationwide sampling programs to monitor and assess the prevalence of contaminants in water which were not currently regulated under the Safe Drinking Water Act. The lasting EPA sampling program, known as UCMR3, included an unregulated

contaminant known as 1,4-Dioxane, amongst about a dozen other contaminants. 1,4-Dioxane is a synthetic industrial chemical that has been found in groundwater at sites throughout the United States as a result of wastewater discharge, unintended chemical spills, leaks or wrongful disposal practices.

Our District conducted UCMR3 testing in 2013 and 2014 as part of the nationwide EPA study. And in mid 2015 we learned that we had a level of 34 micrograms per liter detected in our Well #42, which from what I've been told is the highest level found in the country as part of this program. Currently, there is no federal drinking water standard for 1,4-Dioxane. New York State has a drinking water standard of 50 micrograms per liter for unspecified organic compounds, which at this time would include 1,4-Dioxane. So the level found at our well is below that standard.

However, with no guidance from the EPA or New York State with regard to what the level means, what the health effect might be or what

actions we should be taking, we are left completely on our own to assess the situation and make decisions about whether or not we should take any action.

Even after discussing this issue with the Nassau County Department of Health, we received no direction, as they said they waiting on the State. To this day, years after the samples were taken, we have no guidance or direction from the Health Department or the EPA. Left to our devices we made a conservative decision to take the well offline and continue to conduct tests of the water to monitor the levels and evaluate any fluctuations. This was done recognizing that we'd be putting additional stress on our other supply facilities but without the support and guidance we would have expected from either the Health Department or the EPA; we erred on the side of caution.

You must understand this is a very difficult decision for us. On the one hand, all of our water quality meets and exceeds all federal and State standards, including for 1,4-

Dioxane. But because this was a new situation and there was uncertainty about the appropriate next steps to be taken, the lack of direction from the regulatory experts put us in a very tough position.

We are not health experts. The EPA and the DOH are. I don't understand how they can possibly ask us to test for things when they have absolutely no plan and no idea in how to deal with the results. Leaving the action and reaction to the water suppliers in assessing the water quality situation, developing a plan and communicating the meaning of the results to the public is a disregard by the EPA and DOH of their regulatory responsibility.

Following some simple research, we know that 1,4-Dioxane was used primarily as a solvent stabilizer and is commonly found comingled with existing VOC groundwater plumes. We know that our affected well is already impacted by such a plume and although we have treatment on the well, it is not effective in removing this contaminant. Again based on our sole initiative, we have tested and

studied multiple water treatment processes that could possibly be effective in removing 1,4-Dioxane, just in case it becomes regulated.

With no assistance, guidance or support from the State or the EPA, Hicksville was proactive in planning and funding this study in an effort to find an effective treatment solution that if successful could then be used by all water suppliers should a drinking water standard be set. Not only has the Department of Health, DEC and EPA been absent during this process; but we made written requests to both the DEC and EPA for information, support, assistance and guidance. We received very little to nothing.

In fact, we recently made a request to the EPA for assistance in requiring any upgrading known Superfund sites to conduct a sampling round for 1,4-Dioxane. As we were evaluating treatment alternatives in advance of a potential standard and the 1,4-Dioxane found was likely part of an existing groundwater plume, it was important to understand the extent of the concentrations that could possibly impact our well.

Here was the substance of the EPA's response: *Dear Mr. Iannone, your letter requests that EPA undertake a sampling program of sites that could be impacting Well 42 with 1,4-Dioxane, which was first detected by the Water District in 2013 as part of the Unregulated Contaminant Monitoring Rule program. In accordance with the process required by the Safe Water Drinking Act, EPA is evaluating contaminants for which systems monitored under the 3rd UCMR.*

EPA is currently compiling results from the sampling effort in order to evaluate the contaminants detected under the UCMR 3 to determine whether to regulate any of them in the future. To regulate a contaminant under the Safe Drinking Water Act, EPA must first find that, one, it may have adverse health effects; two, occurs frequently or there is substantial likelihood that it occurs frequently; and three, there is meaningful opportunity for health risk reduction for people served by public water systems.

If water sampling results indicate that

drinking water contains UCMR3 contaminants at levels greater than health advisory levels, EPA recommends that water systems quickly undertake additional sampling to assess the level, scope and localized source of contamination to inform next steps. If follow up sampling confirms the presence of UCMR3 contaminants at levels above the health advisory levels, drinking water systems and public health officials should promptly provide consumers with information about the levels in their drinking water.

As indicated in our June 2016 response letter to your early April 18, 2016 correspondence, EPA has not collected groundwater data in the area upgradient of Well 42. Although your letter requests that EPA undertake a sampling program at properties that could be impacting Well 42, EPA does not conduct such sampling under the Safe Drinking Water Act program; etc.

My takeaway from this response is: Good luck, Hicksville, you're on your own. That seems to be the message from all regulators at local,

state and federal level. I find it utterly ridiculous that we are supposed to undertake a sampling program to find the extent of an unregulated contaminant. There is no way this should be a burden placed on the public water supplier.

We need a much more comprehensive and proactive federal and state regulatory program, whereby the background information on any new contaminants we are asked to sample for is fully vetted, evaluated, understood and communicated. There is no way public water suppliers should have the burden of interpreting such results, deciphering what they mean, creating a plan and communicating information with the public. This should be all worked out in advance of doing the actual testing; so that our industry, both regulatory and supplier are and appear to be cohesive. This lack of upfront effort and planning puts all of us in a very poor position.

Now for the important question: Is 1,4-Dioxane going to be regulated? If I take you back to 2003, perchlorate was part of the UCMR

program. And all we heard about was that it was going to be regulated down to possibly one microgram per liter. That would put many wells out of service on Long Island and require tens of hundreds of millions of dollars for treatment. It's 13 years later and there is no standard and no talk of a standard. Year after year, we heard from the State and EPA: maybe, maybe not; regarding a standard for perchlorate.

Public water suppliers can't operate this way. Some suppliers actually invested in treatment in anticipation of a standard to the tune of millions, only to now question if they made the right decision. If 1,4-Dioxane is the next regulatory perchlorate, please let us know as soon as you can; so we won't waste our time, money and resources. At this time I'd like to thank you for the opportunity to address the Committee for future consideration.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you for your very cogent if sobering testimony; much for us to think about. And thank you for sharing your thoughts with us in such a forthright

manner. Let me see if any of the colleagues here have questions. Assemblyman Gottfried?

ASSEMBLY MEMBER GOTTFRIED: Mr. Iannone, to clarify: If you test for let's say for a UCMR chemical that you've been told to test for and what comes back is a level lower than a level that either the EPA or the State Health Department has issued a health advisory for; is it clear to you that you are not legally obligated to do anything at that point? Or is that not clear?

MR. IANNONE: I would say it's probably not as clear as you would think. There's a standard for 1,4-Dioxane at 50 parts per million set by the State. If there aren't any standards set, that's the number: It's 50 parts. We're below 50 parts. So, technically since it's an unregulated contaminant, we comply.

But being in Hicksville, we've made the decision to take that well offline and look for treatment in case it does get regulated down to what we would assume most other contaminant levels are: about five parts; which is costly --

designs, engineering. And it also puts a burden on the rest of our system because now we have lost one well in a production that in the summer months for fire protection and so forth could be detrimental.

So, those are the decisions because there isn't anything that regulates. If it came out that it was above the regulated number, whatever that regulated number would be, and that's what I'm asking for; there isn't a regulated number at this point. So there's no guidance. And the same thing with perchlorate: perchlorate's not regulated at this point either.

ASSEMBLY MEMBER GOTTFRIED: Okay, thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you. Mr. Boufis?

MR. BOUFIS: I actually wanted to clarify something that Sarah said before. Joseph Saladino, when he was talking about withdrawing the water, the 19 million gallons a day, that was not to go and be pumped to the ocean. The Water District, because we had no guidance from the DEC

and when we asked them for a full hydraulic containment, they said it could not be done because they couldn't figure out a way to get rid of the water.

So we spent time with our engineers and we came up with a plan where we would take the water from the extraction wells. You would clean this contaminated water that's in the aquifer and then we would transport it through New York State easements or county easements up to Bethpage State Park, which has five golf courses. And we would shut down their irrigation wells. We would build a series of recharge basins and ponds and irrigate the golf courses. So that's where the bulk of the water was going.

We've also identified because every time we turn around it's either the Navy or Grumman, they can't find a building for sale or piece of property; they don't know how to get in touch with the local Nassau County DPW to find out who owns which recharge basin; we did all the leg work and we turned it over to the Assemblyman, so he could run with it. So that was my first

clarification.

The other thing, I just had a comment. I spent 21 years at Suffolk County Water Authority. And I don't think it's right or proper that Sarah should even pretend to speak on behalf of the Water Authority. So, if there's anything that the Committee would like to know about the Water Authority, they should contact them. Because I take it very personal when people discuss or pretend to know what's going on with the Northrop Grumman plume and what we live at Bethpage every day. Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you for offering those additional comments. We I think have an expanded understanding of the kinds of difficulties that you're facing in that District. I would like to say that you have well-educated your Legislators and they in turn don't hold back at all in sharing that information. And so we did not come into this hearing without some prior knowledge, as you heard. We had worked cooperatively on letters and outreach to administrative individuals.

So, I just wanted to put that in the record. I mean, your Legislators are well-informed on this and I think that's a tribute to your work; that I didn't understand until I saw the pieces in this hearing today and now it's more clear. Also, I was not aware until you mentioned it just a moment ago about your plans to take the 19 million gallons to golf courses, which really is analogous to what John Turner was talking about at Indian Island. It's not exactly the same but the same basic concept and it's gratifying to know that you're working in the same direction and that there is something parallel going on in that sense in each of our Counties.

MR. TURNER: Thank you. We are the protectors of Long Island's most precious resource. And we take our jobs very seriously, whether it's groundwater, surface water. When I was a kid, I used to be able to go into the Great South Bay and scallop and clam and eat them. You can't do it now. So it's all one big picture. And we're not looking to waste water. We're not

looking to withdraw water for no reason.

But leaving the contamination that's in the aquifer right now in Bethpage is just detrimental to the entire environment. In 1977 when we switched over, that was the time to actually capture and remediate the plume. The plume is now separated. It has dove deep and is now affecting South Farmingdale water, Levittown water. My friend in New York, it is all over and eventually it's going to make its way to Massapequa water and the Great South Bay if we don't do anything. This will be around for my great children.

ASSEMBLY MEMBER ENGLEBRIGHT: Once again thank you for your testimony and your thoughts.

MR. TURNER: Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: We have one more panel. I'd like to call that panel now: Karen Blumer, Vice President of the Carmans River Watershed Trust Fund and Jill Toby and Michael Kaufman. Are there others who would wish to offer testimony at this time? We need to swear you in.

ASSEMBLY MEMBER GOTTFRIED: Do you each

swear or affirm that the testimony you're about to give is true?

ALL: I do.

ASSEMBLY MEMBER GOTTFRIED: Okay.

[WHEREBY THE WITNESSES, MS. KAREN BLUMER, MS. JILL TOBY AND MR. MICHAEL KAUFMAN WERE DULY SWORN.]

ASSEMBLY MEMBER ENGLEBRIGHT: Alright. Who would like to go first? Karen, are you going first? Your name is the first mentioned.

MS. KAREN BLUMER, VICE PRESIDENT, CARMANS RIVER WATERSHED TRUST FUND: Sure. Honorable Members of the Legislature, Mr. Hannon, Englebright, Gottfried, Ms. Schimel and Fred Thiele and Mr. Raia, you all deserve medals truly. I think we all do. I guess I would not have stayed this long except that I have a few things to say that I really haven't heard here today and I think they're very worthy and serious. We're all handwringing but these are directed to a solution that I hope that you will take seriously and work with us on.

As you said, I'm representing Open Space

Council and we administer a legacy fund for a major sub-watershed that flows into Long Island's Great South Bay. That's the Carmans River Watershed Trust Fund. We also sit at the LICAP meetings by virtue of our membership in a number of the subcommittees because of our expertise on water. We really thank you for having this hearing on what is possibly the most critical issue for our survival of Long Island: the destiny of our waters.

To begin with, I'd like to mention the framework that you have cast this hearing within, which is water quality, thank you very much to Al Krupski and Michelle Schimel for constantly combining water quality; it cannot be separated from quantity. And it's telling the mindset that this was done on. They are inseparable: hydrologically, ecologically and legally. This is supported not only by science but good case law.

We're certainly in a water crisis. It's far greater than anybody has really projected we feel. Ken Lavalle hit it on the head earlier. We're just touching the surface. Chris Schubert

1 told us earlier that a few years ago he would
2 have said the Lloyd aquifer fine and dandelion
3 but now he sees serious differences in that idea.
4 This is no surprise truly. We've been in
5 a water decline; it's been brewing for over half
6 a century. There are 16 major Long Island water
7 reports beginning in 1969, as we learned today,
8 the year that Steve Bellone was born; so he was
9 in diapers with one of the early reports. And our
10 trajectory is certainly not going up. It's going
11 precipitously down.
12 So in the shadow of this really
13 unspeakable decline, one concept appears to be
14 crucial and it's something that no one has talked
15 about. That is, New York State, the State that
16 you represent does not own our water; nor do the
17 counties or the feds or local municipalities. We
18 own our water. Under the Ancient Sovereign Law
19 and Steve List can back this up; Sovereign Law of
20 Public Trust, we are the rightful owner,
21 beneficiaries of this natural life supporting
22 asset.
23 Under Public Trust Law, the State and
24

its agencies serve as our Trustees. As Trustees, you're responsible for the preservation of our asset. By all evidence after half a century of severe decline and mismanagement of water on Long Island, I'm really sorry to say because many of you are friends but you have failed us and are continuing to do so. Put into Trust language, this is over half a century of bankrupted water asset that we own.

So, to craft a solution: I'm not here to blame you but more to work with you, to ask for your help to craft a solution. We have to look at what's happened over 50 years and continues today. It's very simple, yet no one is speaking about it. We're operating within a broken system. It's so broken that there is not one agency, one government or one stakeholder that can escape it. This is something that you, along with us, must fix. And to that end I'm going to echo, we're going to echo and endorse Bob DeLuca's earlier request for you to establish a legislative working group.

And it would be great if you could start

that tonight, not tomorrow. We don't have any minutes to lose. And we'd really like to suggest maybe for Nassau, Michelle Schimel might be part of that. You get it that water quantity and quality can't be separated. Maybe from Suffolk, Steve Englebright or Fred Thiele; you've already been asking questions about one of the things that we see are a solution, which is an entity.

So, we really expected a lot of agency bashing today -- this morning. We heard some of it. However, we think it's a little misdirected and not fair to be bashing our agencies. But rather we should be looking at the broken system in which they're forced to operate, which is the real cause of the confusion, the total lack of coordination.

You should sit at the LICAP tables the way we do. The guys all sit around; the system is so broken, they can't even talk to each other. They cannot share data. There is no central database here in 2016. And we need not an annual report or a monthly report or a weekly or hourly. This should be a minute-to-minute feed; so that

all of us can hook into it and see: What does our aquifer look like? But no, they lament over this. This is not rocket science.

So, that's the real cause of our failing water management, that it's the system that's broken. So in order to heal it, what we need is something that's a real heavy lift: a transformative change, a paradigm that's different. Nobody wants to change but we've got to look at this. So, why is this so dysfunctional and broken? Well, got to look at it. We see myriad agencies and bodies. Each one of them has a little piece of the water pie.

DEC issues pumping permits with having no idea what the aquifer looks like. And that's a substantial piece of the pie. However, look at what they do. They have myriad other responsibilities: solid waste, hunting, whatever, not just water. The Health Department is the same. They're in charge of wastewater, again another large piece of the pie. I won't even go into that. We could spend all night talking about that.

But possibly the largest piece of the pie nobody's even talking about: the municipalities through "home rule," which have dominion over zoning, development and land use. This is outside your control. But please listen up: This is not outside the control of an entity. Israel Water Authority has done it. Cape Code Commission. I know that nobody wants to touch home rule but we're in a crisis and we might have to look at that.

So what we have is a hodgepodge of jurisdiction over our waters. It's like a regulatory circus. The concept here is that every agency has a little piece of the pie, but -- and this is the big but -- no one is in charge of our asset. Our Trustees, which are you, are absent. Who says no? Michelle Schimel asked earlier of Legislator Krupski: When developers come in, when planning comes in, is water an issue? That was never answered but I'll tell you: No, it is not.

And if you talk to the water providers, this is how bad it is: Your law says that they cannot turn down water supply for anybody. If

Jerry Wolkoff comes up, 9,000 units, how many? No, they cannot say no. They must provide water. And that is without cumulative impact, without any carrying capacity, without knowing how bad it is.

So this is something that needs to be looked at by an entity and needs to be controlled. In short, what is needed here is not technical expertise. We have that. It's not numerous laws. We have that. It is an issue of governance. Our agencies have limited authority, as it should be. They are technicians, biologists, enforcers. They lack the power for the one thing that we're in need of and that's governance. This is an issue for the Legislator as to how we manage our waters as a coordinated body.

So, what would that entity look like? This is the question. None of us, be it the State, the County, all of us environmental advocates; all of the stakeholders, no one can decide that alone. Some of us have begun working on that already. We've been working toward a

solution.

We have urged desperately both LICAP and the State's LINAP to provide a similar platform to look at what would that entity look like. So we heartily invite you as Legislators to get out of your chairs, to roll up your sleeves and join us in that pursuit. The Long Island Water Forum, which is the third umbrella water conservation umbrella group; we have about 80 affiliate organizations, experts, individuals are planning a Seeking of Solutions Series this Fall. Some of you may be tapped to be panelists or participate in the brain trust that we really need.

Again, this would be a perfect place for a legislative working group and not just the Legislature but to working with some of us to look at that entity. Whatever the entity ends up, we suggest and this is only a suggestion that a good number of us have put together: It's got to be a certain kind of criteria for what we need as an entity. It should 24/7 professional. Most importantly, science-based. No voting member on its board will be without a water or science

1 background. It will have teeth and authority.
2 Most of all, it will have an income that
3 is independent of government; kept in a lockbox
4 dedicated only to water. This goes to Fred
5 Thiele's earlier question and concerns. This goes
6 to some of the monetary solutions and problems
7 that we have. It will have a balanced decision
8 making board that will include stakeholders from
9 all walks but will not be controlled by any of
10 them -- not any one of them. And most of all,
11 also it will have citizen representation as part
12 of the voting board.
13 It should also have a Public Trust
14 representation as part of the voting board to
15 ensure that the goals and paradigm of the Public
16 Trust are carried out; mainly that your fiduciary
17 responsibility and that of the board will be us,
18 the owners, in preserving our asset and that
19 water use will be drawn from the interest only,
20 not as it is now with a principal gouged out.
21 These are just initial thoughts. Nothing
22 is bound in stone but they are important. The
23 However, this will really require getting beyond
24

the status quo. And again, there's the rub. There's the heavy lift.

Our experience at LICAP for example is that there is a total pressure from the leadership and every single official at that table to maintain the status quo. And that's after 50 years of water failure, they want to maintain all the agencies and the whole structure as it is. The only exceptions are the two official citizen appointees by the Nassau and Suffolk County Legislatures: Sarah Meyland and Jared Hershkowitz, respectively, who you've heard from earlier; they are actively seeking alternatives to what an entity might be.

So I've come here not really to whine but to urge you in the strongest possible terms to transform this unspeakable water situation into a new world with many of us who are working overtime to bring this about. Steve has mentioned, your doors are open; so are ours and hopefully we can get together to reach some kind of real solution. This is something that a lot of you, a lot of us don't really want to look at.

We'll all have to change something some tiny amount, give up something in order to get a whole lot more. So please show up at the table in a leadership role and help us work that out. The one law that you must be devoting yourself to now is the law creating this oversight entity for Long Island, which could be in the form of a Water Trust. Thank you very much for staying awake.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. Mike Kaufman?

MR. MICHAEL KAUFMAN, COMMISSIONER, SUFFOLK COUNTY PLANNING COMMISSION: Thank you. Thank you very much for the opportunity to present my case to you. I work in the trenches of land development. I'm a Commissioner with the Suffolk County Planning Commission and I oversee a lot of development that occurs in a County of 1.5 million people and that's larger than 11 states.

I'm also Vice Chairman of the primary Suffolk County SEQRA Review Agency. We run the SEQRA Process and the EIS Process for the County

of Suffolk. And I write pretty good EISs, I have to admit. They're bullet proof and they are always in the public interest. But, I also represent developers on the other side of the river sometimes.

I'm experienced in municipal land use. I've drafted zoning codes. I've set up coastal management program, an LWRP for my two home villages. I've worked with the Department of State on coastal issues. I've worked with DEC. I've done a lot of municipal work for the last say 26 years for the County of Suffolk. And for fun and games I occasionally design and supervise major ship channel dredging projects. It keeps me awake at night.

Okay. I'm going to talk about Suffolk County at this point in time. Suffolk County is facing a massive Countywide nitrogen contamination problem, impacting our groundwater and coastal resources throughout the County; in part because there is no coordinated ability at State or local level to specifically review and control the causes of the problem.

Coastal septic issues at present are overseen by a multitude of agencies, which have different missions, viewpoints; different standard of review. And basically this prevents coordinated action and allows gaps and disconnects to occur and also it allows reluctance to interfere with other agencies' jurisdictions. And I say this as someone who has worked in the trenches and frankly, has worked with developers. I know a lot of the tricks that go on.

So, who has primary jurisdiction over groundwater contamination issues occurring throughout Suffolk County? Okay, the County has limited authority itself; as it does not have any primary authority over land use, except for the County Planning Commission. Suffolk County DOH has limited authority or impact on the problem. It oversees mostly technical standards. They've got whole booklets of how to put in a septic system. But it's always for the oversight and the construction of individual septic structures. There's no oversight or anything like that that

translates into systemic review beyond basically individual residential or commercial sites.

DEC, it oversees wetlands, coastal protection, biological resource protection, certain inland issues. But it doesn't really have a systemic authority over land use in any way, shape or form that's really recognizable, except along the coast. And I don't mean to bash DEC or anything like that but that's the reality of it. They kind of stop at mean high water for most land development. I'm not talking about a lot of their industrial jurisdictions, etc. But DEC doesn't review projects for overall contributions of pollutants in terms of groundwater issues.

The towns in Suffolk County control land use in their borders. They don't really look at nitrogen loading or groundwater issues in any systemic way, unfortunately. Bluntly, they always defer to Suffolk County DOH or DEC on the technical issues and say: Hey, you know, we got land use jurisdiction. We're the home rule entity. Let those other agencies worry about the groundwater pollution and the nitrogen problems.

And realistically, that's exactly what happens. So the towns are really not looking at the overall Countywide problem; rather the individual application. And again this creates gaps and disconnects inherent in divided responsibilities that frankly you can run a truck through. And that's the reality of the situation.

Bluntly, I don't think any longer that local planning boards or ZBA reviews or anything like that, the local land use authorities can look only at small areas and individual sites, which is what they prefer to do; or frankly have the State ignore the local land use under the home rule concept. No longer can we tolerate reviews of isolate properties, individual properties, you know, 30 houses here, 20 houses there; a ZBA looking at a one or two property subdivision, something like that, which requires a variance.

Rather, we have to recognize the problem starts with each individual site or application and each site should be assessed for its systemic impact or its impact upon the land right in that

general area; but also what it might contribute in other areas.

I'm going to give you a percent example. It's on my block. When I moved in in 1980, my septic systems fortunately were placed properly. I live along the Nissequogue River and we placed the septics as far away as possible. Down the road from me there's a pond. DEC limits at the time were 75 feet setbacks for wastewater systems. They allowed 75 feet in my village. And that was just because of sheer stubbornness or whatever: 75 feet, that's what DEC required, that's all they did.

Frankly, had they flipped to the other side of the house, we would have gained 50 or 60 feet more of separation between the pond and the septic system and every foot counts and I've learned that through the years. Not all the nitrogen gets absorbed but a lot of the waste does and it would have preserved that pond a lot more. And that pond right now has algal problems.

So at any rate, I believe we need new standards with teeth, that can be added to or

should be added to State law to require specific consideration of nitrogen and groundwater impacts at the local level and extending frankly into State agency review. Now at the State agency level, SEQRA maybe should have a specific review for groundwater issues here on Long Island. If the law can provide for individual towns to have exceptions or have different rules; for example, the Village of Lansing upstate, I've noticed in the town law has certain regulations devoted to itself. Well, we can do that for Long Island.

But basically SEQRA should have a specific review for these groundwater issues and the systemic impacts beyond the individual site on Long Island. Otherwise, SEQRA's going to continue to be less than fully effective and it's not that effective a document. And I state that as someone who administers the document and frankly prays over the document a lot and hoping that I'll have some impact when I'm in a public role. SEQRA, as an identification document, it doesn't always block stupidity, unfortunately.

At the local level, maybe town law

should be updated. Now I'll give you a couple examples that are already in the New York State town law: ZBA decisions. At the present, let's see, the initial grant of authority in Town Law 267-B states that: The standard of decision for ZBA is the benefit to the applicant versus detriment to the health of the area. And then the fourth mandated standard or review in that section mandates ZBA to weight the potential adverse impact on the physical environment of the neighborhood or district. Okay. But, the problem is ZBAs usually undertake only narrow geographical reviews and generally only in the context of surface land use. They don't look at everything that goes on, even though the grant of authority is right there.

The environmental review has to be larger. Maybe Town Law 267 can be amended to state that on Long Island the septic impact should be assessed to one degree or another. Maybe the ZBA standard should be the planning board standard. Town planning boards under Town Law 267 talk about -- well, again, they're

created by State law and they say that to the extent orderly development of land is a State standard.

That's not all the law really says. It's clear that each developed parcel will have an impact, however. So, shouldn't these issues have more of an important review? You've already got the standard in the ZBA standard; I don't know, 20 pages in in the McKinney's books that I read. You've got the legal language over there. It should be applied to a planning board. Planning boards can't sit in isolation.

And again, you know, everyone always defers to SEQRA and they say: Okay, SEQRA will take care of it. I hate to tell you this: SEQRA doesn't. And I'll probably be executed by a few of my friends for expressing such heretical views but SEQRA is usually discounted, unless you've got a very, very strong board that's willing to say something and really trying to uphold up.

Most boards bluntly don't. They say: Oh, mitigation is possible; okay, and they dodge the issue or else in terms of groundwater or septic

impact, they give it to the Department of Health. DOH has only limited jurisdiction.

So I would put it to you that maybe the grant of authority should be updated; that the planning boards and the ZBAs should not rely totally upon SEQRA to handle the environmental issues. It should be in their grant of authority and it should be mandated that they touch upon these issues when they write a decision. I say this as an attorney. Okay, I've got 30 years of practice in. One of these days I'll get it right. But I say this as someone who knows how the system works and it needs more teeth.

SEQRA's a great document. And when I do it at the County, I hope that I usually get it right. And frankly, I've never been sued. I shouldn't say I but the documents that I've overseen have never been sued upon. And they've been successfully gotten through the Legislature. And I've always gotten good compliments for them, that they're comprehensive, etc. But it doesn't always happen with a lot of the other SEQR documents that I've seen.

Now, right now there are only two actors out there in the County of Suffolk that are trying to if you will fill the gap. You've got the County Executive Steve Bellone, who has recognized that nitrogen pollution is a clear and present danger. And he's tried to update our septic systems, which are a major part of the problem. The new septic systems that they're talking about -- I've been on the septic tour, so I've seen them; are the critical first step in solving the problem. But they're expensive. Financing is an issue. The roll out is hard.

Town of Brookhaven, Supervisor Romaine was one of your first speakers; it's taken some steps also. They're starting to require protections within 500 feet of the coast because that's the most dangerous part of our problem. I have a map in front of me and I'm not going to give it right now. Assemblyman Englebright has a copy in his office right now. And it shows basically the two-year contributing zones, which are massive. Basically when you put fertilizer on your lawn or there's a septic issue, two years

later it appears in the groundwater.

That's the problem that we're facing. And we're also just dealing with baby steps at this point in time. It's hard to put in new protections. I understand that. I know how hard it has been to get certain regulations passed at the County of Suffolk. But you have to start someplace. These are maybe some suggestions to do it. The basic authority is there to push on it. Maybe a little bit more oriented towards Long Island's problems are maybe something that can be utilized to try and start solving our problems. It won't help with the legacy problems. But maybe it'll stop what's happening today in its track.

I'd like to thank everyone for listening to this. I wish I had coffee to offer all of you. I don't unfortunately. But again thank you very much for taking my comments.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you for offering your comments. We appreciate, I know that you have a very, very busy schedule. And a lot of what you do is public work and we really value your taking the time and being here to

share your thoughts with us. Thank you, Michael.

MR. KAUFMAN: Thank you.

ASSEMBLY MEMBER ENGLEBRIGHT: Jill Toby? You'll need a microphone.

MS. JILL TOBY, ARCHITECT, ACTIVIST: So, it's my great honor and pleasure to be here to speak with you. And thanks so much for your strength and fortitude. I appreciate that and particularly bringing together the four Committees. That's encouraging. I think that's one of the great failings that is the basis of the problems we've heard about all day long is that, as others have said, we don't speak to each other and we're very compartmentalized.

My history is originally as a landscape architect. I graduated in 1979 from Rhode Island School of Design. I worked in the field for many years until I later received my degree as an architect. That's not the most important thing. I just wanted to give you a little bit of background.

These are not new issues, as everybody's become perfectly aware. And I'm just going to go

over a few points because I did submit my testimony and I hope that you will be kind enough to make the time to read it. I admit that it takes a very broad scope. I hope that it's not too broad for you to relate to.

So, I'm just going to go through a few points that came up as I listened. First is that I also feel in a better position to speak about going forward in the future rather than as we've coined it the legacy problem. But I think the first thing I wanted to say is that we need to really publicly ask: Where these chemicals are coming from and why? Does this supply fulfill the demand or does the demand follow supply that's allowed for short-term economic gain? I think that's an important part of our broken system: What we're willing to do for economic gain and whose gain particularly?

It seems obvious that in the absence of effective methods to assure that the treatment of unregulated substances guarantee safe and healthy potable water to the citizenry, that the sources of these chemicals be shut off until such time as

that guarantee be made regarding those chemicals and any new ones. And I think this is part and parcel of the Toxic Substances Act, as it's been rewritten.

Trained as a designer, I'm perfectly well-aware of being on the cutting edge and what it means to make new materials. And I gave some references in here, a very good old book -- now is old book, is *Cradle to Cradle* by William McDonough. It speaks very poignantly to those issues of design and what happens to the things we design. But back to my first point is: Why are we designing these things? Why are we designing the things we're designing that are introducing these kinds of chemicals?

So the third point or a couple little answers to things also that got discussed: We were taught very early on in school as landscape designers to balance our cut and fill. I know there's a lot of talk about sand mines and bringing in dump and burrow and things like that. But I think that's an important concept that we have to learn to live with; which is balancing

cut and fill.

In other words, whatever you're making, if you want to make a depression, then you have to take your cut and keep it on your site. You have to keep your own site as you received it. And the idea of moving everything from place to place to place is not a good one. And this is the reason it's not a good one: Because no one can keep track of where it's going; how much of it's going. Can they really afford to absorb those things? And that's the problem. So we were taught a very simple approach, which is: balance cut and fill. The same way with keeping water on site.

And some of these things have been built into other municipalities' laws. The other one is: Keeping your own water on the site. We talked a little bit about it when we said: Could we keep our own rooftop water? Which was an idea that came from: You've given up the recharge area because you've put a solid roof there; so that we have to handle that water now. It's not going to take its natural course. In the same way you can't start running off water down your street in

sewerage or storm water sewerage and expect that the municipality is going to be able to handle it.

Well, I mean, I graduated in 1979 and I understood it in 1979. But we're still doing it. And now we're sitting here until midnight or it's 10:30 now, talking about how we can't handle it. Well, we shouldn't be handling it. That's why we can't handle it. And people who are trained in this, as I was hoping to do in 1979, understood that. It wasn't rocket science, to say the least. It was landscape architecture. And at that time there was no environmental science. It hadn't developed yet. So, we were about the closest that it got to that.

The next thing is the rate-setting idea. I think that's a great idea. I'm a total proponent of that. And I know that we could turn around these things probably within a year if we really put the onus on people who are putting toxics into the water. For example, there are some local farms and I've had discussion on them on why they are not organic farms.

And they have their training and they have their opinions and they have their elders. So, they continue to use pesticides rather than go back to organics, which everybody did before World War II, for the most part. And so that's fine. If they choose to place pesticides and toxics into our community water systems, they should be charged for it, absolutely.

And I guarantee you they will change their methods straightway because they don't have the money to spend; just like we don't have the money to spend and we aren't going to have the money to spend, especially as the class system becomes as top heavy as it is and there's a total loss of middle class. So it's not a promising situation for coming up with this kind of funding. And forgive me if I speak bluntly and in generalizations at this point but I'm sure you understand. So that's the rate-setting solution. And I think in a certain way it effectively self-regulates.

And I think it's something we could test. Those costs will be passed onto the

consumers. And then maybe the consumers with education, which I applaud you for speaking about education and that's fantastic, I really do; and if the public understands where these raising costs are coming from, then they'll try to change their habits. And if they don't understand where these rising costs are coming from, they'll get violent and aggressive, which is what's happening and they'll take drugs and more drugs, which is problematic. But if they do understand, maybe they'll be ready and willing to change habits and accept those pass-along costs or just change their buying habits and encourage manufacturers to cater to their "demand."

Let's see there's probably just one or two left here. Philadelphia. We talked about education. Philadelphia Museum on water infrastructure, I don't know if any of you or all of you may be familiar with it: fantastic on the Schylkill River. I happen to have studied the preservation at Penn, at University of Pennsylvania. And I enjoyed that and tagged along with a number of young plumbers who were learning

1 plumbing skills and learning how important the
2 performance of their duties are to protect the
3 entire community. So it's a beautiful place. It's
4 a beautiful museum. And it's really a great
5 educational experience.
6 Paris as well has a great sewer and
7 always has for decades: sewer tours. It's just a
8 great thing. It's on all the top ten things to do
9 when you go to Paris is to go on the sewer tour.
10 It's a great city. It has a fantastic history of
11 development. It doesn't develop from thin air. It
12 develops from people who get together and
13 engineers and lawmakers who understand each other
14 enough to create a quality of life that the whole
15 world might envy. So they show it off and people
16 love to learn about it.
17 And that's about all I really have to
18 say. I just thank you very much again for
19 offering to be here with us and to allow us to
20 enjoy your curiosity and your interest and with
21 what looks like enthusiasm and dedication over a
22 longer period of time than this long day to
23 solving these problems. Thank you.
24

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. It was very well spoken. Carol Kopf is the Media Director for Fluoride Action Network. You will need to be sworn in.

ASSEMBLY MEMBER GOTTFRIED: Yes, because you weren't up here when we swore in the rest of the group. Do you swear or affirm that the testimony you're about to give is true?

MS. CAROL KOPF, MEDIA DIRECTOR, FLUORIDE ACTION NETWORK: Yes, I do.

[WHEREUPON THE WITNESS, MS. CAROL KOPF, WAS DULY SWORN.]

ASSEMBLY MEMBER ENGLEBRIGHT: Okay. Please proceed.

MS. KOPF: Hi. I want to thank you very much for giving me this opportunity to speak at this hearings. Mine is not a popular issue, as you probably all know. It's past my bedtime and I hope this doesn't sound like a bedtime story for you guys. But it seems that PFOA was the spark that caused these hearings.

But I'm here to speak about a different fluoride containing product -- industrial waste

product. It's called hydrofluosilicic acid, which is purposely added to about 73 percent of New York State's public water supplies in a failed effort to reduce tooth decay in tap water drinkers. Its short name is fluoride. But not all fluorides are the same. Because toxic fluoride industrial emissions killed farm animals and crops in the last century, it's now illegal for industries to emit fluoride into the atmosphere. The phosphate fertilizer industry dutifully captures its fluoride waste before they escape from smokestacks.

Also captured in the process are trace amounts of lead, arsenic and other toxins; unbelievably this chemical brew that is trucked as hazardous waste and then injected unpurified into New York State's public water supplies, the same water supplies that process, manufacture, mixes with and cooks many foods and beverages consumed by New Yorkers whose water isn't even fluoridated.

I heard the State Department of Health Commissioner say in a cable broadcast of your

previous meetings that these toxins are ubiquitous in nature. And they are. They're even in bottled water. But it still doesn't make sense to add it to the water, no matter how small the dose is because these toxins are cumulative. Hydrofluosilicic acid itself has neither been tested in humans or animals, nor has its synergistic effect been tested with other water additives or impurities. The U.S. National Toxicology Program is just now studying fluorides toxic brain effects. The American public, especially our children are guinea pigs in this ongoing experiment.

Sadly, fluoride has also been shown to enhance lead absorption when lead is already in the environment. According to retired EPA scientist: If this stuff gets into the air, it's a pollutant. If it gets into the river, it's a pollutant. If it gets into a lake, it's a pollutant. But if it goes right straight into your drinking water, it's not a pollutant? That's very strange.

Several cities stopped fluoridation,

simply because they couldn't be provided any safety studies for hydrofluosilicic acid, as in Poughkeepsie, New York and Selma, Tennessee. In fact, Poughkeepsie stopped fluoridation in 2008. Their tooth decay rates steadily went down in three separate dates and this was according to NYU researchers who are presenting their information at the next American Public Health Association meeting.

I first became involved in the 1980's when I spearheaded the effort that stopped two decades of fluoridation in Levittown, New York. It was a time of Lois Gibbs and Love Canal and when the environmental movement was in full swing. I never thought this would ever be initiated again but I was wrong.

After Levittown stopped, Carle Place in Nassau County followed; then Nassau communities bordering New York City. And finally in the 1990's, after Suffolk County citizens protested their Health Commissioner's Fluoridation Mandate, the Suffolk County Legislature reversed his decision. So now Long Island is totally non-

fluoridated. And we, along with other non-fluoridated New York State communities, now are targets for fluoridation, according to a former Dental Bureau Chief from the New York State Department of Health.

After the Suffolk County debacle, a Statewide home rule bill was passed into law requiring fluoridation decisions be taken out of the hands of bureaucrats and placed in the hands of legislative bodies that own their own water system and presumably will answer to their constituents. It went through the normal process of garnering legislative support, was endorsed by many organizations of New Yorkers. Both sides of the issues were heard.

But, the 2015-2016 approved budget changed that law, without citizen notification or input and takes independent authority away from Legislators and puts complicated rules into place for stopping fluoridation and gets bureaucrats back into the decision. The new law is so complicated that an Upstate community needed to know what it had to do if it wanted to stop

fluoridation. But Department of Health employees still needed to figure it out even though New York State has an employee dedicated to fluoridation issues.

Also approved in the budget was millions of dollars in grants to instigate and upgrade fluoridation equipment, sometimes with pressure as is being done in Cortland, New York right now. The State Department of Health is also wasting more money conducting fluoridation spokesperson training sessions to reach those interested about how to defend, promote or lobby for fluoridation. No one opposed is allowed to attend. I was asked to leave such a meeting at SUNY Farmingdale last year.

Fluoridation is based on old-time beliefs and modern science has disproved them. You've got to look at the science. Hundreds of millions of dollars changing hands across the United States, hiring PR agencies, conducting political strategies and funding pro-fluoridation activists with the caveat that they don't speak about health risks.

Those of us opposed to fluoridation work on a shoestring budget. All we have to offer is the truth, as we know it, and I'm a volunteer. The FDA regulates fluoride in toothpaste as drugs for topical application but it says fluoride supplements meant for ingestion are unapproved drugs.

So how did this happen? At the beginning of the last century, it was believed that ingested fluoride was an essential nutrient to reduce tooth decay. Natural calcium fluoridated water was originally found to be the cause of brown stained teeth, now known as dental fluorosis, from ingesting too much fluoride while teeth were forming under the gums. Since those with brown teeth had less tooth decay, researchers assumed that fluoride must also be an essential nutrient to prevent cavities. We now know it's the calcium in healthy diets that made their teeth decay resistant, as well as access to dental care.

Fluoride is just the tooth discoloring culprit and still is today. Calcium fluoride is

much less toxic than sodium fluoride, a hydrofluosilicic acid. In fact, calcium is the antidote for fluoride poisoning. Based on those early 1900's findings, human experiments were set up first in Grand Rapids, Michigan for tooth effects and then in Newburgh, New York for health effects in 1945, which I learned from these hearings now also has a PFOA problem too.

So Newburgh children were the first guinea in a health experiment to see if injecting sodium fluoride in the water supply could make them sick. It did; but that was ignored. In fact, after 50 years of fluoridation, Newburgh children had more tooth decay and more dental fluorosis than never-fluoridated Kingston, New York, which acted as the control city.

The Newburgh-Kingston study experiment can and has been torn apart by high school biology classes. For example, only school children were studied, not toddlers or adults. The experiment was declared a success after five years, before the teeth of those born into the experiment had even erupted. Anyone sick two

weeks prior to examination were excluded, thereby missing the very children who may have been sickened by fluoride. Cancer, brain and long-term effects were never even considered.

In 1955, ten years after the Kingston-Newburgh experiment began and five years after it was declared a success, a research paper from the State University of New York reported that children in fluoridated Newburgh had more cortical bone defects, anemia and earlier puberty than non-fluoridated Kingston. This is the foundation by which you were told fluoridation is safe. It was also a time when essential nutrients were discovered to prevent disease. For example, vitamin C prevents scurvy. Vitamin D prevents rickets. But consuming a fluoride-free diet does not cause tooth decay.

The main point of my testimony is that if you won't stop fluoridation, then you must stop adding toxin-laden hydrofluosilicic acid into the water and find a safer, non-contaminated source. Offering millions of dollars to communities to encourage the addition of tainted

industrial waste into public water supplies should be halted, unless the company that supplies the chemicals can provide evidence that their product has been tested and that they vouch for its safety.

The money you save you could use to clean up the water supplies accidentally invaded by these industrial pollutants. New York City spends $24 million annually on chemicals, equipment repair, manpower, etc., according to a 2008 FOIA request. It seems that more and more New Yorkers are avoiding the contaminated tap water anyway; so why add an unnecessary chemical that would just get flushed down the toilet? Or I should add, I'm hearing so much about the water being even more contaminated than I knew about, now we're going to put fluoride in it and tell children to purposely drink it? That's not good.

Also, if the State Department of Health is continuing its fluoridation spokesperson training, they need to provide experts who represent the science on both sides of the issue. Right now, in essence it's just a government

supported lobbying group.

But if you believe fluoride is a good thing, you need to give us the freedom to choice. Fluoride, like all drugs, has adverse health effects. The water supply should never be used as a drug delivery system prescribed by Legislator, delivered by water engineer and dosed based on thirst and not age, health, weight, need or the presence or absence of teeth. Rotten diets make rotten teeth, with or without fluoride, as proven in the 1930's by dentist Weston Price and reported in his book, *Nutrition and Physical Degeneration*.

So after 71 years of fluoridation reaching record numbers of Americans, 61 years of fluoridated toothpaste, a glut of fluoridated dental products both at the dentist and over-the-counter and in higher concentrations, a fluoride saturated food supply, fluoride containing medicines; yet tooth decay is still a national epidemic and dental fluorosis is becoming the new one.

The corporations who profit from tooth

decay and fluoride sales have become multi-billion dollar, multi-international conglomerates and new dental schools are opening; one here in New York. Tooth decay is big business and fluoridation doesn't hurt dentists' bottom line. The end.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much. This concludes I think our evening, unless there are questions from anyone. Mr. Gottfried?

ASSEMBLY MEMBER GOTTFRIED: Yeah, I have just one, I don't know question, comment to Mr. Kaufman. Your discussion of Town Law Section 267, which I've never read; I live in New York City, not a town.

MR. KAUFMAN: New York's just a big town, that's all.

ASSEMBLY MEMBER GOTTFRIED: Yeah.

MR. KAUFMAN: Even a little village sometimes.

ASSEMBLY MEMBER GOTTFRIED: Right, and the Bronx is up and the Battery's down. So, I don't know if you've ever tried your hand at bill

drafting?

MR. KAUFMAN: I have.

ASSEMBLY MEMBER GOTTFRIED: I'd be really interested if you would take Section 267 and using brackets and underlining amend it the way you would like it to be amended and send it to us. I don't know whether something will come as a result of that but I think it would help me anyway understand the issue you're raising and maybe it is something that we can do something about.

MR. KAUFMAN: Yes, I have drafted bills in the past for the County; I think at least one bill for the State in terms of historic preservation. So, I understand what you're looking for.

ASSEMBLY MEMBER GOTTFRIED: Okay, great. Thank you.

MS. BLUMER: Excuse me, I would just like to ask you, Legislator Gottfried: We've been working on draft legislation also for an entity. Would you entertain that also? We've been tweaking it up and adjusting it.

ASSEMBLY MEMBER GOTTFRIED: Well, I think we'd all be interested in seeing it. Whether it's something we would inclined to support would depend certainly a lot on what it says. But certainly if you're putting together a proposal along those lines, we're the folks you would send it to, yeah.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you for your testimony to the panel. You have run the longest distance of the day and we're very grateful that you took the time to wait through the whole day to offer your thoughts to us. We appreciate it very much. I just want to also express appreciation to the staff, both at the Senate and at the Assembly, who have supported us and propped us up and kept us from falling backwards through these two very, very long hearings. Thank you, staff, so very, very much. Thank you again to my colleagues. Unless there are other comments --

SENATOR HANNON: I just want to thank the staff also and thank you for a good job at presiding today, Assemblyman Englebright.

ASSEMBLY MEMBER ENGLEBRIGHT: Thank you very much.

SENATOR HANNON: And thank you all for staying.

ASSEMBLY MEMBER ENGLEBRIGHT: So, we'll conclude this hearing and we'll have much to read and think about. Thank you all very much.

(The public hearing concluded at approximately 11:30 P.M.)

CERTIFICATE OF ACCURACY

I, Lea Simmons, certify that the foregoing transcript of the Senate Standing Committee on Health and the Senate Standing Committee on Environmental Conservation and the Assembly Standing Committee on Health and the Assembly Standing Committee on Environmental Conservation on September 12, 2016, was prepared using the required transcription equipment and is a true and accurate record of the proceedings.

Certified By

Date: January 5, 2015

GENEVAWORLDWIDE, INC
256 West 38th Street - 10th Floor
New York, NY 10018