STATE OF NEW JERSEY

DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN RE:

Clean Water Council

Location: Department of Environmental Protection
401 East State Street
Trenton, New Jersey 08625

Date: Thursday, October 19, 2017

Commencing At: 1:10 p.m.

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HELD BEFORE:

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BRITTANY MUSOLINO
NATHANIEL SAJDAK

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PEGGY GALLOS

I N D E X

MR. COSGROVE: Welcome everyone to the 2017 Annual Clean Water Council hearing. I'm Jim Cosgrove. I'm chair of the Council. I suspect we're going to have some more people coming in as we get moving here today, but I didn't want to wait any longer to start, so what I'd like to do first is just quickly ask the other council members to introduce themselves so you have a sense of who we are on the council and who we represent.

MR. MCCRACKEN: Tony McCracken. I've been on the council a long time, Assistant Planning Director for Somerset County.

MS. SANCHEZ: Jessica Sanchez. I represent the Delaware River Basin Commission.

MS. CONNOLLY: Maria Connolly, and I'm a planner. I'm representing the Department of Community Affairs.

MR. VAN ABS: Dan Van Abs with Rutgers University, public member of the council.

MR. BAKUN: George Bakun with Phillips Sixth Company, representing New Jersey Business Administration Association.

MS. KERR: Ashley Kerr. I represent New Jersey Farm Bureau.

MR. FURNARI: Russ Furnari, PATG, representing State Chamber.

MS. HOWLAND: Sandy Howland representing the New Jersey Department of Agriculture.

MS. COFFEY: Jennifer Coffey with ANJEC, but also advisory member from the Water Supply Advisory Panel.

MR. CACH: Stan Cach, New Jersey Department of Environmental Protection.

MR. COSGROVE: Thank you. So this is the way we have the day, or the afternoon, set up here. Dave Glass is here to give the keynote speech which will be in just a couple of minutes. Then we follow that with a talk on examples of some non-point source stormwater treatment projects that have worked well in New Jersey followed by a talk on money. How do we find money to do some of the projects that we're talking about today, and then after that, we will move on to the public testimony.

So if you are interested in testifying, you should have indicated so when you checked in. If you haven't done that, please make sure you do that some time between now and

about 2:30 and we'll go, based on the crowd, I don't think we'll be here until four o'clock, but we'll probably start taking testimony around 2:30. There's the list of the Clean Water Council members in case you didn't hear everybody, and I suspect some of these people will be coming in.

I wanted to just tee this off here. Just this week, the New Jersey DEP issued the, quote, 303(d) list, the 2014 New Jersey Water Quality Assessment report, and it actually was a great introduction to what we're talking about here. First of all, one of the things I found interesting is, of the assessed waters in New Jersey, unfortunately, most of them are showing up as being impaired and that may seem a little worse than it actually is because it only takes one parameter to cause a stream or a stream segment to be listed as being impaired, but what are the causes of these use impairments?

What you see in the graph there is this, again, is out of the 303(d) list report, pathogens and phosphorus are two big issues that are impairing waters. Where are pathogens and phosphorus coming from? Well, certainly

pathogens are mostly coming from non-point sources. Phosphorus is coming from both point and non-point sources, but certainly a great contribution from non-point sources. What are the solutions?

Well, historically, we've used TMDLs to figure out how much we have to ratchet down point and non-point sources. We also now DEP is using what they call sub list 5R in the assessment report which is watersheds better suitable for restorations to solve non-point sources, so you save that for non-point source impaired watersheds only, but the real issue here comes down, in my opinion, to these two bars.

This is an example. This is the Raritan Nutrient TMDL Study, and DEP figured out that we had to get the load in the Raritan from about 12,000 pounds of phosphorus a day down to less than 4,000 pounds a day. The different color bars are the different sources of the nutrient source. The purple color is point sources. Well, how do we deal with point sources?

The way we deal with point sources is we ratchet down effluent limits at the waste

water treatment plants. So for example, that purple section on the left there is the existing condition. DEP determined that purple bar, that comes almost up to 4,000 kilograms per day, had to get down to the little tiny bar on the right. Well, they figured out what that needed to be at each waste water treatment plant and there was a mechanism.

We could put in a permit with these new effluent limits had to be, in this case, for phosphorus, but the red bar, which is stormwater run off from urban areas and the yellow bar which is stormwater run off from agricultural areas, we have prescribed reductions within the TMDL for those sources, but we haven't really made much progress in terms of how to reduce that non-point source load.

That is the focus of today's discussion. How do we get at the red and the yellow on that graph. What do we do to figure out how to ratchet those loads down such that you meet the loads on the right and that's quite a challenge. So with that, I'll turn this over to David Glass, NJ DEP Deputy Commissioner and leave you with him.

MR. GLASS: All right. Thank you, Jim. Good afternoon. Happy to be here on behalf of Commissioner Martin. He sends his regrets that he could not make it today. I thank you all for being here today, especially the members of council. The New Jersey Clean Water Council has been an important source of information regarding water quality and policy to the Commissioner and to DEP's team.

If the Commissioner were here, he would say there are many councils, advisory boards, commissions that report to DEP, but there are few that he really focuses his time on. The Clean Water Council is one of those. Thank you all to the council members for your work. And on behalf of the Commissioner, I appreciate your willingness to serve.

Sometimes it's a thankless task of all the amount of time and effort that you put into this, but it really does help us here at DEP and our entire team. Over the past eight years, DEP has had many significant accomplishments in the water sector. Many of which you have played a role in. Since 2010, more than 34 million has been spent on implementing on 62 non-point source

grants to mitigate impacts to water quality. Our beaches have been opened 99.99 percent of the time. We're still trying for that other 10th of a percent.

We've been working to address the presence of emergent contaminants such as PFOS and PFOA. We've made new recommendations for a maximum contaminant level for 123 TCP and PFNA. We consistently monitor over 1300 public water systems for lead, copper and other contaminants serving about 8 million people. Over the past 40 years, we have focused on point source solution and have done a great job of addressing that problem.

Now our focus needs to be on non-point source stormwater pollution which brings me here today. I would like to review four major strategies by which New Jersey continues to address non-point source pollution. MS4 permits, combined sewer overflows, ocean water quality projects and Barnegat Bay. As you all know, DEP has been working on MS4 permits.

These permits help to reduce flooding, to improve operations and maintenance of stormwater facilities and improve water

quality through proper stormwater management, support of operations of maintenance of stormwater facilities through inventory and mapping. Provide municipalities with a better understanding of their stormwater systems, improve education and training opportunities at the local level, increase public outreach and transparency of stormwater provisions and eliminate additional permits needed for specific municipal operations.

DEP is very sensitive to the issue of unfunded mandates. That's why we are providing assistance to towns and cities related to inventory, mapping, training and guidance. Within that, we have developed a tool kit which includes on-line training resources and free wide design review courses for municipal engineers, recently developed maintenance guidance available on our website and free inventory and mapping application is being developed as well.

We are just about to issue the final MS4 Tier A and Tier B municipal stormwater NJPDES, general permits. These will help us develop water quality enhancements across the state. I'm also proud to say that this

administration is addressing the storm problems of combined sewer overflows.

In fact, this is the first administration to do so. March 12, 2015, DEP issued 25 final permits to address 210 CSOs still existing in the state. Goals of the new permit include improved water quality by reducing and ultimately eliminating all 210 CSO outfalls, reducing flooding, providing opportunities for green infrastructure and enhance asset management and operations and maintenance.

New Jersey is proactively addressing CSOs through permits, unlike other states that are doing so, as a requirement of federal enforcement action. Since 2010, more than 230 million in low cost loans have been provided by the New Jersey Environmental Infrastructure Finance Program for stormwater and CSO improvements throughout the state.

80 million of this was principal forgiveness, which many of you know is grant like money and we are on track to eliminate all of New Jersey's CSOs. It's going to take time to complete this effort, but we are on a path that will get us there. Over the past eight years, we

have also worked hard to address ocean water quality issues. We have not only continued to work the work started by past administrations, but have taken it to another level. We have worked with communities to tackle areas, specific problems with focused projects, to help us get the job done.

I want to give you a few examples. In Spring Lake, Wreck Pond has been a priority for this administration since day one. We made a commitment to address it. As far back as 2001, as little as a 10th of an inch of rain fall would cause beach closures. Superstorm Sandy provided us with an additional set of challenges and showed us the vulnerabilities of our coastal lakes.

To address Wreck Pond issues, we worked with Monmouth County in the towns of Spring Lake and Sea Girt to determine the major cause of contamination. We found that sewer and stormwater systems are interconnected causing raw sewage to flow into Wreck Pond whenever it rains. Once this issue was discovered, the towns could fix it. We then worked with partners to address Wreck Pond's other vulnerabilities, which

included some post Sandy fixes which included a second outfall pipe, sluice gate and a living shore line to help reduce localized flooding.

I had the pleasure of announcing this event this past winter, and it was a good reminder that you're Deputy Commissioner when you're on the beach in the winter at Wreck Pond announcing this event. It was very warm that day, but a worthwhile project and glad they were able to make that announcement. Shark River is a similar story. It's another example of how DEP is focused on stormwater related issues.

Several studies were conducted in 2015 and areas with elevated levels of bacteria were found during storm conditions. This resulted in a ban on shellfish harvesting in the area. The presence of bacteria suggested a possible unpermited waste water discharge. Municipal counties and state representatives worked together to find a source of contamination.

They identified areas of the sewer line that were leaking, allowing contaminated water to make its way through ground water and eventually into the Shark River. Neptune City

Township and Belmar responded quickly, preparing and replacing portions of the sewer line to eliminate discharge improvement water quality in the river. Another example occurred this summer when we had unusual exceedances at two Atlantic Highlands beaches. Island Public Works partnered with DEP staff to identify a sanitary sewer line break that was negatively affecting water quality at Mary's Creek which was causing the high levels of bacteria at both beaches.

Once identified, Highlands quickly repaired the sanitary sewer line. Subsequent monitoring indicated that bacteria levels were back within accessible ranges and the beaches were reopened. When working with partners like this and by taking a find and fix approach, we can quickly address non-point source pollution that otherwise can affect water quality for years.

Sometimes these fixes are easy and sometimes the problems are more difficult to find and take a larger investment to repair. We've been successful in addressing both. However, the commitment and partners needed to engage to make it happen. By investing and recovering

resilience projects such as these, we're safeguarding and protecting our coastal communities, working to improve the infrastructure and ultimately preserving our 42 billion dollar tourism industry from future storms.

I'd like to turn to talk about Barnegat Bay. As you know, the Governor, the long term restoration of this Barnegat Bay has been the Governor's top priority during this administration. Barnegat Bay is a vital importance to the state's culture, history, economy and environment, but the bay is a vulnerable resource that needs to be protected, enhanced and restored so it can be enjoyed by all generations to come.

For this reason, in 2010, Governor Christie directed DEP to move forward with the ten point plan to clean up and restore the bay. The plan has resulted in successful actions that have helped the bay, including funding of 24 million dollars and 31 stormwater infrastructure projects and upgrades within the bay's watershed.

New Jersey's first comprehensive water monitoring network for both fresh and

marine water quality was established for the 5,000 water samples taken and analyzed. Governor Christie signed legislation that established the most restrictive standards, the nation for nitrogen content and fertilizer and application rates for use. Reserved more than 11,000 acres of open space and the watershed through Green Acres, the Ocean County Natural Land Trust and its partners, all since 2011 and DEP has led eight successful Barnegat Bay blitzes, which is a volunteer event, which has resulted in thousands of pounds of litter being picked up by 32,000 volunteers.

In addition, as part of these plans, we funded 10 research projects focused on filling the data gap and addressing the health of the bay. These were completed by prominent professors at top universities, including the Academy of Natural of Sciences at Drexel, Rutgers, Montclair State, George Mason, Monmouth and Rider. The results create one of the most comprehensive research studies ever done in a single estuary.

The research and monitoring clearly indicate that areas of the northern part of the

bay are impacted by nutrients due to stormwater run off. To address this, new TMDLs will be targeted in these areas. The central and southern parts of the Barnegat Bay are being targeted for protection strategies to ensure that the healthy areas stay healthy and enhancement strategies for the areas that need extra attention so that they do not become impaired.

Now, they are taken what we have learned and moving the science into action with phase two of this project known as the Barnegat Bay Restoration, Enhancement and Protection Strategy, we are providing 20 million in grants to municipalities and non profits to support this plan. Our studies have provided us with specific data, sound science in which we can base policy decisions moving forward.

Some people say we should have made these decisions eight years ago, but we had no data to back up these decisions. We didn't know where to focus our efforts, what the problems were and how to address the issues. Our studies provide us with enough information to move forward. We can now target TMDLs for specific areas and we have a baseline on which to measure

our improvements.

Our goal remains the same since 2010 since the 2010 announcement of comprehensive plan to follow the science in order to restore, protect and enhance the health of the bay. We will continue to work with our partners to educate, communicate and advocate for a healthy watershed. In fact, we've already been working with Toms River on the municipal stormwater compliance assistance and already had success with them.

This is designed to help communities by identifying all areas of the operations that can benefit from improved technologies and procedures. This also includes financing and other resources that help them better manage their stormwater inland instead of sending pollutants to the river and ultimately the bay. This pilot has been significant in success and we hope to continue the successes in the future.

Once again, on behalf of Commissioner Martin, I want to thank the members of the council for your service to the state. The state doesn't just want partners like the Clean Water Council to address these challenges.

We need them. We need your expertise, your energy, your perspective. There are a lot of groups out there who do a lot of talking and criticizing, but there are only a certain number of people who roll up their sleeves and do the work as this council does. I want to thank you for your leadership over the years. The Commissioner and I look forward to hearing your recommendations. Thank you.

(APPLAUSE)

MR. COSGROVE: We have a few minutes, if anyone has any questions for the Deputy Commissioner. So we're going to move on to our first speaker. Our first speaker is Brittany Musolino from the Stony Brook-Millstone Watershed Association, and she's going to talk about -- the title of her talk is Voluntary Action is Gaining Traction for Meaningful Stormwater Pollution Improvements. So with that, I'll turn it over to Brittany and if we could switch to her Power Point.

MS. MUSOLINO: Hi, everyone. The last time I was in this room presenting I was a watershed ambassador presenting on the work I did during my year of service, so it's really great

to be back talking about what I've done with Stony Brook-Millstone Watershed Association with the past two years now. And non-point source pollution is really the biggest thing we focus on as a nonprofit nonregulatory group, and it's a passion of mine which can be kind of a weird thing to say sometimes.

I think this room gets it a bit, but you know, preventing non-point source pollution is a majority of what we do as an organization, as a watershed group, and I just want to thank Jim Cosgrove for inviting me to speak today and I want to talk a little bit about our organization, get started. I know a lot of you are familiar with us. We're a member supported nonprofit that started in 1949, and we focus on Central Jersey and keeping its water clean, safe and healthy.

We do that through conservation advocacy, science and education, so a lot of what I'm going to be talking about today are projects that we've done through our science and stewardship department, and specifically through the River Friendly Certification Programs. So as an organization and tackling non-point sources, there are a few things that we really focus on

and a few programs that we do this through.

Our River Friendly programs offer certification to a variety of sites including residents, businesses, golf courses and schools. And I'll talk a bit more about what that entails in the next slide. Green infrastructure is a big focus of ours in the last year and-a-half or so, which I'll talk about a bit more with a grant from the DEP. And focusing on bioretention specifically and designing for better infiltration of water.

Education and outreach is a large part of what we do. Our education department is probably our biggest department of the organization. It educates over 10,000 adults and students a year, and that is the biggest, I think, foundation of a lot of this work is just educating people. It should always be a factor when you're thinking about a project or just working with groups in general to have that education component.

And water quality monitoring, which we've been doing since 1992 through the volunteer monitoring program, over 100 volunteers, monitoring about 45 sites in our watershed area,

and this is a really important piece to a lot of the green infrastructure projects and River Friendly specific projects. Having that monitoring before and after is something that you don't see a lot and it is usually a missing piece of grant money that we get, so that's something that we want to focus on a lot more in the future.

So our River Friendly programs began in about 2002. We got a large grant from the EPA to focus on non-point source pollution prevention through these programs and they have moved a lot through the years especially the last few years. We've really updated our standards and the way we work with sites and what we ask of them to submit to us. We have the four programs I mentioned and there's also a farms program, which I think is going to be really important, that we want to get involved with a bit more in the upcoming years.

It is now run by the North Jersey RC and D with support from the New Jersey Water Supply Authority as well, so they're the ones to go to ask about those, but similar focuses, goals to improve water quality, environmental health, really focus on stormwater management, wildlife

habitat enhancement, providing that kind of natural landscape for wildlife to have habitat, but for also water to really go somewhere and not just run off into our streams. This is all voluntary, as I said, so that's a good and a bad part about this, I think.

Having that voluntary component makes people more interested in what you're doing, more interested in the project and willing to work with you. The down side of that is getting them to do it, so that's where, you know, working and partnering with other groups really helps. Our River Friendly programs have recently developed a really strong partnership in the Raritan Basin with the New Jersey Water Supply History and American Headwater Association.

We all kind of work together to work with these different sites around the Raritan Basin, and it has been a success in getting the word out a bit more and doing more outreach through social media and other ways to reach different populations. The process by which we certify sites changes depending on the site, so with our business and courses we require a lot of documentation they submit to us on IP10 plans,

soil and landscape management, narrative, soil testing, pretty much everything they do on their site and a big focus on the stormwater management as well, all of their best management practices, and then we try to suggest some improvements they can make.

Small improvements that will build up over the years, and usually these are certifications can take two to three years, so there's a relationship you develop with the site and you can really, you know, focus on meaningful projects. Our school resident program is kind of at a lower level. Schools really focus on the education of the students and the campus.

Projects on campus and our resident program really just targets homeowner activity on the landscape, so it's really just a self survey, but it's a nice education for, you know, residents on kind of that smaller scale, but residential is also very still important. I think a lot of sources of non-point source pollution come from our residential area, so that's something that we really focus our attention on.

So some monitoring approaches we use

through the River Friendly program and other projects we do include integrated pest management, so making sure that they are using certain techniques like (inaudible) really knowing the insect or the pest that is affecting their site and using small dosages of pesticides or whatever they might be using, and timing.

As I said, soil and landscape care, using maps of where there might be issues on the sites, hot spots, pests, and just a lot of levels of their maintenance and what their routine is and documenting all of that. A lot of times we'll come to a site and they never really thought about writing it down, and the next person comes in and doesn't know what was happening on the site, so it's really that knowledge of businesses, campus or a golf course to continue those good practices.

And water conservation is another portion of this. This is just a few of the standards involved with the River Friendly certification. You know, water monitoring and irrigation tracking, making sure that there's no leaks, kind of basic maintenance that needs to be kept up on. We also perform a site visit to look

at buffer zones, stream health, pond health, just visual. Sometimes we'll go in there and do chemistry and biological as well to see if there's any further issues, so it's nice River Friendly kind of offers a way to get to kind of a higher level of working with the site, so we can do that monitoring.

We can implement maybe bigger projects if they have funding to do so. I'm gonna actually talk about a specific example that we are working on right now. Meadow Lakes is a senior living community in East Windsor, and they applied to River Friendly Business Program about a year ago. And they have a very large pond which they have named Shanks Pond. I'm not sure why, but it is part of the Rocky Brook Tributary, so it then feeds into Penny Lake.

I'll show on the next slide. They had some issues with Algal blooms really affecting their pond. They even have a smaller pond that you see on the slide and an even smaller pond, really so bad that you couldn't see anything, a blanket. I was told that they even lost a few swans which they keep on site to scare off geese which works really well actually. I

think it's a cool tactic, and they really do treat the pond with a variety of different products including something called Sludge Away, copper sulfate.

So we're really trying to work on decreasing what they have to put into the pond and really tracking what is happening on the site which we've done through actually mapping all of the inlets around the site, and there's a lot, and all the outfalls that are going into the pond as we have been monitoring before our project. So we were lucky enough that this community had a resident that wanted to donate a nice chunk of money to us to install floating wetlands, which was a new project for us as an organization and we are really excited about, so this is showing the site kind of from a higher view.

It is surrounded by the Peddie School and the Peddie Golf Course and the Turnpike, so there's a lot going on, and a lot of different water quality issues. Our monitoring in wet and dry weather in the spring and the fall showed impaired for phosphorus and hydrogen, not a big surprise, and higher where there are constrictions and a lot of kind of leak matter

and where the water wasn't flowing as well. So we developed maps and the research on pulling wetlands and are actually installing them tomorrow, so it was like a little too early to show you what they look like in the water, but I'm sure some of you know about the floating wetlands.

This was us building them. You could do a DIY or you can purchase something called The BioHaven which is kind of the main product you get for the floating wetlands. They're made out of a fibrous material, kind of felt like a Brillo Pad, kind of scratched us up a bit, but it will allow for plants to grow through and really get down into the water and attack microbes and all these beneficial things that will soak up the nutrients from the water naturally.

So they have the potential to move thousands of pounds of algae per year by soaking up those nutrients, nitrogen and phosphorus which is what we're aiming for. Our goal for this is to have the site just really stop treating the water by installing about 700 square feet of floating wetland, and we're going to do that kind

of piece meal over time and using plants that are really great at soaking up nutrients.

So water loving plants that have strong roots and that are native, and that material, if you're wondering, it's called PolyFlow, so it's pretty simple to make and I know Rutgers does a lot of this work and have made videos about it. So this is something we're looking at to do more around the watershed. It is treating the symptoms and not the problem, but I think it's a nice way to bring attention to the issues in our watershed.

It's a really nice educational piece, and I think it helps when you can't install green infrastructure on the site or when it's already an impaired water body, it's a really useful tool. There are a lot of different studies, but not too many hard numbers on, you know, what the removal rate is, but we are doing monitoring before and after to see that, but I have seen ranges of 40 to 90 percent removal of nitrogen and phosphorus.

Some other real world approaches that we're doing include expanding no mow no spray areas on our River Friendly sites. That's

one of the main things we encourage, especially on corporate campuses. For example, Johnson and Johnson I was just at today, they are doing really great with expanding kind of their no mow zones on an almost 300 acre property, so that's one tactic.

Green infrastructure of course, looking at redirection, disconnection of down spouts, capture and reuse of water, bioretention, kind of all the basic green infrastructure tactics, and then just general landscape best management practices. So maintenance, stormwater structure, landscape care, really knowing your soils, aerating, making sure infiltration is happening and pest management. So one example of a school we worked with is Princeton Day School.

They're actually certified last year and they were interested in doing a rain garden on their property. It's a pretty big site, 80 acres, and they had a really big erosion problem happening near their outdoor garden and playground, so you can see in this picture. This was before the rain and then that's after the rain. The storm drain is there. You just can't see it.

It was completely covered with sediment, so definitely a big sediment issue. And we're hoping by installing a rain garden, kind of in a weird shape along in front of the storm drain, that we would help to remove solids and anything else that might be running into that storm drain. So this is a great way to get the kids involved and learn about stormwater issues and just about rain gardens in general.

This was pretty much planned and designed by the school, so they're monitoring and having to add plants as the years go on. This was just installed last year, so they're going to have to -- you have to maintain it over the years. But bioretention can really be effective with TSS removal. These numbers are from the New Jersey BMP Manual, and this is what we use to show the effectiveness, or at least the theoretical effectiveness, of green infrastructure.

And these numbers, I got from calculating the drainage area in the area of the rain garden, so there is a lot of, you know, calculations out there that can show the impact of a project, especially something like this

where it can be difficult to monitor. That's after planted and last fall they had no more sediment issues, so it's a small scale thing, but when it adds up, it can make a big difference.

Two of the large sites we work with is through the River Friendly program, Jansen Pharmaceuticals and Jasna Polana, which is a golf course in Princeton have increased their no mow zones 5,000 of square feet and replaced just mowed grass that they were probably fertilizing and may have been compacted with wildflower, New Jersey native wildflower plantings. A vegetative filter can remove up to 70 percent TSS and 30 percent nitrogen and phosphorus, DPP.

So even simple projects like this, getting rid of lawns and mowed grass, even in stormwater basins, can make a big difference. So this was actually a policy department project. Mike Pisauro, which is here, worked on this stormwater ordinance in Princeton, and this was voluntary by Princeton themselves, so, you know, they really wanted to control their stormwater better.

That picture is shown from, I think Irene, and it's completely flooded the train

station and they have flooding issues pretty often, so they pretty much reduced the trigger of soil disturbance and impervious cover and that would trigger the state regulations of 80 percent TSS removal and not increasing run off from the previous levels. And then maintaining 100 percent average annual preconstruction recharge.

I had to look that up. And then they introduced a minor development regulation, so if you have an addition of over 400 square feet, you have to capture two gallons per square feet using green infrastructure, so that's not something we see a lot and we are working with them ongoing to implement more green infrastructure and work on the stormwater management, and this is just an example of what you can do at the municipal level.

Our 319 grant which is from DEP. This is an example of how DEP support really helps our work with both focusing on non-point sources. We are doing an impervious cover reduction project which you may have seen Rutgers Water Resources have done in a lot of towns throughout the state, I think over 50 now, and it

includes selecting sites in 16 municipalities in our watershed just through mapping and then actually going to the sites on the ground doing visits and assessments and creating designs through RCIS to capture.

Our goal is to capture 100 percent of the run off volume, but to really do what we can with the site and then we present that to the township, so it ends up being a report of, you know, impervious cover assessment, land use assessment and all these kinds of ready to go projects. And if they're interested in doing that, we'll look for implementation money and try to get more green infrastructure in our watershed.

We also recently got a second grant, or approved for a second grant, to focus on the (inaudible) Brook watershed which I believe is on the 303(d) list and we will being doing green infrastructure in Hopewell Borough for that. In conclusion, there is kind of a holistic approach to non-point source. Just focusing on green infrastructure isn't going to solve everything.

Really focusing on how we're using our landscape and working with sites one on one

developing that relationship to, you know, reduce what is running off. Stronger policies at the municipal level, for example, stormwater management, which I talked about a bit, and the review process of new development or redevelopment. Riparian buffer zones, which is a big one, tree cover, just some examples, and education of course, should be with everything.

And with that, I want to thank you. Thank you for having me to speak and I look forward to answering any questions you may have.

(APPLAUSE)

MR. COSGROVE: Thank you, Brittany. Before we move to our next speaker, does anyone have any questions for Brittany? Quiet crowd today. Our next speaker is Nathaniel Sajdak. Nathaniel is the Watershed Director of the Sussex County MUA, Wallkill River Watershed Management Group and he's going to show us the money.

That's a big issue here because it takes a lot of it to make these happen. He's got some great examples of how he was able to pool resources from different funding resources to be able to do some of these non-point source projects.

MR. SAJDAK: So my name is Nathaniel Sajdak. I'm the Watershed Director for the Sussex County Municipal Utilities Authority and Wallkill River Watershed Management Group. Brittany doesn't even know it, but she threw me a great fast ball, which don't tell my son I'm about to make a Yankee reference as a die hard Mets fan, but I'll put my best Aaron Judge swing on and reference the fact that Brittany talked about being a former watershed ambassador to the AmeriCorps Program, so taking that fast ball and hitting it out of the park, I'd like to applaud the Department of Environmental Protection.

I myself was also a watershed ambassador. I was in first class of ambassadors in 2000, 2001, so when we're talking about non-point source pollution and how do we go about dealing with this problem in the state of New Jersey. For 18 years, the Department of Environmental Protection has sponsored the New Jersey Watershed Ambassadors Program through the AmeriCorps Program.

And when you think about that, that's 18 years of ambassadors out there working with our public, with our community, to engage

these problems of non-point source pollution, so I want to thank the Department Environmental of Protection for continuing to sponsor this program. It is a great tool to help us with the problems that we're speaking about today. I would also like to thank Mr. Cosgrove and the Clean Water Council for inviting me to be here today.

I'm excited to spend a few minutes with you, I guess showing you the money. I don't have the money in my pocket to show you, but I'm going to speak to you about how we have been able to find unique opportunities to combine resources to work as partners to put a lot of these projects on the ground. And what you'll hear, and what I'm about to speak about, is there's a lot of similarities to make you think that Brittany spoke about, as well as what I'm going to speak about, happening in different areas of the state, completely different areas of the state.

But because they're happening simultaneously, we're making huge strides in New Jersey. Real quickly, my organization, the roots of our work, of our growth, started in those

early years of 2000s, when we were awarded money for the Sussex County MUA. It was awarded in one of those initial planning grants from the Department of Environmental Protection to jump start watershed management out in the local watersheds.

The basis at the time was to go out there and develop these watershed restoration plans, tell the story of the watershed, find out what's going on, engage the community, find project opportunities, go out there, get the public involved in the work in trying to restore and protect our waterways. For years we've been working on targeted watershed areas in Sussex County, New Jersey up there in the northwest corner.

Yes, I made references to Wallkill River Watershed Management Group, but we worked in both the Wallkill and the upper Delaware watershed, specifically here in Sussex County, the Paulins Kill Watershed, so I often like to think of ourselves as to becoming that watershed liaison for all of Sussex County. And similar to what Brittany spoke about, the basis or the foundation for our success and our growth have

been those education and outreach programs.

The community stewardship programs, getting people outside the meeting room into the field to be a part of a project or initiative. And then the staple of our efforts have been formed around three very important programs. Agricultural outreach and assistance program, a riparian ecosystem enhancement program and stormwater and outreach and assistance program.

And I'm going to speak to all three of those programs when I speak to you a bit more in a few minutes about the leveraging of resources and funding to put projects on the ground. Ultimately though, what I feel is the most successful component, the most important component of doing the work that we're doing, whether it's the watersheds that I work in or the watersheds that all of you work in, is being the local groups on the ground.

Being that entity that's there day in and day out, getting our hands and feet wet, studying the watershed, understanding what's going on out there. Studying the land uses, learning where the Ag resources are, where the agricultural land uses are, where the municipal

and developed land uses are or our recreational lands uses. We need to develop that understanding of the watershed if we're going to be able to successfully work with it, getting to know what's important to our stakeholders.

What are the recreational concerns, what are their interests, what is going to bring them to the table to want to work with us. And then ultimately, at that local entity, you are the person, you are the group, you are the organization that's building the relationships, that's forming the one on one friendships, not just partnerships, but friendships with the farmers and the land owners.

That's getting the students out there. That's working with the local businesses like a local nursery to supply materials for a project. Those relationships are critical when we're looking at trying to maximize the funding that we have available to us. I've been asked to speak specifically today about our work in the agricultural community and the municipal community, and I'll start with our work in the agricultural community.

Over the last few years, we have

worked aggressively to build a cooperative cost share program bringing together resources from the New Jersey Department of Environmental Protection and the non-point source 319 program in combination with USDA and NRCS. We have found unique ways to pair these resources, pair the partnerships, pair the technical skills to work with the farmers in our watersheds.

Ultimately, what we've been able to successfully achieve, is a combination of our 319 funding resources that have been awarded to us by the Department of Environmental Protection with NRCS's EQIP funding to help that farmer put a project on the ground, that he or she may not have been able to do in the past, because they did not have enough funding to make up the difference.

Ultimately, the 319 funding that we've been able to secure from the department has allowed us to leverage with the USDA NRCS funding resources to get a farmer to that 90, 90 percent cost coverage for a project, leaving them with only five or 10 percent of the remaining to cover on their own, which is a lot easier to cover than say 30 or 40 percent of their remaining funds.

We have successfully utilized these funds in Sussex County to put Ag restoration projects and Ag BMP projects on the ground and advocating Stony Brook Watershed as well as Paulins Kill watershed. You need a nucleus project. You need a demonstration to be able to showcase what you can do. In addition to that too, you also need a land owner. You need a farmer who is willing to take that gamble with you, and we had one of those farmers.

Back in 2013 we had a farmer, in a Lawrence Township, a large dairy farm. He said he was willing to be our guinea pig. He let us sit at the kitchen table with him. When I say us, I mean us as the local watershed restoration group bringing DEP funding to the table, not NRCS. We needed to develop that trust, that friendship, not just a partnership, that friendship.

And this farmer, he took us on his farm. He opened his farm property to us. He allowed us on the site to really understand what was going on out there. He engaged us in his day by day activities to understand where his problems were, where his resource concerns were.

And in the process of doing so, we built that trust and we developed an understanding of what was impacting his farm.

Whether it be the manure stock piles or the barn yard run off or the unrestricted access that his livestock had to the surface ways. These are existing resource concerns on his farm. He wasn't happy about them. He wanted assistance with doing something to solve these problems, which ultimately we were talking about stormwater. These are stormwater run off concerns.

Up in Sussex County, when we're talking about some of our farm operations, the run off from these properties is a significant concern to our waterways. So here we had a farmer who was asking for assistance and finally had a farmer that was willing to allow us with our funding from DEP, to work side by side with NRCS, to do something about it.

So working with him, combining the resources, we were able to put Ag BMPs on this farm that included a concrete heavy use area, allowing this farmer to better manage that barn yard runoff, to better manage the manure

generators on this farm. The stormwater from his roof was redirected outside of the heavy use area, and then we also helped install a large manure collection tank that allows this farmer to collect up to six months worth of manure at a time so that he can better manage when he spreads it on his fields.

And providing him that ability to better manage that resource not only helps his operation, but it helps our job with respect to trying to improve our waterways. As a result of that nucleus project and that farmer that took a chance on us and was willing to work with us, word of mouth goes a long way.

And before we knew it, multiple farmers were finally willing to say, we will work with you as well, and as a result of that nucleus project, in the year since then, we have actively worked side by side with NRCS utilizing the funding from DEP, as well as many other partners, to get involved in other Ag BMP projects including, as you see here, soil erosion control measures such as grass waterways, covered heavy use areas, concrete heavy use areas, we dealt with liquid manure BMPs.

We've been actively involved in assisting with cover crop. We're also currently involved in a live stock waterway exclusion project on another large area farm in the Clover Brook watershed. We've assisted with funding for comprehensive nutrient management plans which opens up the door for the Ag BMP projects to get on the ground, and last but not least, just as important as that list of structural Ag BMPs on our agricultural lands, are those riparian buffers and Brittany started speaking to that as well in her presentation.

That specific project I just referenced is only one of many different success stories that we've been able to generate side by side with the specific landowners in the watersheds we're working in. One very dear to my heart and very important to me is what I call the Ideal Farm story. Ben and Jan Jorritsma of Ideal Farms in Lafayette, New Jersey right there in the heart of the Paulins Kill watershed, they too were one of those landowners that said you can come work on my farm.

You can come work on my property, what would you like to do. They put their land

in our hands to find something to help them with their properties, and as a result, that small little one mile stretch of Paulins Kill River that they opened up to us, they allowed us onto that property to begin a riparian restoration effort. That riparian effort, that's a flood plain improvement project designed to improve the ecosystem functions of that flood plain, to better manage stormwater, and we had a retired grazing pasture that was no longer being used for Ag activity.

And I remember when I asked Jan Jorritsma for permission for us to utilize the funding resources we had to plant her property, she said yes and she's been asked over and over, why did you allow that organization to go out there and do that work. And her answer in the beginning was always it just made sense. She had no use for the property anymore for Ag purposes so why not allow for restoration to take place on her farm.

Little did she know, the impact that she would have in allowing us to start that project on her property because here we are five years later, and what started on the Jorritsma

farm on this one mile stretch has now resulted in a four mile continuous riparian restoration corridor bringing together this entire list of partners and funding resources that you see.

Over 12,000 trees have been planted throughout this entire corridor covering four miles, as I said, linking agricultural properties, state protected properties, commercial properties, not to mention hundreds and hundreds of community volunteers who have gone out there and participated in this effort.

Little did Jan Jorritsma know that when she allowed us to go on that property, this would be the result, and what we have now brought to the table is a project that is making a real difference in the Paulins Kill watershed and connecting funding partners and resources, like you see over there, in a unique way that is now being duplicated throughout the entire state.

What I reference with regards to all these farm properties with the agricultural properties, combining of the resources, finding unique ways for us partners to work together can be duplicated and repeated on our other land use areas. That being said, how about our municipal

properties. How about our developed areas. Here's a perfect example. The town of Newton, looking at an aerial map of their municipal park.

We studied that municipal park at the local watershed entity just like we did the farm. We go to the municipal officials in that town and we try to develop that same partnership, and I'm going to use the word again friendship like we do on the farm. You cannot begin to implement these projects and find ways to combine the resources without having that friendship and that trust, and believe it or not, using the success stories on the farms help us when we get to the municipal parks, and you need to find that little hanging fruit, that nucleus.

In the town of Newton, there's a very simple low hanging fruit that we were able to capitalize on. That little X marks the spot there was an area where there was a very large stream debris clog right behind one of their municipal buildings, so little did the town know of the significance of that little stream debris problem because ultimately during storm events, the storm unloading coming from the urban areas of town was impacting the stream and ultimately

flooding this park area, their township park.

The biggest concern was the ball field which was being inundated by the flood waters during large events. Here was a perfect opportunity to form that friendship with the township DPW, and when you're going to try and implement projects in municipal land or on municipal land, there is no bigger ally than the township DPW. I think many of you in the room can agree with that statement, so here we help them develop a process.

We helped them get the permit by rule approval, from the Department of Environmental Protection, to perform that stream clean up. So we performed that stream clean up. The guys from DPW, they loved the opportunity to do something in their stream. It was different from the day by day operations that they're used to. As a result, we had that little hanging fruit victory which gave us the ability to form the friendship with the DPW, which has now resulted in all kinds of additional work projects in their municipal park.

That friendship, that's a form of resource commitment because getting our township

DPW, our municipal DPW, to help us put these projects on the ground, that is a form of funding in itself, so the ability to leverage the resources, start by having a funding source that allows our organization to go out there to form that friendship. Once we form that friendship, we work with the municipality, we bring in other partners and we put a project on the ground. Just next door in neighboring Hampton Township, another great little hanging fruit for us, the local municipal school, and similar to what Brittany spoke to.

You're looking for projects of opportunity in our watersheds because when we find the project of opportunity, you have an ability to bring the partners together. People are attracted to projects like this. They want to use the funding resources, the technical resources and the skills they have to help. In this case, this school gave us 300 resources, 300 students.

300 students that were wanting to learn, that wanted to do something about their watershed. The river is right in their front yard, so here we go again. We saw an opportunity

to bring together partners. We saw an opportunity to bring the township BPW back into another project. We saw an opportunity to bring the local nursery into the project.

We were able to combine funding resources from the Department of Environmental Protection, the William Penn Foundation, the National Fish and Wildlife Foundation, Rutgers, New Jersey Future, and many others, to put a large rain garden on the ground on this school campus. Brittany, I'm not trying to turn this into a competition, but ultimately, what we ended up building here was a rain garden that was 3,800 square feet in size, capable of managing close to 500,000 gallons of stormwater a year.

That's 500,000 gallons of stormwater that's being infiltrated into this rain garden and not into the Paulins Kill across the street. Most importantly, with this project outside of the water quality improvement that we were getting, we were getting a community of three to 400 students, parents, administrators, faculty members who were invested in a project.

We brought together local community members who now understood why we were doing

this. When you think about all the different funding contributions that came in the form of hand labor, township BPW, any kind of services to help us build the site, local Cerbo's Nursery helping to donate lots of the plant materials. In addition to the community members that are now helping to take ownership of this and maintain this project, and all that's happening without having a direct amount of money in my pocket to show you because we built the friendships.

We built the relationship. When we look at that rain garden today, it's over a year old now. It has served as the nucleus, just like that farm project did for many other projects. And as a result now, there are other funding sources that have come to our table because of the success of this project. Additional funding from the Department of Environmental Protection, from the William Penn Foundation, National Fish and Wildlife Foundation, New Jersey Future, Rutgers, is now allowing us to explore other project opportunities on this campus, other project opportunities in the lakes surrounding this campus and then also in the town of Newton.

And I'll explain that in a second,

but ultimately we talk about the funding resources that are out there, and sometimes those best funding resources are in the form of that community partnership project because when you bring these partners together, all of a sudden the costs of a project disappears and instead are magnified in the effort of all these partners working together to make it happen. So I spoke about the town of Newton. I spoke about that McKeown School being our nucleus project.

Well, starting next week, that same process is going to be repeated right next door in the town of Newton in their Memory Park, not quite 3800 square feet, but 3200, I'll take it. The township BPW is going to help us once again with the excavation of the site. The local nursery is helping to donate some of the materials. Funding was provided for the design of the project from the William Penn Foundation and New Jersey Future working side by side with Rutgers University in their Water Resources Department.

And then once again, students from the local schools there in the town of Newton are coming to help us build this project, and those

are only some of the resources that are coming to help us put this project on the ground. When I think about the overall picture, I'm trying to tie it all together for you. For our organization, the 319 non-point source program here is sponsored by the Department of Environmental Protection has been that funding foundation over the years that has allowed us to build something.

It has empowered us to create projects, to make things happen. And that funding source, similar to what Brittany was speaking about, has allowed us to go out there and work with others to get those technical resources and guidance that we need and it has also allowed us to build partnerships with other partners that are sponsoring the growth of these projects.

That funding source from the Department also put us in the position to be able, as a small watershed organization, to really benefit when the William Penn Foundation launched the Delaware River Watershed Initiative in April of 2013. If you're not already familiar with the William Penn Foundation and the Delaware

River Initiative, which I'm sure many of you are.

As they quote, this program was designed to bring together a form of collaboration amongst conservation organizations that hadn't been seen before, and ultimately what it has allowed is for a partner, a bridging of partners that, in my opinion, is the strongest that there has ever been. When I think about the critical keys to success, and specifically, I was asked about how do we leverage all of our resources. Well, the first step is to identify those resource concerns.

We can't put a project on the ground. We can't find funding sources to help put that project on the ground unless we truly understand what those resource concerns are. Then we generate the management strategies. Then we foster those unique cooperative partnerships that allow us to share and leverage the resources and most importantly, then we engage in the power of the community.

We're all being asked here today, how can we handle non-point source pollution in New Jersey. All of us in the room are tied to this day in and day out in some way, shape or

form. We do that as professionals, we do that as conservation organizations. We do that as partners in this field. But we can't do it by ourselves. We need that community to be a part of it with us.

So the power of leveraging and funding. Leveraging resources. How is that helping us try restoration and stewardship work. Well, the reality is, it is helping us to improve the water quality and the watershed health of our watersheds here in New Jersey. It's helping us enhance ecological habitats. It's helping us create new recreational opportunities.

Remember one of my first slides said what's important to the community members that we work with. We need to recognize that sometimes there's no recreational opportunities, so we expect that is something that's important to them. We can use that. And in helping them understand why we need them to work with us, we raise that educational awareness, and then ultimately we promote active involvement by the community because by promoting that involvement, we generate a sense of stewardship.

When all is said and done, we engage

our community in a way that puts them in the watershed. It gets them out of the classroom, it gets them out of a meeting room, it gets them out of their home into the field. People, I feel these days, are looking for these opportunities, whether it's a student, an adult, any type of community member, they want to help in their watershed. They want to be a part of something special.

Through these efforts, through this leveraging, through this partnership, we're allowing these community members to become better aligned in partnership with the important governmental and foundational organizations that we speak about. Most importantly, the logos you see on here. The New Jersey Department of Environmental Protection, USDA NRCS, National Fish and Wildlife Foundation, U.S. Fish and Wildlife Foundation and the William Penn Foundation to name a few.

Remember I had that picture way back in the beginning of, I'll admit that is myself, standing in the stream there trying to define or figure out what's going in our watershed. When this picture was taken years ago, we were a small

watershed organization trying to figure out what do we do with our watersheds, how can we write a story, how can we find a project.

And through all of this partnership collaboration, through the funding resources that have been provided, through the grants from the Department of Environmental Protection that has allowed us to grow into -- or have an organizational structure, the partners that have now come together to join the three logos up top are enabling us to put projects on the ground; are enabling us to find the money to actually make something happen.

And it's those success stories, whether they're Ideal Farm's success story, or that manure management project, or the McKeown School Rain Garden or next week the Newton Rain Garden, or any of the projects that Brittany spoke to you about, when all these partners come together, we're finding a synergy. We're finding common ground, and I'm proud to say, since my years as a watershed ambassador, and now I'm been the watershed director for the MUA for 16 years, today, I feel very confident when I say this.

I think the communication and

collaboration between all of these various organizations, between all the different organizations represented here in the room, it's the highest it has ever been. I think it's the strongest it has ever been. And as a result, we are all working together to find unique ways to bring our resources together because we all have a common ground, we all have a common goal. We want to improve the water quality of our waterways here in New Jersey.

And I think when all is said and done, if we allow ourselves to harness the momentum that is now in place to work together, to find ways to bring resources together, we're going to put more and more projects on the ground and we're going to reduce, as Jim had in his slides earlier, the amount of red and yellow that was on that bar graph that he had.

And I'm confident we're going to do that, not just by being the people that we are in this room working on this day by day, but by getting the community members that we are targeting to work with us day by day. I'll leave you with this note. I referenced the students at McKeown School. I had those 300 students that

participated in the development of that rain garden, and you may think, well, they participated in that rain garden project.

It was an opportunity to get out of the classroom, get out there and build something. Well, it's about creating a movement. It's about creating something for the future and we had 30 of those students come out, and get ready for this, participate in a summer stormwater camp. Not exactly the way you expect kids to want to do, but these students came out and participated in a week long stormwater camp where they went out and measured their parking lot.

They went out and figured how much stormwater was coming off of the parking lot for the next project and it's that sense of environmental stewardship that we're trying to instill in our communities. And by doing that, that in itself is a funding resource that doesn't require us to actually find the money to empower those kids because now we've created that opportunity.

So I appreciate the opportunity to speak here this afternoon. Thank you very much, and if there are any questions before we move

into the public testimony, we'd be welcome to take those.

(APPLAUSE)

MR. COSGROVE: Peggy has a question.

MS. GALLOS: That was very inspiring. Can you talk a little bit about Sussex County MUA and what the value for their participation is? And that's an unusual participant.

MR. SAJDAK: That's one of my favorite questions, and it is one I am very proud to answer as I stand here 17 years later. Because the Sussex County MUA -- here is the basis for that. The MUA was identified to be the host agency on a watershed planning grant from the Department of Environmental Protection back in 2000. They were designated by the Sussex County Board of Chosen Freeholders to accept that grant from the Department to sponsor watershed management.

And I will admit, when I came on board as a watershed ambassador, I was fresh out of college. I joined into this effort and I learned very quickly, that that was a very controversial decision at the time and there were

a lot of people that weren't in agreement with it.

To make a long story short, the MUA has served to be our administrative agent, that umbrella that allows us to operate as a watershed management group. Now, myself and I have two other staff members. Christina Rogers is with me here today. I have another staff member who was with NRCS today ironically at a meeting and we also relied on the watershed ambassador program. There's four of us operating under that MUA umbrella.

So the MUA, in a way, they operate a solid waste and recycling facility and a waste water treatment plan. And over the course of 17 years, our watershed management group has, in a way, become the third entity or the third arm of what they do for Sussex County, so the way they benefit. In fact, I was honored yesterday to give a presentation in front of the Board of Commissioners, very similar to this one, speaking about some of our upcoming projects.

And they are benefitting from the fact that we are out there putting projects on the ground that are done with their partnership

support. They are serving as an entity that's providing us a lot of in kind office space, use of a vehicle. And that type of support is funding that we don't need to ask for in the grants that we submit, including the Department of Environmental Protection. The MUA is helping to provide that for us.

But ultimately, they are benefitting because they get to, as our side by side partner, be rewarded by the community engagement, to be a part of the projects we're putting on the ground. And to this day, I still speak very highly that they have allowed us to grow into what we have and given us the support to make things happen.

MS. MEISTRELL: So I am project director with New Jersey Audubon. And my question is, what, in terms of the riparian forest restoration, how much Ag land, either crop land or pasture land, was actually converted to create the riparian buffer project. And if that number is low, which I'm imagining some of it is pretty low, do you have a sense of whether or not there's going to be a lot of momentum and a push into expanding that buffer? And then another part of all of this is what is your long term

maintenance strategies for the riparian buffer. So three questions all wrapped up in one.

MR. SAJDAK: So looking at that corridor, that's what you're referring to, correct?

MS. MEISTRELL: Yes.

MR. SAJDAK: When you ask about how much Ag land was converted to forested buffer, in fact, one of the things we like to study is the amount of acreage that is being reforested. In that particular corridor, nothing in that corridor is specifically active or current agricultural lands.

They were all retired Ag pastures which, unfortunately, over the years has become inundated by invasive species, as I'm sure many of you are familiar with. Whether it be, you know, (inaudible), purple loosestrife or reed canary grass being one of our biggest culprits. That project on the Jorritsma farm, what's unique about it is, not only are we reforesting that corridor, but we're doing in it partners with the (inaudible), which is now put, through the Weather and Preserve Protection Program, a permanent easement on that property.

Approximately, 20 acres of that property have been a part of the reforestation efforts. That's a unique example because of the fact that we're not retiring active Ag lands to put the project on the ground. Instead, we're working with lands that were formally Ag lands. So I hope that answers your first question.

MS. MS. MEISTRELL: Yes, it does.

MR. SAJDAK: The long term maintenance program. Well, we have been preaching for so long now, and everyone is very much in agreement with this, the maintenance on this project is huge. There is no question about it. You cannot have a successful reforestation project without being out there day in and day out, finding ways to see what's going on, responding to the pressures, and then doing something about it regularly.

Those tree tubes that you see in the pictures of our flood plan restoration on the Jorritsma site, I am very proud to say, there are a few trees last week that hit the five year mark and the tree tubes that we use, I'm sure many of you are familiar with these tree tubes. They're made by Tubex. They have a seam in them that

splits once the tree gets big enough and we had our first tree tube split this year and we were so proud.

So we take the tree tubes off and they're recycled. From a maintenance perspective, we will not work on a property unless we know there is some sort of management strategy in place. Believe it or not, one of the things we don't do is working side by side with NRCS, we've convinced them of the importance of the maintenance and they are now allocating some funding resources to cover maintenance costs on projects like this where they will fund the contractor to go out there just like an EQIP contract to perform maintenance work, to go out there, reset the tubes after a big storm event, control additional invasives that are pressuring those trees that we planted.

So management strategies or maintenance is without a doubt something that needs to be incorporated before we actually -- there was a third question, too, wasn't there?

MS. MEISTRELL: Yes, there was. If you see that there is some momentum in trying to expand these buffers and ultimately to convert

some areas into riparian forested buffers or expand the buffer width itself.

MR. SAJDAK: So this project, because it's now set a precedent for many other areas, particularly in my neck of the woods, up there in Sussex County where we have active buffer projects now in the neighboring watersheds, like Cascades, like the Wallkill, like the Clove Brook, so the momentum is very much in place. The tree tubes have become the best press release, not only for the public, but other land owners who want to be a part of it.

We're working very closely with the nature conservancy who is also influencing buffer projects. You guys at New Jersey Audubon are putting all these buffer projects on the ground, but in addition, we also have sites similar to that where we are combining strategies. So your colleague, John Park, and I are working on similar properties where we won't reforest this section.

We'll manage it as a grasslands habitat to better improve a bird habitat, so that type of dialogue and synergy is what I'm speaking about, how we're combining our restoration and

conservation strategies, instead of competing with one another.

MS. MEISTRELL: Thank you.

MS. SANCHEZ: As a follow up to that question, I was wondering if there was, if you found any conflict with NRCS, if you found any conflict between NRCS and Stroud and some of the other agencies worked about how wide that buffer width should be. That's only one of my questions.

MR. SAJDAK: Projects of opportunity, we will work with what's provided to us. You know, speaking to that, you also have to work with the land owner. You can only accomplish what the land owner is going to allow you to do. But in all honestly, if the land owner is gonna give you 50 feet to work with, we'll take it. If in that case, we're going to have 300 feet or possibly even more, we're certainly going to take it.

I would also say from my small group, that the William Penn Foundation Initiative has allowed us to partner with somebody like Stroud and to be able to work with the technical skills and expertise that Stroud

brings to the table has been instrumental in our work, so I feel there is such dialogue in place right now to prevent that type of debate and allow it to work side by side.

MS. SANCHEZ: That's good too because I'm more familiar with work that's been done on the (inaudible) and there was quite a bit of controversy with the NRCS money and taking land out of tillage, what they would cover, what they wouldn't cover as far as widths of that buffer and that would be what the track record is they would cover so that's one of my questions.

I'm not familiar with the Wallkill. My question is, do you have anything other than domestic water supply up there and mostly wells? Do you have any larger purveyors and have they got, if you do, if you do, do you see expanding into getting them as partners?

MR. SAJDAK: No and no. The reality is most of Sussex is all on private well supply or community well supply. There's a few small public water supplies, but with respect to partnering with a water supply authority in Sussex County, we do not have the opportunity, no.

MS. SANCHEZ: Thank you.

MR. SAJDAK: Jim, thank you very much. I appreciate the questions.

(APPLAUSE)

MR. COSGROVE: Okay. Why don't we take a five minute break before we move to the public hearing portion of the day.

(Whereupon a break was taken.)

MR. COSGROVE: We're going to get started. Okay, folks. We're going to move to the public portion testimony of our afternoon. I'm asking everyone to please keep your testimony to five minutes. We would be more than happy to take longer testimony written from you and we would love to have, even if your testimony is under five minutes, we would love to have it written as well.

It will help us sort through all the comments at the end, so we have seven people so far that have signed up to testify. We're going to start with Laura Tessieri from North Jersey RC and D. If you would come up to the microphone and thank you.

MS. TESSIERI: Thank you. I'm Laura Tessieri. I'm the Associate Director of the

North Jersey RC and D, Resource Conservation and Development Council. We're a small nonprofit located in Asbury, New Jersey along a beautiful stretch of the Musconetcong River, not too far north of Route 78. And our mission speaks towards working towards the sustainable use and protection of natural and human resources through innovation, education and partnerships.

As Nathaniel spoke, partnerships are key. We couldn't really join together and achieve, what we're able to achieve, without our partnerships and so we work with NJ DEP 319 grants, with NRCS, with partner agreements and also through the grants that they're able to make to their producers, the Delaware River Watershed Initiative and New Jersey Department of Ag and others.

So the goal that we work with on this grant funding, we work towards water quality improvements through green infrastructure installations, with municipalities, with residents and others, things such as the rain gardens that were mentioned today. We also work with Ag producers. And our work with Ag producers, anything from repairing buffers to

heavy use protection facilities.

Stream crossings all for the good of water quality, and we also have a voluntary program, along with the Water Supply Authority, the River Friendly farm certification, so we really try to educate the producers through that initial voluntary program where we go out on their farms and take a look at their resource concern and possibly work with them further through DEP and NRCS grants. And then our aerial cover crop seeding program, over 2,000 acres of area covered crops were seeded this year in some targeted watershed areas.

So furthering through with that cover crop seeding, we want our soil to stay covered. I heard at a soil conference the past couple days, Ray Archuletta, quote, we don't have a run off program. We have an infiltration problem. So I think we really need to work towards soil health, to really work towards voluntarily, not necessarily calling out a producer, but instead working through them for stewardship also to, you know, save them time, money, fuel, costs and not have them be a target of a non-point source pollution, but to have them

be a success story and wanting to work with us and further that goal.

And so education is really key. Farmer to farmer education is really key. We see some of our best results from farmer Ag field days and really getting the farmers out there on the field and talking about results, not necessarily being talked to, but talking amongst themselves. So we would like to see that push and see a push towards soil health because, you know, cover crops, I saw a sign over the past couple days. Cover crops equals healthy soil and clean water, and all that push towards better infiltration means reduced run off, so the cover is on the land.

It keeps green, no run off, but then increased soil matter which happens as a result of this cover cropping. One percent increased in organic matter is a holding capacity additional 27,000 gallons of water per acre. So I think there's a lot of good through that program that we can see into the future. Thank you.

MR. COSGROVE: The next commentor is Jeff Tittle from the New Jersey Sierra Club.

MR. TITTEL: Thank you. Jeff

Tittel, Director of New Jersey Sierra Club and I want to thank the staff and the council members for being here and all the good work that's been done. Over the years, by the department, I've been involved in water protection issues, you know, probably since I was a kid.

In fact, yesterday was the 45th anniversary of the Clean Water Act going into effect and I was there in October protesting in front of the capital to help encourage the legislature at that time in Congress to overturn President's Nixon's veto and it passed 0-1 and I've been involved in Earth Day. I was involved in the clean up of the Elizabeth River in Hillside in junior high and it's still going on today.

Earth Day 1973, walked all the streams and rivers in and around Hillside where I was, and was the founding member of the Environmental Commission and chair, to identify point sources of pollution so that they would be reported and would have to come in to the DEP to get permitted, so I want to give you a little bit of history and I spent summers next to the reservoirs, so I have a long history.

And I'm here because I think what was left out of the presentations today, and there are a lot of good people doing good work, is the regulatory scheme. That planning and regulations have to be an integral part of what the Department of Environmental Protection does when it comes to treatment water and clean water. Without it, all you're doing is some nice projects, but what happens in the end.

I mean, I saw a nice presentation about the rain gardens. That's great, but we've eliminated the SWRPA. How much more water would be protected and cleaned up by keeping the SWRPA in place than having to build a rain garden to make up for the loss of that SWRPA. I've been involved with the Wallkill almost 30 years now.

Four times the Wallkill River was nominated for category one stream designation because it drains into a wildlife refuge and there is a lot of (inaudible), very high quality waters. Poor times, politics and the department was rebuffed from the Governor's Office, so it's good to see that -- is doing some nice things, but the expansion of the plants and the thousands of the units that were added don't make up for

dealing with the cow manure.

And so it really comes down to the public and politics, but also regulations, and so I'm sorry Mr. Glass left because I would have wanted to respond, to his end, about people saying when things are being too late or being critical. I was there when we did the last water supply master plan. When Dan was here and I know he was part of that and my friend, Steve Niswan, who has since retired from two jobs since then. We did a lot of good work on water in the state.

I was involved very closely in getting the Highlands Act passed and the wetlands rules back in 1988 and '89, and I remember walking all the wetlands up in northern Passaic County and Bergen County and kick out under the wetlands under the Army Corp. jurisdiction to the state, flood hazard rules, expansion of category one program, water quality planning rules, stormwater rules, and on and on.

And the reason I'm saying that is because, under this administration, every one of those rules has been weakened. And every weakening of those rules adds to more pollution in our waterways and more over development and

more building in flood zone areas and flood hazard areas. Same thing with the (inaudible) rules.

When I started with Sierra Club 20 years ago, 15 percent of our streams in New Jersey met all the definition of swimmable, fishable and drinkable. Now only one stream system in the entire state meets that definition and that's the Flat Brook. When I started, 40 percent of our streams were impaired by phosphorus, so 65 percent. We were making progress. We are seeing progress going backwards because we're not putting in the planning and regulatory schemes that need to be done to protect the water supply.

We can be doing a lot of good things, but when you take areas that are environmentally sensitive in Ocean County that were removed in 2007 and 2008 from the sewer service area and then you put most of them back in, you're going to see degrading water quality in the Barnegat Bay no matter what nice things we do.

With the over development that's happening in Lakewood, we're going to see even

more impacts and the over ponding of the Aquifer down there discharging out to the oceans. We've seen the Musconetcong stream drop over a foot during the least decade, so we're going to see more and more than that. So the reason I'm here today for the Clean Water Council is that this administration is coming to a close.

You know, there was evidence of Barnegat Bay should have been impaired more than 10, 15 years ago. Great reports by Mike -- even though we're suppressed, so what I'm here today to say -- I forgot to mention the roll back of the Highlands and the whole list. What I'm here to say today is for the Clean Water Council, to start planning for next year and for next administration.

Hopefully the administration is going to care about water quality and drinking water that's not going to disband the Drinking Water Quality Institute and not nominate a new standard for drinking water until the end of this administration. You know, also in that 10 period, we have seen six reservoirs in New Jersey close because of pollution.

We've seen over 1200 wells close

because of pollution. We have 3500 portable wells in this state that are within the 12 year time of travel of reprosites (ph). We have a serious water problem. We have a problem of over development, creating -- making droughts worse, and making floods worse. We have a problem with water quality because of pollution that's been historic in many areas.

The challenge now is to move forward to make sure we start making up for the eight years of lost time and degradation for our water supply and go back and strengthen our rules and move us forward. Thank you.

MR. COSGROVE: Thank you. Kristen Meistrell from New Jersey Audubon.

MS. MEISTRELL: Thank you. Hello, everyone. My name is Kristen Meistrell. I'm the Stewardship Project Director with New Jersey Audubon, and I'm actually very, very thankful that I'm here today to be able to talk to you about all of this and that Nathaniel and Brittany actually did their presentations earlier because it really, really flows nicely into what I want to talk about today.

So a little bit about New Jersey

Audubon. We are a state wide nonprofit conservation organization, and we have a long history of working with the agricultural community and private land owners to enhance, restore and maintain wildlife habitat. So again, I'm glad that Nathaniel touched a little bit on the Delaware River Watershed Initiative, so I don't have to get into it too much.

But we are a part of the Delaware River Watershed Initiative, and through that, we are working towards improving wildlife habitat on working lands through the implementation of agricultural best management practices that also happens to address water quality and health. We think this is a really, really important thing to be driving home. The importance of working with our Ag community and working with our private land owners.

So we're doing a lot of things like working with them to implement cover crops and no till or reduced till, working to install filter strips and install riparian buffers and then also working to restore and maintain livestock fencing and stream crossings. And so through all of this work, we've had the wonderful opportunity to

build trust within the agricultural community, and we build that trust by really, really listening and hearing what the Ag community has to -- some of the issues that they are facing.

So this has allowed us to gain a lot of feedback and really think about exactly what the obstacles are that the Ag community is facing. And really, the obstacles they are facing falls into two categories, the financial and the technical support to be able to do these practices. So the technical support is, you know, talking with the Ag producer or the land owner and discussing the importance of some of these BMPs, but also creating relationships and building partnerships where now you can have the Ag community talking to each other and Ag producers talking to each other and really creating that good community where we're all discussing different things and how you can really improve water quality through these BMPs.

And then the other one is really an issue that I think everyone faces, and that's the lack of financial support for a lot of this work. We really need to work on trying to make sure we're continuing to leverage the funding in

different resources available to try and make sure that there's enough support to be able to install or implement these BMPs; that there's enough support incentives to put these BMPs on the ground so that's specifically talking about riparian buffers and taking crop land out of production to make sure that we are protecting our waterways, making sure that there's adequate incentives to be able to do that.

And most importantly, I touched on this a little bit in my question is the funding and maintenance, long term maintenance of these BMPs. So without the financial support to be able to do this, a lot of the work and the resources that we put into all of this will go down the drain. So through, you know, we've been able to have the great opportunity to work with fantastic partners in the Delaware River Watershed Initiative.

We've gotten support from William Penn Foundation, National Fish and Wildlife Foundation, the USDA Natural Resources Conservation service, and now 319 funding through NJ DEP to try and offer voluntary programs to Ag producers that emphasize the importance of Ag

BMPs and to provide funding to implement and maintain these BMPs and also creating that platform to allow Ag producers to talk to one another and really, really discuss the benefits and the challenges of these BMPs.

But I really, really want to emphasize the voluntary aspect of this because if we're not providing good structure and we're not providing a voluntary program that really listens to the needs of our Ag producers and land owners, you know, especially listening to the needs that go beyond ecosystem function and really hear what kind of challenges that they're facing, by doing all of that, we can really secure the long term success of these BMPs and then start to amplify them and allow them to really, really go across the entire state and not just where a couple really great partnerships are happening and putting these projects on the ground. So I want to thank you all for your attention and for the opportunity to speak. Thank you.

MR. COSGROVE: The next is Gayle Smith from Montgomery Township.

MS. SMITH: Good afternoon. Thank you for the opportunity to talk to you today

about ideas for non-point source pollution reduction. My name is Gayle Smith and I am the Montgomery Township engineer. Montgomery Township, through its sewer utility, operates six waste water treatments plants all subject to separate discharge limits through the NJPDES permit for each plant.

The township is also a Tier A municipality subject to the municipal stormwater management program. The township supports the concept of a point non-point source pollution trading program. The township foresees excalating costs to achieve increasingly restrictive discharge limits for its point source discharges from the waste water treatment plants.

To most effectively reduce pollutant loads in waterways, a trading program could be a good option. Montgomery owns and operates about 36 detention basins. The majority of these basins were constructed in the 1980s and 1990s before effective water quality features were part of the basin design. One possible example for a trading program would be to retrofit detention basins to improve non-point water quality instead of waste water treatment plant upgrades.

Addressing point source pollution alone will not sufficiently clean up our impaired waterways. We urge NJ DEP to be open and flexible to innovative ways to reduce pollutant loads whether they be from point or non-point sources. Thank you very much.

MR. COSGROVE: Jennifer Coffey from ANJEC.

MS. COFFEY: Hi. Good afternoon. I'm going to officially take off my Clean Water Council Advisory tag here. Jennifer Coffey from ANJEC, the Executive Director there. The Association of New Jersey Environmental Commissions is about 49 year old organization, and our mission is to help local governments, municipalities make good decisions for the environment.

In doing so, we have great partners, many of whom are in this room, including the Department, on a number of projects. We have also installed a number of rain gardens. We are partners in the Delaware River Watershed Initiative to protect and restore the Delaware River. We also have a small grants program where we provide funds to environmental commissions to

create rain gardens, community gardens, pollinator gardens, stream buffers.

That said, and hearing everything that was said here today I want to echo the comments of Jeff Tittel which he made earlier. All of the work that the nonprofits are doing and that municipalities are doing at the local level cannot possibly reverse the impairments that we have in our waterways, from pathogens and nutrients, without a strong regulatory scheme. The roll backs that we saw in the flood hazard area regulations earlier this year are abhorring when you look at the impairments that we have to water quality.

Eliminating the Special Water Resource Protection Area, also known as the SWRPA, allows more impairments to many of our tributaries and our main sources of drinking water. Allowing more development, closer to our streams through the flood hazard rules is also abhorrent, so it will reverse any of the good work that is being done through nonprofits, local government, corporate partnerships without those strong regulatory standards.

We do need, in the next

administration, to look at, not only going back to where the flood hazard rules were 12 months ago, but look at what's coming in 20, 30 years. We have the data. The data is strong in terms of where the flooding projections are going to take us, from sea level rise and also because of too much development in the wrong places.

We have a lot of impervious cover that prevents rain water from soaking in and we have rising tides, so let's look at that data and let's incorporate that into our flood hazard projections so that we keep people and businesses out of harm's way. The other thing I'd like to talk about just very briefly with the stormwater rules, as those are being talked about in the next administration.

We have an election in two and-a-half weeks, so there is a new administration coming, is very tight integration with the surface water quality rules. We talked about TMDLs here today, total maximum rules, we talked about NJPDES, New Jersey Pollution Discharge Elimination Permits. And as it stands right now, you can get approval for a stormwater plant at the local or at the state level if

you're triggering other rules, and you can allow discharge into a stream that violates standards for nutrients.

That should not be possible. You should not, under the Clean Water Act, the federal Clean Water Act, and we invoked Nixon earlier, you should not be able to make water quality worse, so those rules need to be better integrated in the next administration so that you are prohibited from discharging additional nutrients into a stream that violates surface water quality standards. And in doing so, what we should require is mandatory construction of green infrastructure, or what we call as non structural measures, in the stormwater rules.

So green infrastructure, we heard a lot about that today, uptakes nutrients. That standard in the stormwater rules of maximum extent practicable needs to be thrown overboard because that maximum extent practicable, when you meet most engineers, I know a lot of engineers. I know a lot of good engineers, they will say, it's not practicable to put in green infrastructure.

And I say hang on, give me the white

out. And when you start reconfiguring the way you're developing a site or putting less impervious cover in, it is practicable. So we need to change the regulations to make sure that we're removing more nutrients, we're not discharging nutrients into streams that already violate our standards and we look at our flood hazard rules and create bigger and better buffers for what we know is going to happen for our children and our children's children. Thank you.

MR. COSGROVE: Thank you. Candice Perry from New Jersey Future.

MS. PERRY: Hi. Good afternoon. My name is Candice Perry, and I'm from New Jersey Future which is a statewide non partisan, nonprofit that engages in smart growth, policy research, technical assistance, education and advocacy for about over 30 years. Thank you so much to the council for this opportunity to testify today. New Jersey's waterways need to be protected from the negative effects of non-point source pollution.

My testimony will respond to three of the council's questions. First, how can a municipality stormwater program better address

non-point source pollution reduction. Green infrastructure. So green infrastructure is an approach to managing stormwater by enabling waters to infiltrate into the ground where it falls or by capturing that stormwater for a later reuse.

Green infrastructure is an important strategy in making a non-point source pollution and improve water quality, especially in developed areas where impervious surfaces make up a large percentage of that municipality's land use. In addition to intercepting pollution from stormwater run off and returning clean water to brown water (inaudible), green infrastructure is a powerful tool that offers many other benefits including carbon sequestration, beautifying neighborhoods, aiding and traffic calming, increasing property values and cooling the air.

I assist in managing a program at New Jersey Future called Main Stream Green Infrastructure which strives to make green infrastructure the first choice for stormwater management in the state of New Jersey. And we do that in a few ways. Through working with towns, working with developers, advancing demonstration

projects and working with state agencies. Your second question, what can the department do to ensure require non-point source reductions.

So after working in the Main Stream Green Infrastructure Program for about two years now, we have learned that there are important steps that the department can take in order to allow green infrastructure to reach its fullest potential in terms of communicating non-point source pollution. First, to ensure non-point source pollution reductions, the department should improve its stormwater management rules and revise the stormwater management best practices rule that accompanies the rule.

Specifically, the rule must do more to require the use of green infrastructure and remove the loop hole that requires developers to use non structural stormwater management strategies to maximum extent practicable and replace it with an objective standard that accounts for practices that infiltrates stormwater. This one creates the use of green infrastructure by increasing the level of predictability to developers.

Secondly, some municipalities craft

their local regulations in ways that go above and beyond department regulations. New Jersey Future recommends that the department provides clear guidance. One way that municipalities can do this, on ways that municipalities can strengthen their local stormwater management regulations which will ultimately add to the department's goal of reducing non-point source pollution and restoring clean water for New Jersey.

Third, the department should release its guidance for green infrastructure for the CSO long term control plan as soon as possible to allow CSO permittees to start planning, to start their planning efforts for the long term control plan. And lastly, what sources of funding be tapped for these necessary non-point source pollution reductions. New Jersey Future commends the department on the recent announcement of its water quality restoration grants for non-point source pollution program.

New Jersey Future recommends that the DEP continues a direct portion of its 319H monies and other funds to support communities in constructing green infrastructure projects. Even with these grants though, municipalities still

lack adequate funding to manage stormwater. Local departments of Public Works face many demands for a limited resources.

A sustainable funding source to fund and maintain stormwater management efforts is crucial to enable municipalities to meet their regulatory requirements and to achieve better environmental outcomes. Stormwater fees are authorized in 39 other states to raise funds to upgrade and maintain stormwater infrastructure. New Jersey Future expects legislation to authorize stormwater fees and it should be reintroduced in early 2019, if not before.

We recommend that department support this discussion with its technical assistants and technical expertise. Again, thank you so much on behalf of New Jersey Future for the opportunity to testify today and happy to follow up with any questions afterwards. Thanks.

MR. COSGROVE: Thank you very much. Peggy Gallos from the New Jersey Association of Environmental Authorities.

MS. GALLOS: Good afternoon. My name is Peggy Gallos. I'm the Executive Director of the Association of Environmental Authorities.

We are an organization of water and waste water public agencies and we provide services to millions of people across the state. I'm very happy to be here today at this hearing.

Stormwater is not a statutory responsibility of authorities, and that may be why Sussex County MUA had a little controversy about becoming involved in the project that Nathaniel referred to earlier, but AEA members have a very strong interest in participating in this important state dialogue because we want a cleaner environment and we also think addressing stormwater can help us save money and water in waste water facilities and also better protect drinking water.

Sussex County MUA is a wonderful example of collaboration and some AEA members, on probably a smaller scale, do a lot of informal assistance with stormwater with their municipalities, and not a revenue source for them, but just the kind of friendships that Nathaniel was talking about and collaborations that he was talking about.

AEA has recently been engaged in the dialogue about stormwater utilities and the

establishing of stormwater fees, and given that authorities have the statutory permission and the revenue, authorities can be a really important player in this whole thing. Authorities know about cleaning water, after all, and it's largely thanks to moderate sewage treatment that we have made many of the strides that we have made.

The department has done a great deal to focus on stormwater in the last couple of years and we commend that. We also thank the Clean Water Council for the work it's done on this which is really the next great frontier. And I'm kind of thinking about all these different approaches and different ways of going about this and different collaborations, but the bottom line is that we need to create the political will to address this problem.

And for our part, we're very interested and we're very eager to be part of the effort to create the political will to do this. There are many, many approaches. Authorities can play a role in that, and we also are very interested in participating in efforts to create collaborations and educate local officials and the public about the importance of this

particular problem.

We believe that collaboration and collaborative approaches, flexibility and incentives for positive efforts are the kinds of elements that are needed in this work and we hope that we can create more momentum, build on a momentum that has been started to address non-point source pollution. We will have more detailed comments to submit later. Thank you.

MR. COSGROVE: Thank you, Peggy. Is there anyone else that wishes to testify?

MR. PISAURO: Thank you for this opportunity. My name is Mike Pisauro. I'm the policy director for Stony Brook-Millstone Watershed Association. I wanted to follow up with something that Jen Coffey said and Jeff Tittel about the regulations. Jen Coffey mentioned water quality standards in land use decisions.

The rules already say to DEP, they should not be issuing permits to impaired waters, but to go further, I've been going for the last several years to planning boards and zoning boards hearings where they're approving stormwater plants or approving development close

to streams and I started talking about impaired waters. And most of those individuals sort of eyes glare over and go, there's impaired waters? I had no idea.

And then when I say, well, the stormwater rules say you have to reduce TSS by 80 percent, but you have an impaired water, you have to do better. There's just blank looks. The rules already say that. The Clean Water Act already says that. The linkages need to be cleaner, more enforced and the tools need to be out there. There is a municipality in my watershed who, I went to discuss, and I said, well, there's a TMDL for your waterways.

Again, I now have spent the next five minutes explaining what a TMDL was and what that really meant. Again, the stormwater plan need to be better because that waterway had an 83 percent or 84 percent reduction in TSS removal, but how are you going to get there if we're still doing what we've always done before.

And just following the rules that don't really make those linkages clear. The other thing is we have a lot of our older communities that have been built before

stormwater management. The rules, as they are written, do not require any stormwater management for those older communities as they get redeveloped and they are getting redeveloped and we want to encourage them to be redeveloped.

But as extreme storm events are increasing, the densities have increased, the impervious surfaces upstream have increased, we're not going to see improvements in the water quality if we're not starting to address redevelopment. And to miss that opportunity just sort of forces us to be back here in the next few years going, why is this not working? So we need to require and give better tools to municipal officials to address water quality in those impairments to recognize they are there and to deal with that.

The rules need to be more explicit. DEP needs to do a better job, and they do a great job, but getting that information out about the TMDLs. The Raritan TMDLs proposed years ago was sent up to EPA up in 2014, approved last year, but yet, most municipalities don't know it exists and what it really means, so those tools and that training needs and that education needs to get

out there.

And you know, not only should our stormwater rules be better in impaired waters but maybe we need to enhance those stream buffers, those transition areas, maybe transition areas doesn't make sense to a wetland adjacent to an impaired water, maybe allowing and encouraging into the riparian zone along a stream that's impaired doesn't make sense, so we need to integrate that better. We will be submitting more detailed comments, but I'd like to thank the council for this opportunity. Thank you.

MR. COSGROVE: Thank you. Anybody else? Okay. I just wanted to put this up. If any of you, especially those of you who spoke, if you want to submit written comments or you think of other things after today, we're accepting comments until October 31st, so there's the address, fax number, email address. Please send your comments electronically in Word format, if possible. Thank you very much for coming today and I'll close the hearing at this point.

(Hearing Concluded at 3:16 p.m.)

C E R T I F I C A T E

I, LAUREN ETIER, a Certified Court Reporter, License No. XI 02211, and Notary Public of the State of New Jersey, that the foregoing is a true and accurate transcript of the testimony as taken stenographically by and before me at the time, place and on the date hereinbefore set forth.

I DO FURTHER CERTIFY that I am neither a relative nor employee nor attorney nor council of any of the parties to this action, and that I am neither a relative nor employee of such attorney or council, and that I am not financially interested in the action.

Lauren M. Etier

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Notary Public of the State of New Jersey

My Commission Expires June 14, 2018

Dated: November 3, 2017

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