MEETING OF THE LONG ISLAND COMMISSION ON

AQUIFER PROTECTION

JULY 1, 2015

10:08 a.m.

260 Motor Parkway

Hauppauge, New York

Terri Fudens
Court Reporter

APPEARANCES:

Jeffrey Szabo, Chair
Suffolk County Water Authority

Mike Levy, Vice-Chair
Long Island Water Conference

Stan Carey
Nassau-Suffolk Water Commissioners Association

Walter Dawydiak
Suffolk County Commissioner of Health

Don Irwin
Nassau County Commissioner of Health

Chris Ostuni
Nassau County Legislature Presiding Officer

Michael White
Suffolk County Legislature Presiding Officer

Sarah Meyland
Nassau County Legislature Minority Leader

Jared Hershkowitz
Suffolk County Presiding Officer

Brian Schneider
Nassau County Commissioner of Public Works

Tony Leung
New York State DEC, Stony Brook office

Steve Colabufo
Suffolk County Water Authority

Frank Castelli
Representing Dorian Dale and Suffolk County Economic Development

Corey Humphrey
Nassau County Soil and Water Conservation District

Stephen Terracciano
U.S. Geological Survey

MR. SZABO: Welcome. It's eight minutes after 10, July 1st. Happy July 1st everybody. This is the hearing of the Long Island Commission on Aquifer Protection.

Last time we had a stenographer here, she asked if each member could identify themselves before they spoke. I'm assuming you make the same request. Keep that in mind, folks.

My name is Jeff Szabo, Chairman of the Commission. Welcome. It's very good to see everyone. We will start with introductions and work our way around the table.

SPEAKER: We're having trouble hearing you.

MR. SZABO: We don't have the mic set up. Typically we don't. I think the room is set up --

SPEAKER: There is a mic right there, if it works.

MR. SZABO: Let's go. To my

left is the Vice Chair.

MR. LEVY: Mike Levy from the Long Island Water Conference.

MR. SZABO: Before we move on, I would like to say Mike is a friend. He's done a fantastic job as Vice Chair, but Mike is leaving his position. He resigned as Vice Chair.

I want to thank you for your efforts in the last more than a year trying to make this successful and putting in a lot of time and working with the other committee members here.

We will have a replacement for Mike shortly, and he'll likely attend the next meeting.

Thank you for your time and efforts and your vast knowledge. It's helped out quite a bit.

SPEAKER: Could you get some kind of speaker, because we can't hear you at all.

SPEAKER: We can't hear what

you're saying.

MR. SZABO: We're looking into a microphone.

MR. CAREY: Stan Carey, the rep for Nassau Suffolk Water Commissioners Association and the Superintendent of the Massapequa Water District.

MR. LEUNG: Tony Leung, with the New York State DEC, Stony Brook office.

MR. COLABUFO: Steve Colabufo, Suffolk County Water Authority.

MR. DAWYDIAK: Walter Dawydiak, Suffolk County Health Department.

MS. MEYLAND: Sarah Meyland representing the Nassau County Minority Leader.

MR. HERSHKOWITZ: Jared Hershkowitz representing the Suffolk County Presiding Officer.

MR. SCHNEIDER: Brian Schneider representing Nassau County Executive Ed Mangano.

MR. CASTELLI: Frank Castelli. I'm representing Dorian Dale and Suffolk County Economic Development.

MR. IRWIN: Donald Irwin, Nassau County Department of Health.

MR. WHITE: Michael White representing Suffolk County Legislature Presiding Officer.

MR. HUMPHREY: Corey Humphrey, Nassau County Soil and Water Conservation District.

MR. TERRACCIANO: Stephen Terracciano with the United States Geological Survey.

MS. GALLAGHER: Carrie Meek Gallagher with the Suffolk County Water Authority.

MR. SZABO: How is this? Can you hear me now?

I don't believe we can pass around the microphone, but maybe we can place the microphone in the center of the table. Would that be helpful and that will pick up --

SPEAKER: That won't work.

MR. SZABO: Everyone can just hear me then. What do you think? I like it that way.

I don't know what to tell you folks. I do apologize. Typically this has not been a problem in the past, and I apologize for the inconvenience. I do hope that you can hear us.

We will all try to speak up. I will try to pass the microphone back and forth. The cord is maybe what, 12, 15 feet.

At this point, thank you everyone for the introductions. I will ask if there's any public comment, if anyone would like to get up and to address the Commission. If so, please identify yourself.

Okay. No comments.

We'll move on to the adoption of the minutes from the February 11, 2015 meeting. I would hope that the

Commission members have had an opportunity to review the minutes and make any corrections or suggestions.

May I have a motion? Motion by Mike. Second by Jared and Brian. We are hereby approved.

Status of the bi-county agreement between Nassau and Suffolk Counties, this is something that you would think would be very easy to accomplish. There was legislation adopted by Nassau and Suffolk to create the Commission, and a Memorandum of Agreement between the two and drafts have been circulated between both law departments in the respective counties. And we understand we are near sign-off and approval, but we do not have a final copy yet.

I want to thank the folks from Nassau County, Brian and Don, and everyone else for chiming in, and our friends from Suffolk who have been

advocates in trying to get this approved and moved along. So we expect that shortly.

We will seek subcommittee updates. I will pass the microphone over to Carrie Gallagher, and Steve Colabufo may also want to chime in, but I will pass the mic to Carrie, and she can brief us on subcommittee activity.

MS. GALLAGHER: Thank you. So since the last full Commission meeting in February, we've actually had the inaugural meeting of the Water Quality Working Group, and we had three joint subcommittee meetings, one on February 25, one on April 22 and one on June 3rd.

And the notes from the March 31, February 25 and April 22 meetings are up on the website. June 3rd is not up there yet. But essentially what we accomplished or started to accomplish, let's put it that way,

with the Water Quality Working Group, the big issue we're trying to figure out is can we come up with a regional water quality database where we agree on the parameters that should be input, the type of reporting format, and everyone can be doing -- you know, uploading data on a regular basis.

So what we started with is instead of reinventing the wheel, does such a database exist in some format at another entity level that we could utilize. So we were looking at the NWIS database, the STORET, WQX, SDWIS and EQuIS. And those are state and federal databases that exist that are getting some form of the data that we report on and collect on a regular basis.

And one of the questions was which agency receives or collects the most data. Should we start from that? What's the most relevant data?

We talked about conducting a survey, and we'll follow up a little bit on that in our next meeting, in terms of figuring out what types of information should be included. Is it just public water supply data, is it monitored well data, is it private well data?

So that still has to be figured out, but at least I think we made a good starting point in kind of narrowing down where we want to focus on.

The other big issue is the reporting format. Most people seem to agree that Excel will be the easiest format, because everyone has access to that software, and we should be able to use some type of reporting template.

Then finally the parameters to measure. So universally the large categories of parameters that everyone agrees some subset of those

need to be included would be the disinfection of by-products in organics like nitrates and chlorides, et cetera, the volatile organic compounds, semi-volatile organic compounds, emerging contaminants, and then some of the contaminants that when they leach cause PH changes. So parameters such as radon, arsenic, iron and manganese.

So our follow-up actions -- in the interim what we've done since that March 31st meeting is we, SCWA, are working with USGS on a pilot project with the water quality portal and being able to see if we do some mapping of the data that exists in that water quality portal, and then can we upload data, other additional data, and map it out.

So we're hoping that actually at the water conference symposium, which is being planned for the fall, that we might be able to show an example

of what that looks like. That's underway.

At the same time we're also trying to work with the DEC Division of Environmental Remediation out of Albany to upload a small dataset of our public water supply data into EQuIS and see what that looks like. Can you upload it easily and then can you pull information out easily. So, again, just exploring the existing databases first before we talk about, you know, creating something totally new.

So there was a lot going on. A lot of discussion with the Water Quality Working Group. The joint subcommittees have focused a lot of time and effort on coming up with the outline for the Groundwater Resources Management Plan, and that we'll be discussing at the very end of the agenda today.

So we started with a road map.

We turned it into more of a structured outline. We have volunteers signed up to work on draft sections of most of those pieces of the plan. The first drafts of those sections are due at the end of this year in December. So we did establish a timeline so that we'll actually have a plan hopefully developed or a draft released by 2017, which we're supposed to meet statutorily.

We had a very interesting presentation on geothermal, because we are going to include that in one of the chapters in the plan by John Rhyner and Paul Boyce of P. W. Grosser and Associates. And it was really on -- they used an example of their project with Amneal Pharmaceuticals in Yaphank.

And they were requested by us, the Water Authority, to perform both groundwater flow and thermal modeling

in order to assess the potential impacts of the system on our nearby station.

So the presentation, the case study in particular, really helped describe the many considerations that have to be included when you're looking at geothermal. I know a bunch of people in the audience were at that presentation, and we did share that presentation around, so I believe we still have a copy. If it's not posted on the website, we can make it available for anyone who is interested.

Then we also had a very interesting, and it got lively at times, discussion by Jared, and he can elaborate on this more at the end of the meeting. We have that on the agenda at the very end of the meeting, on his Long Island Aquifer Recovery Act idea and what that entails.

So one is coming up with the Groundwater Resources Management Plan. Actually, I should encapsulate it. So the three things that have really been worked on is one, can we come up with a regional water quality database. Two, producing a Groundwater Resources Management Plan, so similar to the Suffolk County Comp Plan, but island-wide and focused specifically on groundwater resources, including some connections with surface water.

And three is what type of actions can we all agree on and start working towards collectively taking action on now, and that's really where Jared's discussion of the Long Island Aquifer Recovery Act legislation comes into play.

So that's, in a nutshell, what the subcommittees have been working on. I should also mention that with Stan joining us, we are getting,

along with Bill Merklin of Dvirka and Bartilucci, a new subcommittee chair for the Water Resources Opportunity Subcommittee.

So we've been having these joint meetings. Because Dr. Karl Schweitzer was no longer able to continue to participate, we didn't really have a chair for that second subcommittee, and now we do.

So thank you Bill, thank you Stan, and we look forward to moving forward with you two onboard.

MR. SZABO: Thank you very much, Carrie. Much appreciated.

Any questions for any of the items that Carrie just discussed from the Commission members? We can pass the microphone.

The next item, we have circulated the Commission's 2015 Annual Report. It is a draft. We would like to issue it as soon as possible. I believe most of you have

this. If you haven't received it, I believe we do have some copies here that we can share.

Do we have a timetable on when we need a response in order to say this is the final version?

MS. GALLAGHER: We would like to by the end of this month.

MR. SZABO: Okay. So take a look. Read through it. If you have comments, suggestions, please give them back to me, or to Mike, or to Carrie, myself or Carrie Gallagher, and then we would like to issue this annual report by the end of the month.

At this point, any comments on the draft report from any of the Commission members at this point? Have you had a chance to review it?

Okay. The presentation by the Irrigation Association of New York, Tom Shanahan reached out to us and asked for a few minutes. I don't see

Tom in the audience.

MR. TRACEY: Tom's not here. I'm the president of the IANY, and I can speak.

MR. SZABO: Welcome. Do you want to come up, and I'll give you the microphone?

MS. GALLAGHER: Rich is going to hand out your presentation; right?

MR. TRACEY: Yes. I'm not sure where to stand. Where do you want me to stand?

MS. GALLAGHER: You can stand up by the mic, and we can move the stand a little bit if you want.

MR. TRACEY: Perfect. We have a handout over here from the Irrigation Association. Thank you for letting me present today.

My name is Tom Tracey. I was born and raised on Long Island, so I'm very concerned with the water quality and quantity issues that we're facing. I am also an

irrigation contractor, and I make my living using water. And I realize that water is one of the most precious resources.

If it came out to drinking water or watering lawns, obviously we would always take drinking water. But I don't think it comes down to that. And though irrigation has been vilified, recent articles in Newsday were talking about almost making watering your lawn a crime in a way, and that's probably because I think most of the water is wasted.

So studies have said 50 percent of the irrigation water that goes down on the lawns is wasted, and we do believe that. And one of the reasons is because of the fact that there's poor irrigation practices.

So there are many different ways we can save water and still get the results. Basically we live on Long Island. We enjoy our lawns. We

enjoy our landscape. It's a big part of the industry, the business. It's over $200 million in the flora culture industry. The irrigation industry supports that industry.

The recent drought that we had for the last couple of months in April and May, our phones have been ringing off the hook. So obviously there's a need. People want irrigation, people want nice landscapes, but of course we need drinking water.

The IANY, what we're promoting basically is water conservation methods. So there's different ways of going about it. One is proper irrigation design. Again, most of the irrigation systems waste a lot of water because they're done by unqualified people, and they're putting the wrong heads in the wrong spaces.

Most areas are overwatered. You

know, a little is good, so a lot must be better. So let's pour more water onto it. And that's bad for the plants. It's bad for fungus. It's bad for insects. It's bad for the lawn.

You want to have a slow application of water that reduces the runoff. Going into that, we're talking about fertilizer runoff and nitrogen pollution into our bays. If the irrigation system was watering just the lawn without all that runoff, we would be reducing some of that nitrogen into our bays and waterways.

So the Irrigation Association is looking to work on certification. We think that all irrigation contractors should be competent. They should understand what a good efficient irrigation system is and how it can work.

There are many different ways

that you can save water. The simplest, and the one we're pushing right now, is really a rain sensor. The studies have shown that a rain sensor can save 30 percent of your water bill just by turning off the system when it's not needed.

There's also smart controllers. Smart controllers can adjust the irrigation systems based on the prevailing weather conditions. Many of my clients will turn around and tell me to set the sprinkler system on every other day whether it rains or not, whether it's July and it's the wettest season on record, or it's April, like we just had, and it was the dryest April pretty much on record.

We don't want to do that. We want to be able to control the irrigation and schedule it according to the weather demands. So smart controllers can do that.

Irrigation inspection, just making sure the system doesn't have leaks, doesn't have broken heads. You drive around and you see 20-foot geysers in industrial areas that go on for weeks and weeks. Nobody is inspecting those systems. So there is a great waste in the water being used for irrigation systems. So again, we are trying to promote education and the certification of irrigation contractors as stewards of this water source.

So we've been working on legislation through the state for the last 10 years. Rich Sullivan has been working with our lobbiest Tom Shanahan up in Albany. We've been at several meetings with our legislators trying to promote the requirement of irrigation certification.

So in a nutshell, what we're looking to do is to work with the Board, LICAP, and the whole public in

general, on making sure that the irrigation water is not wasted, we're getting the results we need and we're conserving our valuable resource.

Any questions?

SPEAKER: I know there's numerous alternative types of irrigation systems used in other places that are a little bit more water starved like Subsurface.

MR. TRACEY: Yes.

SPEAKER: Has that been marketed or pushed on Long Island for certain things? I mean I know for like landscaping beds, it's perfect. For turf, maybe not so much.

Has that aggressively been pushed at all?

MR. TRACEY: It's been pushed by me. I mean I'll recommend using drip irrigation. That's pretty much what we like to use. It's a slow application in the water right to the root base of the plant, so you're not

getting the runoff you were talking about. You're not spraying water onto walkways, onto buildings, fences. It's pretty much putting the water right where it is.

It is the most efficient use. We do recommend it where applicable. The big problem is it costs more money than typical conventional irrigation. So when I'm bidding a job and I quote an effective drip system, and some guy comes in at half the price, the consumer typically goes with the guy who is cheaper.

So even though there's ways to conserve, this guy says I do it just as well and at half the price. So it's really a matter of cost versus efficiency. And that's why the public has to be educated.

Yes, you can get a cheap sprinkler system put in by a landscaper or unqualified person. But an irrigation contractor who is

certified would know when to use drip irrigation, when to use a rain sensor, when to use smart controller and be able to give the landscape the water it needs without overwatering.

MR. CASTELLI: The smart controllers, do they measure a combination of atmospheric parameters and things like soil moisture, or is it just one or the other?

MR. TRACEY: Most of the smart controllers -- very good question. A smart controller basically is getting the Evapotranspiration data from several different weather stations, and it's determining how much water is evaporating out of the ground, transpiring through the leaves, and how much water needs to be replaced.

So it's adjusting the water cycles. So normally a baseline irrigation controller, a brief schedule would probably be one inch of water a week. Well, this week we

didn't need one inch of water a week because we got one and a half inches of rain. But basically through the course of the year, it's getting ET data from either weather stations or from cellular phones directly and saying okay, it's time to downgrade the irrigation, cut down the percentage, so you don't need to be watering that much.

MR. CASTELLI: That's very useful.

MR. TRACEY: Very useful.

Yes, sir.

MR. SCHNEIDER: Brian Schneider.

I think we could all appreciate the efforts that your association is making for educating and certifying new contractors, but what's your -- what's the association's stance on the thousands of irrigation systems that have been in play for 10, 20, 30 years with no checks or balances on how they were installed or how

they're even operating?

MR. TRACEY: That's a very good question.

Right now we haven't been addressing that, because there is no way to enforce it. Many people have a system. I'm a certified back-flow inspector. You all know the importance of making sure that the potable water is not contaminated by irrigation water.

And there are systems out there that don't even have backflow prevention devices. And because it was grandfathered in and wasn't required back then, most people don't want to put them in. They don't want to incur the additional expense of having a backflow condition, a backflow installation put in.

So there's nothing really to do with any of the systems that are already out there other than the fact that as they are replaced, because

they are aging -- I've been doing this for 30 years, so we're now replacing some of the systems that we put in, and obviously they can be done more efficiently.

But there's no permitting process across the island. There's no competency for irrigation contractors. There's no best management practices for what a good irrigation design is. There is information available to that end though.

I mean the National Irrigation Association, Irrigationassociation.org, has wonderful resources about what an efficient system is. I'm also certified by them. They're an accredited agency, and I'm a certified irrigation auditor, which means I'll go out and I'll put catch cans around the sprinklers, and I'll see how efficient the sprinkler

system is.

I can do an audit on an existing system. I can do an audit on the lawn out over here, and I can tell you that the distribution uniformity is less than 25 percent. That means we're overwatering 75 percent of the the water just because we're trying to keep this lower irrigated section green.

So audits can be performed. That would be a good way to do it. But again, it's the expense, and it's a voluntary expense right now. Nobody is mandating it. There's no license. There's no law. So, you know, people just basically feel they can save money by not doing anything.

MR. HERSHKOWITZ: When you work with builders in putting in these large irrigation systems, do you encourage them to use low irrigation or even no irrigation landscaping? Do you work with them on trying to

save money by doing the landscaping part --

MR. TRACEY: That's an oxymoron. You're talking about builders and saving money. Because most of the time when I do a job, and I actually estimate a job for a builder, again, it's the lowest possible price.

MR. HERSHKOWITZ: Well, irrigation landscaping actually will save them money over the long term if you do --

MR. TRACEY: But it's not going to save the builders over the long term. It will save the end user over the long term. The builder is only concerned about getting this project done as cheap as possible and getting out.

So that's a good point, that builders basically are promoting the situation where they get the least competent person at the lowest possible price to put in the worst

possible system. Of course if something could be done on that end where there was again a BMP, a base management -- some kind of base qualifications. We need to have at least a 70 percent distribution uniformity. We have to adhere to proper velocity rates in the system.

There's no specifications in a design most of the time. But in all the contracts and all the estimates I've given, when the builder comes in, there's nothing as far as how efficient the irrigation system is. There's 100 percent coverage and that's it. Want it done.

MR. DAWYDIAK: Walter Dawydiak.

What is the average cost for a typical residential installation for a rain sensor or a smart controller above and beyond what a baseline system would be, and how does that compare to a retrofit?

MR. TRACEY: Rain sensors are

very cheap. You can buy them for about $20. So depending on the installation, where we have to run the wires to -- I mean if it was a special -- you know, you called me up to go to your house, I might charge you about $150.

So even at that rate, you will save that much money in water that year alone. As far as retrofitting a smart controller, it all depends on how many zones the property has. There's too many variables in that. But just say $500 for a smart controller, which is only probably a couple hundred dollars more than a standard controller if I was doing a whole new system.

So you're not talking about a lot of money to actually put in a smart controller over a conventional controller on a new system.

MR. DAWYDIAK: So for a retrofit, it would be about 500?

MR. TRACEY: I would say about 500 for a retrofit, and 150 -- again those prices are based on my market. If you talk to the other guys or my competitors, maybe they will charge you $125. Then again it might not be hooked up right.

One of the problems -- I've got to address this, because I go up against my competitors, and they'll say a free rain sensor with every system. And I'll see a rain sensor installed five feet off the wall under a two-foot overhang. And they have a rain sensor, but it does absolutely nothing.

So again, everything has to be done the correct way. And it's really up to the consumer to make sure that these things are done right unless you pass legislation or make recommendations that all sprinkler systems should have rain sensors, all systems should be audited, especially

older systems that are probably wasting a lot more water.

MR. DAWYDIAK: Thank you.

MR. TRACEY: Thank you. Anybody else?

MR. LEUNG: Tony Leung. Can you clarify what these weather stations are? You mentioned a smart controller, but then you also mentioned weather stations. Are you talking about weather stations installed at the residences?

MR. TRACEY: It could be any different kind of way, because basically Cornell Cooperative Extension sends me weather data from seven different weather stations on Long Island that they maintain.

So I get a weekly report that tells me what the precipitation rate is and what the evapotranspiration is on those sites. And then basically they're getting it from the airport, because they have a weather station,

they're getting it from golf courses, and they'll measure the wind, they'll measure the humidity, they'll measure the rainfall, they'll measure the temperature, and again they'll create that evapotranspiration rate that tells us how much water we need to sustain the irrigation, sustain the landscape.

The weather stations and the golf courses have them, and airports have them, and that's where most of the Cornell Cooperative Extension reports are, in Islip, and Farmingdale, and Central Park. So that's where they get that data from.

MR. SZABO: Tom, you mentioned that the association has made an effort to get the New York State Legislature to approve certification or a license for contractors.

Is there anything that would prohibit the group from certifying with the County Legislatures? That

may be a way, an avenue for you to pursue if you went municipality by municipality.

I would defer to counsel to see if there's anything that would prohibit it. I don't think so, but you may be able to get the County Department of Consumer Affairs or something like that that could administer such a program.

MR. TRACEY: Well, I agree with that 100 percent. We tried it on a statewide basis. We've tried to pass legislation, and it's been shot down, not voted for, objected to for all different reasons for the past 20 years.

But basically we have a need here on Long Island. So even though we call ourselves the Irrigation Association of New York, our board members are here on Long Island. So it's easier for us to see the local issues and see what's going on. Open

up Newsday and see what's happening.

So, yes, we think that on a statewide basis, we would love to see it on the statewide, but it's probably easier to adopt on a countywide. And it's also -- I would think it's easier to adopt on a water purveyor way where the water companies require certain, you know, rain sensors.

And it's true. On Long Island, some of the water districts do require a rain sensor. And two of them that I know of of the 50 or so different water districts actually require the rain sensor be tested annually to make sure it works. So on a local level, I think that's a place to start. That's a better thing for us.

MR. SZABO: That might be the way to go. Even an organization like LICAP, we were formed by efforts of the Suffolk County Legislature and

the Nassau County Legislature, and we said we will remain an entity and a commission until something at the state level is approved that could address some of the concerns that this commission is looking at.

So you can point to us as an example of something that's working.

MR. TRACEY: That's why we're here.

Yes, sir.

MR. WHITE: Michael White. Two-part question. The first part of the question is just so I can understand sort of the who, what, where and when about the regulation or the statute or the legislation you're looking for, who does it regulate?

But the second part of that question, which I'd like you to answer first, is what is the association doing in terms of coordinating and educating the

industry? I mean do you have a membership, do you have an educational program? What's your own application?

MR. TRACEY: Yes, we do. We have educational programs. Most of the educational programs that we run in our association are geared towards contractors, and we're teaching them different irrigation practices.

Recently we had a certified irrigation technician class, and we had a certified landscape irrigation auditor class, and so we are promoting that. We have about a hundred members across the state. Most of them are located on Long Island where we have a bigger population density. As our association promotes sustainable use, we are basically having those classes, trying to educate the contractors, and we've been doing that for over 20 years.

Again, it's kind of a hard sell on the rank and file contractors out there. There's no legislation, there's no impetus for them to come out and take the time and learn how to do it. They've been doing it one way all their lives, and that's what they keep on doing.

So we've been working for I don't know how many countless years trying to promote education as one of our key tenants and understanding how an efficient irrigation system is.

And the second part of your question I forgot.

MR. DAWYDIAK: Just an outline of the legislation. What does it intend to do, who is going to regulate, how is it going to regulate it, and who is in charge?

MR. TRACEY: Well, we were going for a statewide certification through the business. Tom Shanahan is here. He's our lobbiest and he's been

working with us for 20 years.

The original legislation that we had was basically going to be enforced by the --

MR. SHANAHAN: It would have been enforced by the State Education Department, so they would have had the mandate and they would have overseen the certification process.

MR. TRACEY: But that law didn't pass, the legislation. We tried, and tried, and tried and it kept on getting shot down.

Right now, as far as State legislation goes, there was a Great Lakes Water Compact signed by the DEC, so we're trying to actually work with that entity and promote efficient irrigation as part of the water conservation plan.

MR. TRACEY: The Great Lakes Water Compact had a provision allowing, not requiring, DEC to set water conservation standards

statewide, which they have so far declined to do, but they still have the option at some time in the future of doing so.

MR. WHITE: But in terms of the regulation, does it regulate the provider, or does it regulate the user who has to be forced to get a license?

MR. TRACEY: Now it would regulate the provider. It would be an imposition on the contractor to be certified.

MR. WHITE: And who would determine whether he does or she does or doesn't.

MR. SZABO: Who determines?

MR. SHANAHAN: The State Education Department.

SPEAKER: Do you have copies of that legislation?

MR. TRACEY: I don't have it with me. I don't know what the latest version is. It did at one

point pass the Assembly and was held up in the Senate.

SPEAKER: Can you use the microphone.

MR. OSTUNI: Was it in the most current session?

MR. SHANAHAN: We were not pushing it in this session. We were working on this. We were working on approaching this group.

MR. OSTUNI: Was it a previous session?

MR. SHANAHAN: Again, I don't know what the last version is. We kind of put that on hold after the Great Lakes Compact legislation. What we were really working on most recently, that did pass, but again, DEC has not yet taken advantage of the provision allowing them to create water conservation regulations statewide.

MR. HUMPHREY: Corey Humphrey.

You guys worked really hard on

the legislation drafting. Are there any other areas of the country that maybe have adopted similar legislation?

MR. SHANAHAN: Oh, yes.

MR. TRACEY: New Jersey has a -- they have an irrigation license, a statewide irrigation license. Connecticut has a requirement for certification. There's a little semantics on how they're enforced, but basically yes.

MR. SHANAHAN: North Carolina.

MR. TRACEY: There's more than a dozen states across. I can get that information for you.

MR. SHANAHAN: Michigan, I believe also, is one of the large states.

MR. TRACEY: And California, Arizona, Texas are some of the areas.

MR. SHANAHAN: When you talk about the northeast, you're talking about states, as in California and

some of the dry states where it's an imperative -- because of quantity problems, you also have these requirements in the states where that is not the problem, but the problem is making sure the profession is well regulated.

Again, you got quality concerns as well as quantity that irrigation helps satisfy.

MR. HUMPHREY: Thank you.

MR. SHANAHAN: Somebody in the back there.

SPEAKER: When you speak about the irrigation systems and the water saving devices, are you talking mostly commercial, and by commercial I mean water parks, golf courses, farming or residents as well?

MR. TRACEY: Everything. Everything.

SPEAKER: If you had to pick what the biggest culprit in wasting water with regard to water saving

devices or not saving water, could you pick one?

MR. TRACEY: I would say that there's more houses on Long Island than companies. So as far as square foot of irrigated acres, whatever is the square foot of the area.

But the commercial users are probably the biggest wasters per capita, I would say, because again, they'll have a system that's using hundreds of gallons of water per minute and heads that are broken and continue to run for days and weeks and months.

It's more apparent in the commercial setting, but I think overall in general, there's more residence irrigation.

MR. SCHNEIDER: Brian Schneider.

To add on to Jerry's comment, even though there are more homes with irrigation systems, but if you would consider golf course irrigation that

has, you know, a single point withdrawal, specifically in threatened areas, for example like the Manhasset Peninsula where salt water intrusion can be severely impacted by this large withdrawal in a concentrated area, we need to consider that.

Even though there are more homes, there could be more impact from single points of irrigation rather than widespread.

MR. TRACEY: I would believe that the golf course is probably the most efficient irrigation systems that are commercially available, because basically that's their stock and trade. They have to have enough green grass. And they're not going to waste the water and wind with up fungus and insects and all kinds of problems.

So they're pretty much doing a good job at sustaining -- putting the

water where they need it. They won't water the system -- you know, the fairways, unless they actually need it. And they do have valve and head systems where they'll put in one head to water one part of the green as opposed to 15 heads watering all of the green just because one part needs it.

So again, maybe an older golf course can be inefficient, but most of the golf courses now are very efficient with their use of water.

MR. SZABO: Thank you Tom and Tom. Much appreciated.

MR. SHANAHAN: Did you mention our video?

MR. TRACEY: No.

Again, one of the things that we're promoting recently is the fact that a rain sensor can save 30 percent of water. And we believe that rain sensors should be installed on every system, and that's an easy

legislation to adopt. And we do have a video on YouTube, and it's in the handout over here. We're promoting rain sensors.

MR. SHANAHAN: We're using social media to try and -- it's a public service message basically. And I can E-mail the link to all of you also, if you want.

We're trying to take an active aggressive role in trying to promote the fact that rain sensors work, because we've had contractors say -- our clients say well, these things don't work. So we're trying to dispel that notion, because they do, and they're very effective.

MS. GALLAGHER: So if everyone signed in, then we can send you follow-up information and links as Tom and Tom indicated.

We also -- we have our water conservation program at the Water Authority, which is on our website.

There was a lot of talk about water conservation in the new Suffolk County Comp Plan. And we recently held, and I think a bunch of people in this room participated in, a meeting with EPA, Region 2, their water sense liaison.

So there is an effort stemming from LICAP and the Irrigation Association of New York and DEC and others to figure out if we can come up with a spring program, spring 2016 program that we can get all behind in a public outreach and education program on smart irrigation.

So since we know that, in terms of efficient water use on Long Island, that's where we'll get the most bang for our bucks, so to speak, in investing our resources and time. So if anyone is interested in participating, we're going to try to set up another meeting over the summer to work a little bit more on

that topic.

MR. LEVY: On the subject of water sensors, I'm also the Superintendent of Garden City Park Water District.

We adopted in our ordinance requiring every house with a sprinkler system to have a rain sensor installed. Enforcement has been our biggest issue. We try to do our best to get out there, but there's only so much resources we can push through.

But on a night like last night where we saw an inch of rain at 4 o'clock in the morning, we'll see upwards of a 50 percent reduction in our pumpage for that day. Today we will pump 50 percent less than we pumped yesterday due to the fact that the rain sensors do work and they picked up that rain last night, and people did not water. So it's definitely a viable option.

MR. TRACEY: And you have the power to enforce that.

MR. LEVY: That's another subject. We do our best to enforce it. What right we have to it is sometimes questioned.

MR. SHANAHAN: You're a municipal system; right?

MR. LEVY: Yes.

MR. SHANAHAN: So you have the right to adopt it, where not every municipal system does.

I see I'm being agreed with over there by an attorney. The nonmunicipal systems probably don't have the power to even adopt such a regulation, which is a problem, which is why if -- through this organization, if you make recommendations that the counties then adopt, the counties would have the power to adopt regulations saying yes, every system has to have a rain sensor or something more. And they

can also adopt regulations requiring certification of irrigation contractors.

That's where the problems of doing it on a piecemeal basis, is that many of the suppliers do not have the power to even document the regulations, nevermind to enforce it, whereas the counties would.

MR. SZABO: Thank you.

MR. TRACEY: Have a good day.

MR. CAREY: Stan Carey.

Just one point. I think Jared started to go down this road with his question with regard to builders and what they do to conserve water. But perhaps maybe this Commission -- this Commission could consider maybe a subcommittee, an outreach program to the county, town and village planning boards requiring drought resistant -- drought resistant landscaping and also perhaps -- I don't know if it would be within their jurisdiction or

authority to require some of these devices.

Also, just to expand on what Mike had mentioned, a lot of districts do have in their regulations that permits are required for all new systems, which include rain sensors any time a new system is installed, along with the cross-connection control program. So we do have the authority.

It is tough for us to enforce, but we do try our best. I really think maybe for this committee, an outreach program to the county and town planning boards would be worthwhile.

MR. SZABO: Thank you, Stan. Much appreciated.

Maybe the Water Quality Working Group, I think they're meeting later this month, July 22, this is something they can take up and make a recommendation.

At this point I would like to ask Sarah Meyland to come up. She has a presentation regarding ground water management.

MS. MEYLAND: So thank you very much for having me speak to you today. This topic came up a while back at one of our joint committee meetings, and we were talking about water management ideas.

And I gave a very brief description of what I'm going to talk to you about today, and Carrie invited me to give a more detailed presentation. So that's what I'm going to do for you this morning.

Just stepping back and looking at the issue of water resources here in New York State, just as almost every state has a dual source of water, here in New York we have an abundance of surface water, and in parts of the state we have an abundance of groundwater.

Surface water obviously comes in many ways. We've got ponds, lakes, rivers, estuaries, oceans, whereas groundwater is strictly water being pumped from below the land surface, and it's held in formations that we call aquifers. And aquifers can have various characteristics. Here on Long Island we have unconfined aquifers, and we also have confined aquifers.

Stepping back and looking at how New York, as a state, tries to manage its water resources -- and we here in New York are very fortunate that we are considered a water rich state and, in fact, we are.

But when you look at where that water is coming from and how it is used, we see some real differences between how New York, beyond Long Island, deals with water and how we deal with it here on Long Island. So for New York State in general,

94 percent of all the water that's used in the state is using surface water, and only 6 percent is water that is groundwater sourced.

Of the six sole source aquifers in New York, Long Island is the largest. It was the first. And the aquifers beneath Long Island are the most abundant of all the aquifers in New York State.

This is a map of the watersheds in New York State. There are 17 watersheds. They are based on surface water resources. And you can see that the state has a lot of areas that are draining into surface water systems.

This you're very familiar with. This is the classic diagram of the aquifer system on Long Island. We have three main aquifer formations. The glacial, which is the youngest, and it dates since the time that the glaciers receded from Long Island, so

it's probably about 10,000 years old or so. It sits directly on top of the Magothy, the formation itself, and is as much as 65 million years old.

Then below that is Raritan clay, which is not an aquifer. It does not meet the definition of an aquifer, but it does store a considerable amount of water. Then at the very bottom we have the Lloyd, which is a confined aquifer. It holds the least amount of water. It's the hardest formation for water to reach down to, and the water down there moves very slowly through the system. So there are areas of the aquifer that may have water that could be as much as 8,000 years old or so.

So we're very fortunate that we have multiple ways to store water here beneath Long Island. I want to point out one point here, which is this note right here, not to scale.

So we're all familiar with this view of what our groundwater aquifers look like, but the point to keep in mind is this is a false view of the way the aquifers actually exist below Long Island, because we're talking about an island that's 20 miles wide, and an aquifer system that may be 2,000 feet deep.

So we have radically magnified the depth ratio to the distance ratio. So aquifers actually are a thin veneer sitting on a base bedrock formation.

So then the question becomes well, how do -- how does water get managed in New York State. And when we look at the state, all of the different areas that are rich in water, we see something that was already alluded to by Tom, which is that there are water management entities around New York State that have one job, to manage and oversee

the water resources within their jurisdiction.

And the two largest or oldest systems are the Delaware River Basin Compact and the Susquehanna River Basin Compact. These two are noteworthy because both of them manage both surface water and groundwater.

In terms of the water resources, the surface water resources in the state, we've got 76,000 lakes and ponds and so forth, and we have 70,000 miles of rivers and streams. So this is just a further underscoring of the richness of our water resources here in the state.

And the major river systems are the Delaware Mohawk -- excuse me. The Hudson Mohawk, the Delaware River System, the Susquehanna, the St. Lawrence and the Niagara. Out of these five major river systems in New York, four of them are already

under the jurisdiction of a water management entity, a compact. And the fifth system, the one that isn't managed yet, is the Hudson Mohawk. And there is legislation before Congress right now to establish a compact for this last major water system in New York State.

So just looking again at where the jurisdiction of these different management compacts oversee, we have the Delaware, which is the oldest system that was created in 1961, and it is responsible for the headwaters of the Delaware River. The compact itself includes New York, New Jersey, Pennsylvania, Delaware and the United States.

These compacts are authorized under the U.S. Constitution, and so compact legislation where you've got multi-state partners begins in Congress. And then once Congress adopts that authorizing legislation,

then the individual states adopt authorizing legislation themselves.

This one is really important, because it oversees the water supply for 90 percent of New York City. New York City basically provides water for half the population of the State of New York. So not only having the great work that the city does itself in maintaining its water system, they've got the backup of having the Delaware Compact helping to manage the resource both for New York City and for all the downstream users of that water supply.

The Susquehanna Compact, which was created in 1971, represents New York, Pennsylvania, Maryland and the United States, and it includes the Susquehanna River Basin area as well as the Chemung River Basin. So it's a little bit younger than Delaware, but it's very, very active in the same way that the Delaware

Compact is.

Then the newest compact, as was already mentioned, is the Great Lakes-St. Lawrence Compact. It was established in 2008. It has eight states, the United States, Canada, and two provinces in Canada. It basically covers the western and northern parts of New York State. It's a very large compact drainage area.

So that's the way the rest of New York State oversees its water resources. It has specialized agencies that have been set up to make sure that the water is equitably shared and that its quality and quantity are maintained. Who we have doing the work for looking out for our groundwater here on Long Island is most of the people at the table today.

We've got the New York State DEC. Some of its responsibilities

include the waterway permit program, Superfund, SPDES discharge program and groundwater quality. Both of the county health departments oversee drinking water quantity and often operate as an agency on behalf of either the State Health Department or the DEC for various programs.

The County Health Department oversees issues like the water treatment systems as well. Both counties have a Department of Public Works. These departments cover a lot of activities including operating sewer systems in the two counties. And in Nassau, it also operates as a water monitoring agency and collects water data from their monitoring well system, something that I think the Suffolk Health Department does in Suffolk County.

Then we have the USGS, and they really are the backbone of how we understand what's going on here on

Long Island. They do groundwater and surface water studies. They monitor the groundwater and surface waters. They model it, collect data and so forth.

So this is who we really have working for us. You can see that the duties are spread out among a number of entities. But what we don't have is a single entity that pulls all of the activities together and operates it as a single effort.

Part of the reason that we've been having some issues over the last 15 or 20 years is that the DEC is our main go-to agency to really provide the oversight, the enforcement, and policymaking for the groundwater here on Long Island. And unfortunately, the department has suffered a long running decline in its budget, its operating budget, and in its staffing.

So in the department of -- the

division of water itself, they continue to lose people. I think this year is one of the first years where you actually got to add somebody to your staff.

So what are the issues between the two counties? Well, you'll see that the list of water quality issues -- the names are the same, but the ranking is a little different from one county to the next. Here in Suffolk the big issue is trying to get nitrate contamination under control, both due to its impact on surface water as well as groundwater.

Then number 2 comes VOCs, then pesticides and then a number of other issues like gasoline spills and MTBE contamination, perchlorate, radioactive materials and pharmaceuticals.

Nassau has a different lineup for these problems. VOCs are clearly the number 1 problem in the country.

Close to about 50 percent of all the public supply wells are having to treat nitrates at this point, and the nitrates are finding their way into deeper and deeper sections of the aquifer.

Coming after that is nitrates, but the number of wells being treated for nitrates is substantially smaller than the number for VOCs. Then the county has a similar set of issues, perchlorate, radioactive materials, pesticides and so forth.

When we get to water quantity issues, we see a somewhat different picture between the two counties. If you can look at the diagram for Suffolk County over on the right, you will see what a healthy groundwater system should look like. We've got water coming in, which is water through recharge, and this is from the county's recent comprehensive plan. And we see the water going out

of the system. And you will note that the numbers, 1,367 million gallons a day, they're equal. And this is a demonstration of a healthy aquifer where the water coming into the system should be roughly balanced with the amount of water leaving the system.

In Nassau, we don't see that same level of health in terms of quantity. So the county has had an inflow number for a while now of 341 million gallons a day inflow, of recharge. When you add up all the ways that water leaves the system, you will see that there is a substantially larger amount of water going out than there is coming in.

The county itself had set a safe yield at 185 million gallons a day. We're looking at pumpage data in both counties for the year 2010. That year the pumpage in Nassau County, just from water utility withdrawals,

was 203 million gallons a day. So we see that we have an imbalance of around 63 million gallons a day.

STAN: I see you only looking at 2010. We all know that was a very extreme year for the public water suppliers. Wouldn't it be better to quantify your statements to show this over a time period?

MS. MEYLAND: I would be happy to, but I would call to your attention the article in Newsday today which said that 2010 was just the beginning of a string of very hot years that ran all the way up to 2013.

I think what we would see, maybe the actual number might be a little bit different, but the trend would be what I'm showing you here, that we're pumping a tremendous amount of water from the system. And if our goal is to be in balance, our goal is not being met. And the way that an

aquifer prefers to be is in balance.

So where is the extra water going to come from? Well, most likely it's going to come from salt water intrusion, and that underscores the ongoing finding that we're having salt water intrusion issues on both coastlines of Nassau County.

In the year 2010, the County of Nassau pumped 74 billion gallons, and Suffolk County pumped 88.5 billion gallons. The total pumpage in 2010 for Suffolk County was 242 million gallons a day. So we know that in the summer, no surprise, hot, dry summer, we get a lot more pumpage than when the weather is not quite so severe.

And just to point out where we are this year, we are basically about four inches short of where we should be in average rainfall for Long Island.

MS. GALLAGHER: Sarah and Stan,

if I could just comment. One of the things that we're doing this year with the state of the aquifer website that USGS provides for us is we're going to have updated pumpage data through 2014. So one of the issues was getting that data. So we should have that updated pumpage data and have it available by the end of their fiscal year, which is September 30. So we will be able to do maybe more of that type of analysis at that point when we have all the data input.

MR. LEUNG: Very quick before you move on. The 185 million gallons per day, I saw that number coming from the groundwater management plan. But you just mentioned that number came from Nassau County. Can you clarify that, because I didn't know where that number came from?

MS. MEYLAND: Brian, if I don't get it quite right, I'm sure you'll

get it right for us.

The county, going back to the 1980s, has been doing -- Nassau County has been doing 10-year groundwater management studies. And going back to 1980, the county used to have a safe withdrawal limit of 180 million gallons a day.

Going forward into the '90s, the county readjusted that and upped it to 185. But it came through work from Nassau County and was agreed to basically by the DEC.

MR. SCHNEIDER: Correct.

MR. LEVY: Did Suffolk County --

MS. MEYLAND: No. Well, I don't know if they have officially, but at this point Suffolk County does not really see the quantity as the kind of issue that it is in Nassau.

However, there is one caveat to that, which is when you look at Nassau County, many of the streams have already been impacted. Their

stream life is shortened. They have low flow in many streams.

It's just the opposite in Suffolk for the most part where the streams are still flowing at close to a hundred percent capacity compared to pre-development.

The issue is not when can Suffolk County start to draw down the water level to the extent that will impact streams. The goal would be in Suffolk to keep stream flow where it is right now, at basically full flow.

So, you know, there are differing goals now between the two counties in terms of what kind of impact they're willing to accept.

MR. DAWYDIAK: Just one more question. Can you define what's in the category of inflow and outflow?

MS. MEYLAND: Inflow is recharge. It's precipitation in all of its various forms. Outflow is every way that water leaves the

groundwater system. So it's stream discharges, it's coastal discharges, it's partially evaporation, and it is pumping not solely by water utilities, but by all users who have a permit to take water out of the system, whether they're regulated by the DEC, 45 gallons per minute capacity or more, and all the users that are taking water out that don't require a permit. This is just looking, however, at public water supply withdrawals.

MR. CASTELLI: The inflow is not just precipitation, it's a function of permeable surface and how much is recharged. Is that true?

MS. MEYLAND: Yeah. It's the recharge. This is the recharge.

MR. CASTELLI: If it's just the (inaudible) the percent permeable surfaces you have and how much runs off.

MS. MEYLAND: Yes, it is

recharged. So some precipitation will run off. This is what gets captured and infiltrates into the groundwater.

SPEAKER: Is that based on a formula? You stated before it was precipitation in various forms.

Do you then apply a formula as to evapotranspiration when you say inflow?

MS. MEYLAND: You can do that, but I'm using the numbers from Nassau County so that they have a system of defining what inflow is. And so rather than trying to second guess them, I'm just sticking with their numbers and trying to show how what we're doing today, how they compare with numbers.

Now in doing a water budget, a robust water budget, you're looking at a very long period of time and looking at averages. What I'm doing is just to show you that within the

last 20 years or so, particularly in Nassau, the amount of water coming out of the system does not compare well with the long-term averages.

We are clearly taking more out of the system than the system can bear, and we're seeing the consequences of that in salt water intrusion as an example on both shorelines.

SPEAKER: When was the last time Nassau County did a similar plan to what they did in Suffolk County?

MS. MEYLAND: Well, there are three studies to mention. One was a 1990 plan, one was a 1998 plan, and then in 2005 the Department of Public Works did a three-year synopsis of water data that they had collected into their database. I don't believe there's anything more recent than that.

SPEAKER: So they're about due to do something, because weather

patterns have changed?

MS. MEYLAND: Right. So from 1998 where it was a countywide look at all of the issues, we don't have anything more recent than that.

MS. PILEWSKI: I'm Jennifer Pilewski from New York State DEC.

You provided an estimate of 63 million gallons per day salt water intrusion. I wanted to just clarify that that really kind of depends on where your wells are pumping from.

When you're pumping close to the coast, you're going to have lots more salt water intrusion versus wells that are placed at various points through the county in the middle of the island and things like that. You're not going to have salt water intrusion as much unless you're lowering the entire water table.

So I wanted to clarify with you where your estimate of the 63 million gallons a day of saltwater intrusion

came from.

MS. MEYLAND: So what I'm showing you with these numbers is the shortfall. If the system were to be in balance, it would need an extra 63 million gallons a day of water. I'm not necessarily saying that this is all saltwater intrusion, but this is the impetus that leads the system to try to put itself back into balance.

And furthermore, when you take an excess amount of water out, you reduce the ability of the fresh water system to hold the ocean back. And so yes, we tend to say well, saltwater intrusion is worse where we have coastal pumping. But in realty, it's the whole system that works together.

When we do massive drawdown in the center of the county, because that's where the bulk of the water is coming out of, it has an effect all

the way out to the shoreline. We can see now in Long Beach that we are finding saltwater intrusion at the base of the Lloyd beneath Long Beach Island. That is not Long Beach doing that. Long Beach will suffer the immediate consequences if their wells start to turn salty.

But we can see a whole line of trends from the west end of Long Beach Island to the east end of Long Beach Island, and we see this very clear change in salinity from the east to the west -- from the west to the east rather. And if you go further west over into Queens, the saltwater intrusion is even worse over there. That's an historical remnant of the pumping from Jamaica.

So in order to get these numbers actually, you know, with today's reality, we should do a new look at a water budget. But here's the thing. We don't have a water budget for all

of Nassau County or Suffolk County combined. That study has never been done. And actually that's something that we need to be doing if we're going to manage our groundwater supply.

So what we have been talking about is providing the oversight.

SPEAKER: I had a question on your last slide. The inflow in Nassau County, I mean as public water suppliers, we all know what our greatest demand period is, and the presentation before yours was all about irrigation.

That's where all the water goes, back into the ground. So does that inflow account for the water that's going back into the ground from irrigation?

MS. MEYLAND: Well, this is actually a misunderstanding of the groundwater system, especially in Nassau County. Most recharge to the

aquifer does not occur in the summer, even though we get a regular -- in normal years, a regular range of rainfall through the summer.

The main recharge for the groundwater system is from the fall, winter and early spring. So when we're pumping all that great amount of water from a system in the summer, that's when the recharge is at it's absolute lowest.

So we're putting a double whammy on the groundwater system. We're taking the most water out, and it's also simultaneously the time of the year with the lowest recharge. And it is not true that when you put extra water on your lawn that that water finds its way back into the groundwater system. That is not the way it works.

SPEAKER: None of it does?

MS. MEYLAND: I will defer to the USGS, but I will say if it's not

zero, it's close to zero, because the plants are taking it up, the soil is moist, the air temperature is hot. So those all work against significant recharge in that period, the growing period.

So what are we going to do about all of this? Obviously we need to do something. We can't simply afford to not take all of these changes that we're seeing seriously and come up with a way to do water management that is a success and that follows the way water management is practiced, not only in New York State, but across the United States and indeed the world.

And that is basically using the best science we have and setting up policies and having a full-time staff of hydrologists and other managers who actually take on the role of day-to-day oversight management and researching. So we need good

oversight, we need good compliance, we need good enforcement.

So how do we put together an entity like that? Well, it needs to be able to do good planning and development of a strategy, it needs to actually manage a system on a daily basis, it needs to protect it, and obviously information out to the public and other interested parties is essential.

So everybody wants a management plan, and having a plan is great. Of course recalling that since 2008, we've had 10 groundwater management plans already, the challenge is not developing a great plan. There have been a lot of great plans already created, and certainly when my cap is done, there will be another one to add to the list.

The key is not the plan. The key is the strategy and the implementation. And that's why we

need a comprehensive entity that is actually going to get us from the planning actions to the implementation and actions that look at the long-term health and safety of the system itself.

So what this would be doing is it would be relying on the best science we have. This would be a science-based effort, looking at human activities, pollution, many things that we were talking about already. Looking at inflow and outflow, which we were just discussing, and defining what is the true availability of water.

Maybe it's going to be a bi-county definition. Probably so. But we have to know really how much water can we safely bring out of the system without adverse consequences. And right now we are having adverse consequences in the way we're pulling water out of the system.

And also, how do we do a better job of conserving. When it comes to the analysis of what's going on, we would rely very heavily on the USGS and others to quantify and identify impacts on the water supply. And ultimately we also want to do better watershed management and promote both acquisition and best land use practices that would be providing information to those who have the powers to carry out that work.

To manage the system, we would start with the well permit program. Now it is administered by the DEC. That authority and that effort would move over to the compact in the same way that it has moved over to the compact in Delaware and in the Susquehanna system.

So the well permit program would be one of the responsibilities of the compact, and it would look at issues of trying to reduce water waste,

which is critical. And something that we're not doing right now is it would look at the issues where the system is at risk. Drought, saltwater intrusion, sea level rise, flooding, and the contamination in the system that continues to spread, both into the lower reaches of the aquifer due to the withdrawals, and spread laterally as water movement in the aquifers continues to spread.

(At this time, a brief recess was taken.)

MS. MEYLAND: To be able to do this, the Compact would enter into long-range contracts with the USGS and other important entities that are capable of doing aquifer research, modeling and developing, and investigation tools and so forth.

Very importantly, the Compact would work cooperatively with all the other entities that I've already shown to you and others to make this

a successful program. The Compact should be viewed as an ally to all of those that are interested in protecting the groundwater supply and properly managing it.

One of the things that management might be able to help us do is to identify those areas where water development in the future may no longer be appropriate, because there are other areas that would be more appropriate. So having a long-range vision of those areas would be very helpful.

Another thing we don't talk about much is storm water management. The DEC is doing storm water management for discharges to surface waters, but we don't really talk about storm water management in the context of how it recharges the groundwater systems. So this is an area that is not being addressed, and the Compact could provide a service

in that area.

In general, it would help us identify and implement sustainable practices with respect to the groundwater supply. Also, the Compact would be there for us as our champion. We've already seen what happens when the aquifer resource of Long Island is challenged by those who also want to use it. And we don't have a ready champion.

We can pull a group together, but it would be much more efficient and actually serve us better in the long run to have an entity that's already up to speed and able to step in and protect our interests when needed.

We need also to try to bring down the contamination of the groundwater, and so these would again be areas where the Compact could play a key role. And it could help protect other water dependent

systems, the streams, the wetlands, the ponds, the coastal waters, to make sure that the way we use the groundwater and the way it flows from the system supports all these other water dependant water bodies.

And one other point is that there's a tremendous amount of effort now going into finding wastewater solutions for Suffolk County and for the areas that are on on-site systems. And that work is to be applauded. If there are other areas that need to be addressed beyond the programs that have been identified now, the Compact may have a role to play in supporting further research or cooperating with the entities that are doing the most degree of work right now.

Last is getting information out to everybody who is interested through publications, websites, mailings and so forth. What we see

is a lot of information about water quality. We don't see very much information going on on water quantity. We don't really have good information about areas of contamination and how best to protect the watersheds in the two counties.

So the work that's being started here with the water quality database could be augmented by the water quantity database. How would an entity like this work? Well, we'd have a Board of Directors. One way to construct a Board of Directors would be to have 11 members. Five of those would represent government appointments, and six would be professionals in the field of water management, hydrology and so forth. Each member could have a four-year term with a maximum of two consecutive terms.

Running or working side-by-side with the Board of Directors would be

an advisory committee. We call this the Watershed Oversight Committee. It's something that worked very, very well in the 2008 study where you had a collection of water professionals and interested members of the public and not for profit organizations.

So these two bodies would work hand in hand to try to come up with the best strategies protecting and managing our groundwater supply.

How would the Compact be funded? This is a question everybody wants to know. The Compact would be self-supporting. Pretty much the other compacts are self-supporting. They do get contributions from the state members.

What we're proposing here for Long Island is that it would be completely self-supporting, so it would not go to state government, county government, town government, village government and ask for a

direct contribution.

The way the other compacts fund their work is they have a fee on water withdrawals, and this is what we would propose here on Long Island as well. And it would apply to any entity that had a well permit program. The fees would be based on millions of gallons per year pumped. That fee could be structured any way we saw fit.

What we think would be a reasonable approach would be to have a two-tier fee system so that one level of fee would kick in for the summer period, and the second fee level would kick in in the winter. So I'm going to stop here.

Are there any other questions that you would like to ask me?

SPEAKER: The New York State DEC's current definition of a Compact basin commission is an interstate commission. This would not meet the

definition of that, and thereby it wouldn't be, under current regulations, exempt from DEC's definition.

The reason that these other basin commissions were formed is because there's multiple states with different (inaudible). So they needed one entity which would regulate the interests of the several states that are involved or the several -- the countries that are involved, Canada and the United States. This doesn't really meet that definition.

MS. MEYLAND: Well, that's because there aren't any intrastate compacts in the state at the moment, so that definition would have to be amended.

And what this Compact would do would basically provide the same kinds of services to all the interested stakeholders within this

water resource as the interstate compacts do. And clearly that's why the process for the interstates is to start at the federal level and get buy-ins from all the affected states, and then each state adopts its own version of that enabling legislation and identifies who would be the representatives and so forth.

So yes, this process would start with state legislation in New York State.

MR. AMPER: Dick Amper, Pine Barrens Society.

Why is the state resisting an intrastate Compact?

MS. MEYLAND: I don't know that the state is resisting it. We're talking to groups like this to educate them about how water management is conducted in New York State and beyond New York State. This is the way professional water management -- this is what it looks

like, and we think that given the multiple layers of interest in a sustainable groundwater supply for Long Island, we should find a model that works, and these compacts clearly work. They're successful. They're modeled all around the world.

People come from outside the U.S. to look at how the Delaware River Basin system operates. And so virtually every continent in the United States, except for Antarctica, has some version of a management compact like the one we're talking about.

MR. AMPER: Can Nassau and Suffolk set up such a thing by itself, or would it require state --

MS. MEYLAND: It would require state legislation.

SPEAKER: As you know, to create another entity takes a heavy (inaudible). Why couldn't we work within the existing regulatory

(inaudible) rather than saying it just doesn't work? I mean it has worked. (Inaudible)

Why couldn't we kind of work within that to make sure they get the funding?

MS. MEYLAND: Actually, with all due respect to the DEC, and this is not a criticism of the agency, it's a just a statement of reality, it's not working for us. It is not working for us.

And so rather than going back to the 208 plan in 1978 and coming forward to 2015, we have made very little progress in protecting and managing our groundwater. So if we think that some tweaks here and there will get the job done, we're misleading ourselves. We need a professional 24 hour a day, fully staffed agency that can actually get the job done and be an impartial arbitor of how to protect our

drinking water supply.

SPEAKER: I'm just not understanding. I think you defined DEC. It's just we have to find the (inaudible) efforts by putting our efforts into funding (inaudible).

MR. SHANAHAN: Essentially DEC, through its regions, is an intrastate compact. So if your fault with it is that it's not working well, what makes any of us think that a new layer of bureaucracy, a separate layer, is going to work any better?

MS. MEYLAND: Well, let me ask the regional office how many hydrologists do you have on staff today.

MR. LEUNG: We have at least one.

MS. MEYLAND: One. So I'm not saying that to put you on the spot, but it's just an example of how we can't get by with one. We can't really get by with three. There's so

much that needs to be done that tweaking the DEC and hoping for the best is not going to get us where we need to be.

SPEAKER: This is an issue that's been going on for decades. It's not even as recent as when we had 340 employees. This is a pervasive problem, and it requires a pervasive answer.

The answer to your question is do compacts work. What we have had over the last decade has not. Simple. It's really easy.

MS. BLUM: Paula Blum, League of Women Voters.

As someone who is not a professional in any away in this, the way I see it, DEC and a lot of the other agencies are dependent upon state and county funding, and funding is not always available. Funding can be pulled very easily, whereas this would be supported by something that

cannot be affected by government in terms of funding.

It would have its own funding, and it would have a certain amount of autonomy which the DEC and other agencies just don't have.

MS. MEYLAND: The DEC, they would likely sit on the compact board. So it's not as if the DEC is out of the picture. Clearly they have a role and a place in the whole effort to protect and manage groundwater. It's just that the burden would no longer be totally on their shoulders the way it is right now.

MR. LEUNG: I just want to go further and answer some of the questions.

MS. MEYLAND: Let me give you this microphone so people can hear you.

MR. LEUNG: You know, I think we all agree that there's some issues

here, and I think that the department will agree with you that there's management issues with the groundwater resources and quantity as well as quality.

But what we don't agree on is whether or not you need this compact. The department is handling a lot of these issues. Granted we may not be handling them appropriately from your perspective or from your standpoint. But if you look at your own slide, you acknowledge that the DEC's staffing been cut.

If we were given certain resources, I think we can manage the resources without having a new compact. That's all I have to say.

MS. MEYLAND: Have you recommended an increase in staffing to the Governor?

SPEAKER: The other compacts, who are members? Are they state members or are they --

MS. MEYLAND: I just told you they're representatives of each state in the Compact. So in the Delaware compact, for example, the governor is the representative.

In the other compacts, it may be the DEC commissioner that's a representative. It's a very high level state representative as a board member of each compact.

SPEAKER: I just want to address the DEC's comments about -- these are state, multiple statewide. I think we just saw with the Supreme Court that the intent of a regulation or legislation is as important as the actual implementation of it.

In Nassau County, we have a huge population and two different bodies drawn from the same source. I think the intent of the compact legislation is exactly that, to regulate multiple bodies that are drawing from similar sources in order to regulate more

efficiently.

So let's look at the intent, and let's look at history realistically, and let's not put self interests in the way of promoting and regulating official public health. That's what we're trying to do.

MS. MEYLAND: One other point I will make, just to probably answer some questions that haven't been asked about the funding piece, is we're looking at a per person cost of about the price of one Starbucks coffee per year per person. When we separate the impact out over the entire population or most of the population of the county, the financial impact is really negligible. It's negligible. A cup of coffee a year?

We're not talking about any mammoth impact financially on having an entity that gets us to where we want to be. So the question is why

not do it that way. Why not move forward and get in place something that cannot just come up with the plans, but actually make them happen and then enforce them.

SPEAKER: This is a question not so much for you but for Jared.

Jared, about three or four weeks ago you presented your Long Island Recovery Act. You proposed it.

Do you see this possibly dovetailing with what you were suggesting at that time?

MR. HERSHKOWITZ: No. The compact was number 10 on my proposal.

MS. MEYLAND: Yes.

SPEAKER: We're sitting here at the Suffolk County Water Authority, representative of the Nassau purveyors also. And within earshot, I just heard one of the purveyors say this will hurt us.

I was wondering if you could address that concept. Will it hurt

water purveyors who are now withdrawing water for nothing, and then they will be charged? Also, could we hear from some of the purveyors to your response.

MR. CAREY: Sure. Stan Carey, Nassau/Suffolk Water Commissions Association. And we are very concerned about this, because right now the reporting and permitting process is extensive for us. If another level of government compact is added to this, what is that going to do for the process? Is it going to add an expense?

So I do have another question. If this is going to be a direct tax on the water suppliers, why would government officials or government entities get to appoint the people on the new compact?

MS. MEYLAND: What was that last part?

MR. CAREY: You're going to tax

the water purveyors, so why would the government get to appoint if we're paying for the compact?

MS. MEYLAND: So one part of the question was this would be another level of government. That's not the case. What it would be would be rather than working your permits through the DEC, you would work your permits through the compact.

MR. CAREY: So we wouldn't deal with the DEC anymore?

MS. MEYLAND: Right.

SPEAKER: What would happen with existing permits?

MS. MEYLAND: They would be transferred to the compact. So it would be a smooth transition from one management entity to the other.

MR. LEVY: Could they possibly be altered?

MS. MEYLAND: Could they be altered? I would presume that they would stay on the same permit cycle

that they are now, a 10-year permitting process. There would be no reason to change that.

But the other thing is that yes, the water utilities are going to call this a tax, but really you're getting so much for this marginal amount of money that's coming not from you directly, but from your customers who are actually using the water.

Right now we take the water that's owned by the state, take it for free, sell it to the customer, and the customer pays the cost of delivery.

What this would do is for an incredibly small amount of money per customer, give them all these benefits. They currently do not exist. They don't exist. You aren't reported on annually on what the total pumpage was from the groundwater system, you aren't told where the hot spots are, you aren't

told where the plumes are, unless it hits one of your wells.

There's so much that the water utilities would benefit from having a professional day in, day out management agency, a management entity that you're missing right now, and so why not get the benefit of all that.

STAN: Some of that is required to be reported by the EPA.

MS. MEYLAND: It's required to be reported, but when do we get the feedback? What are the numbers showing us, and what decisions are made once you see what the numbers are?

We don't see the DEC coming in and saying, hey guys, we have a problem here. We're over-drafting the aquifer in sections, and we should just look the other way. We can't look the other way any longer. We can't look away from what is

coming in our direction.

We've got sea level rise, we've got saltwater intrusion, we've got climate change, we've got continuing spread of contaminants. We need a plan to prevent the loss of our water supply, because we're not doing what we can do and should do now. It's no good for us if we wait until the crisis hits.

Look at what Suffolk is trying to do with this nitrogen after letting it go for so long. It's just a massive undertaking. Why would we want all the other issues with the water supply to reach that point before we try to fix it? It makes no sense.

We need to put the plan together and a solution together now, and that's what the compact does. It would be your ally, not your enemy. It would give you the science you're looking for and a little bit more

certainty.

MR. SHANAHAN: Two questions. Hopefully one is easy and one a little tougher.

First, you talked about the minimal cost. Have you projected a realistic cost for this agency, say per thousand gallons?

MS. MEYLAND: It's based on a million gallon withdrawal level.

MR. SHANAHAN: Still, the cost is usually figured per thousand?

MS. MEYLAND: What you would do if you wanted a rough estimate is you would look at the population, and you'd look at the annual pumpage.

MR. SHANAHAN: What's the cost?

MS. MEYLAND: If you look at something like that, the per person cost when you look at the customer base, it would be somewhere in the order of about $3.50 per person per year.

MR. SHANAHAN: Okay. You

already know, because you showed us the numbers before, what the pumpage is on an annual basis for both counties.

So have you projected over that what the cost would be per thousand?

MS. MEYLAND: We haven't gone back, because you realize that each individual water system charges different levels for their water.

MR. SHANAHAN: But you're going to charge per thousand.

MS. MEYLAND: We wouldn't be able to do that. If one system is charging 80 cents per thousand gallons, and another system is charging two and a half dollars per thousand --

MR. SHANAHAN: It doesn't matter. You're only going to add a certain amount per million gallons so you know how much each pumps.

MS. MEYLAND: What would happen would be that there would be a fee

that would be defined in the statute to start the process going, and then it could be modified every time.

MR. SHANAHAN: Do you know how much you want to raise total?

MS. MEYLAND: Yes. We would be looking initially to raise around $10 million to get the entity up and running. It's not that much. Suffolk County is looking to raise two and a half billion to try to deal with this.

MS. GALLAGHER: I thought it was 8 billion.

MR. SHANAHAN: The other thing, you talked about transferring the powers of the DEC.

MS. MEYLAND: Correct.

MR. SHANAHAN: It's not just as simple as that, because first of all you have two agencies, not only DEC, but DOH.

MS. MEYLAND: It wouldn't affect the DOH.

MR. SHANAHAN: It wouldn't affect the reporting all the way back to the EPA?

MS. MEYLAND: No. It would not affect that.

MR. SHANAHAN: It would have no effect on that?

MS. MEYLAND: No.

MR. SCHNEIDER: Sarah, you said that in all the other compacts, that they're all self-supporting in the examples that you used from around the country.

Are there opportunities for federal funding, for specific studies or, you know, pieces of work that need to get done, or grants or anything?

MS. MEYLAND: Yes. Absolutely. Other systems around the country do get federal funding for special projects.

MR. LEVY: The 11 member board, I presume that's modeled after some

of the other compacts that are out there, or is that just something --

MS. MEYLAND: This makeup is trying to accomplish two things, make sure that all of the levels of government on the island and at the state level are adequately represented, and to bring a good component of science into the policy making process.

Hydrology is not the same as surface water science, and a lot of people who don't have the hydrology background make mistakes in trying to understand how groundwater works.

So we would want people who not only would do a good job of representing the interests of Long Island, but would have the scientific expertise to understand why things are happening the way they are and to help develop good science-based policy.

MR. SHANAHAN: Sarah, would this

agency have the power to surpass existing regulations on a statewide basis, for instance, the allowed amount of nitrite in the water supply?

MS. MEYLAND: This would not set water quality standards. That's done by the Health Department.

MR. SHANAHAN: You're saying won't have the power. What powers would it have to impose a science-based --

MS. MEYLAND: Well, it would have mostly the power the DEC has already, undertaking science, putting into practice good sound policies, and having people follow through on them. We're not really recommending a massive, you know, empowerment of a separate entity, although it will be doing things that clearly are not being done now.

We're not looking at saltwater intrusion in a very sophisticated

way. We don't even know where the saltwater front is for most of Long Island. So it will have a set of responsibilities that are not so much regulatory, but are just developing good science that will allow us to have the best practices on the island.

MR. SHANAHAN: Say you include best practices to restrict consumption --

MS. MEYLAND: Restrict consumption? I really -- I'm not sure. I'm not sure that that would be necessary. I would think that conservation would be the way to move forward to deal with the problem we're seeing.

MR. SHANAHAN: Restricting consumption is conservation.

MS. MEYLAND: Well, you could think of it that way, but I don't think that's the only way to deal with it.

STAN: Would the new compact take over responsibility of managing superfund sites?

MS. MEYLAND: No.

STAN: So the DEC would continue to manage all contamination?

MS. MEYLAND: Yes. But what the Compact will be able to do that doesn't exist now is to employ modeling to provide better information on where the plumes are, how fast they're traveling. Maybe some of the treatment technology that we're not looking at now actually would be a better fit for some of the problems that we have.

So it would be a scientific resource to try to speed up a lot of the treatment that is lagging on for, you know, literally decades and will probably be decades on from where we are now.

Here's a real simple question. Do you have a map of all of the

superfund sites in Nassau County? No. We don't even have a simple map showing where the superfund sites are originating from and the plume footprint. Why not? It's the DEC's area of expertise.

We have so many pieces of information that we could use to better manage our groundwater system that we do not have now, and we have no real ability to get us there unless we set something up like a compact whose sole purpose is to protect our drinking water supply.

MR. HERSHKOWITZ: Sarah's presentation is not reinventing the wheel here. This exists and it works. It's such a great model that it's being studied internationally. This is nothing new. The regulations exist. The structures exist. It's been in practice for many, many years.

New York State is familiar with

it. What we have simply is what exists now does not work. We proved it here at LICAP. It's not working. Additional funding is not going to make it work, because we had additional funding many years ago, and it still doesn't work.

So what exists now in other areas is working. Why wouldn't we look at this closely and carefully? Why wouldn't we just understand and accept we have problems here that are not being solved with the existing agencies. It's because the agencies don't have great intent to do their jobs, whether they're not funded or what have? What exists in other areas has been doing it better, so why not look at this seriously.

MR. SHANAHAN: What this young lady pointed out earlier, and Sarah agreed, there are no intrastate compacts.

MR. HERSHKOWITZ: I answered

that question before. If you open your eyes to that, you will see that here --

MR. SHANAHAN: Let's not be insulting.

MS. MEYLAND: There are intrastate compacts. What we're talking about is using the compact model to create something completely within the borders of New York. And there are management entities around the country that don't call themselves compact, but they do the same function.

So the issue is not to get hung up on the name. The issue is to try to develop an entity that gets the job done.

One more and then we're going to wrap it up.

SPEAKER: What do the existing compacts do to prevent from having the same fate that the DEC has now of staff cuts and funding cuts; do they

have some way of maintaining that?

MS. MEYLAND: It's in control of a sound budget. It does not have to do an annual budget battle. It does not have to look to the governor to define its capabilities for it.

SPEAKER: As a follow-up to that, if you do, let's say, discover something that needs to be investigated or some task that needs to be undertaken in response to what you do, that's going to cost something. So the budget is going to have to be increased. So how do you maintain the adequate level to do all the additional work?

MS. MEYLAND: Well, we don't think that the budget is going to be consumed totally by the administrative expenses. We think within that budget is the ability to do projects, and to fund research, and to fund science.

And just like we've all seen, if

there is a monumental task that needs to be done, the Compact will have to cooperate with the others.

SPEAKER: Is it a regulatory agency or not?

MS. MEYLAND: It is a regulatory agency to the extent it runs the well permit program.

The DEC has a question, and then I'm turning it over here.

SPEAKER: So your previous slide had shown we're going to incorporate superfunds and Health Department issues, but then you just stated that it's not. So I think what you're saying is it's literally just going to take over the permitting program, which currently exists in only one (inaudible).

So I think your previous discussion was kind of that it's combining all of these things, but then what you just said seems like it's not really combining all these

things and just taking over one program that exists.

MS. MEYLAND: Let me just say that the other compacts in the state are doing well permitting. The new stating reporting for the whole state was turned over to the compacts to conduct that where the compacts exist. So we already see that where the compacts exist, actions that would normally have been left to the DEC have been assigned to the compacts.

So this is not anything new. It's just that now we would have a dedicated agency doing that and other things. It's not saying that the compact would take over the superfund program, but it certainly would be a good ally in trying to meet our needs to get that program running as well as possible, cleaning up sites as quickly as possible, forecasting future problems.

So is it going to be doing the well permit program? Yes. Are there other areas where it would either have its own set of issues that it's looking at or to work with others? Yes, it would do that as well.

Do you have a question Jeff?

MR. SZABO: A couple of comments about the questions.

Obviously Sarah promised that this would spark some debate and some lively discussion, and we certainly had that, so I thank you.

It does seem like it would be somewhat of a duplication of existing services at an additional cost of maybe 10 or $15 million to the residents of Nassau and Suffolk County -- 10 million roughly.

MS. MEYLAND: Yes.

MR. SZABO: I do understand some of the benefits and coordination and some of the scientific research that needs to get done, and I think we all

agree here that more needs to get done.

But dealing with customers and dealing with the people -- the entities that you would pass the fees on to, do you think that there's a great -- that the public would be okay with this type of organization, an additional layer of government, when, you know, especially from a water provider's perspective, we think we do a very good job protecting drinking water here in Nassau and Suffolk County.

You say it's a cup of coffee. It's $10 million in an additional bureaucratic level of government. Do you think they would be supportive?

MS. MEYLAND: All the polls that have been conducted on Long Island for the last 20 or 30 years, when the public is asked would you pay more for water to have better protection and to secure your drinking water,

unanimously almost -- in the range of 75 percent of the people polled, say yes.

This is not an issue of price. There's nobody who can quibble about spending $3.50 extra on average for their water bill. So that's not the issue. It's not a duplication. It is a transfer from the efforts of the DEC to another entity that will actually be able to give you more than what we're getting now. It's not a criticism of the DEC.

It is hamstrung, not through its own fault. But we can't accept that any longer. We shouldn't accept that any longer. So this would be moving in the way that the other compacts have done, moving the administration out of the DEC and into another entity. That's all it is. It's not a duplication of effort. It is a transfer from one to another.

MR. SZABO: Have you, over the

years before jumping to -- I'm not sure how long you've been working this, but proposing and working toward a compact being approved, have you sought additional funding to raise DEC staffing levels to something that you would think more appropriate?

MS. MEYLAND: I fought when I used to work in the legislature many, many times to try to get more money to the DEC. That has not happened.

So I don't really think the solution at this point is to try to give the DEC a little bit more money. We've moved beyond that now. We need action. We need implementation. And we do not see that that is going to be coming from the DEC. But it could clearly come from an entity that has a single mission, and that would be the Compact.

MR. SZABO: Thank you.

We're moving to one of our last

items for discussion, an outline of the groundwater resource management plan.

I'll turn the microphone over to Carrie Gallagher. We'll try to move through it as quickly as possible in the interest of time. We've already been here a couple of hours.

MS. GALLAGHER: So I think the key is hopefully everyone has seen the outline, it's two pages. It was sent around. There should be extra copies available on the table.

Really, I think at this point if you -- it's really if you see any glaring issues, if anything is missing, or if you would like to sign up and volunteer to help with writing a section of the plan, let me know. I was going to go more in detail, but I feel like we've talked about a lot of these issues at today's meeting already. And that was really the goal, was to make sure that we

weren't missing anything and that we -- if anyone wanted to jump in and be involved, let us know.

We will be having another joint subcommittee meeting later this summer to tackle moving forward with the plan as well as having a presentation by my intern, who is working on number 5, summary of prior Long Island groundwater and aquifer management plan.

So Sarah had indicated in her presentation, there are all these prior studies that have been done, one of which being the (inaudible). He's already gone through and done Cliff's notes version of the 2015 comp plan. An 1,100-page study, he has a 34-page Cliff's notes version. A 2008 study, he has a 28-page version of that. 1986 DEC groundwater plan, I think he got it down to also around 30 pages.

So basically going through and

highlighting -- mostly looking at the recommendations section by section, because that's what we really want to focus in on is to make sure that whatever we're proposing is not going to reinvent the wheel.

We can look at what good recommendations are out there that haven't been implemented yet that we might want to revisit and which ones we've made progress on. That's really it.

I know, Jared, we wanted to get into your discussion. I'm not sure that people are going to be able to stay and have as robust a discussion this time.

MR. HERSHKOWITZ: Just one statement. I think that it's more appropriate that the two subcommittees come up with a hierarchy and that maybe at the top of the hierarchy (inaudible) that we can recommend LICAP in September.

I don't believe that we need to wait until the end of the legislation a year and a half from now to start making some recommendations. But perhaps the joint subcommittees could bring that to LICAP generally in September, and maybe we can attack that at that time.

Mr. Jeff, does that make any sense to you?

MR. SZABO: Yes, absolutely. We'll consider it.

MS. MEYLAND: Would it be possible -- I'm sorry to do this to you -- to have a presentation from the USGS on their western national research proposal?

SPEAKER: Sure.

MS. GALLAGHER: So that feeds into -- I was going to have Jeff announce it, but we also have an offer to have John Masterson come down. If we can move our meeting from September 10 to September 17 in

the afternoon, John Masterson will be on the island, and he can talk about the climate modeling efforts that they've been working on with the Northern Atlantic Coastal Plain. They've actually done a special piece for Long Island.

MR. TERRACCIANO: So there is a regional model, a Northern Atlantic Costal Plain groundwater flow model. They have decided to take a closer look at Long Island, and John will report --

MS. GALLAGHER: At our request. LICAP sent a letter requesting that.

SPEAKER: So I have to say that the USGS works cooperatively with many of the agencies on Long Island, and the government puts up some funds, and the partner agencies put up the bulk of the funds.

The GS has a budget currently of around three or four million dollars from the government. We've been

managed to leverage federal projects and funding maybe covering 35 percent of that at the present time.

So the USGS probably wouldn't take the $10 million maybe to do additional work to help understand the resources, but we could. So the concentration in modeling that looks at Long Island will address sea level rise, but at a very coarse scale. The modeling is done, I think, at one mile size blocks, but it does look at the aquifers in greater detail with depth.

So we're looking forward to leveraging the federally funded projects to address some of the nitrogen issues and some of the proposed pumping issues, and also groundwater flooding, which is, I think, of greater concern to us and most of the North Atlantic Coastal Plain.

MS. GALLAGHER: (Inaudible) to

the other presentation, which we may not have both of them on the same day. But we could do -- in September we can have John Masterson, and then we could also have a presentation at some point on the Western Nassau.

MR. TERRACCIANO: Sure.

MR. SZABO: Very busy September.

So we will send out a meeting reminder -- date change for September 17 now. There will be a subcommittee meeting July 22 here in the Education Center at 2:30.

Any other comments or questions from any of the Commission members or anyone from the public? Okay. Nothing. No hands being raised.

I make a motion to close the meeting. Seconded by Jared.

Have a fantastic summer everyone. Thank you for attendance. See you in September.

(Time noted: 12:06 p.m.)

C E R T I F I C A T I O N

I, Terri Fudens, a stenotype reporter and Notary Public within and for the State of New York do hereby certify:

That the foregoing transcription is a true record of my stenographic notes.

I further certify that I am not related to any of the parties by blood or marriage and that I am in no way interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand.

_____

Terri Fudens