STATE OF NEW JERSEY

DEPARTMENT OF ENVIRONMENTAL PROTECTION

IN RE:

Using Stormwater Utilities to :

Address Water Quality and Flooding :

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(NO EXHIBITS WERE MARKED.)

MR. MCCRACKEN: Welcome and thank you all for coming. As you can see, the New Jersey Clean Water Council. We're made up of 18 different representatives of various organizations from business and industry to environmental groups to counties and municipalities and all the rest.

Our topic today is going to be Using Stormwater Utilities to Address Water Quality and Flooding. As you know, this was the result of PL 2019 Chapter 32 signed by the Governor in March of this year and it gives local governmental agencies the opportunity to create stormwater utilities if it's beneficial to them.

It's not a requirement. It's not a mandate, but you're paying for a lot of this in your local taxes anyway, if you know it or not. This way, at least that money can be focused in such a way so if it works for you, good. If not, you don't. Members of the Clean Water Council, they're generally sitting up here. If I can ask them to stand up and identify themselves.

MR. COSGROVE: I'm Jim Cosgrove from Kleinfelder. I represent the New Jersey Society of Professional Engineers.

MS. CONNOLLY: Maria Connolly. I represent the Department of Community Affairs.

MR. BAKUN: George Bakun. I represent New Jersey BIA.

MR. FURNARI: Russ Furnari, PSE and G. I represent the State Chamber of Commerce.

MR. VAN ABS: Dan Van Abs, Rutgers, public member.

MR. MCALEER: Shane McAleer. I represent Delaware River Basin Commission.

MS. COFFEY: Jennifer Coffey from ANJEC. I'm an advisor to the council.

MR. MCCRACKEN: And my name is Anthony McCracken. I am chair of the council this year. There's another advisor to our council who just walked in.

MS. KERR: Ashley Kerr, New Jersey Farm Bureau.

MR. MCCRACKEN: My name is Anthony McCracken. I'm the chair. This year, the council, thanks for coming out. I'm the assistant planning director for Somerset County and a long time member of the council currently as a public member. We have the opportunity to welcome today our deputy commissioner who I'm

going to welcome up to say a few words for us, if she would, Debbie Mans.

Debbie Mans joined DEP as a deputy commissioner in February of 2018. Before joining DEP, Deputy Commissioner served as the Baykeeper executive director of the Matawan Basin New York New Jersey Baykeeper since April 2008. Prior to joining Baykeeper, she served as environmental and energy policy advisor to them, Governor John S. Corzine assisting in the development of State Energy Master Plan and charting clean energy plans through 2020.

She also served as the Governor's appointment to the State Planning Commission as a Smart Growth ombudsman. Before working for the Governor, Deputy Commissioner Mans served as Baykeeper policy director from 2002 to 2006 where she developed policies and programs for Baykeeper admission.

From 2000, 2002, she worked with the Stonybrook Middlestone Watershed Association as policy and outreach specialist. And in that role she directed activities for a program design to build New Jersey's community base watershed programs and organizations. She graduated from

the University of Michigan and Vermont Law School. She's the former chair of the New Jersey League of Conservation Voters and is currently a member of her borough council, so thank you.

(Applause)

MS. MANS: So again, my name is Debbie Mans. I'm the deputy commissioner. And Commissioner McCabe sends her regards and thanks you for coming out on Friday afternoon to DEP. And thank you to the council and all the speakers focusing today's meeting on stormwater utility, a very timely topic.

The law finally got signed and so here we are. We joined with several other states. So we have problems with stormwater in New Jersey. We have some of the oldest waste water and drinking water infrastructure in the state and sewage, and the legislators joined a task force on drinking water infrastructure also to examine the plight of our stormwater systems.

Some systems are 100 years old. And the USEPA has ranked stormwater management as New Jersey's most expensive water related funding need requiring 15.6 billion dollars in 2008. And we know that estimate has grown since then.

Additionally, I don't know if you saw over the summer, we still have several water challenges going on in New Jersey.

We have a proliferation of harmful cyanobacteria blooms or HABs in our lakes this summer leading to several advisories going on. We still continue to face issue of combined sewer overflows. And while we've seen progress, our lakes, streams and ocean water quality must continue to be protected and improved so we can reach our goals of the Clean Water Act.

So we believe that stormwater utilities is another tool in our toolbox to address the challenges that we face. Just a little bit more on CSOs or combined sewers. They're not just water quality issues. I had the pleasure of kayaking on the Cooper River and Delaware River this Wednesday. It was after all that rainfall.

And people are covering up open wounds and making sure we need to wear gloves when we're kayaking. We need to make sure that every time we're going down a water body it's safe, every time we want to do that. CSOs lead to flooding, acute localized flooding in

communities as well.

And so we have been working for several years now, a few years on their new CSO permit. You've been following this. We have reviewed and issued response letters to all the CSO permittees. There's 25 in the state. I'm a little rusty on that, on their community engagement plans and the evaluation of alternatives.

And 2020 we'll be looking at their long awaited long term control plan. This is your plan for eliminating CSOs over the next 20 to 30 years. We're committed to continuing the engagement with all interested parties.

We know we need to do a little more work on making sure communities are well aware of what's going on with combined sewers and the investments that are going to need to be made. For some communities, this is one of the largest investments they'll be making over time and we really need the permittees to help us make sure people are aware and understand the priority on that.

I really like having forums like these because it raises up the issues and expands

the dialogue around water quality. A lot of you are influencers in our community, so you can take back the latest information and make a change in your community. On stormwater, we're on track to finalize the first phase of the rule changes to the New Jersey Stormwater Management Rules by the end of the year.

It's been a large effort, and a lot of you have been along on this journey which is not over yet. These rules advance the use of green infrastructure to help with water quality and mitigate local flooding concerns, but we're continuing to meet with stakeholders on the second phase of the rule changes to address major developments and redevelopment accountability, oversight and training for engineers, so I thank all of you for the time you've invested in that to make sure rules better.

I mentioned this before, but I think we all realize that as regulators, developers, municipal representatives and advocates, all these actions require investment and this is an investment in our communities. And we believe that stormwater utilities are one means to provide for sustainable funding for the cost of

improving our stormwater systems throughout New Jersey.

We, as a regulator, the environmental regulator for New Jersey, will remain neutral and objective on whether or not a stormwater utility is right for your jurisdiction, but we are here to provide technical assistance and guidance and work with a lot of the great advocates who have been working in your towns to try to educate you about this.

The need for this funding option is why we're working on a guidance that's mandated by the Stormwater Utility Law. And we appreciate your insight as we move forward with that, so that's an ongoing project that this meeting, I think, in particular will be very helpful for us.

In early 2020, DEP will launch the first phase of a web based guidance manual that will pull together information and resources and we've already been coordinating with the Department of Community Affairs since they are connected to municipal budgets. Oversight is critical on this.

And we're discussing DEP's vision identifying specific needs of interested parties

through our stakeholder process and we've taken advantage of ongoing efforts like rebuild by design as well as some of the other states to make sure that we're all moving in the same direction.

So we're really committed to doing this, and it looks like you have a great agenda. I really thank the speakers for lending their insight to us. I think the municipalities, in particular the counties, want to know how this works, can it work and how do I make sure people are educated and understand why we're doing it and why we're investing it so thank you.

So we need partners for you. I apologize, I have to leave for a meeting about our other big priority, offshore wind. So we do it all here at the DEP, but I leave you in good hands and I turn it back over to the chair. Thank you.

(Applause)

MR. MCCRACKEN: Thank you, Deputy Commissioner. We do. We do have a really good panel here today. Some of these folks come from Maryland, Harrisburg. Diane, not too far away, but she's a Jersey person and Philadelphia.

So we do have people from another perspective outside the state of New Jersey and they're going to show you how people implemented these programs in other places and where it's working and maybe there's some rough edges and home runs. We'll find out soon enough.

But the first person who's going to speak is Miss Diane Alexander. She's a partner at the Maraziti Falcon Company. She is an attorney and has advised public and private sector clients regarding municipal environmental infrastructure resiliency related issues over 30 years.

Successfully litigated matters involving a wide range of environmental and municipal laws and regulations. She represents public utilities, municipalities, private sector concerning water resource, stormwater, air permitting issues as well as water and waste water planning and compliance; participated with stakeholder groups convened by DEP regarding DEP regulations and New Jersey discharge, NJPDS regulations, planning rules and surface water quality standards and participated in drafting the legislation and the connection of these

creation of stormwater utilities, so Diane.

MS. ALEXANDER: Good afternoon. I'm going to have to make that shorter, too. But for now, I'm going to talk to you about stormwater management in New Jersey. Most people that have graduated from the University of Pennsylvania or were in the Air Force will recognize this saying. I will either find a way or make one.

That's pretty much where we are with respect to stormwater utilities in New Jersey. This is most attributed to Hannibal during the Second Punic War when he decided to cross the Alps with elephants from Africa in order to invade Rome, but it works here too, I think. So we all know the water cycle.

On your left is the natural water cycle, and on your right is what we've done to it. So the water that we used to have going to our ground water and other areas is no longer going there, but going elsewhere, and that creates a problem in some communities.

And the problem is increasing precipitation, increasing impervious service, reduced ground water recharge, degradation of water quality. We all know that we have aging

infrastructure in New Jersey. There's insufficient or unrestricted funding that is supposed to go toward stormwater management.

It doesn't always get to there due to the numerous priorities that a municipality has to address, and they have to address those priorities with scarce and capped finances. But as many of you know, a very large portion of the municipal budget will go to the school systems and another part goes to the county, so they really don't have as much financial ability as one would think based upon the amount of taxes we all pay.

The lack of stormwater management or insufficient stormwater management has caused public health and public concerns. 60 percent of the state's water bodies on the impaired water body list are impaired because of nonpoint source pollution. Creation of a stormwater utility is not a wholly new concept.

We created municipality authorities many, many years ago. Passaic Valley Sewage Commission, among the earlier authorities, was created in 1902. As a result of the Federal Water Pollution Control Act of 1948, many more

authorities were created, then a few other laws were passed.

But what really spurred our modern day municipal day utilities authority was the Clean Water Act in 1972. And that was a grass roots public effort to bring about real change and address environmental concerns. And it's going to be something similar to that that's going to launch the stormwater utilities, I believe.

As you all know, in 1972, the Clean Water Act established standards, discharge permits, planning, funding and also importantly, enforcement. That typically gets one's attention. Many treatment facilities were designed and constructed or significantly upgraded in the 70s and early 80s. That effort was largely due to public participation.

And I was a young associate back then and I was among those that was charged with the community outreach and the public hearings and the public meetings. And I can tell you, the municipal utilities authorities were not entirely well received by the communities who had perfectly adequate functioning septic systems.

They could not understand why they had to pay thousands of dollars to hook into this trendy new sewage authority. But over time, I think that they have come to appreciate the benefits that that effort established. So back then, and as is probably true now, the creation of a stormwater utility is going to require a good deal of public education and.

So we have a lot of avenues to address the impacts of stormwater. I'm not going to go through them. Among those, are the MS4 permits, which I'll talk a little bit about and local ordinances that regulate on municipal level, stormwater and maintenance of stormwater on private property.

There's also land use approvals, relevant to stormwater management. As you know in New Jersey, we have MS4 permit. There are two types, Tier A and Tier B. Most of the municipalities fall in Tier A, and I'm going to talk a little bit about Tier A. Tier B, the requirements are a little less onerous, but that doesn't mean that stormwater management isn't a priority for some of the Tier B municipalities.

So among the MS4 obligations are, as

I said, public education and outreach. They're tasked with construction sites stormwater runoff and post construction site runoff. They also have pollution prevention, good housekeeping and training that they are responsible for.

Among the many functions that a municipality performs is street sweeping, catch basin and storm drain, inlet inspection, cleaning, retrofitting, repair, maintenance. There are best management practices for municipally owned stormwater systems.

They may or may not know where all of their stormwater facilities are, but some of that is a function of the fact that there may be a stormwater drain that leads to a wetland that then flows, you know, sheet flow down a hill to some other catch basin which is picked up by a pipe and taken under the road, so that is a little bit more tricky for a stormwater system than it is for a water or sewer system.

They're also obligated to inspect and address elicit discharge and scouring and comply with TMDLs. I'm not going to go too far into the CSOs, but there are a number of combined sewer systems in New Jersey. Combined sewer

systems are currently working on their long term control plans which are going to ultimately come up with a solution to the combined nature of the stormwater sanitary sewer system.

And as Debbie mentioned earlier, that effort is ongoing. What I was asked to talk about was what are municipalities, what are existing authorities doing to assist municipalities with respect to the management of stormwater assets. Well, there are many things that they can be doing.

Under the Clean Stormwater Flood Reduction Act, they have just been granted a whole new set of tools, but in the past, they have used service contracts with their participants and shared services agreements to affect some amount of stormwater maintenance. I'm just going to talk about three today.

First, the Brick Township MUA, they operate a water treatment plant and a sewer plant. They recognized, I don't know, 20 years ago that it was important for their reservoir that they manage, or at least have something to do with, the stormwater within their boundaries and they have always been an active partner in

stormwater management and they are part of the Flood Planning Management Committee for the area.

They have an emphasis on getting the ground, getting the water back to the ground water, where it fell. They have a partnership with their communities where they have upgraded stormwater retention basins. They use grants from the DEP. They design, manage and maintain the stormwater detention basins and then ultimately turn them back over to the communities and they do that through a shared services agreement.

They also assist their communities with stormwater management by sharing their CCTV truck. They have implemented stormwater improvements to reduce runoff and improve stormwater quality within their confines. And they have also undertaken, as many other authorities have, flood proofing and resiliency equipment projects, throughout their communities.

They've also drafted a stormwater ordinance which emphasizes green infrastructure and bioswales and rain gardens, and they also have a significant community outreach program, which they call greening your landscape while

protecting the watershed where they have had more workshops on building rain barrels and they have exhibits. And Ollie the Otter there is a result of an annual community outreach program that they have at the schools to come up with a mascot and a slogan and that was last year's winner. I thought it was cute.

Another municipal utilities authority, regional sewage authority that is doing something with respect to stormwater is the Plainfield Area Regional Sewage Authority. They, two years ago, implemented a cleaning program with seven of their eight towns, which they do pursuant to a shared services agreement.

They clean 20 percent of each of their customer's collection system each year for five years. That will get to 100 percent. Then after that five year period is over, they're going to do 10 percent each year and TV the lines. They clean approximately 350,000 feet of pipe annually. They also do stormwater.

When stormwater problems arise, they will troubleshoot, send out their video cameras and their jet vacs and clean and make recommendations for repairs. But this is an

instance where a shared service agreement between an MUA and a community has been very beneficial for both parties. The last utility and an example of a utility is Passaic Valley Sewerage Commission.

They have a tremendous effort ongoing with respect to the CSO work in their communities. They have undertaken a significant amount of the CSO effort. They also assist in developing clean waterways and healthy neighborhoods. They have free educational outreach programs who they send to whoever asks for them.

They have are very active in community and educational outreach. They prepared a district wide municipal clean infrastructure feasibility plan to identify places where rain harvesting projects would be beneficial. They also fund school projects. There's an outdoor classroom and an outdoor theater that they constructed.

I think the first one, the top one is in Kearney. And I think -- I can't remember where the bottom one is. But they're very active in their communities, trying to address the

impact of stormwater. And they're not the only ones doing things with respect to stormwater. But what can a partnership between an MUA and a community do?

MUAs know all about reporting and compliance. Maybe better than most. They have flow meters and other equipment that they can certainly lend to the effort of stormwater management. They have licensed and trained personnel. They can assist with operation and maintenance of stormwater system, cleaning and inspection services.

That is already being done under shared services agreements by some utilities authorities. They perform easement maintenance on their own easements, especially the delegated local agencies currently inspect their regulated entities and could inspect the regulated entities for stormwater compliance.

Many of them have a significant education and outreach program already. They have identified resiliency as a priority and have frequently undertaken II projects and many of them have billing and collection set up within their utilities authority.

And that's what authorities are doing without a dedicated funding source that can be used for this effort. There can be so much more done with dedicated funds and that's my presentation.

(Applause)

MR. MCCRACKEN: Thanks, Diane. I'll be remiss also if I didn't identify the folks from DEP, Janice Brogle back there who is the director of the division, the director of the Division of Water Quality and she's been a big help.

Stan Cach who couldn't be here today, but has been the liaison to the council forever as a staffer and has done a great job and I saw Gabe Mahon over there too who has been helping us lately and then also John Gray who is back in there smiling through the window.

We have with us also coming today our next speaker Anthony Dill. Mr. Dill is a Board Certified environmental engineer, licensed in five states with 25 years of experience helping municipalities improve their stormwater, waste water systems.

He received his BS in civil

engineering from Notre Dame, MS in environmental planning, University of Illinois. And as a storm water utility leader based out of Arcadis, Philadelphia office. He's recently managed six stormwater fee studies for municipalities in Pennsylvania and began his engineering career helping improve Camden's drinking water quality and addressing pollution at New Jersey superfund sites.

I wasn't at a meeting that we had, I think it was, Association of Counties, and I wasn't there, but I heard he had an excellent presentation, so when we had the opportunity to invite him, I thought that would be great.

MR. DILL: Okay. So stormwater utilities. Why do we need them? What value do they play? I'll say one of the first, I'd say the first stormwater utility study I did, the very first meeting, I sat down with the director of Public Works, and I said, what's the condition of your stormwater condition here in this township of Pennsylvania? And his answer was scarily unknown.

And that answer is pretty much echoed by everybody I've met since then because

stormwater is sort of the forgotten stepchild of the utilities. We know we need to convey drinking water to people, we know we need to take the sewage and convey it properly to where it goes. But stormwater pipes in the ground, they only matter when it rains and pretty much when it rains a lot.

So they tend to get a lower priority and nobody has a proactive inspection program where they go out and inspect all their storm sewers on a regular basis and fix them when they need it. Nobody does that.

So any one of these communities that they feel bad that they've neglected their infrastructure, they're not alone. It's something we see everywhere. Having a focused mission on that is something that really adds value to a stormwater utility.

We have increasing regulatory requirements, long term control plans, MS4 permits, especially in Pennsylvania, and a lot of communities have pollutant reduction plan requirements in there, where they have to start addressing the pollutants that are in stormwater and remove that outside of combined sewers.

And then we've got increased flooding issues. A lot of areas are seeing more flooding, maybe some increased storm events and we want to look to those stormwater utilities to help us address those items. And finally, you know, we are starting to see folks recognizing stormwater as a utility just like we have drinking water, waste water, electric and gas.

We expect to pay a fee for those. We expect that a utility will provide on a consistent basis a certain level of service. We're looking to start considering stormwater in that same category. So that's why you would want to have an entity with a focused mission on stormwater.

But then the question is, well, why charge a fee for stormwater? To the extent stormwater is getting done in many communities, it's through the general fund taxes that come in through the local community. That same community I met with said we haven't raised taxes in 35 years and we're not about to.

We don't want to increase taxes, so that was a way of funding a program that needed to have its level service increase, so how else

can we do that. So stormwater fees provide a dedicated funding source for stormwater. So even if you did raise taxes, you're now going to get a general fund that you're competing with all the other important needs of a community.

So this way if we know we're doing something specifically to raise revenue for stormwater, we put it into a stormwater utility fund, we know it's going to be used for those purposes. It also provides stable revenue that allows us to do planning. Even if you get some revenue in place and go out and inspect our storm sewers, figure out where the worst ones are and want to fix them, we don't want to turn around and not have any money there to do anything about it.

So again, we want to have stable revenue source dedicated to stormwater. In some cases, if you have really big needs, you could borrow against that and use that money to pay that off over time. And a stormwater fee is, by most people, considered a more equitable of allocating costs because taxes, you know, if you raise taxes, those properties with the highest assessed values pay the most taxes.

That's not necessarily proportionate to how much stormwater runoff is generated. A parking lot is going to generate as much stormwater runoff as a tall building, but they may have different assessed values. And also, tax exempt properties don't contribute taxes at all, but they generally pay their other utilities, water and sewer and generate stormwater runoff as well.

And finally, this is a little more nuanced, but charging a stormwater fee can provide incentive for maintenance of best management practices. That's a term in the industry for things like ponds, bioswale, rain gardens, things like that, that are stormwater controls on properties that can help reduce the volume of stormwater run off or the pollutants in stormwater runoff.

So most fee structures, and any that would be developed in New Jersey, would be required to have a credit program. So when you charge someone a fee, they have an opportunity to reduce that fee if they have on site management of stormwater on their property.

And in Pennsylvania, before they

issued their fee, were getting 30 inspection reports a year which are required under their ordinances for on site stormwater management systems. After they issued a fee, they got 150 inspection reports. People wanted to get the credit off of the stormwater.

This map is from a Western Kentucky University survey. They do an annual survey of utilities throughout the country. It just shows you back, rewind about 10 years, it's almost a thousand stormwater utilities in Pennsylvania, none in New Jersey. One in, I'm sorry, throughout the country, almost a thousand.

There is one Philadelphia was charging a fee and none in New Jersey. Fast forward to their 2019 study showing over 1700 in the country. Still none in New Jersey and this data is probably the best source of information we have sort of nationwide. It's missing a few.

Some of the details are not quite there. There is a sense of this is widespread throughout the country. And just for fun, I think they put this in this years report for the first time. How are politics influencing evolution of stormwater utilities.

It doesn't seem to be governed by politics, if you look back at the last selection of how states voted. We see states that are red and blue. They all seem to generally recommend there's an importance of stormwater. We need to address it and have a dedicated funding source for it.

I do work in Pennsylvania. Right now, we have about 40 stormwater utilities, at least that I know of, that are in place in Pennsylvania and if you look at this little pie chart. It says about 68 percent of those charge residents a flat stormwater fee, so all residential properties in those communities pay the same fee.

These other ones have structures that are either based on individual residential impervious areas, if they have that data available for some type of tiered structure. On average, in these communities of Pennsylvania they pay about 22 dollars a quarter for their stormwater fee.

That's for residential properties. So what's the potential scope of a stormwater utility. There's the administrative functions

that need to be performed. That's your MS4 permit reporting, MS4 municipal separate storm sewer permits.

If you have a stormwater fee, the billing and collections activities have to go along with that, evaluating credit policies that come in, applications that come in, if there's any appeals to say I think you billed me the wrong amount on my bill, and any public education outreach requirements.

And then of course we have the operation and maintenance activities that we have for the utility. This could be outfall inspections, repairs of the pipes. And in some communities, they've included street sweeping and leaf collection because those activities do directly impact the performance of the stormwater system.

If you don't clean the streets, clogging the inlets and everything. Other communities have chosen not to include that in their stormwater utility and that has to be based on their local needs and what's the budget and the impact of the rate on that. And finally, a capital projects.

If we have to do projects to reduce pollutants, CSO long term control projects are being included in this budget, projects that reduce funding or spanning the stormwater collection system again to help with flooding concerns.

And the point I've made, that scope has to be tailored to the individual needs of the community. So when I look through the legislation here in New Jersey, the fee base just sort of jumped out at me, different than I what encountered elsewhere.

So it requires that a fee reduction or a credit be offered for any property that maintains an stormwater management system. Stormwater fee credit programs are very common, but there's many communities that have chosen not to implement it for typical residential properties.

We're going to focus on the commercial, the larger properties and have a credit program from there, not wanting to get involved with administering a credit program in the residential level. But here, and according to legislation, it is required.

And there are examples of communities that do that, but some have not. There's an exemption from these for any land that's devoted to agriculture or horticulture use that's assessed you see there. That's something you don't typically see, something you want to be aware of.

There's a requirement that five percent of fees are collected or 50,000, whichever is less, goes into a state fund that's for clean stormwater and flood reduction. And then finally, any surplus revenues. The revenue collected, if it's more than needed for local stormwater services amount not to exceed five percent, that can be transferred over included in the local budget.

So typical rate structures for stormwater management fees. So you know, we require to have a structure that's based on fair equitable approximation of the contribution stormwater from a property. Now, residential properties in some cases get grouped together.

We evaluate how much impervious surface is associated with that group and then divide it by each property. That's the examples

that have a flat fee. So a flat fee, or some type of tiered structure for residential properties, may be based on the size of the properties or how much impervious are the ones we typically see.

For the non residential and multi family type properties, sometimes call them commercial. Impervious area is typically what we use. There are some examples where they use a combination of the gross area of the property plus the impervious and charge two different fees, combined bill there, but because the legislation here, specifically agricultural and horticultural type properties, you know, undeveloped properties as well go with that would typically get no fees.

And again, because of that sort of rule here in New Jersey, in my opinion, I would be looking for commercial properties based on impervious area and the green spaces that are in that property, the wooded or grass areas to not assess a separate fee onto those areas.

It seems consistent with general intent. And one of the keys when you go through developing specific rate structure of

communities, trying to balance precision and fairness versus simplicity. We want something that's pretty easy to administer and explain with the community and not get too caught up in highly detailed rigorous fee for the resident structure that gets hard to manage and I'll explain that.

So as I said, the common rate structures and we look at flat rate for single family residential, that's the most common I see in stormwater utilities. It's easy to explain. For many communities, it's consistent with how they build trash or sewer.

Maybe they have a flat quarterly rate they charge for trash collection, just add this to the bill. You know, one of the things that, you know, you have to note, small property use and houses pay the same as large. So again, from an equity standpoint, that's something you have to understand and communicate to the community.

Parcel size is another way, some folks, if they don't impervious data, how much each house and driveway of the community is available. A surrogate, that might be a size of the property. Radnor Township in Pennsylvania

does this, where they look at based on the size of the property, they're going to charge you a different fee because there's general correlation.

Bigger properties tend to have bigger houses and more impervious surfaces. It's a little more equitable. You get some potential for appeals there and sometimes we see some discrepancies and deeded acreage versus county parcel data.

When we calculate it in GIS, they have a slightly different parcel size, but that's pretty manageable. So the stormwater rate that's actually charged, folks, is basically taken the total cost and divided by the amount of impervious area.

And we use a term called equivalent residential units when we talk about impervious area and I'll explain that on the next slide. Basically, divide the program costs by a number of units and that calculates the fee. So the equivalent residential unit I was explaining, this example you see on the left, this is representing a typical residence in that community, taking impervious area associated with

the house, the driveway, and in this example, 1,950 square feet.

We have a commercial property on the right that has the ability to add that up to 19,500 square feet. That's 10 times as much impervious area as a typical residence, so it's 10 equivalent residential units. So if this entity on the left is paying $10 stormwater fee, the one on the right would pay $100 fee.

So something we hear a lot is what about communities that have combined sewers in their community because typically when you have combined sewers, it's a portion of the community. This map of Lancaster shows the central older core has a lot of combined sewers, where stormwater is mixed in, in the same pipes that have sewage in them in the combined sewers.

When you get to the outer areas of the community, they're separate. So sanitary goes in one pipe. Stormwater goes in another pipe and those peripheries are covered by their MS4 permit. Well, the communities, is it fair if somebody is already paying a waste water bill that takes stormwater into the same pipe to the sewage, can we also charge them a stormwater fee?

And these communities, Philadelphia, Lancaster have said yes for the rational that that money can be used for supporting both projects that are associated with MS4 systems, but also CSO projects. So if you have projects to manage the combined sewage, combined sewer overflows in the community, that stormwater fee can be tagged and used specifically for those projects.

Also, support other community wide initiatives that address flooding in the community, street sweeping other types of activities. And in the case of Lancaster they transferred a portion of that revenue into their waste water budget because that group does do the maintenance of all those pipes that convey stormwater and sanitary sewer that should take a portion of that fee into that budget so there's lots of ways that you can figure out how to manage that.

So as I mentioned earlier, the legislation requires credits to be offered to folks that have on site stormwater management. And the types of credits can include storage practices, ponds and things, infiltration

practices.

Basically, anything that can hold back or infiltrate or treat stormwater on the property. Some that are not so much structural things in nature would be education programs for schools, fertilizer management programs.

Those that have industrial discharge permits within the community that already have to do stormwater monitoring and reporting and some of the credit programs that you get innovation come talk to me, if there's something that's going to improve stormwater, we'll try and work something out.

But typically, the maximum credit is capped, so no matter what you do on your property, you still have to contribute a stormwater fee and I see those often capped around 50 percent. So the credit policy, the advantages promotes fee equity, so when we're issuing a stormwater fee, if there's two properties that are identical in size, one was built last year and has lots of stormwater management controls on site because it's required by ordinances these days when they're built.

And another was built 50 years ago

and has no stormwater controls, that the one with the stormwater controls can apply for a credit and pay less. And that's fair because they pay for the cost of that and they have to operate and maintain the stormwater facilities. As I mentioned, they can promote better maintenance of BMPs.

And in some cases we've always made the argument it can promote people to go do something voluntarily on the property, build something to hold back stormwater to get a discount off their stormwater bill. What we found that generally doesn't happen. You have to have a very short pay back, I'm going to voluntarily bill something to get a reduction off my bill.

It doesn't pay back two or three years, they probably won't do it. So the ones that I'm familiar with and I had a lot of success in Philadelphia and Lancaster, a couple of the grant program. They recognize, in order to achieve what we're trying to accomplish in terms of CSO reductions or pollutant reductions, we need to include private property.

If you have enough space in public

property to build enough things to be able to manage stormwater. So Lancaster for example took a loan out to fund green infrastructure projects. And the city pays 100 percent design and 90 percent of the construction cost for these projects they do the contracting and they cap the property owners costs at 10 percent.

They get a 40 year O and M agreement so they can come in and inspect these facilities, they provide training on how to properly maintain them and this picture on the right was just a regular old parking lot. They needed to do some improvements there and they had a grant that funded porous asphalt there and a bio retention garden in this church parking lot.

And the properties here can also apply for a stormwater fee credit as well. To date, they've completed 12 projects that were voluntary projects on private property. Philadelphia Water Department, our biggest, you know, utility here in the state has a combined system with green infrastructure program that's part of its CSO long term control plan.

To date, they've approved 1200 credit applications and issued 184 grants that

typically cover 100 percent of the construction costs of projects on private property. And their perspective is if it's less expensive to pay someone on a private property to build a stormwater management facility than it would cost us to do on a public space, we're going to pay for it and it's been very effective.

And right now, their CSO long term control plan, a third of their projects are incentivized voluntary projects on private property. But again, it's largely because of this grant program that's coupled as part of the program.

So just a couple thoughts on some challenges we see with stormwater utilities. Some might say it's a legal tax, you're not taxing authority here. And the key there is really design the fee so it's in accordance with the legislation. It has to be a fair and equitable approximation portion of contribution of stormwater, so kind of links the fee to the use of the stormwater system.

The fee is too high, why should we pay that much. Well, the key there, explain the benefits and value of the program and it's

important to compare what other stormwater -- New Jersey we don't really have much to compare. If you look at other states in the region what's a typical stormwater fee, what are others paying for this, to see if we are in that ballpark.

And then if we use taxes instead, we say the tax impact may actually be higher because taxes are only charged to properties that pay taxes. Stormwater fee goes to the tax exempt property as well, so it kind of spreads that burden out into a larger group of properties. Commercial, especially larger parts.

This fee is not in our budget, how are we supposed to pay for it. I've seen folks kind of phase in fees, look at getting a 50 percent credit on the first year or first bill and they can apply for a credit down the road and really just trying to notify businesses well in advance, so they can plan ahead in the budgeting process and then push back from elected officials.

Of course they might not be on board. You have to get everybody informed and on board early on in the process and engaged so they're aware of what's going on and they know

what's coming.

So this is my final slide here. There are some considerations for regional stormwater utilities. A lot of them have implemented at a local level. There are, seems to be an increasing trend, to try and look at managing stormwater on a more regional basis. There's some benefits there.

If you have a utility, a director, an MS4 administrator, you can share those costs among a larger group of folks. If you have some regional flood solutions, you can try and solve it and not just solve my problem and push the water down to the next community.

The one, I guess I'd say the challenge would be you have to make sure all those communities that are involved would agree on what is the scope of service and the level of service we want provided by a regional entity. So if you can get that happening, there is some benefits and costs of things there. So that's what I wanted to cover. We're going to hold questions until the end. Thank you.

(Applause)

MR. MCCRACKEN: Just to remind you

guys, if you're going to testify, at that point, you need to fill out a card or the sign up sheet and they'll give you a card and we'll take them in the order that we get them.

We're going to have two more presentations. We're going to take a five minute break because you're going to come back and offer us testimony, please. Ellen Kohler comes to us from Maryland from the Environmental Finance Center.

Ellen joined the Environmental Finance Center in April of 2018. She has 25 years of experience addressing legal regulatory and policy content around water natural resource issues. Working from Delaware, her projects center around providing technical assistance to communities, mid atlantic region, water resource policy and finance topics.

She's interested in developing water financing mechanisms that ensure equity in terms of financial burden and diversity and inclusion of identifying community benefits. She's licensed as an attorney in Pennsylvania, Michigan and Colorado.

She began her career with the

Department of Justice in Washington, D.C. as a trial attorney in environmental and natural resource matters. Her cases involved Endangered Species Act issues, marine mammal protection claims, litigation under federal wildlife statutes.

Many of these cases involved claims under other environmental statutes as well and the Clean Water Act of course. Her publication includes several law review articles on water management issues and public participation environmental decision making as well as a guide book to Clean Water Act permitting processes in Michigan.

She's presented at multiple conferences and strategies for finance stormwater management multi municipal stormwater initiatives. She serves on the board of the Delaware Natural Nature Society and cochairs the Advocacy Committee. She has her JD from the Universe of Colorado at Boulder. Thank you.

MS. KOHLER: I won't talk about any endangered specious, sorry. I'm going to address using stormwater utilities to provide sufficient sustainable and equitable financing. But first

half of my presentation is going to really focus on the financing side of things.

And then the second half will be looking more at fees and utilities. So there's going to be some similarities here, not surprisingly. So just a little background. The Environmental Finance Centers, there are 10 of them around the country.

We serve the EPA region where we are. My Environmental Finance Center serves EPA region three. We do a lot of partnering with the other EFCs, so we partner with the Syracuse EFC, which covers region two, includes New Jersey. As you know, was mentioned in my bio, I do live in the area.

I have been working on Delaware River issues for the last six years, so I'm familiar with a bit of the New Jersey context, even though my most of my projects are in Pennsylvania and Delaware. Not surprisingly, some similar content here in that the context of the work that we do with those municipalities is pretty similar.

A lot of the work we're doing is because we have communities that are trying to

address their MS4 obligations. We are working in communities in the mid Atlantic that have been developed before there were any stormwater management regulations, so this is the Wissahickon Creek outside of Philadelphia.

The gray area is without any stormwater management. You can imagine that map if we add stormwater regulation that's just managing for volume. We might add a little bit more. There's very little in this watershed that has been put in that also addresses water quality.

So a huge challenge in the mid Atlantic and a lot of our communities. And then again as mentioned before, we have this lovely challenge of looking at increasing heavy precipitation events that are creating a lot of flooding concerns. And obviously, the stormwater management systems that we have in place were not designed to manage those kind of stormwater events.

So with that all in mind we have communities that are both addressing their MS4 situation. Some communities we work with are really just looking at how they're going to

address their flooding situation. Those components though are going to be relatively similar.

You have a bunch of different activities you got to consider, whether you need them in your community. And most communities, these kinds of activities are disbursed among the municipal departments and you probably don't have the kind of capacity or probably the data that you might need to initiate that program.

So if you're thinking about starting that program, there are five basic steps. First, you got to figure out what you have. Then you got to figure out what you'd like to do, and how much what you'd like to do might cost. Based on that, you have to develop your budget and figure out what kind of funding you currently have in place. And if you don't have enough funding in place, what are going to be your financial strategies to make sure you got what you need to do what you want to do.

The most important thing is in the middle you have to have a lot of public outreach, early, often, always. That's going to be your most important thing. As has already been

mentioned several times, nobody thinks about stormwater. They don't think about it as being a priority. It's not something that they are -- it's underground.

It's just like for those communities that get their drinking water from groundwater, nobody is thinking about what is happening with that ground water. Stormwater is the same way. It's all underground or it's just -- as somebody in my neighborhood once said after a winter storm and there was a whole bunch of salt on the ground, oh, so glad it rained and washed all that salt away. Right? It went away, right?

So there you go. So in developing a financing strategy for your stormwater program, three basic things you're looking at. You got to take your activities, match them up with who you're partnering with and figuring out how you're going to bring in your revenue. And it's essential to have a financing strategy for your stormwater program.

One, you've got to have some -- that financing strategy is going to help you build with credibility with your public and your funders if you're trying to get support for what

you're trying to do. Grants and general funds are simply not going to be enough most likely to fund what you need to do in your community.

And finally, if you don't have a financing strategy, that implementation plan that you develop is probably not going to happen because if you don't, you have to have thought about how you're actually going to fund that implementation. You got four basic budget categories. Nothing really surprising here.

That was already covered previously and you've got to set of -- these are the kind of things we see across municipalities we work with as being the general funding, or the general revenue sources. Some of them have limitations as to how they can be used. For example, unfortunately, we see a lot of grant programs that will not allow you to use those funds for operations and maintenance despite all of the information we've already talked about, about how important operations and maintenance is.

We're seeing a little bit of shifting on that, but you have to think about which revenue streams you can use for which activities, when they're coming in, those kind

of -- that's the pairing up piece. Depending on your enabling legislation in your community, you may be able to adopt a fee without structuring a utility.

So you know, think about how -- what works for you in your community. This is an example of a budget from Berlin, Maryland. Berlin developed a stormwater program because of flooding, not because of its MS4 program. So they were looking at -- but they did adopt a fee. You'll see that revenue stream across the top is based on their fee structure.

You also notice that fee does not change over 10 years. And then if you look down here at the bottom, you'll notice that the first three years they run in a deficit, but the rest of the years they run at a surplus. They ran a deficit because flooding was really important to address right away so the first three years they implemented a bunch of projects to stop the flooding, but then continued to pay for them over the rest of the course of the 10 years of this financing strategy.

You'll also notice there are a bunch of zeros. The zeros represent where they're

using capacity from other departments in the municipality. Looking at how they're leveraging the capacity they already have. And you'll also notice there's a nice heavy budget here for operations and maintenance.

So those are all things that, you know, are really important in terms of putting together that financing strategy. So sustainable financing has three basic elements. First, you have to reduce your costs as much as you possibly can, you got to generate sufficient revenue for what you want to do and then you have to develop that private landowner programming.

For just the reasons that Tony explained, you're never going to be able to reach or accomplish all the stormwater management probably, you're probably not going to be able to accomplish all the water management that you need to do on your municipal properties.

You need to have some way of interacting with private landowners in terms of reaching the goals that you want to reach. So we start off with reducing costs. The first thing you have to do is look at your codes and ordinances and make sure you are not

incentivizing impervious cover.

There is a great tool that the Center for Watershed Protection has that will help you go through those codes of ordinances because if you are incentivizing impervious cover on private property, and stormwater run off from that property ends up on public property, say a road, that then becomes public responsibility in terms of managing. So you have to shift the cost from the private landowner to the public to pay for.

So you don't want an ordinance that does that. You want an ordinance that switches it back, shifts that regulatory risk to the private landowner who wants to build more impervious cover and also shifts the cost to that private landowner that wants to build impervious cover.

Another strategy you want to consider is how we incorporate stormwater management across your community priorities. One way of doing that is looking at how to incorporate stormwater management in all your capital improvement plans and projects. This is an example from the City of Lancaster, a lot

about the City of Lancaster.

They have found, by incorporating stormwater management into all their other capital improvement projects, they save 45 percent as opposed to doing the stormwater projects on their own. So when you do a road project, for example, you plan the stormwater management at the same time, the engineering cost, all of the construction costs are then reduced because you're doing it all at one time instead of doing it twice.

Another way to reduce costs or to think about how you're leveraging the money that you have is consider a pay for performance contract structure. I'm not sure how many of you are familiar with the Prince George's County example. What they did, they used a contract that said we want you to achieve this amount of impervious cover treatment and we want you to also provide us with 30 years of operations and maintenance.

Yes, 30 years of operation and maintenance in the contract. That's pretty much the life cycle for a lot of those best management practices, and by the way, we also want you to do

a bunch of -- we want you to sponsor a bunch of internships, we want you to do job training, we want you to work with X percentage of folks in our community and subcontractors.

All of that was part of the contract. They didn't tell them where and when and how to do the EMPs, but they told them this is what you have to achieve. So that's how they structured the contract. And frankly, the engineering group that bid on the contract over performed.

Another way to reduce costs is through multi municipal collaborations. We have worked with many communities, most of them in Pennsylvania around multi municipal collaborations. I want to note this data is a little old. This is from 2018. Things have changed in some of these collaborations.

For example, York County is considering a stormwater utility, an authority to cover all of the municipalities that participate in their multi municipal collaboration. Blair County, has a different funding structure now. The communities that are part of the Lebanon County multi municipal collaboration have adopted

fees to pay for their share, so they have not done a utility.

They've just adopted fees individually and that pays for their share of the work they do together. Three of these collaborations are county based and the last two are watershed based, so they're just different ways of collaborating. And Adrienne is going to talk more about collaboration, but just briefly, they create efficiencies, obviously.

It helps you maximize the resources you have. It also helps you fill gaps in the resources that you don't have and it makes you a lot more competitive for funding opportunities. Another kind of collaboration, this is happening on the eastern shore of Maryland. They have all pulled together local resources which they were then able to leverage with two different funders so they have three times the amount of money that they would have just on their own.

They share a staff person who aggregates projects for them by aggregating those projects. When they go out to cost those projects, they get a reduced rate because they have more that they're bidding on. These are

different sized municipalities as you can see.

Some are counties, some are towns, so you're not limited to who you can collaborate with. It's about the scope as Tony pointed out. So one other, you know, thing I will mention, well, another kind of collaboration that I mention in all my other talks but I figure you guys know about, Camden County Municipal Utilities Authority and how they are working with partners in the area to work on implementing green stormwater infrastructure and they have helped form an organization to do that.

So there are lots of different ways of collaborating and lots of different partners to collaborate with. So those are things to think about in terms of reducing costs. So generally, what we see in our work with municipalities that we see a lot of new strategies coming about because of the Chesapeake Bay TMDL1.

We see a lot of communities adopting fees in the Chesapeake drainage. And because more and more communities are adopting fees, it's becoming easier for the neighboring communities to adopt the fees. Tipping point where they're

talking about it, so now all of a sudden it's okay for the neighboring community to talk about it.

We're not seeing that so much in the Delaware River Watershed, so I'm a little curious whether it come from the Chesapeake and move into the Delaware or move from Philadelphia and they're going to clash. We'll see. The most important thing that I see in a lot of these collaborations, or successful stormwater programs, is there's either a strong county support system, a strong watershed organization that's helping out and or a strong environment advisory council, a local volunteer group that's municipality sponsored, so those are where we see a lot of success, and that makes sense.

You have folks out there saying, hey, we care about this, regardless of who the elected officials are. That voice out there saying that this matters is continuous across time as opposed to changing with whoever is in those elected offices. I also want to point out by the way, operations and maintenance is really important. Make sure you don't forget about it.

That's protecting the investment

that you've already invested in. And this is just to point out that these kinds of multi municipal collaborations that we're seeing in Pennsylvania seems to me to be probably not a bad strategy in New Jersey as well you've got a lot of smaller municipalities.

It's very hard for a small municipality to feel like the money that they are investing in stormwater management is actually having an impact on water quality, right. A small municipality is going to feel like I am putting money down the drain. Checking a box on my permit.

If they can collaborate with others, either at a county level or a watershed level, they are more likely to feel like that that money they are investing is meaningful, particularly on a watershed basis because then you're all working on the same water quality problems.

That seems to me that that's the thing to think about, particularly because of the size in certain regions you've got some really, really small municipalities, so just to sum up those financing recommendations, review your codes and ordinances, make sure you're not

incentivizing impervious cover, reduce your costs so you're maximizing what the revenues that you have to as much as you can, diversify your funding sources, consider those lifecycle costs for your operations and maintenance and make sure that -- and think about how you're using your contracts.

Make sure you're considering including operations and maintenance at least five years, maybe more in those contracts, consider pay for performance structure, if that's of interest to you, and then make sure you're tracking what you're doing and tracking it in a consistent way.

That information will then help you in terms of budgeting for the future. So now, turning to utilities and fees. So you've looked at all your ordinances. You're good. You're not incentivizing too much impervious cover. You have gained as many efficiencies as you possibly can and leveraged your existing revenues to a maximum you possibly can.

You still don't feel like you have enough revenue coming in so you're thinking about a fee. So what are some of the things you want

to think about next. You want to look at your land uses. As Tony pointed out to you, you have a lot of taxes in properties, they're not paying anything to manage stormwater right now.

Do you have a situation where you're going to have pretty high administrative costs or what might those costs look like. Do you want to think about a fee or a fee and a utility, what might you call that fee. We have a municipality in Pennsylvania West Chester that calls it the stormwater protection fee.

That's a lot more politically palpable than a stormwater management fee. You don't have to call it that. Most importantly, as you embark on this process, you need to have a stakeholder engagement group.

And that group should include folks that you think are potential opponents to your stormwater program because they are the most important people to get on board to understand the problem that your community is facing. And you want to make sure that you have different kind of landowners, so private land owners, commercial landowners, tax exempt landowners on that stakeholder engagement group.

Sort of the reverse of this. The reasons that you might not want to consider a fee. You don't have a big monetary issue in terms of meeting the needs that you have for managing stormwater. You don't have a lot of tax exempt properties.

You don't think that the administrative billing is really worth the cost of it or maybe the money that you're bringing in from your property taxes is legally pretty much an equitable way to do things, so a fee is not for every community.

And so just to walk through some of this with a specific example I'm going to use Dairy Township which is near Hershey, Pennsylvania. They decided to consider adopting a fee and they did go ahead and do it and they did it in the context of expanding the authority of their existing waste water management authority.

And so that authority now has a broader mission which you can tell is sort of much more sort of globally about water and water quality for the benefit of the community as a whole. This is their waste water treatment

plant. It got flooded a few years ago. This is why they were able to have, unfortunately, able to have this conversation in their community because nobody wants a flooded waste water treatment plant in their community.

So they leveraged that to do a needs assessment of what their needs were across their existing infrastructure. So they had an 11 million dollar need in terms of failed infrastructure and they had a need in terms of stormwater management of 15.5 to total up and then doing a further assessment which they've had some costs here to do with the Army Corp.

So it all totaled up to 27 million dollars if needed so that was their -- they looked at what they had, they did a cost estimate around what they needed and then they considered what they wanted to be able to do. What is their current level of service and what did they want to be able to provide to their community and realized that was going to cost more money to provide that level of service that was more comprehensive was what they were aiming for.

Everybody would love to believe that we could all provide exceptional level of

service, but they figured it was rational and probably more politically viable to try to get to a comprehensive level of level service. So they did some cost assessments around that, looked at there impervious area by land use category.

And you will notice there's a pretty big chunk in tax exempt property. They have some very large schools, very large hospital campus in their area and realized that they really needed to bring in some of the revenues from those land uses. They developed an annual budget. That's a pretty reasonable annual budget.

It does of course include operations and maintenance, so the MS4 compliance piece is for putting projects into the MS4 compliance. The capital improvements is for fixing the stuff that doesn't work right now. So the stormwater -- the MS4 is new stuff. The capital improvements is fixing the old stuff, right.

And this shows you one of the reasons that it was a cost effective thing for them to do. They had incredibly large overlap between their stormwater customers and their wastewater customers, 84 percent. So that meant that the administrative costs of billing for

their stormwater program was going to be pretty well -- pretty manageable because they're billing the same set of customers, not a lot of new customers that they had to bill.

And they also realized that the amount of money that they were getting from the non residential equivalent residential units was worth the cost of billing the residential customers because it's not equitable to have a program where you're only billing your non residential customers for stormwater management.

Your residential customers are getting them if they're managing stormwater. You have to bill everybody. The question is billing everybody, which you got 89 percent of a residential, they're not bringing in a lot of money. So is that administrative cost of billing the residential worth what you're going to get from the non residential which is where most of the money is coming from in this community.

It did make sense for them. Just in general to review their process, their board of supervisors recognized they had a need. They started meeting with some partners and talked for about three or four months about the potential

pros and cons.

They didn't see a down side to considering a stormwater utility or I should say expanding the authorities of their existing waste water utility, so they went ahead and formed the stakeholder advisory committee.

After they formed that committee, it took them about a year to go through the process of considering gathering all the information, considering different kinds of structures for their fee and adopting their fee.

So one of the reasons that that process went as smoothly as it did was because it had really good public outreach and they had this stakeholder advisory committee that was truly representative of all the folks that were stakeholders in the program.

So that's really -- that was my example to run through, what I consider to be, a very good process for setting up a fee. And also, considering who you're partnering with and whether it's a good idea to expand the authority of an existing waste water treatment utility in this case, but it doesn't have to be obviously just a waste water utility. As was mentioned

before, we will deal with questions later. Thank you.

(Applause)

MR. MCCRACKEN: Our next speaker is Adrienne Vicari. She's a P.E. She works with Herbert Rowland and Grubic Incorporated and they are out of Harrisburg, PA. She has her BS in civil engineering and is professionally licensed in Pennsylvania and also in Ohio.

She's an expert in the Commonwealth of Pennsylvania on stormwater fees and infrastructure funding. She's a licensed professional engineer who provides technical expertise, stormwater management design almost 20 years of experience, capital improvement planning, public sector budgeting and gives her comprehensive understanding of the environmental needs and challenges that communities face.

She has assisted more than 40 municipalities at implementing stormwater fees, pioneered innovative approach to stormwater management involving regional county wide collaboration and has been praised by the Pennsylvania Department of Environmental Protection and honored with the Governor's Award

for local government excellence and environmental excellence.

She's delivered workshops on stormwater management, financing at numerous conferences. She also participated right here in New Jersey on a panel called Changing the Course of Stormwater Management at the New Jersey Redevelopment Forum in March of this past year and that's where we heard about her and that she would be such a good speaker. So with that, Adrienne.

MS. VICARI: Thanks, Tony. And thanks Ellen for that great lead up as well. As a township municipal authority was one of my clients that I really enjoyed getting a chance to work through that process of helping them implement a stormwater fee and I'm excited to see the impact that it's been able to make in that community and that's why I'm excited to be here today to talk about collaboration.

Because it's something I'm really passionate about and it's something that I can think -- that I believe can really help sustain New Jersey communities as well. So as Tony already mentioned, we've seen a number of

pressures building in recent decades for municipalities managing stormwater.

We see that stormwater infrastructure in the mid Atlantic region. It's aging faster than it's being replaced. In fact, last year, the American Society of Civil Engineers rated New Jersey a D in terms of its stormwater infrastructure and that's because of the surmounting amount of deferred maintenance and just that, as was mentioned before, a lot of municipalities, they just don't even know the condition of their stormwater infrastructure or even where it's all at.

So in many cases, that's just because of municipalities, they don't have sufficient tax revenue in order to keep up with maintenance and the cost of maintenance, they grow each year in terms of inflation. So many municipalities are also facing the fact that they never installed the infrastructure the first time around in many cases.

It's constructed by developers and dedicated over to municipalities. And now a lot of it is reaching the end of its useful life. It needs to be replaced, so municipalities need to

start investing more money than they have in the past just to keep what they already have.

Another challenge is water quality degradation and tightening regulations. We're seeing that requirements associated with MS4 permits, they're increasing in a number of states and they're becoming more stringent. And again, the cost of compliance just continue to go up, so that leads another challenge and that's, you know, how do you deal with the growing cost of stormwater management.

For a lot of municipalities tax revenue, it's remaining stable from year to year, yet cost related to maintenance, replacement, regulations and continue to go up. And so municipalities are forced to keep doing more each year with less.

So we see that stormwater utilities, they can be a really effective platform to start collaboration, either amongst municipalities that are regional or a county level. Also, they provide a great mechanism for a municipality to start partnering together with property owners and having property owners get more involved in managing their rate and volume of stormwater

leaving their property or the quality of stormwater that's leaving their property.

And that's because charging property owners a fee and then giving them a credit to work together is a great incentive for them to start getting involved and to help with the growing cost of stormwater management funding agencies.

They're also more likely to fund sustainable stormwater programs, especially if you're competing as a community for federal dollars. Funding agencies, they want to fund sustainable infrastructure, so they want to know if they're putting grant money toward a project that there's a revenue source that's there that can help sustain and maintain that infrastructure.

So we're starting to see that municipalities that have implemented a stormwater fee or that are collaborating together, they're getting more consideration for grant dollars. And then enhanced stormwater programs can also provide a backbone for state agencies or other agencies to start partnering.

We see that entities like New

Jersey, Department of Transportation, they're also struggling with stormwater management in those costs and they're seeing, you know, state DOT's partner with utilities to start meeting permit requirements or start better managing maintenance of their infrastructure.

This chart provides examples of entities that a stormwater utility, either municipality or at the county level an authority can consider collaborating with for stormwater management. And these types of collaboration, they generally bring in administrative and financial cost savings that can be shared with all of the entities to arrive at a more cost effective and sustainable solution for stormwater.

And really stormwater utilities and the thought of stormwater utilities, they really provide an opportunity to kind of shift thinking, shift how we think about how we're going to start dealing with stormwater. This is a great way to say the way we've been doing it in the past, it just isn't working.

So let's look at other mechanisms and how do we start working together to make this

more of a community solution, so I'm going to go through a few of these. So first, I want to highlight partnerships with property owners.

Again, we find that property owners, they're much more likely to make an effort and to get involved with stormwater management if they're being rewarded. Stormwater fee and a credit program, it is a great opportunity to incentivize.

And Tony mentioned before a township in Pennsylvania, before they had the fee and credit policy, they were, I think you said 30 property owners that were submitting the required documentation each year. Once they implemented the credit program, they had 150 property owners solely to provide more support and all of that documentation is stuff that's needed by Hamden for their MS4 permit requirement.

So it's really getting that collaboration to take place. It's also a great chance to educate property owners on the importance of water quality and to help them realize that they can play a role in mitigating the overall costs to the community. We've seen municipalities really realize a whole host of

administrative and financial benefits for stormwater management when they start getting involved with property owners.

You know, for instance, I have clients where the municipalities are doing street sweeping in order to be able to get sediment off of the streets before it's getting into the stormwater system and into the local streams. They're partnering with developers where they're taking the street sweepings, they're screening them and they're giving them to developers to use as clean fill.

The developers are then getting a credit back for taking that sediment away. It costs the municipality or the authority $65 a ton for them to take the street sweepers to a landfill. They can give it to a developer. It's a win win situation for both.

We wouldn't have developers come to the table and saying, how can we sit down and start taking collaborations to make this work, if we weren't charging a stormwater fee, but it starts the discussion. Also, looking at collaboration among municipalities at a regional or at a county level or finding ways to start

partnering with the county planning department or county conservation district is another great way to lessen the cost.

We see that one benefit of regional solutions is that it supports watershed base management and planning. Political boundaries and watershed boundaries, they sell them on the side. When we can start moving outside of political boundaries and start managing stormwater on a watershed basis we can look at more holistic solutions.

There's many cases where a stormwater problem that a municipality is facing is not necessarily originating from that municipality. Lots of times it's stormwater run off that's coming across municipal borders. So when you're doing it and it's just a municipal by municipal approach, then you have fragmented solutions.

When you can move outside of those and look at regional stormwater, that's when you can really provide holistic, more cost effective solutions. And we have a number of counties in Pennsylvania now that are getting involved in either county wide stormwater management planning

or watershed based for the number one reason of helping to deal with some of the regional stormwater problems that are going on.

We've also seen some states such as Pennsylvania where DEP, they're willing to streamline the environmental regulations for MS4 when municipalities come together. Economies of scale, it's another benefit. There's a lot of fixed costs associated with stormwater management.

When you start dividing those fixed costs up amongst multiple users, the cost for municipalities is going to come down. On the same line, increased purchasing power for equipment and supplies and enhanced opportunities for grants and loans.

A lot of funding programs, they're political in nature and it's a lot easier for legislators to get behind projects and get behind entities that are supporting a larger constituent base. So again, when we start looking at regional solutions for stormwater management, we're starting to see them get more priority in terms of funding.

And really, the biggest seller for a

regional collaboration is the cost savings for all the property owners that are involved and we'll get into more of that in a minute. There's also a growing number of ways that a stormwater utility can partner with the state government or federal government for cost savings.

And this slide provides some of the main examples that we're starting to see regional entities start using to bring federal dollars and sometimes state dollars back to their local community. Army Corp Civil Engineers, they have a technical assistance program. Mentioned that we used it for -- township.

All of our stormwater utility clients take advantage of the Army Corp technical assistance program. It's a 50/50 cost share program that extends for multiple years. Once you get involved in their program, you continue to get 50/50 cost share from them at the federal level until you're done.

And that can support any of the planning, preliminary design, condition assessment and mapping of stormwater infrastructure. It's a really great program. Natural Fish and Wildlife Foundation, they also

have multiple grant opportunities that can help fund implementation of stormwater BMPs and also help fund implementation of stormwater utilities and stormwater fees.

USGS, US Geological Survey, they have opportunities to partner for impervious area development. The most costly part of implementing a stormwater fee is getting the impervious area data for a municipality. And USGS are actually going through and they're developing impervious area and getting that data for their own use, so there's really great ways to partner with them and for them to buy back the data that communities develop.

I also mentioned already partnerships with NJ DOT and other statewide opportunities and then, you know, funding agencies. They might have opportunities for stormwater authority, implementation and stormwater project financing as well.

And thinking through the benefits of collaboration, we wanted to share more about why Luzerne Valley Sanitary Authority. We've been able to build a program for them when they're managing stormwater and it's really the whole

backbone of their program is collaboration.

Two years ago they formed Pennsylvania's first regional stormwater in Luzerne County and historically their role was managing waste water for 36 municipalities. And all of those municipalities are the municipalities that are shown in color on the map.

And then green municipalities, are the 32 that signed intergovernmental cooperation agreements in order to work with Wyoming Valley Sanitary Authority on stormwater management. So how did they begin collaborating?

Well, WVSA, they surveyed the municipalities in order to get an understanding as to what their greatest needs were relative to stormwater management and to better understand in what ways they would be willing to come together and start working together. And so through that process, what they wound up implementing is WVSA came on board as the MS4 permit administrator for the first five years.

When they surveyed the municipalities, in this region, the greatest need was help with regulatory support. And again,

it's going to be different from region to region, but in this case, the municipality said we can really use help, meaning new environmental regulations.

And so WVSA came on board and they did planning to look at where they can implement green infrastructure approaches or BMPs, best management practices throughout those 32 municipalities in order to meet the specific MS4 permit regulations that they're being faced with in Pennsylvania.

They're operating and maintaining all of those BMPs. They're also helping the municipalities work alongside them, managing the existing infrastructure. They're going through and they're mapping all of the stormwater infrastructure. In most of the municipalities, they've never had their infrastructure mapped before.

And then they're also helping them with a lot of the minimum control measures that are associated with the MS4 permit. Things like public education, public involvement, elicit discharge detection, pollution prevention and they're also supporting them with all of the

documentation that needs to get submitted into DEP.

So how are they working with the municipalities. What are the municipalities still doing. Well, they're maintaining ownership of their MS4 permits and they're also maintaining permits of all of the existing stormwater infrastructure for the time being. As I mentioned before, WVSA, they send crews out to each municipality.

They spend a couple days a month in each municipality, working alongside municipality's Public Works crews and they'll help with doing the street sweeping, doing line flushing, doing catch basin rebuilding. The municipalities remain in charge of their assets. WVSA also gives a portion of the stormwater fee.

They put it aside in a savings account, and whenever the municipalities improve their stormwater infrastructure, then they can get reimbursed for their project cost out of that savings account. Property owners that partner with WVSA in the municipalities to help implement BMPs that we can count toward the permit and to also engage in the public events that promote

water quality and help with public education.

Again, all of that can be reported back to meet the needs of the municipality's MS4 permits. So relative to what this all costs, WVSA is looking at about 27 million dollars worth of infrastructure improvements over the first five years of the program. About 22 million of that is in best management practices, so the majority of what they're doing is relative to green infrastructure.

They're also putting some stormwater parks and I mentioned before funding savings accounts for municipalities to use for their existing stormwater infrastructure. They have about an eight million dollar a year budget that includes the O and M costs, the capital improvement cost and also the administrative cost.

What that results to is a fee of roughly $4.80 per month or less for about 85 percent of the property owners throughout their region. So currently, WVSA is working on phase one of their program. That's what I just went over. Phase one was developed based upon the results of the surveys that they got back

from the municipality.

That's what they said they could use the most support in and what the majority of municipalities, how they wanted to partner together. Phase two is the next step. And phase two is based upon adding in all those economies of scale that can be gained for the community, if they were to work together to a larger extent.

So in that phase, WVSA would come on board as a co-permittee for the MS4 permit and they would look to actually lease the infrastructure, stormwater infrastructure from the municipalities and they would start directly operating and maintaining that. They would also do more enhanced condition of assessment, management planning, capital improvement planning, take over repair replacement of the assets and look at supporting them in any regulatory requirements.

And then phase three, that may occur at a later date where they would actually become owners of the stormwater infrastructure in each municipality. I mentioned before that partnerships and collaboration is really the backbone of their program. It started with WVSA

partnering with those 32 municipalities for stormwater management.

And that's projected to save the municipalities 47 million dollars over the first five years and 264 million dollars for the community over the next 20 years. In addition to that, they expanded the collaboration efforts down to the smallest in property owners and up to the federal government.

So they're working to partner with the County Flood Protection Authority. They're looking to implement large scale regional BMPs in a lot of the levy infrastructure that the flood protection authority owns. And by putting the BMPs in those areas to improve water quality and help manage stormwater it's going to save the community about nine million dollars through that partnership.

They also partnered with USGS. USGS bought back the impervious area data that was developed throughout those 32 municipalities to help with implementation of the stormwater fee. And they partnered with the Army Corp of Engineers. Army Corp is helping them map all the infrastructure.

They're helping them with asset management and capital improvement planning and a whole host of other items and that's projected to save them 10 million dollars over the first five years of the program.

And then in addition, WVSA, they're in the process now of forming partnerships with large land developers, university, school districts, environmental groups, all of those things are helping with operation and maintenance of the best management practices and then also working through the minimum control measures that are required for their permits.

So this slide just shows the savings of just the municipalities working together and this is more specific to the permit requirements that these municipalities have relative to MS4. As part of their permits, they are required to reduce sediment pollution getting into local waterways by 10 percent over the next five years.

In order to do that on their own, the municipalities in total would have had to install 455 projects if they were going to do smaller projects cited within municipal borders. By being able to work collaboratively and do

larger BMPs, they're able to meet that 10 percent sediment reduction goal by only doing 65 projects and that's really important for them because they only have five years to get these projects done and we're able to reduce the number of projects by 390 which is -- that's a lot of projects that they no longer have to try to administer.

I went over the capital project cost. And of those 27 million, 22 million were related to BMPs. If each of the municipalities were doing it on their own, it would have been 69 million dollars, so they're saving 47 million in that regard.

And if we look at the expanded role of WVSA through those different phases I went over on the slide and how they're looking to partner with the municipalities going forward, the projected 20 year present worth cost savings is 264 million dollars to be working together, so that's saving those municipalities and the property owners, the 264 million dollars over the next 20 years in managing stormwater.

For each of the municipalities, they're reducing their overall costs by 50 to 70 percent. And that's detailed a little bit more

in the next slide. So again, this just shows three of the municipalities in the 32 in the working group.

You can see for the first municipality, number one, the total cost for their stormwater program, the first five years is at 3.2 million dollars. They were going to do it on their own and provide those same services to meet the permit requirement, so it would have cost them 7.7 million, so they're saving 58 percent by partnering together and you can see the savings go for the other two on the slide.

For each of the municipalities in the project area, their savings is between 50 and 70 percent. The other important thing to note is WVSA also implemented a regional fee. If the municipalities were doing it on their own, they would have had to either come up with that money based upon tax revenue or implement stormwater fees on their own.

Here, through the WVSA directly charging property owners, so not only is our cost savings for municipality, but the municipalities don't have to try to use tax revenue to fund those costs. And also when this approach the

average residential property owner is saving about 60 percent paying for stormwater through a fee as opposed to paying for it through property taxes.

So I've looked at about 40 municipalities in Pennsylvania where I've helped them implement stormwater fees and looked at what the impact is to the average residential property owner, if we're going to fund it by a fee or fund it by a tax.

And for each of those municipalities, the savings for the average residential property owner is between 55 and 75 percent paying for it through a fee as opposed to a tax and that's because it was mentioned before, you're paying based upon impervious area in most cases, not assessed property value and everyone in the community is paying, not just tax exempt users.

And everyone says, okay, well, that's great that it saves residential property owners, but that means that other people have to pay more in the community in order to make up for it. Well, one thing to think about though is that if you're funding stormwater through a tax,

it's just based on the cost of the program and the assessed value and, you know, you get your tax bill, you got to pay that amount.

When you look at a fee in New Jersey, there's a credit program that comes along with it, so it gives property owners the ability to start controlling stormwater on their property. And then by doing that, they can get a reduction. So they really didn't have a say as to the magnitude of what they're paying for stormwater and how they're paying for it.

They're paying for it directly to the municipality or to the utility in terms of the fee, or if their implementing devices to better manage stormwater on their own property. So when we look at, you know, regional collaboration and moving forward, we really find that a really great way to start is through the course of the feasibility study just to get municipalities or entities talking. Define those needs.

What needs are similar from community to community or municipality to municipality and what ways are they different. I would say that as part of establishing that

vision, also going through and looking at the cost is key.

So having a business plan that goes along with the feasibility study that looks at what's the cost if everyone did it on their own and then what's the cost if everyone came together. It's really important because elected officials need to go back to their constituents and they need to explain why it makes sense to work together with municipalities or why it might make sense of what a stormwater device in a municipality other than your own in order to save costs.

And the feasibility study and the business plan, it's a great way to do that. As we start looking at regional solutions, having a regional leader, I think can be really key. I've had the opportunity to with a number of different types of groups in Pennsylvania and, you know, we see regional authorities.

We see county level government. We see councils of government, we see coalitions. And in some cases, everyone has kind of equal weight in the group and we can come up with some really great solutions that can be carried back,

but the most effective solutions that we're seeing when there's a single regional leader, either a regional authority or when the county is willing to get involved and help the municipalities come together to start talking.

Also, having the willingness of the leader to expend funds in order to get things up and running. There's costs associated with the planning involved, costs associated with impervious area development, the feasibility study.

And the hardest part with that is right now there is an extra cost to put towards stormwater management, but if the leader can use general funds, take out a short term loan, loan money from maybe the waste water side to the stormwater side to get things up and running, once a stormwater fee is being collected, a portion of that fee revenue can go back to repay those funds.

So all of the stormwater utilities that we've implemented, the stormwater fee in the first year has repaid the funds to get the whole program implemented. Being able to define the vision and the benefits and have open

collaborative communication throughout the process is really key.

I mentioned before having a study with the business plan model can do a great way in demonstrating the cost savings and why it makes sense to take this type of approach. Thank you.

(Applause)

MR. MCCRACKEN: Thank you to all of our speakers. I think they did a really nice job.

(Applause)

MR. MCCRACKEN: We're going to take about 10 minutes or so of questions. I'll run around with the microphone.

MR. BARRETT: Kurt Barrett is my name. My question is about the New Jersey law. As Tony pointed out, it says that all properties have to be eligible for some kind of stormwater credit and that seems like it could be overwhelming and you could spend a lot of time and money to manage that program and figuring it out whether things that people say that they've done, they actually did and they actually work. And I was wondering if anyone on the panel has

any advice on how to deal with that.

MS. KOHLER: I would say a good credit program should really be designed on just looking at cost savings that property owners are providing back to the community for what they're doing.

So it's important to realize that some type of credits can be more costly to administer than really the cost savings that's received back to the program. So when you look at credits, there's ways to offer credits to various types of property owners or sizes of property owners, but maybe the largest property owner, maybe those have more of an opportunity to take advantage of a wider variety of credits.

If they're smaller property owners, you're going to look for ways that you can kind of streamline that process and give them opportunities to get involved that would benefit the community and save costs but not in ways that are going to take a lot of administrative time to go in and manage the municipality.

MS. ALEXANDER: During the stakeholder process we talked about credits at length. And the idea behind the credits were if

a land owner wanted to continue to hold onto his stormwater management system on site and treat on site, that he should be given a credit because that stormwater was not going into the municipal system.

There would be a fee for the general municipal system, but he would not be responsible for the amount of stormwater that was not going into the municipal system, so it really is more of an incentive for green infrastructure, or it's intended to be more of an incentive for green infrastructure or on site stormwater management more so than anything else.

MS. KOHLER: I would add. What we've seen in some of the municipalities in Pennsylvania is that the credit program for some of the smaller residential properties is generally often seen and that's also public education and outreach initiative.

So you may find that you have a great partner in a watershed group for example who is willing to go out and work with landowners on implementing rain barrels or small rain gardens, so that can be your -- for getting the information that you need.

What we also see is some of these communities provide the credit but don't necessarily track what's happening in terms of meeting their MS4 permit obligation in terms of a pollution reduction, so they offer the credit but they're not necessarily accounting for it to get a pollution reduction, if that makes sense.

They use it more as the public education and outreach program. That's one way to limit the administrative costs.

MS. ALEXANDER: There was a component of inspection and checking to make sure that those that were getting credits would actually be doing what they should they would be doing. That was discussed during the stakeholder process.

MR. MCCRACKEN: Anybody else?

UNKNOWN SPEAKER: Hi. My name is (inaudible). I'm with Suburban Consulting Engineers. My question to you, Adrienne, is the MUA that you just discussed too many letters to remember right now, I think it was Wyoming Valley Sanitary Authority. They serve 36 municipalities for the sewer treatment and only 32 signed up.

Did you shame the other four for not

joining the team? I mean, something where we're going to be up against in addressing this with MUA in the state of New Jersey and a lot of the questions that I've had from clients in even considering the stormwater utility is the regional aspect, so, okay, I am a township.

I can start billing in addition to my sewer bill, stormwater line item, but everybody that lives on a county road gets what credit because it's a county owned structure. So for those cases where you have an MUA that's supporting 36 and only 32 signed up, how are the other four left out and what are they doing?

MS. VICARI: Sure. So with WVSA, it was an opt in program, so the municipalities could choose if they wanted to come on board and sign in a governmental cooperation agreement. In the case with WVSA, they provided waste water treatment service for 36 municipalities, but a portion of those 36, I want to say six municipalities, they had a smaller regional waste water authority that then sent their waste water down to WVSA for treatment.

So of those six that were part of a smaller authority, four of them decided to stay

together and manage stormwater on their own as opposed to coming on board with WVSA. We also have the instance where municipalities got waivers.

So WVSA's main program, it was focused on meeting permit requirements because that was the greatest need in that area. And we're going to see with regional collaborations that it's not necessarily going to be why municipalities collaborate, but that was the instance there.

So we had municipalities get waivers from the Pennsylvania Department of Environmental Protection saying you don't have to comply with all these departments right now. And the municipalities actually thought about then maybe backing out and not being part of the regional collaboration, but realizing the other benefits and that probably the fact that regulations were going to get tighter in the future, they decided to stay in and remain part of the program.

It was important for us to make sure that what each property owner was paying was equitable, so those municipalities then got waivers and are receiving the whole scope of

services. Their property owners encouraged less than the ones receiving the whole scope of services.

And that was really important for the municipalities and those elected local officials to be able to explain and justify back to their constituents, why they're part of the program and what benefit they're going to get. And then that gives those municipalities, the ability to move up and become a full scale partner in the future when they no longer receive a waiver and they need to fully comply.

But I would say, there's been discussions with some of the various county initiatives we're getting involved with. Is it going to be an opt-in type of program, or is it going to be a county requiring the municipalities to come on board. And in most cases, the thought is for it to be an opt-in program.

And as part of that initial feasibility study, that's why they look to see what are the needs that the municipalities have and can we demonstrate the benefits as part of administrative benefits, financial benefits for that feasibility study and the business plan

model.

MR. MCCRACKEN: I think it's amazing that you have that many municipalities who are willing to talk to each other. Did anybody want to pull out? Is it a time thing, five year, 10 year commitment? Did anybody want to pull out?

MS. VICARI: With WVSA's program, they signed agreements that are perpetual, so there's never the intent to pull out. That being said, we did have municipalities that got waivers on the back end from Pennsylvania DEP that were interested in pulling out.

And so it took some discussion and dialogue and negotiations for them to really understand the benefits of the program and educating them on how to explain to their constituents why they're being charged a stormwater fee even though the municipality got a waiver.

MR. MCCRACKEN: And the savings. The savings, it's amazing. You can't argue with good numbers. Anybody else?

MS. KOHLER: I would say, if your county, that collaboration is 45 municipalities, so really, it's becoming more common I would say

to get a lot of communities to pull together, but also I think that what you need to, both of you guys brought it up, it's really what are the scope of activities.

And the reason it's a big driver right now is the new aspect of the MS4 permit requiring -- that's where the big cost is and so that's what's bringing folks together. If that's not there, you have to figure out what it is that's going to bring your communities together that they need to work on together.

A lot of these communities, as they start these collaborations, it's really hard to agree initially to that kind of the time period. So you'll see some where they have a two year agreement and then maybe a five year agreement so you might have to take baby steps to get to a long term collaboration, but those baby steps build that trust as needed to be able to continue moving forward.

Even if it's a one year agreement or a two year agreement, that's not a failure. That's a step in the right direction to build the trust that you need to have.

MR. MCCRACKEN: Okay. A couple

more.

MR. BAKUN: You mentioned that a large number of the stormwater utilities have a residential flat fee. I can understand it from a simplicity perspective. What is it that drove the rest of them not to have a flat fee?

MR. DILL: That's a good question. I think the driving factor there was trying to be more equitable. If we have in our communities very large properties and very small row homes, that it's not acceptable or fair to have everybody pay the same fee.

So they said it's worth the administrative burden, if you will, to calculate what those fees should be and to do the administrative effort to then charge separate fees for those groups, whether it's based on property size or actual -- some cases and folks have access to create actual digitized impervious area of how big is your driveway for every single residential property, that data is available.

It's easier to assess them more specific. Many communities just do represent of sample of five to 10 percent of the residential properties to calculate that residential unit

that's used for the basis of commercial billing. So they say we're just going to digitize that percentage and make sure it's a representative sample throughout the community and not incur costs of having to digitize 100 percent and then maintain that over the future as things change and you go back and revisit that every five years or 10 years, so that's kind of the counter.

MR. BAKUN: For those that went to the more detailed analysis, do they tend to do that up front or after they hit the push back from residents saying this isn't fair?

MR. DILL: I think most of us were upfront on the initial. Typically, what we do is we do an evaluation of structure and stuff versus flat review, what those rates would look like in that community and working with the staff or the boards there. They make a decision, okay, do we want to go to a tiered structure or flat and they make the decision based on the pros and cons what's best for their community.

MS. VICARI: I think also, if you look at waste water fee billing, you know, initially, it was done based upon an EDU basis, so residential property owners were generally

billed and EDU and equivalent -- and then non residential was multiples and EDU.

And then we got to the point where technology advanced and water meters were installed on all of the homes and then we could start having volume metric billing for waste water bills and that's kind of where the industry went. The same way relative to stormwater where due to the costs, implement stormwater program developing impervious area data was cheaper to only digitize the representative sampling of the residential property owners and bill them all the same.

We have seen a lot of advances in the last couple of years with impervious area technology and the cost to develop impervious area is really coming down so now we're starting to see more of municipalities just develop impervious area data for all of their properties because as they're educating the public on stormwater and why they're charging a fee, the equitableness is really a big aspect.

And so a lot of them are going to more of a tiered approach and not necessarily differentiating between residential and non

residential, but just looking at the total impervious area and impervious area magnitude into blocks and then assign a flat fees for blocks, if that makes sense.

MR. BAGUN: Thanks.

MR. MCCRACKEN: Anybody else?

UNKNOWN SPEAKER: The key word is equitable. We have several municipalities. You brought up a very good point, Ellen. There's municipal boundaries, there's county boundaries and then there's watersheds. When you have a shared services agreement and there is a municipality.

And you said also, Adrienne, that there's the equitable portion to your client, MUA, that was establishing a fee with certain credits or waivers to each municipality, so they're not all taking the same burden.

At what point do you take into account that the upstream location is the cause of the need for the downstream location to address and implement a higher capital cost for -- I have a client in mind right now, where there is stream erosion from the banks of the river and they literally have to address it in

the millions.

They put it off because they don't have the money in the budget and they also think it's an unfair burden because this is all upstream causing this effect. So how do you address something like that where the town that needs to consider stormwater utility stands alone with a bigger capital cost that is really a cause and effect from upstream locations?

MS. KOHLER: So if they're not in a multi municipality collaboration, it's a very good challenge. If they are, we have had and I don't know if you notice on the chart, they are funding formulas that help distribute the burden.

As part of that conversation that goes on within that collaboration it's how are we going to figure out what an equitable distribution of the burden should be. And some of them have included amount of impervious cover, miles of impaired stream because that related to the MS4 permit and the pollution reduction requirement and population.

So you can have a set of framework that you then work through with the communities to figure out how are you going to decide what is

equitable. So in that setting you might have a flow be part of your calculation. Now, you have to have some really good data about the flow to be able to get there.

So that's the other limiting factor about the framework that you use for that formula is what do you have good data about but that's one of the things that we've seen. It would be a little surprising to me in Pennsylvania if there were an MS4 permit that would require -- downstream to address the flow generated from the upstream community.

The way the MS4 permit is structured in Pennsylvania you have to deal with a certain percent of pollutant reductions. You don't have to deal with it in that structure -- elsewhere and just meet your 10 percent reduction. The challenge there is you still got stream bank erosion issues.

So that's where that -- that's where watershed approach really makes a lot of sense and being able to engage that upstream community is really important. And we have the issues throughout the country. I am sure that you are all aware of, for example, Ellicott City which

has flooded twice with storm events.

It's because this community has all built up and doesn't have sufficient stormwater management, and it all flows down stream to that town. And yet, they have not been able to deal with the county wide basis because the folks that live up here, they don't want to pay for it. It's a huge challenge and, you know, it needs to be addressed, but we don't have -- these are not necessarily the tools that are going to force that to happen.

MR. MCCRACKEN: So for those people that haven't, if you're going to testify, please get signed up for it so we know how many we have signed up to do so. We're going to allow five minutes per presentation. We strongly encourage people to submit detailed written comments to us, so we have something that is tangible.

And again, we also have this being recorded as well as a transcript that's being prepared of the hearing, so you have the opportunity to be heard on that. We're taking written comments until November the 29th. And the information, I believe, is in the packet as

to who to send it to.

But if not, it can be sent to Division of Water Quality, 401 East State Street PO Box 425, Trenton, New Jersey 08625, fax number 609-341-4518 or by mail to Tracy Omrod at dep.nj.gov. I was going to say, if we need to take five minute break.

(Whereupon a break was taken.)

MR. MCCRACKEN: We have three folks that offered to speak today and give testimony. Clean Water Council, we are going to be posting this stuff next week, so all the slides that you saw will be on our Clean Water Council website next week. Also, the address over there for Stan Cach. He's dep.nj.gov.

He's the person you can send your comments to, to November the 29th, so we have a little bit of time. Please offer comments. This is really an important thing and it's the start of something that's very significant in New Jersey and we need your input so we can make good recommendations.

All this stuff goes to the commissioner directly, and our council will take everything, put together and make a

recommendation on where they should be headed. If you went to the department of where they go, send your comments in. We got Henry. Come up, we have five minutes max at this point. If we have a little time afterwards, if someone wants to continue, we can do that.

MR. GAJDA: Hello, everyone. My name is Henry Gajda. I'm the policy director with the New Jersey League of Conservation Voters. We will be submitting more detailed comments, but I wanted to touch on a few points today.

We lead a coalition entitled Flood Defense New Jersey. It's a coalition of state and non profit organizations working to protect the communities from damaging floods and harmful stormwater pollution.

We have worked with our coalition members including New Jersey Future, the Association of New Jersey Environmental Commissioners, the Pinelands Preservation Alliance and the New Jersey Highlands Coalition, amongst many other partners that are in this room today.

We help local communities set up

programs to control flooding and reduce pollution. And within these programs we undergo extensive public engagement and education work. It was this coalition that led the legislative and administrative charge to pass the Clean Water and Flood Reduction Act.

On our website, Flood Defense New Jersey Dot Org, you can find a variety of educational materials developed by many of the people in this very room. Just quickly, I really like this study, but in the survey of more than 350 communities and 48 states, which was released in November 2018, researchers from the University of Maryland and Texas found that 82 percent of communities experienced local inland flooding.

Furthermore, 85 percent of these communities experienced flooding outside of designated flood hazard areas. This report also highlights a major equity issue, the social costs of these urban flooding events disproportionately hurt low income communities.

These communities are more likely to live in high risk flood zones, but less likely to have flood insurance. While the secondary effects include snarled traffic that lowers

productivity and incurs a loss of hourly wages. In addition, 70 percent of respondents believe that the lack of sufficient infrastructure improvements was a main contributor to urban flooding.

And more than half of those respondents believe their communities have failed to make proper infrastructure improvements to withstand increasing levels of rainfall. The report concludes with a sobering finding, which is that the federal government isn't helping so it ultimately is up to state and local governments to take action.

Ultimately, this legislative accomplishment and achievement is a great tool to actually help move our county's regional authorities and municipalities forward and we look forward to working with many of the people in this room.

Just to let everybody know, Kaitlin Barakat, who is our water quality coordinator, she's here. She has a bunch of educational materials, so if you are interested in getting more involved, please go find her and you guys can have a nice conversation. Thank you very

much.

MR. MCCRACKEN: Thank you. That other slide that I had them chase before was an important one I should have mentioned. And that's what the department is looking specifically for comments on, so if you can consider these questions.

And that's what are some of the hurdles for implementing a stormwater in New Jersey. How can we better achieve public education regarding stormwater utilities. How can a stormwater utility help improve a municipality's stormwater program. And also, what tools or guidance can be provided by DEP to get you there.

So please think of those things when you're considering comments even now or after. Mike Pisauro.

MR. PISAURO: Thank you very much. My name is Mike Pisauro. I'm the policy director for the Watershed Institute. I'd like to take this opportunity to thank the council for hosting this and for the speakers for providing their knowledge and experience. This is brand new to New Jersey.

It's not a new topic as we heard today. I started my environmental career in 2005 and I think stormwater utilities was one of the legislations I was first working on, so it took us a number of years to get here. Hopefully, it's not another 10 to 14 years before we have one in New Jersey.

So a couple comments. You know, one of the speakers, I think Tony said there's that scary unknown. And New Jersey is littered with the scary unknown, but we're also littered with the scary known. There are -- we see it every day. I didn't drive by it this morning but there's a stormwater management basin on my way to work that the last several months has been holding water.

It was fixed for a little bit of time and I just kind of unconsciously didn't go by there today to see whether it was still holding water or not. But we don't have something that a lot of the other communities have.

So in Pennsylvania you heard that we have a requirement or Pennsylvania has a requirement to reduce their pollution, existing

pollution. New Jersey's stormwater rules in our MS4 permit really aren't designed that way, so we don't have the driver like the Chesapeake Bay TMDL to do some of these things, but we do have the driver of flooding.

We all know that. We all drive through it. We all try to circumvent some of our roads that were flooded and all those basins that don't function. And some of that, you know, these problems are, you know, we heard was a lack of resources to do it, but a lot of it is just we have a very rich and vibrant history of development.

And that rich and vibrant history of development predated stormwater management. Stormwater utilities is one of those tools that we can start to address those sort of, I used to say sins of the past, but maybe that's too harsh, the mistakes of the past, or the problems that are the consequences of the past.

But if we only create stormwater utilities to maintain what we have, not to retrofit it, not to fix it and not to improve it and not to address those unintending consequences that are vibrant development, I think stormwater

utilities are going to be missing the boat.

And I would encourage those communities that do go forward with stormwater utilities, that we do really go more, go farther than just maintaining what we have. And I think one of the sort of (inaudible) for developing stormwater utilities is we all know the problems when they're in our face and then the next day, when the road is now open or the basin is now cleared, we kind of forget about it.

So really developing a tool -- and the Watershed Institute is, we either released it or it will be releasing a tool so you can use your smart phone, snap a photo and upload the location of localized flooding so that we really have a visual GPS of where our problems are and I think that would help our communities really start that conversation of, we have a flooding problem, we have a water problem, where are they so we can start to address it, start having that conversation in moving forward in having a stormwater utility in those communities that makes sense.

And those communities that make sense, hopefully, by and large are regional, I

would love to see them on a watershed basis. I don't know if we will ever get to that, but on the county level, because as we've been talking with communities, the 25ish communities in our watershed, almost every single one of them says great idea.

But if I do it and such and such town doesn't do it and such and such town doesn't do it, then what have we accomplished but detach our residents and that's a fee, not a tax, but, well, so regional approaches really will be the goal and I hope that the council and DEP really provides the resources and the incentives to create the regional approaches.

You can provide resources for regional approaches that maybe we don't provide for each individual municipality because following the municipal and school board model would not be a way of officially addressing stormwater problem, so I would like to thank the council, DEP and our speakers.

I know I can speak for the Watershed Institute and many of our watershed organizations throughout the state, we're here to help, we're here to provide guidance, help provide

municipalities and counties with a forum or just knowledge to help reach out to our vendors and community to help have that conversation because I do believe that this is one of those tools we desperately need, so thank you.

MR. MCCRACKEN: We have Eric Fooder.

MR. FOODER: Good afternoon ladies and gentlemen. My name is Eric Fooder. I'm director for utilities of the City of Gloucester, Gloucester, New Jersey. I wanted to actually touch base on some of the questions you're asking.

And first one being, what are some of the hurdles of implementing a stormwater fee. Well, I have one, so I can tell you what the problems are. Most of the issues with a stormwater utility are making or presenting the data in such a way that you get stakeholder buyer, the public, the governing body, the other members of the municipality, surrounding municipalities, okay.

So it isn't just a case of, gee, we ought to do this, gee it's a great idea. No. Why are you doing it? What's the financial gain? What's the liability if we don't? And that seems

to drive a lot of things, too. What's your liability exposure?

If this mitigates that, you're ahead of the game because you don't want to be the one municipality that's out there and you didn't do something and now all of a sudden it's a disaster. How do we better achieve public education?

Well, you can go to our website which is www.cityofgloucester.org. We have a green table and we have public outreach where members of Sustainable New Jersey, we get the word out every month, we have green infrastructure projects that we do.

We just completed a rain garden right in front of our water treatment plant which I'm quite proud of but we do that every year. We do tree plantings, we do public outreach, we include the Board of education. They send the kids out with us, you know, and I, as the department director, send my assets to go help them.

They're not really part of the Department of Utilities, I do it anyway because we're all in it together. How can a stormwater

utility help improve a municipality's stormwater program? One thing that wasn't touched on earlier on, and it was Tony's presentation, part of it was if you have a stormwater utility, the local governing body is entitled to five percent of the surplus, okay, which is why the municipalities don't like MUAs because if you're a city department, they get it all, so that, you actually have to, if you're going to do it, convince your governing bodies that even though you're only getting five percent of it, it's worth the five percent.

It's worth -- you're gaining so much more in good PR. You don't want to be the one there where they just went under water and everybody is screaming at the meeting, which happens. What tools and guidance can be provided by DEP. I'll tell you the one right off the bat.

Stormwater utilities or stormwater departments, whatever group you want to call it, they tend to be the forgotten utility. It needs to be under the purview of a licensed operator, just like all the other ones are.

DEP was to find it in their wisdom to say, okay, we're going to make the waste water

collection system operators responsible for stormwater. That would be my recommendation. Now, so far, it's been sort of a grassroots effort to at least get qualified individuals to do it.

For instance, even though I don't need it, I'm a certified stormwater inspector. There's a group that hosts a class annually. I'm sending my subordinates down to it. I want everybody to be educated because there really isn't a curriculum on what to do with stormwater.

But the closest group are the waste water collection system guys, so having an individual that's responsible for your system, to me, is a key element to any successful stormwater utility and we need DEP's help to do that. Thank you very much for your time and have a great afternoon.

MR. MCCRACKEN: Anyone else for the good of the cause? Thank you again for DEP for hosting this and giving us the opportunity and to the council members who helped me. Thank you all.

(Hearing Concluded at 3:45 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 30, 2020

Dated: November 13, 2019

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