COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUSTAINABLE WATER INFRASTRUCTURE TASK FORCE

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PUBLIC HEARING

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BEFORE: Senator Jim Ferlo, Sam Scalfone, and Dana Aunkst

HEARING: Monday, May 19, 2008
Commencing at 1:30 p.m.

LOCATION: Carnegie Mellon University
5000 Forbes Avenue
Pittsburgh, PA 15213

WITNESSES: Arthur Tamilia, John Schombert, Eric Close, Nate Wildfire, Tom Cahill, Dr. Jared Cohon, Colonel Michael Crall, Michael Kenney, Suzy Meyer, Dr. Wrap, Gary Parks, Mr. Kraynyk, Jeff Fliss

Reporter: Barbara J. Jones

I N D E X

P R O C E E D I N G S

SENATOR FERLO:

Good afternoon again, folks. Ladies and gentlemen, State Senator Jim Ferlo. It being roughly 1:30, 1:33, I would like to get started. We have seven or eight scheduled speakers that were invited and also agreed to participate in this important public hearing; as well a number of individuals phoned in and got on the agenda. And as well for those who will be in sustainability and sustain yourself to the end of this public hearing, you're also welcome to contribute. So if you could be patient, if you wanted to speak today, we'll go through scheduled speakers.

A couple of folks also e-mailed DEP or wrote in to our office. We're going to recognize those individuals towards the latter part of the agenda, and as well we'll still have an open mic for individuals that want to testify prior to close of the hearing.

I want to thank everybody for being out here today. Thank Carnegie Mellon University especially for their good work in helping to host this event. Especially want to thank the DEP staff and my staff person, Stephen Bruder (phonetic), from

Harrisburg, for the arrangements today.

I especially want to thank our governor, Ed Rendell, as well as Secretary Kathleen McGinty for their leadership in helping to create this Water Infrastructure Task Force. Now, usually I have a lot of time to give a great senatorial speech, but I'm going to dispense with that because we know in common, everybody in this room, I look out in the audience and I see a lot of skill and expertise and a lot of fellow travelers when it comes to understanding the depth of the issues that we face.

I want to thank the Governor and the Secretary because in the six years that I've been in the Pennsylvania State Senate, this is probably one of the first times I've seen such great leadership coming from the executive branch and the Secretary to really say hey, look, we cannot put these crises off for another generation; we either pay now or pay later. Let's take the bull by the horns.

I want to thank them for creating this task force. As you know, this is one of about eight task force hearings that will be held throughout the Commonwealth, so there will be other opportunities if you didn't get the chance to speak today. They'll be traveling around the Commonwealth between now and the

next month and a half so there will be other opportunities as well. We cannot put off this crisis any further, and as well given the complexity issue, as you well know --- I look out in the room and I see a lot of folks that are from sewer authorities, water authorities, local municipal officials. We have the technology community here, and obviously all of us, I think of one stripe or another, consider ourselves environmentalists. We're concerned about what we do every day with our water and sewage, or better yet what we're not doing every day especially with our sewage. So I want to thank everybody for being out here today.

We have a couple of other folks that are here that will be in and out of the hearing today. To my right is Sam Scarfone representing the Pennsylvania Rural Water Association. He is one of a number of other colleagues that will be sitting on this task force as we move around the state and he may want to have an opening comment, as well I especially thank President Cohon from Carnegie Mellon University for being here today. He's a member of the statewide task force as well. He'll be in and out and be back, I think, roughly at 3:00 to testify formally. But at this time since we're on his home turf, I'd like to

first introduce President Cohon. Thank you.

PRESIDENT COHON:

Thank you, Senator Ferlo. Mr. Chairman, I really appreciate that. The only people who can talk longer than members of the State Senate are college presidents. However, I will spare you that. I just want to say welcome to Carnegie Mellon. We're very proud to be hosting this very important hearing and delighted by this fantastic turnout. And as president of this great university, I might be able to get more chairs but don't hold me to that. And as Senator Ferlo said, unfortunately today is also the day of Board of Trustees meeting, so I have to go run to some of those meetings but I will be back for my slot at 2:50 or 3:00 o'clock to testify. Thank you very much for bringing this here, plus your leadership.

SENATOR FERLO:

Thank you. I also want to introduce Matt Junker from Senator Regola's Office. Welcome for being out today as well as I see Mr. Cornell Connor from Congressman Doyle's office. The Congressman's been a great attribute to the city and a great supporter of capital infrastructure needs for our city, our county, and our region. I want to thank

Congressman Doyle for his leadership. If there are other elected officials that need to be recognized by apology, we'll get you through the course of the day. As well, I see the president of city council in Wilkinsburg, our sister city, Wilkinsburg, Denise Edwards who was here earlier, I think I see her somewhere. There she is. Denise, welcome, thanks very much for being out here. She's just an example, Wilkinsburg.

I represent a three county area; not only the City of Pittsburgh but large parts of Armstrong and Westmoreland Counties and throughout the AK Valley. So whether it's big city Pittsburgh, Allegheny County or the smaller communities that I represent, we're all basically in the same boat when it comes to needed infrastructure needs, water and sewage. So the diversity of my community is really symbolic and representative of the diversity of the problem we have throughout all 67 counties.

I'm hoping that this task force through today's testimony and subsequent hearings will not only better educate ourselves as a community about the severity of the need, but I'm at least heck bent on making sure that we have specific recommendations. I'm willing to step up to the plate and vote for

rates, or taxes or bond issues or whatever we need to do to make the kind of capital infrastructure investment that is so long overdue in our Commonwealth.

Just in closing, as a past city council member, I know I can show you a number of wooden pipes that we have in the City of Pittsburgh that are roughly 110 years old and probably of every combination of types of pipes since that last hundred years. That's got to change.

So thank you all for being out here today. We're going to first move to our opening remarks by --- actually the first presenter will be representatives of the Department of Environmental Protection. If you have received agendas with some of the background information, they’re on the table here. Please help yourself.

So at this time I want to welcome Dana Aunkst. He's the Bureau Director from the Water Standards and Facility Regulations from the Rachel Carson Headquarters, command central, from Harrisburg. Thank you. And just by the way for those of you who need any technical folks, we have folks here willing to help with you with the PowerPoint if you so need it.

MR. AUNKST:

Good afternoon. Thank you, Senator. Welcome everybody. It's a great turnout. When we first got here, I said I think this room will be big enough. Guess I was wrong. I'm here to just kick this thing off with a presentation on sustainable infrastructure. We hear that term a lot. What we mean at the Department when we talk about sustainable infrastructure --- initially, we took this presentation in a slightly different form to all of our regional offices earlier this year because one of the things that we wanted to make sure is that if we're going to mark on this major initiative, we want make certain that our regional staff and all the staff in the department are thinking the same way.

So the first thing we have to talk about is why we're here. Well, we're here right now as a department to provide an overview of this initiative and inasmuch as we need to start taking a different approach and a more comprehensive view of the way we look at our drinking water and wastewater infrastructure. And you'll notice up here I have, on my slide I've got On-lot System Management there under infrastructure and that's important because wastewater infrastructure includes all of those septic systems

that are out there as well. The days of running pipes miles and miles and miles to pick up five and six customers are over. One of the things in the department we're trying to change the way of thinking is that on-lot system, septic systems, sand mounds, et cetera, should be considered more permanent infrastructure than a temporary fix until those public sewers become available. And when we factor in the needs in the on-lot areas of the Commonwealth, you can imagine that the dollar numbers go way up.

Again, we want to try to encourage a different way of thinking that this is just something that we need to consider, sustainability as part of our everyday way of life. And sustainability means planning for the future, not setting systems up to replace once they fail, but to continue to operate, maintain, and replace them as they reach the ends of their useful lives. So the big reason we're here today, obviously, is to solicit input and get some support from sustainability concept as part of the task force initiative.

These are some things out of the government's proposed budget for this year that was released in February. When we started looking at the issue of infrastructure and needed repairs in the

Commonwealth, we quickly realized that it was much more than we could bite off in one fiscal year. So for this year's budget, you'll see that the governor proposed programs to fund replacement and repair of bridges, high-hazard dams and some flood control projects. The wastewater and drinking water infrastructure portion of the overall infrastructure need was put to this task force, the one that we're supporting today, to investigate further and try to nail down what is actually needed, how much we have in current resources and what we need to make up, to help repair our infrastructure.

So when we realized it more than one fiscal year, the wastewater and drinking water got pushed off until fiscal year 2009.

That's the goal. I've heard a lot of people talk about an unrealistic schedule to have a report done by the task force by October 1st. The fact is that in October is when we, as cabinet agencies, start preparing our budgets for the following year so the governor generally releases a budget address in early February. We've actually been working on that budget since the prior October. So it's critical that we meet that October 1 deadline because the intent is to use the work of the task

force to create programs in next year's budget.

Here's some details about what's in this year's budget. You can see that the bridge repairs, state-owned dams, flood control projects, those are numbers out of this year's budget and you can see the subsequent years' funding.

To address the wastewater and drinking water needs, the governor issued an executive order creating the Sustainable Water Infrastructure Task Force. There are 30 members on this task force. The tasks given to the task force were significant.

First identify the gap between financial need and resources available. Another task, identify cost savings that may be able to be achieved from non-structural alternatives. If we can achieve the same end result in, for example, cleaning up an impaired stream through non-point-source best management practices or other creative methods in lieu of spending lots of money on building new sewage treatment plant infrastructure, then we can realize those cost savings and that's another task of the task force.

The actual cost of providing services. One of the things that I chuckle every time I hear, is no offense to the elected officials in the room, but a

sewer authority board member saying, we haven't raised our rates in 25 years. Now what does that tell you? That tells you something's not right either they have some really good investments going on or they're not doing a whole lot to maintain the existing infrastructure and plan for its replacement.

And again, finally recommendations out of the task force for promoting sustainable infrastructure, and I'll talk about that in more detail later. We at the Department, then, need to take this report not only from the financial needs and available resources standpoint, but we need to look at what we have right now that may be creating roadblocks toward getting us to repair of our infrastructure in a sustainable manner. Policies and procedures, where there's regulations, we need to also look internally.

The task force has met twice, April 14th, and May 8th. And out of those meetings, the task force has created five working groups. These working groups are actually made up of members that are not necessarily on the task force but when the governor originally proposed the executive order, we had so many people that wanted to part of the task force that we couldn't fit everybody in. It just would have been unmanageable. So what we've done is we've allowed the

people who wanted to participate on the task force and share their expertise, knowledge and experience to be members of the work groups. There are three data collection work groups; the first to collect data on needs assessment. We had estimates from various sources of the total infrastructure needs for drinking water and wastewater in the Commonwealth. For example, the latest EPA Clean Watershed Needs Survey is what it's called for wastewater and Drinking Water Needs Survey for drinking water. The total estimated is somewhere around $20 billion. For wastewater it's $7.2 according to EPA. Now, knowing full well that I've seen numbers just for some things alone in the $3 billion range, that $7.2 just doesn't seem accurate. So that's a good example to use to show that the numbers that we have are all over the map. We really need to try to get a better estimate of what's out there before we can try to tackle it.

So this needs assessment work group is going to try to do that. They're going to look at user rates and they're going to look at affordability criteria. And generally affordability criteria come into play when you're talking about PennVEST funding for example. PennVEST historically has calculated the loan/grant mix based on giving those communities with

the greatest financial need the grant money and they base that all on what they consider to be an affordable user rate. I think they calculate everything out of that. So EPA has indicated in many cases that they consider 2 percent of median household income to be affordable. My estimates in this business over the last 23 years is that might be a little bit high. It's probably in the neighborhood of one to one-and-a-half percent would be a much more affordable rate.

We have many communities that are charging nowhere near one to one-and-a-half percent of the median household income as user rates. Are they under-funding their system? It's hard to tell without doing an analysis of the system, but one of the big things is affordability.

One of the work groups is going to be looking at, as I talked about a little bit earlier, innovative measures. Are there cost savings we can achieve from non-structural alternatives and that work group is going to be looking at things like the BMPs and for example, and you may not run into it in this watershed, but in the Chesapeake Bay Watershed you've heard the rumblings of what’s going on over the ridge.

We have a nutrient trading program that

we've rolled out to help folks comply with their Chesapeake Bay nutrient reduction requirements. So that's the kind of alternative in an innovative way to comply with permit limits and at the same time do it in a less costly way.

Finally, the other data collection work group is the financial resources work group and it's going to be looking at existing resources available to help fund infrastructure improvements.

There are two implementation work groups that were created by the task force; one on financial sustainability and this gets into all of the issues regarding sustainability. I'll talk about those in a little bit.

And finally a legislative and regulatory issues work group that is going to do exactly that, look at legislation that may be needed, regulation changes that may be needed to be made and make recommendations as part of the final report.

And involved in all of this is the need for education and outreach to promote the concept of sustainability, asset management, taking care of your system, long-term budgeting, making sure you have resources for replacement.

We're here today. This is the third

meeting, the second one outside of Harrisburg, and we are going around to collect information, as I said, and get public important testimony. We're also meeting with our advisory committees. We've already met with the Small Systems Technical Assistance Center advisory board, the TAC we call it. We will be meeting with the citizens advisory council tomorrow. And we also have the statewide committee on the state water plan that's working on the state water plan as we speak and we will be meeting with them very soon as well.

Sustainable infrastructure --- I'm not going to bore you with all these details. What does it mean? It's not just the latest EPA buzzword. This started out at the federal level. EPA's very serious about sustainability and they've actually built the concepts together and they're promoting these concepts throughout the country. It's an umbrella that covers every part of the programs that at least I manage, drinking water and wastewater. But it also gets into other programs such as stormwater management and water planning, water resources planning.

Again, it was borne out of recognition that much of our infrastructure is aging, as you've heard Senate Ferlo say. Pipes a hundred-plus years

old in some areas, they're just not sustainable if you will, viable anymore, to perform the function they were originally installed to do.

In 2002, the EPA did a study called the Gap Report. It essentially took nationwide needs, subtracted out financial resources available and the difference being the gap. This is what we need to make up in order to fund our infrastructure improvements to get the infrastructure back to where it needs to be.

One of the things that came out of that study as you can see the years that most of the piping, underground piping, were installed and you can see mostly it was post-World War II, but the vast majority in the 1960s and 1970s. They then put together what they call an echo curve, taking useful life of piping systems versus the year it was installed. And you can see that we're quickly approaching a very, very massive effort to replace the pipes that are going to be going bad in the next couple of decades.

EPA came up with the concept of sustainability. They defined it by four pillars, better management, full-cost pricing, water use efficiency and a watershed approach. I'm not going to

get too much into detail here because this is in your handouts and you'll hear a lot about it in the testimony.

The EPA links to these pillars through the executive order, so we interconnected those thoughts and built them into the executive order and the Sustainable Water Structure Task Force mission.

What is better management? Generally at DEP we look at their management as operator certification and training, workforce development for operators. On the drinking water side we have a program called capability enhancement, source water protection that’s built into capability enhancement to help a system become more capable --- enhanced capability to manage itself. And again there's the issue of on-lot system operation and maintenance. It can only be --- an on-lot system can only be permanent infrastructure if it's operated and maintained properly; otherwise it is very likely to fail. And when an on-lot system fails, generally a homeowner is left with almost no recourse.

System efficiency, another pillar, again we get into workforce development and capability, enhancing the efficiency of these systems.

We have a program right now --- we have

only two people that are doing it for the wastewater and drinking water program, but we can come to a wastewater treatment facility and we have very experienced operators and they will look through the facility, do kind of an audit and help the operator figure out ways to make the system more efficient, cut energy use, cut water use, whatever it happens to be.

That's the kind of thing we'd like to take to a greater level. Like I said, we have only two people doing it right now but if we could get a bigger program, I think we could help a lot more folks.

Water conservation is a big issue, obviously if you don't generate it, you don't have to treat it. And when you produce, you don't lose it. A lot of times we have problems with drinking water systems with unaccounted for water losses, very high water losses.

And then finally energy conservation, which is going to become a big, big topic over the next couple of years as electricity rates go up.

Infrastructure financing, that is the focus. That's why we're here. What do we need? What do we have, and how do we address that gap?

And finally, a watershed approach. Like

I said, we're currently working on a state water plan, revisions to the state water. We're also looking at programs for integrated water resources management and planning. Stormwater management integrated with other parts of our program. Green infrastructure, which is actually a very big and very important issue here in the southwestern part of the state. Sewage water facilities planning and permitting on a watershed basis.

And finally, the concept of regionalization, and I want to make sure I mention this, that that's not all-inclusive of those projects where we have big wastewater treatment plants that serve many, many communities that have miles and miles and miles of sewers.

A regionalization concept can apply to administration only for example where you could have several smaller facilities located in various parts of a municipality serving those areas, and those areas only that are managed by the same authority. They have circuit riders for operators. They have one authority, one billing system. It's kind of an economy scale that it's achieved with that management structure. So regionalization is not just connecting by pipe. It can be administration as well.

In Pennsylvania we're doing our own gap study, I'm going to whiz right through this because I'm going too long here.

We're doing our own analysis of the gap in the needs in Pennsylvania. At DEP we started this about a year and a half ago, and so this task force effort came on the tail end of us finishing it up and we're hoping that our gap study is going to be able to be used as good information for the work group on needs assessment.

We did audits, complete audits and questionnaires on 196 wastewater systems, 158 drinking water systems that gave us a representative sample. We'll be able to project the needs using that model to the entire state. EPA is providing funding and a contractor for us to help us to do this, so this will become an integral part of the needs assessment work group and their report.

And finally our next steps, we're here, as I said, to solicit your input, get the input back to the --- we're going to take all of this input back to our work groups in June and those work groups are going to crunch through the numbers, and they're going to come up with recommendations and debate the issues with the goal of having a final report by October 1.

We have a separate web site for the task force and any issues related to the task force. That's the address right there. I'll leave it up for a second in case you want to write it down.

And finally, contacts at DEP. We are providing staff support for the task force and the working groups. My contact information on the bottom, Nicki Casey at the top. Nicki is actually doing the lion share of this work and she is probably --- if you really want to get a hold of somebody and talk about it, it would be easier to get a hold of her, number one, than me. But number two, she'd have much more pertinent and up-to-date information than I would, as she's doing most of the work. So with that, I'll conclude.

SENATOR FERLO:

Thank you, Dana, very much. For those of you who came in a little bit late, there are agendas on table up here if you didn't actually receive one of the agendas for today's hearing. I want to thank all of you for being out here again today. We want to move quickly to a delegation from ALCOSAN organization representing 83 municipalities throughout Allegheny County. And if you have written testimony in any form, if you could provide it to the stenographer, it

might help her fingers a little bit out at least. So if you have any written testimony, please give us a copy to the steno and it will be made a part of the public record. And if you have to leave before you get a chance to speak later, and if you're not scheduled to speak, or if you do have any written testimony, we'll certainly take it and make it a part of the formal public record. So thanks very much for your patience.

I was liberal on the first speaker because he’s a big shot from DEP, but we're going to move the agenda along because in addition to the scheduled speakers, I see a lot of other folks from the environmental community and other folks from local governments and authorities, and they may want to be able to add a comment or two as well.

So at this point we have Arthur Tamilia, who's the Deputy Executive Director of Environmental Compliance at ALCOSAN, William Inks, who's the Director of Finance and Administration, and Dave Borneman, who's the Director of Engineering and Construction. And I think a lot of you are familiar with the ALCOSAN organization.

Gentlemen, sorry for letting it stand but maybe it will make everybody go quicker. So thanks

very much for your testimony today.

MR. TAMILIA:

Thank you, Senator. We're always more than willing to give DEP as much time as they want. We are ALCOSAN. We're the large retail wastewater facility. Probably we're the largest single facility in the State of Pennsylvania, certainly the largest discharger on the Ohio River. Our system, we are serving 83 municipalities in Allegheny County. Our system consists of a 250-million-gallon wastewater treatment plant and 90 miles of intercepting sewers which brings the waste from those municipalities to the treatment plant.

Our municipalities own the big chunk of regional system. They own and operate separately apart from ALCOSAN over 4,000 miles of municipal sewers. These sewers, as you heard, range in age from 40 to 50 years to over a hundred years. These municipal systems all connect to the ALCOSAN system at approximately 300 points, a little more than 300 points, each of which overflows during wet weather.

ALCOSAN was formed in 1946 as a planning agency, charged by the state to develop a strategy for eliminating the direct discharge of sewage from all these communities and all of our industries into the

waterways of our region. Under the laws and engineering practices at time, ALCOSAN was designed to treat the concentrated dry weather waste that was coming from these municipalities, from these industries. The philosophy at the time was that the diluted waste, waste that was diluted by stormwater during heavy flows in the rivers was much less harmful and that the real important emphasis in design and configuration was to capture this concentrated dry weather waste, which was ALCOSAN is truly designed to do.

In the late '80s, early '90s the laws changed to require reduction or elimination of these overflows. Unlike the earlier Clean Water Act emphasis, earlier Pennsylvania law emphasis, which was to develop treatment through gross remediation, emphasis is now switched with these new laws to better operation and maintenance of sewer systems themselves.

To implement these changes in the laws, EPA developed its combined sewer overhaul policy in 1994, which became law in 2000. This established a two-part strategy for implementing the laws. The first part was to study the systems, determine how they react to wet weather, what kind of flows you're seeing in your collection and treatment systems. With

that information and along with the implementation of best management practices to capture as much as possible during wet weather, the second step requires all of us to develop a long-term control plan which really is the construction phase, the implementation phase of all the work you did prior to that.

An unfortunate facet of the policy is that major metropolitan areas such as Pittsburgh were to have their long-term control plans implemented through a judicially enforceable order or a consent decree, and ALCOSAN received its consent decree entered by the court in January of 2008. For us, this really frames the issues to address the compliance goals and the costs that we're going to have over the next 20 years.

The consent decree is really organized into two major phases. The first phase is intensive study to further examine how our system operates, determine what kind of flows and reaction we see during wet weather, determine what sort of facilities need to be built to comply with the Clean Water Act. Major features in this first phase include evaluating water quality and the impact of overflows on streams; flow monitoring throughout the ALCOSAN system throughout all of our communities; study of operation

of our treatment plant to maximum the flows that can be captured and treated during wet weather. And while we're currently treating about 250 million gallons, we could easily see upwards of close to a billion gallons during wet weather. So it's a major exercise to improve and expand the operation of our plant to capture as much as possible along with in-system controls and construction.

Also during this five-year phase, we will evaluate and select cost-effective control technologies to eliminate sanitary overflows and significantly reduce to combined overflows. At the end of this five-year period, we're going to incorporate all the results, all the study, all this examination into a long-term control plan which will require construction over the 12 to 13 years.

Concurrent with this activity, our municipalities each have orders to do the same thing. They each have to evaluate their systems, make major repairs, and with ALCOSAN, determine to what extent it can improve the operation of their system so that together we can build facilities that will keep us in compliance for 20 years beyond the end of the construction phase.

As I mentioned, this consent decree

really frames the scope and the cost of compliance over the next 20 years. And I'd like to turn it over to Dave Borneman to discuss some of the projects that we anticipate doing and what's happening with the costs of those projects.

MR. BORNEMAN:

Thanks, Art. Before I go to the mic, everybody can hear me just frame this picture for you. This is our total service area within Allegheny County. When we had previously got a conceptual plan which was the basis of the multi-billion dollar price tag you heard earlier about, just to frame, the 90 miles of interceptors, you can see various shades of red going towards our treatment plant, which is located on the north side of Pittsburgh.

That study that we did ten years ago, I want to give you a little update on the costs. The strategy back then was a very conventional solution, a gray solution as we would say, where we were trying to handle all the flows that overflowed over 300 points. We have over 400 points of connection from the communities. We had a strategy at that time which was the least cost to get as much flow to our plant, expand our plant. Costly triple capacity with some wet weather operating parameters agreed to by the

regulatory agencies. If you couldn't get to the plant, we would supplement that with additional interceptor pipe or some remote facilities; either remote overflow control facilities providing some level of treatment or storage, or combinations of storage and treatment or storage and conveyance.

What I hope to do today is just give you a little update where we are going and the approach it's taking. We've done a lot in these last nine years so we've negotiated a long time with the government. Tried to engage our customers who have to be part of the solution.

Keep in mind these costs are non-sustainable costs to take care of what's in the ground already, the numbers, I think by other presenters on that topic. These are all additional costs for compliance. The new requirements under the CSO policy and the requirements to eliminate all sanitary sewer overflows.

Again, we see going forward, there's a new concept that is being developed by other cities called a green solution. So we see going forward a planning effort over the next three or four years, which will try to embrace also green solutions which will either reduce the gray costs or hopefully

complement them in reducing the durations of overflow events or the frequency, of course.

When we look at the four combinations, which we always looked at nine years ago at that but really couldn't get a handle on, the $3 billion we said ten years ago, nine years ago, one billion was the great improvements that are outlined on the board. The other $2 billion was supposed to be in the communities. Communities are responsible for those improvements. It was very hard to get your arms around what exactly needed to be done in each community, so for purposes of that conceptual plan we felt that was a conservative number.

Since that time there's been a lot work done by other agencies, Three Rivers, that help try to get their arms around that cost and infrastructure improvements. But we see going forward a combination green and gray. We still believe it's a good idea to try to reduce the amount of stormwater that's in the urban areas, the ground water. We're a very wet region with basements and springs and mine water, ground water coming in, foundation drains, anything we could do to try to address source control on the property so that the stormwater, ground water can stay there whether it's rain barrels and cisterns on

private property, and we're also looking at ways to reduce the amount of foundation drains that come into the sanitary source system. In urban areas we looked to other cities, there are a lot of initiatives going on in urban areas like rain gardens, plantings along streetscapes.

We see this going on in Portland, Oregon, Kansas City, Washington, D.C. Chicago's come up with an alley, building alleys with porous pavement and then they take the drains from the adjoining buildings and let them drain onto the porous alleyways. Philadelphia tries to do some things with parks, playgrounds, basketball courts using porous pavement. Anything we can do first and foremost that could also have a little betterment and certainly has a curb appeal, when you're talking about plantings. We think that could be a very good strategy, which is going to be in the planning process of an extra four years.

However, realistically there will still be a gray infrastructure improvement needed, whether it will be of the scale that's outlined on that board. It will be determined in the next three years, but just to give you an understanding of what we see in the market as you see other cities filling gray infrastructure, it's very costly, the raw materials,

shortages, steel, cement. Again, just the available resources necessary to building additional infrastructure is going to be very costly.

One of the projects we had ten years ago outlined was a satellite treatment facility, which would have provided the equivalent of primary treatment. At that time, we had a strategy of about ten of those possibly; hopefully it could be reduced with some consolidation of facilities. Ten years ago we thought it was a little over $5 million to build those facilities. We advanced that project and got more site specific, understood the lay of the land, what we had to do to keep the river from flooding some of the sites and that project now is over $60 million. So we've seen over a tenfold increase in that type of a concept going forward.

Another concept we kept advancing was stream removal. Stream removal is where we have an urban area along the river. It's pretty well all concrete streets, small lots, but up above on the hill, you might have a neighborhood of large lots with yards and natural streams. The natural streams will pass through, come into the urban area and then come along the river to the ALCOSAN system where we treat that dry weather stream and all the sediments at the

plant, and when it rains it overflows to the rivers. The cost we have seen on those programs has gone from two to five times what we estimated ten years ago.

And these are just examples that there is a need, not to just get an understanding of the needs of the current infrastructure underground, but also what additional facilities are going to be needed.

Negotiations with the government also tend to, with all due respect, increase the cost. There's certain levels of performance that the government wants. There's certain levels that we portrayed ten years ago that we thought would be acceptable to the region. Through negotiations, for example, our existing treatment plant, we had hoped that the existing capacities would be satisfactory. The negotiations now say that we have to increase secondary treatment capacity to be equivalent to all the peak flows from the separate sewer areas, so we are now looking back to build additional treatment facilities, something we didn't envision ten years ago. Toledo, Ohio has just built a side stream treatment facility that we may be successful in implementing in Pennsylvania. It will take some open mindedness to accept it but it alone in Toledo cost another $70 million, something that we did not have in

our cost estimates ten years ago. So again, just to update you that you hear the billion-dollar number or the $3 billion number; they will change. The great improvements that we've seen in the last ten years, it's staggering how significant the increases have been, but it is something that again we have to face and hopefully we can still come up with a solution that is beneficial to the water quality of our region and to our customers. And with that, I'll turn it over to Bill Inks.

MR. INKS:

Dave, before you step away, I think it's important, Dave reports to our board of directors in the public sector on a monthly basis the construction spending at the authority. We always knew that no matter what was going to happen, at the end of the negotiations, our main sewage treatment facility would have to accept more water. Since 1997, the authority has spent over $370 million expanding that facility to accept more water and place odor control facilities in place so that we didn't offend our neighbors.

So we haven't been standing still during that negotiation. We've been preparing the plant to take the additional water that's going to be required over the next 20 years.

With that, Senator, if I could briefly, as you're aware on May 8th, that Secretary McGinty of the DEP held hearings up there. One of the topics that came up several times with the Public Utility Commission was also in Dana's slides today. The full costing methodology of setting rates and we --- the Senator was dead-on in his opening comments. We know that rates need to be addressed. We know that Pennsylvania rates overall are very favorable compared to the rest of the country.

One of the reasons is that most municipal water and wastewater entities follow a cash basis methodology when they calculate their rates for their consumers. What that means is that they take a look during the year, and say these are our operations and maintenance costs and these are our debt service costs so this is what we're going bill in thousand of gallons. This is what our rate is.

Now, when you use a cast basis of methodology, you don't leave much room for infrastructure repair/replacement. One of the discussions on May 8th with the PUC, and Dana pointed it out in his slide presentation today, is the need to move to the full costing methodology. And I believe in the full costing methodology, full version of it.

I also believe that the ALCOSAN stands for that, too. And what that does to boil it down to its basics is to add a provision for depreciation in your rate structure that generates additional funds over and above the cash basis methodology. It allows you to put that additional funding aside, and what do you want to call it, a capital facilities fund, call it the extension/replacement fund, whatever you want to call it, but allows you to build a war chest so that the next time those facilities need to be maintained, replaced, the money's there or at least a part of the money's there.

Now, I see my --- I'm a member of the task force. I'm also a member of the financial sustainability sub working group and I see Dean --- Dean, raise your hand. Dean Kaplan (phonetic) with PFM, is chairman of the financial sustainability task force. And one of the pieces that I have on here, Dean, is the need --- one size doesn't fit all when you attempt to change the way municipal agencies build rates. And one size certainly doesn't fit all. ALCOSAN has $670 million of gross assets generating $20 million a year in depreciation. So then we need to look at that from the financial sustainability subcommittee, they look at phase-ins because one size

doesn't fit all in this state. It's a big state.

Senator, I'm done. Thank you very much. Strong leadership in western Pennsylvania on the task force is very important and I'm glad you're there.

SENATOR FERLO:

You did great. Thank you very much for the presentation. We're going to move quickly. Many of you are familiar, certainly, with the good of the Three Rivers Wet Weather --- you've got to try to say that quickly --- demonstration project, and John Schombert, the Executive Director, is here today.

I heard the urban area mentioned three times earlier by ALCOSAN. Let's not forget our suburban communities as well. If somebody questioned the Mills Mall, the mall that was proposed at Route 28 and 910, the Mon-Fayette Expressway, and Kilbuck Township Wal-Mart. There's a lot of concern that goes around the room about where we're actually building and meeting around the region in terms of sustainability and water runoff.

I want to thank Three Rivers for their good work. Also Senator Orie, and Senator Pippy, they've all been very active initially in helping me provide some demonstration funds from the state legislature and the Senate for the good work of the

Three Rivers group.

MR. SCHOMBERT:

The National Water Environment Federation conference is here in Pittsburgh today. And they came to Pittsburgh because of the recognition of the wet weather issues that we have here, and what a tale we have to tell. The first session was this morning. Dan Onorato gave the opening remarks, and we're real pleased to have about 500 individuals from around the country, experts here in the city right now. So the timing of this hearing is quite unique given the fact that we have all that going on today.

And Dave Borneman and others from ALCOSAN were at the same session this morning. I don't want to be long; I'll try to make it a little different tone. I'm sure you're going to hear from everybody about the problems and costs and all that. I have a little bit of that, but quickly, Three Rivers Wet Weather is a unique organization and I think that the success that we've had is because we've approached this from a different standpoint.

We're a non-profit corporation, a partnership between a public health agency, the Allegheny County Health Department and a public works agency, Allegheny County Sanitary Authority. That's

very unusual. I don't know that you see that kind of partnership particularly when they are also signing consent decrees at the same time. I don't think you see that anywhere else in the United States.

What we've done is try to create those kinds of regional standard type approaches to the problem so that all the municipalities --- we're focusing on the municipal end of this problem. Dave and Bill and Art gave the concept of how they're dealing with the treatment plant and we're trying to focus on the municipalities. Standardizing things is an essential part of this process.

And we created, I think, a modern municipal partnership. People now associate themselves as being in the Northern Basin group or the Eastern Basin or the Southern Basin group. Communities have learned to work together to develop a consensus on issues in that way and move forward.

We received a lot of help from our local congressman and senator. Senator Specter and Congressman Doyle particularly on the federal level have been having this for us for over ten years. At the state level we've begun to see a lot of funding. Senator, we thank you and the county delegation for that leadership. The foundations have also stepped up

and because of the success, we've given them a new strategy, the Eisen and Mellon Foundations are throwing a good portion of the dollars of our operating costs to us so that we now are very efficient in moving those great state and federal grants to regional activities within the municipalities.

Give you a concept here for this region. In Allegheny County, there is 4,000 miles of pipe inside all that little fine spider mess up there, that's never been mapped before, and we spent millions of dollars. About $2.5 million, $2 million of that was state grant to use the new satellite technology to GPS to create one standard map of the system. Sounds like a no-brainer, but you can't do much planning if you don't have a map that gives you a sense of what the system looks like. You can see there, too, the shading of the eastern and the southern and northern basin groups and how the communities are broken out that way.

More of a challenge though is governments, and I'm going to talk a little on that. There are a lot of technical solutions out here and I have no doubt that with all my science training that we're going to come out with all technical solutions

that are necessary. Probably I'm optimistic, but not quite so optimistic, though, that we have the will to go out and solve this from a governance standpoint.

I'm chairman of the needs committee of the Infrastructure Task Force and the focus there is just not just the financial need, or not putting a cost and all this, but rather how are we going to --- if we're going to make all this investment, how are we going to sustain that investment once we've made that investment.

Look at our system right here. 4,000 miles of public sewer under the jurisdictions of 83 separate municipalities. And so for 500 local elected officials who probably didn't get elected because they wanted to fix the sewer system, they probably had some other agenda in mind and they're not in the water industry or water utility, or generally they're not getting electric and gas. This is a public utility and we need to begin to consider it a public utility. And it has so many impacts. It's buried and it's easy to forget that we have it there.

The other challenge is a private issue here, 4,000 miles of private lateral approximately. We don't have that mapped, but that's a good engineering guess that there's about a one-to-one

ratio even in dense areas like the city, or less dense areas like suburbia. You run into about the same ratio of pipe that's in the private jurisdiction between the homeowner and the sewer connection, that maybe in some studies is as much as 60 percent of this problem, and we can't just address the public sector without addressing the private sector even if that means with public money.

And we have ten operating authorities in ALCOSAN system as well.

What's the definition of success? We think --- and we're changing our definition but the consolidation of the system into a utility-based management structure. Dan Onorato said this morning that he wants to create that umbrella, that single entity, to help the municipalities financially. There's a lot of alternatives here. This isn't a takeover or a regional government. This is the integration and consolidation of a municipal utility into a more efficient, more cost-effective organization adapting the governments --- thank you, Susan, for that term --- to address our water issues that we have here.

And we have to realize that this is public health. Ninety (90) percent of us get our

drinking water from the same source that we discharge our wastewater but from a large standpoint we see more and more here, there's a recreational aspect. This is economic, and it's important but this is also economic development. When we started this process, about half the communities in the ALCOSAN system had some level of bans against new development. Partly because of the consent orders, we're moving forward those have been less controlled. Municipalities can now control those on their own.

And we thank that there's a lot of leadership that have stepped up to the plate on this. This panel alone is one of the leaderships and the Senator knows we go around and meet with the local county delegation. There seems to be a lot of energy and enthusiasm about this.

Here at CMU and at Pitt, there's a lot of research going on. There's programs going on that relate very well to the activities that we need to do.

Councils of governments have begun to bid joint projects, like a closed-circuit television inspection that communities had to do. So they got a price that we've never believe. We thought the prices of that activity would go sky high but because of the joint bidding it stayed around $1.25, $1.50 a foot

rather than the $3.00 or $4.00 a foot that was anticipated if 83 municipalities were competing for the same work schedules and the same activities.

We've seen from state and local officials, and periodically the media will pick up on this issue as well and make a little news with it. The Penn State University Public Television has created a new program called Liquid Assets. It was previewed this morning at the national conference at the convention center that I think when you see it in the fall, it's a real eye opener as to both the national and it has a great local focus as well on what we're facing here on these issues.

We found that communication is extremely important. You're all message carriers, most of you --- I know a good portion of this audience and you carry the messages for us, so we know you're here because we all kind of speak the same language, but we have to aim that message at the rate payers. I think the elected officials give us that opportunity all the time. We have municipal management meetings every month or so. We continue to work with them in conjunction with the engineering community. The engineering cooperation, there are probably 25 local municipal firms working for the 83 municipalities.

There's a few firms that represent a dozen or two dozen of these communities and the consensus that they have reached on engineering, getting engineers to agree on details of flow monitoring, of mapping and so on, was not near the challenge that we expected because we got it together and have been communicating for a long time. And we've done this through a consensus process in developing stakeholders that have been with us for nearly this entire ten years, and we managed it and we try to have good agendas for them and make sure that we're continuing with the dialogue. Some people say we sewered them out a little bit. They won't talk about it anymore, so we have to pace ourselves sometimes with our enthusiasms.

Data is a huge part of this. I cannot imagine if this is 1960 and we're trying to do this project with the amount of data that we've had to collect. The fact that we got GPS mapping in the county, both the county's base layers and the new maps of the sewer systems that Three Rivers was able to create, now we can begin to relate all the information, this data, spatially to those maps so we can see where the issues are, where the priorities are.

We created a municipal data system.

ALCOSAN has created a municipal data based system on their site where a lot of free data was exchanged. It's extremely critical in getting confidence in flow monitoring, for example. There's 500 flow monitors in the ground, 520-some flow monitors in the ground today for project back in February. It will begin to develop the information we need, how much flow, the quantity of water we need deal with here.

It's nice to have this rain because we need rainfall to be able to see what we're dealing with. I know it's a little too much, but we're really moving along in that program. ALCOSAN has shown the leadership, to take that program and help Three Rivers and the municipalities implement that program.

I want to give you a sense --- this is the Ohio River basin, because I think on the state agenda, there's always a lot of talk about the Chesapeake Bay Watershed. This is the Ohio River Basin Watershed down to the Mississippi down to Cairo. It's about 600 miles of the Ohio there, obviously the Allegheny, the Monongahela and the Youghiogheny River basin as well.

We need to remember that there used to be a sign over the turnpike as you entered the Chesapeake Bay Watershed. There was never a sign that

says as you enter --- as you come home, you're entering the Ohio Basin Watershed. We've been working with the Chesapeake Bay Foundation to help get two sides to that sign.

In the state itself I've heard that the Ohio Basin is about two thirds of the size of the Susquehanna, but I've got a good point, I don't think we'll get any respect over here. The focus has been at DEP --- and I don't argue with that focus. The bay is important, with the nutrient issues over there and there's been a long history of interstate issues that required Pennsylvania to do something, but we have an obligation here. We now have a sense of the cost of that obligation about $4 million perhaps that we also need some attention on board the funding across the state.

And you see from this, Great Lakes is a little inflated there. The Susquehanna is the Chesapeake Bay by the way. But these are the distribution of funding in the DEP line item budget that they get every year. The Ohio Basin gets about six cents per person back, and you can see the Susquehanna is running about $3.54 and a little chunk of the Great Lakes up around Erie, is getting nearly $11.

So the compliance issues are pretty set in stone now. We know there's --- everybody has consent orders. It's really moving forward. ALCOSAN I think has left, but since they've gotten out of the legal battles that they were having, it's amazing that they're now engaging municipalities.

There has to be a regional long-term weather plan by 2012. That's not that long. That's not that far away. Flow monitoring is a major part of that. You've got to know how much water we're dealing with before we can start planning for it. That requires that the municipalities, all 83 of them, participate with ALCOSAN in the development of this long-term control plan. From 2012 to 2026, that's when the brick and mortar gets laid. That's when the bills go up and we start seeing what it really costs and what the real work is to install that infrastructure necessary to meet water quality standards by 2026. And it all has to be in place.

In 2046 we have to be in compliance and one of the keys I want to mention is that we operate this as a business. This is a business. I'm not necessarily saying privatization. We need to focus on the goals, asset management and make sure it's run as a business.

And with that I want to thank you very much.

SENATOR FERLO:

Thank you, John, very much. We appreciate it.

Eric Clouse, president and CEO of Red Zone Robotics. Eric, I'm going to try to cut you down to some time there if you can try to go through your --- do you have a PowerPoint as well? And we'll get the Colonel up here next.

MR. CLOUSE:

Senator Ferlo, thank you very much for inviting me. He asked me to come and speak a little bit about the technology within the industry and how we can go about saving costs and actually creating local revenues to solve this problem.

Let me just give you a little background on who I am and Red Zone. Actually the company was formed in a lab right over not too far from here over in the Field Robotics Center. I have to be honest, I didn't wake up one day and say I want to go and solve the nation's sewer infrastructure problems. I'm a robot guy. But what we were looking to do is to go and find that big market that really needed a lot of help, and that's what we did.

So about three --- about actually four years ago, we partnered with ALCOSAN and through a few state programs were able to get some money to be able to go and do some innovative research in taking technologies that have been developed here at Carnegie Mellon and applying them to these big problems that we're all talking about today.

Basically we've expanded significantly. It was about four years ago we were only three people; today we're just under 50 people. We service over 65 communities and cities all throughout the U.S. We have a really good handle on what the U.S. problems are. We also are into Canada and we're also just now doing our first international deal. The beauty of the web, that a lot of the problems that we have here we have everywhere. So we got a call from Singapore, which has a very similar system as ALCOSAN, and we're now helping them with solving their challenges.

So basically this is the real problem that people are faced with is that there's a big spend that needs to go on, how can we most optimally spend this money to maximize our water quality? This is a very, very challenging thing. And up to now we've really been hamstrung with less-than-adequate assets, less-than-adequate decision making tools and

technology to be able to help these decisions.

The kind of questions people are asking, what's the condition of my pipe? When is my pipe going to fail? What is the best way I should go about rehabilitating these pipes? These questions are extremely expensive. When people are actually going and making a decision on this, today they're making a decision nearly blindfolded, only because technology is not there and was not there to properly be able to develop and to find what the best path forward is.

The bottom graph you see here is really the way that folks should be maintaining their assets, where every couple years you have a rehabilitation cycle and then after several years you have a replacement. But being able to get that clarity, being able to get that visibility and what to actually do with this asset to optimally maintain it, is very, very difficult.

As the old adage says you can't manage what you can't measure. It all starts with being able to collect good data and being able to act on that data. Just as John said they've done a great job, Three Rivers, in collecting a lot of data because that's the very first step in order to solve these problems.

So you know, from a business perspective then also from an infrastructure perspective, although there's a lot more than just these types of infrastructure, the little that you can nail the whole country even outside, even in other countries, down to interceptor pipes, trunk pipes, collector pipes and then manholes.

And frankly from a robot person, if you can clean, inspect and rehabilitate three feet of pipe, you can do all 600,000 miles extremely optimally. So what we did and we're utilizing Carnegie Mellon technology and others to do is to really drive the costs out of this first inspection process and then to also get as much information so we can make the most informed decisions.

This is essentially how we do it. We collect the data, we bring it back to our servers, we analyze it, we store it. One of the important things is benchmarking, you want to see how these assets are changing over time. You want to see which ones are deteriorating faster so they should get more money. We need to be able to predict when this is going to fail. You don't want to put money into an infrastructure, into a problem that doesn't need it for 20 years.

We see this all over the U.S. in all of our clients, just with a little bit of information you can save them millions upon millions by allocating that capital properly. It all starts with having good digital data. So when you talk about digital, think of like the old walkman, the old tape that you have versus your iPod. Going from the old analog world to the digital world, there's absolutely no comparison. You can now store on a little iPod literally what would take whole shelves of LPs or tapes that come from the analog world. You can now search these things --- this is where Google and a lot of networking, a lot of GIS work is going on.

So it's really important if you're going to collect the data and you're in the pipe to do it digitally so you can use it forever, you can get no degradation and you make sure you're utilizing the money you're spending most wisely to be able to go then and solve the problem.

So what we're suggesting and really the best practice is out there to baseline your pipe. This is for new installations. This is for operation and maintenance of existing infrastructure and this is also for being able to put together bid packages and understanding repair and rehabilitation needs.

What we need to move from is just looking at failures. Right now a lot of decisions, a lot of the money that goes out there is all chasing failures. We have a break over here. We had a sewer overflow over there. That is fine but that doesn't even get you to a sustainable solution where you need to go and predict and then spend most optimally. So what we're all about is being able to predict, prove where the failures are coming from and then of course finally to gather the right form of rehabilitation assessment and different cost-effective means to prevent failures from happening with that infrastructure.

So I'm also going to say is that robotics is just starting. I think people are familiar with digital technology and how the really a lot of the computer technologies that have come out of Carnegie Mellon have changed the world. Robotics is just starting and just like with your computer, a spreadsheet is one of the very first applications that made your computer useful, we argue that sewer pipes are an ideal application for robots. Dirty, dangerous, and dull, and we have all the technology here in Pittsburgh unlike anywhere else in the world, to be able to go and really leverage, both this opportunity and this market.

What you're going to see over the next 10, 15 years, is although we're robots and robotic technology is mainly do inspection in pipes, we're very quickly moving towards cleaning and maintenance of those pipes, and repair rehabilitation and replacement. This is going to significantly reduce the costs ongoing for having to fix these pipes.

So what we're suggesting is five major issues. Number one is, let's focus on asset management and condition prediction. If you don't focus on what is the real status of my pipe, what is going to take to most optimally fix this asset, you're going to actually just flush dollars down the drain, fix things that don't need to be fixed and not focus on the things that are acute.

Secondly is, it's important for us to benchmark. It's important for us in a micro environmental way to understand what's going on with the pipe outside of your house. We have to know each and every inch of this pipe, be able to benchmark it, understand when it's going to fail and then react before it fails.

Thirdly, we have to focus on cleaning and rehabilitation challenges. It's not enough just to go and do the inspection. Yes, especially in the region

until 2012 a good portion of the money is going to be spent on inspection, but the real big money is going spent after that. And the way that money is going to be spent is all actually --- is coming from the way we're collecting our data and the baseline today. So it's extremely important to get good digital and excellent baseline.

Fourthly, one of the big advantages we have is we have this unique technology here in this region. Let's actually take this technology and turn it into more tax revenue and take this technology and bring it worldwide. We gave you an example where we're doing work in Singapore, but we do work all throughout the U.S. and Canada, all these tons of innovations, the challenges that we solved initially with ALCOSAN, we're bringing to others, we need to do that for the region and export it.

And lastly, let's make sure that we reduce the cost. Let's make sure that we're getting the best prices for all the rehab we're doing by using these techniques to minimize the spending going forward. Thank you very much.

SENATOR FERLO:

Thanks, Eric. What neighborhood are you located in again, I'm sorry?

MR. CLOSE:

Say it again?

SENATOR FERLO:

What's your neighborhood?

MR. CLOSE:

Your neighborhood. Lawrenceville.

SENATOR FERLO:

All righty. Very good. Thanks, Eric, very much.

COLONEL CRALL:

I don’t have a PowerPoint.

SENATOR FERLO:

That's all right. You’re powerful enough for us.

COLONEL CRALL:

I apologize up front for being AWOL last week.

SENATOR FERLO:

That's all right.

COLONEL CRALL:

The Chief of Engineers summoned me, and unfortunately I didn't want to get court marshaled.

SENATOR FERLO:

That was all right. I sit on the board of the Port of Pittsburgh Commission and recently met

the new colonel here, the district engineer for the U.S. Army Corps, and he's willing to help us out with the dredging crisis up the Allegheny Township maybe. But Colonel, thanks very much for being here today.

COLONEL CRALL:

Thanks for having me. I'm Colonel Mike Crall, Commander of the Pittsburgh, U.S. Army Corps of Engineers. The Pittsburgh District oversees the upper Ohio River Valley, five states, about 30,000 square miles, about 10 million people. In the Susquehanna Watershed, the Baltimore district handles that. They don't make anything easy with the federal government. And the Philadelphia district handles the Delaware River. So if it drains from that sign that John talked about into the Ohio, we have something to do with it. We operate 23 locks and dams, 16 federal reservoirs, multi-purpose reservoirs, 16 federal flood control, local flood protection projects as well as overseeing 80 local flood protection projects to ensure that they're in compliance.

Our business lines include navigation, flood damage reduction, environmental infrastructure, water management, hydropower, environmental stewardship, environmental restoration, recreation, emergency management, regulation of Section 404, the

Clean Water Act, as well as military construction.

My purpose for addressing the task force today, sir, is to discuss why we believe water quality and water quantity are inextricably linked and discuss the federal authorities that are available to combat these regional challenges.

When you look at stormwater management, CSOs, deteriorating water supply, deteriorating sanitary infrastructure, it must be addressed using a risk-based basin-wide methodology to leverage federal, state, and local resources.

Unfortunately, it's not. Currently the problem is being tackled as point targets and not necessarily where the greatest need is first, due to multiple agencies that are involved. These vectors need to converge instead of diverge, and the reason, as John talked, about I believe it is the political infrastructure. We need to overcome multiple agencies, multiple municipalities, the ability to pay versus where the need is first.

With organization, economically distressed, downstream townships may not have the ability to pay for infrastructure, new infrastructure whether it be structural or non-structural solutions, upgrades or repairs, and might not be able to make a

non-federal match.

As the regional engineer, I wanted to talk about four specific business lines that I think the task force would be interested in. First I want to give that a call Water Management 101 from the federal perspective. As I talked about, we operate 16 federal reservoirs, the largest one being in New York, the Allegheny Reservoir and the farthest down in West Virginia, Stonewall Jackson.

And what we do is we partner with the National Weather Service and the USGS along with my chief hydrologist, and we take a look at what the weather is going to look like over the next 96 hours. When we seen a storm event coming, we will lower those major reservoirs which we can influence about 30 percent of the Upper Ohio watershed. At the same time, we open our dam gates wide to pass that water as quickly as we can down to Cairo, to my friend, brother district engineers downstream. In fact, I got a hug from the New Orleans district engineer the other day, for sending all the water down to him.

But our reservoirs, those 16 reservoirs are very multi-purpose. They do flood damage reduction as well as flow augmentation for navigation. In the summer months, 80 percent of the water that

flows across the point of Pittsburgh comes from these 16 reservoirs, as well as some of the reservoirs serve as water supply and also augmentation for environmental offsets through the effluents that come from industry and some of the CSOs. We also do hydropower and that's a growing business line for us, where we've just recently seen at $120 a barrel. An interesting federal authority, two of them, environmental infrastructure and local flood protection. And I can tell you this particular year, we are going to expend anywhere from $10 to $20 million in environmental infrastructure programs in western Pennsylvania.

So getting at this federal money is very difficult. It’s not budgetable, but we are committed to let you know how to get at it. It is not easy working with the U.S. Army Corp of Engineers. I can tell you that. I’m a paratrooper, and as the leader of the organization it makes my head hurt sometimes. We're committed to working with the different entities but our challenge is we're working --- if you take a look at the 11 counties in southwest Pennsylvania, 600 different municipalities from watershed associations, to counties, to local townships, to COGs, and it becomes overwhelming; overwhelming but we are

committed --- even though we only have 700 employees, if we had to send all 700 employees to all 600 communities, we'll do that to inform local communities about the federal authorities that are out there, to get after environmental infrastructure programs. And I love that word environmental infrastructure, water and sewer projects.

This year, for example, we are working at Sheridan Park, which I believe it's ALCOSAN and Three Rivers Wet Weather Demonstration and we're going to provide $13 million in federal money against that $40 million project. There are environmental structure programs that we do augment these communities, some communities that remind me of where I'm from in upstate New York where they haven't gotten clean water in years, and we're able to provide that federal money through congressional adds that our local congressional delegation is able to bring about.

As I talked about water quality and water quantity being inextricably linked, very interesting the geography we have up here. On the Mississippi River we can go ahead and predict two weeks from now when it's going to crest at Cairo. Here we can predict in an hour after it starts rain when we're going to overtop a local flood protection structure.

So it's not like we can bring advanced measures to bear right away because our flooding happens instantaneous. But there are also federal authorities to assist local communities to get at that.

So what I wanted to do is tell you, we're committed to really work with all 600 entities if we had to. But it would be a hell of a lot easier, sir, if there was one political entity, a regional entity that we could work with to prioritize both water quality and water quantity projects. I can tell you, sir, I'm asked by the congressional delegation where do I pick. So I don't want to be in that position. We can express where we think the most need is. However, it really --- sometimes there needs to be an authority to help us get at that projects of quality and quantity. So we look forward to working with all the communities and once again working with the task force as well as my brothers to the east of here, if they need to appear before you all, we can get them there to help out. Sir, subject to your questions.

SENATOR FERLO:

Now, can you just clarify one thing? I know there's been a significant amount of money this year alone for locks and dams, could you just indicate either on your web site do you have an update on the

capital infrastructure commitments that will be made over the next few years?

COLONEL CRALL:

We have an initial presence budget for FY '09, and our budget right now for FY '09 is about $158 million.

Our FY '08 budget and you can see the difference, our FY '08 budget, present budget, was about $138 million with the congressional adds --- as I talked about many of these programs are not budgetable in the president's budget --- we're well over a quarter of a billion dollars, so very challenging as we take a look at our O&M and we really didn't want to get into O&M but O&M backlog approaches $100 million. We're in the same boat as you are. I can tell that there's steel in our locks and dams for it because I can see it and I'm a civil engineer I'm not sure that we're supposed to do that. So one good news, and our western Pennsylvania congressional delegation was really able to do a good service in October of this year. They enacted the Water Resources Development Act in October of 2007, and they have given sweeping authorities, federal authorities to western Pennsylvania to get at local flood protection. It is very interesting as we look at

these authorities, and we're working right now with the congressional delegation to put in some reconnaissance and feasibility money into the FY ‘09 budget to look at this. The hard work of congressional delegation and the state and local leaders as a result of Hurricane Ivan, as a result of Millvale, which was my first experience here in the greater Pittsburgh area. As I told my boss, combat is easier than doing local flood protection. It is really good news as we move forward.

SENATOR FERLO:

Thank you very much for all your good work. We appreciate it. Thank you. Dr. Cohon, I think he's still here from Carnegie Mellon. I think he came back from the board, Board of Trustees meeting. And Ty Gourley as well, policy strategist from the University of Pittsburgh, will be up next.

DR. COHON:

I'm Jared Cohon. I’m President of Carnegie Mellon University. I'm also a member of the Sustainable Water Infrastructure Task Force. I'm appearing before you right now as the chair of the regional water management task force, another task force. I’m joined today by Ty Gourley, standing against the wall there, who is with the Institute of

Politics at the University of Pittsburgh, which was the organization base for our task force.

I'm going to give you a brief high-level summary of the work of this task force, Mr. Chairman, and then I'll be happy to answer questions. I'm not going to go in detail over these PowerPoints with you. You have a copy.

This region, our southwest Pennsylvania region, has seen a series of important studies over the last decade, all or most of which I've been in all of it one way or another. You see depicted in the slide the cover for a study that was done in the early part of the decade under the auspices of the Allegheny Conference, which I chaired. A lot of study of the nature of our problems, all of the problems, the way they connect to each other, but one major outcome of every study consistently is the second point, the need for a regional approach to our regional problems, and I gather from Colonel Crall’s message, very consistently that message of how many entities we have and how hard it is to coordinate. We have the beginning of the answer in Colonel Crall’s dream of a single entity.

So our task force, the one I'm reporting for now, took this is our point of departure. We saw

as our mission in particular, a focus on how to make progress institutionally, not technically. We did not see our role as studying the problems yet again. I think the combined result of this studies that went before us was clearly we've got problems. Now, the questions is, how do we make progress on them in particular? How do we deal with the need for regional cooperation?

We went about our work with a great deal of stakeholder connection, consultation, engagement, et cetera. Our task force was broadly representative of our region and it approached everything it did in that way. You see here the names of the members of our task force. We do not show here the counties from which they hail, but all of our counties were, in fact, represented on the task force as well as every relevant sector, or at least most of them, to our work.

This depicts the region. It also tells a story, not only the 11 counties that we focused on, but also the red and blue represent public water and sewer service. If the area's not red or blue, that means people are on wells and have septic tanks. The point of this is we had a region which, as we know, covers a whole range of issues in terms of urban

issues, urban water issues and rural water issues and all of which have to be dealt with on their own terms.

One of the things to keep in mind is that the notion of agreement or cooperation is a broad one and it can take many forms.

To me, the most important thing, and the thing I'd say we'd focused most on, is that third bullet. We're not talking about forcing things, we're not talking about usurping the responsibility or authorities of counties or local jurisdictions, but rather we see a burning need to help our region become more efficient. That, I think, is the key driver that can be found and almost everybody agrees with that.

Our study started about two years ago, after a first phase of benchmarking and by benchmarking we’re talking institutional benchmarking. Again we took the problems as a given, but we were interested in what kind of institutional solutions we could pursue dealing with the regional challenge.

In phase two, we reached out in a very concerted and comprehensive way to the entire region. Ty met with every county commissioner and he's still standing, which is impressive in and of itself and met with many leaders of water authorities, sewer authorities and many, many others. We had 14 public

meetings, at least one in every county, of course during 2007, so our consultation is largely over, but we continue to refine our results and recommendations, and interactions with the key stakeholders.

Here are some key observations from our comprehensive surveying of the people within our region. There is a strong belief, a stronger than you would see statewide that region does have water and sewer problems. That's a significant finding in of itself. And the last one is, too, and people are willing to pay, we won't talk about how much, but they're willing to pay if they think by paying they really will have the impact on improvement in our water and sewer issues, and if we can show that their actions have impact on water and sewer issues.

We also found that people generally found the status quo not to be acceptable. They want to see change and while most people resist strongly, I think, a major regional financing entity or authority, and certainly any kind of forced consolidation on our entities, people are strongly in favor of region-wide planning and technical assistance.

Going after the regional efficiency we're talking about. And indeed, that’s what we’re talking about. So our key recommendation is the creation of

what we refer to as a water district, an entity, not an authority, a water district. Its primary purpose in life would be to provide a planning services, regional planning services, as well as assistance and support for to those who have the authority to provide water and services.

This district we'd like to mention would have its own independent board, appointed by various entities, and the 29 comes from a certain calculus which makes sense to us, but we're not wedded to it. But the key thing here is an independent board.

In a little more detail on its functions, I would emphasize that first bullet integrated water resources planning including prioritization of projects, exactly what Colonel Crall was talking about and which every other entity that deals with water issues in our region talks about. This is what we need very, very strongly.

It's not all we recommend. We believe also that having this district would help us coordinate, pursuit of funding and if we were more coordinated we could be much effective, we think, in getting funding both from the state government and from the federal government. A role here in providing technical assistance to the region.

One of the things that we've found just by virtue of existing as a task force, and because of Ty's excellent outreach efforts, we would get calls without any kind of solicitation by us from local jurisdictions saying, gee, could you help us figure out a coordinated approach with this water problem or this sewer problem. There's a real demand and need and desire in our region to coordinate, to work together, and we believe that having such a district, an entity, could have a very valuable impact.

There's also a great need for regional data collection and management. We see a role from district in that as well. Such a thing has to be funded but the cost would be very modest indeed. We estimate a budget of somewhere between $1.8 million and $5.4 million a year depending on where the district and the region are in planning cycles. That comes out to something like 75 cents per person per year, up to $2.00 per person per year.

The district could have advisory councils based on watersheds, et cetera, and be very, very flexible. The key things I want to leave you with are again, we see this as being able to have a major impact on our ability to cooperate regionally and therefore to be more efficient and we believe to get

more money by virtue of that cooperation.

I want to also emphasize in closing that this may seem like a modest step and in some ways it is. We're not talking about creating an authority. This entity, this water district would only have the responsibility and be allowed to do planning and coordination, prioritization. It would not be able to compel anybody to do anything, but by virtue of the value of their work, their very existence, and because we believe our region's ready to work together, we think it would be, though a modest step, a very significant step and we commend this to the task force Mr. Chairman. We want make sure you know about it. And we hope that the task force will ultimately support what we're proposing.

Thank you very much for your attention. Ty will answer all of your questions.

SENATOR FERLO:

Thanks, Dr. Cohon. We appreciate your leadership. The Water Management Task Force report, is that available online separately or part of the DEP website?

DR. COHON:

I told you Ty would answer your questions.

MR. GOURLEY:

Everything except for recommendations themselves are on the web site.

SENATOR FERLO:

Thank you very much, Dr. Cohon.

DR. COHON:

Thank you again for your leadership.

SENATOR FERLO:

Ty, did you want to finish up with some additional points?

MR. GOURLEY:

No. Just moral support.

SENATOR FERLO:

Okay, no problem. We appreciate your noble support. Thank you for your hospitality as well today here at Carnegie Mellon. Thank you very much. We're going to move quickly to some of the other speakers as well. Nate, do you want to give your presentation? Nate Wildfire from East Liberty Development, Incorporated, and as well an associate, Tom Cahill, president of Cahill Associates. They're trying to look at other ways in terms of sustainability.

MR. WILDFIRE:

Thank you, Senator Ferlo, and the staff

for having us here. Also, I want to say Happy Birthday. Senator Ferlo turns 31 this week, so we wish him the best all those years to come.

SENATOR FERLO:

Thank you.

MR. WILDFIRE:

Wanted to say that here Pittsburgh and then of course, East Liberty, we're hearing a lot about a big scope of problems and we think we have some of this figured out in East Liberty that we want to try to start piloting over the next couple years, Green Infrastructure, and we can real specific about that.

I have Tom Cahill up here with me from Cahill Associates who one of the leading stormwater engineers in the country who has a 5:30 flight, so I'm going to be nice and fast. You're looking at East Liberty here from an aerial, and you'll note that it's kind of a sea of concrete. And the City of Pittsburgh, you pretty much have downtown Pittsburgh, the north shore, and then East Liberty is pretty much maybe the third least permeable neighborhood in the whole city. So we contribute our fair share to the stormwater problem.

East Liberty Development, which is my

organization, is the community development corporation in East Liberty. We're probably one of the very largest CDCs in the whole city and as you can see from just this aerial view, there's a heck of a lot going on in East Liberty. I don't know if any of you go the Whole Foods or Trader Joe's, but it's exploding, so this is creating a perfect platform by which to test pilot sustainable infrastructure. We're going to be ripping up the streets. We're going to be building homes. We're building new commercial opportunities and trying to reroute Penn Circle if we're lucky. Right, Senator Ferlo?

SENATOR FERLO:

Yeah.

MR. WILDFIRE:

So you can see that there's so much coming to East Liberty. This is what's happened since '99. Some of the numbers are staggering. This is what's coming in the next five years and these are real numbers. I'm sure that some you elected officials like the tax revenue down at the bottom. But these are real these are deals that are through the support of our government officials and non-profits. So it's happening. We created the first planning process for disproving neighborhood around

environmental principles that we're aware of in the entire state of Pennsylvania ever, and these are some of those principles coming out of that. I'd like to say I have a team of green gurus, about 35 folks that are from environmental groups throughout the city that are helping us figure out stuff like this. Why here? Again, so much is happening. We literally sit at a crossroads of wealth and poverty. If you drew an imaginary line up Highland Avenue, it would go through Squirrel Hill, Shadyside, Highland Park, Fox Chapel. If you did that same line east to west on Penn, you'd go through Garfield, Lawrenceville, East Liberty, Homewood, East Hills. You can see that we're really at this weird intersection point and the opportunities are incredible.

Our goal of course is to, as we're doing this, do this in a green way. About three years ago, East Liberty began to think in this green fashion and that was a first for us so we're still figuring this out. But now instead of just focusing on our neighborhood, we're starting to think about green infrastructure citywide. And can what we do in the confined geography of East Liberty, have impacts on the whole city, a major region.

Let me turn it over to Tom for a little

bit.

MR. CAHILL:

At the heart of the problem in trying to green East Liberty or even Pittsburgh, is the fact that we have single pipe underneath the ground that carries our sanitary and our stormwater. And so our approach to the problem is not to redo the plumbing, not to build bigger pipes and pumps and conveyance elements, but rather to keep the rainfall out of the sewer system.

And we plan to do that by applying a variety of technologies as we rebuild the city to make a green surface and to make a less impermeable surface, because in doing that we hope that we can reduce a significant amount of rainfall perhaps as much as one inch in an average storm around the region and prevent those pipes that you see underlying the neighborhood from reaching and exceeding capacity and resulting in the overflows down along the Allegheny River.

We're going to do that by a variety of ways and technologies that have been in development for the last 25 years in this stormwater management business but have not found very significant application within the urban environment. And we're

going to do that by calculating how much we need to reduce that inflow of stormwater to prevent the CSOs from overflowing. If you look at the land surface of place like East Liberty, you see that much of that 157 acres or 57.8 percent of the land surface is covered with different types of impervious material, buildings and streets and parking. And so our strategy is to look at those materials and see how many of them we can make pervious, how many pavements we can make that are made of porous asphalt or porous concrete or paver block systems to let the rainwater drain through and not go down the gutter into the inlet or down the down spouts from the rooftops into that same single-pipe system.

So that's a part of the greening strategy, to keep the water from getting into the system. We are also going to do things that open state areas and parks and other opportunities, and we're going to examine the soil that lies beneath our urban streetscape to use that as the medium into which we will infiltrate the rainfall.

Before we showed up, just about everything soaked in with a rainstorm. When we pave it over, almost all of our 37 or 38 inches of rainfall, goes off from every square foot pavement.

So if you want to know what the stormwater problem is about, picture any parking lot or any street covered with three foot of water and you'll understand exactly what we're doing to the plumbing that has to carry that away. We're drowning the system because we've paved over the entire surface in our urban environment. And we change that, we can do that by doing what we call green infrastructure.

And by green we mean using vegetative elements on the streetscapes to make a better community and to make a more permeable community that will take the rain from the streets and curbs and sidewalks and soak it into the ground and not get it to the inlets, and not get the sewer pipe. And there are many, many examples of how we can do that with development in other communities, but we focus on the streets because a significant amount of that surface is coming from that public conveyance system and we want to keep it out of the underground water conveyance system. And so we can do it by building simple structures between the curb and the building face and sidewalk and the green space between. For example, here's a street in Portland where they've paved the parking lane with pervious pavement, with paver blocks where the water drains through goes into

an underground stone bed and then soaks into the subsurface. And there's a different strategy on the side for different streets that we're thinking about applying those same kinds of pervious pavement technologies and other vegetative systems.

Remember that vegetation will take the water and put it back in the atmosphere so it also gets it out of the system. And in so doing, it gobbles up carbon dioxide, one of the primary causes of global warming. And it also makes for a much more livable urban environment.

So by greening we'd be solving the stormwater problem, or reducing it significantly, making it more improved habitat, a more livable environment in Pittsburgh, and doing it in a way that we think aesthetically and environmentally will make it a better a place.

So these are numerous examples. We've done studies of other cities where we think the solution can work very well and in this area, we think East Liberty is the perfect model in which to test the demonstration of these technologies, these green technologies, and we've been successful to get a little seed money from the Heinz Foundation to get started. But clearly to rebuild Pittsburgh will take

significantly greater capital but we think in the long term, it's a much better investment of public dollars to do it green rather than doing it gray with the changes to underground plumbing, which in effect really don't do very much to make Pittsburgh a more livable city.

Just a few examples, you get the sense that by greeting elements within the streetscape, if you'll notice that little section in the upper right hand corner, you'll see that portions of the street have been made pervious. The rainwater also goes into the planting elements along the curb line between the sidewalk and even the sidewalk and the curb, and even the sidewalk itself can be made of porous concrete underlain by a stone bed. So you build reservoirs underneath the surface, soak the water in and it doesn't go down the inlet.

And just a couple of other examples that some of the streets we're looking at and different elements of connection that we think this is what it looks like today that we can change. There's a parking lot in East Liberty and if we made that porous, you will not get one drop of runoff from that surface even under the most extreme rainfalls.

There are endless examples but we think

that with a little bit of greening, we can make all of our streets much more livable and much more permeable. So these are just a few examples and ---.

MR. WILDFIRE:

That's good, this Penn Avenue ---. This is in Penn Avenue or this is in the 1940s, give it a click --- oh, it skipped one, but there's so many things. Specifically we're looking at greening Penn Avenue, circle to circle, street trees, runoff strategies, parking lots. Just imagine Home Depot's parking lot, right on Penn Circle, what happens if every drop of rain that hit that soaked back in? We have a residential program now in the 700 block of Euclid if you're familiar with the Highland Park/East Liberty area. All of our homes built on that street will have rain barrels or rain gardens. We're trying to take that entire street off line as a demonstration of low cost, cost-effective ways at going house by house to literally reduce the load of the region. That’s it. Any questions?

SENATOR FERLO:

That's great. Thank you. Thanks for changing the paradigm. Thank you very much for working to create a certified green neighborhood a new category of certification.

I want to bring up Mike Kenney. He's the executive director of the Pittsburgh Water and Sewer Authority. Mike, thanks for being out here today. Followed by Myron Arnowich (phonetic), if he's still available, from Statewide Clean Water.

MR. KENNEY:

Thank you, Senator. Thank you for inviting me.

SENATOR FERLO:

Sorry, Suzy Meyer. Excuse me.

MR. KENNEY:

Thank you for inviting me this morning to speak on the subject of the infrastructure needs for the City of Pittsburgh and for the community and for the region. I've actually come from a different entity. I came from Westmoreland County. I was the assistant manager at Municipal Authority of Westmoreland County in the water business. I've been in the water industry for 26 years.

As the Senator stated, I'm now the director of Pittsburgh Water and Sewer Authority since April the 1st. One of the programs as a water professional is sometimes I feel like I'm in a circus where I'm just juggling constantly. I'm juggling the needs of the consumer with the needs of the political

sector with the needs of the infrastructure and counterbalancing that on a constant basis.

Some history. The City of Pittsburgh is actually formed as a borough in 1792. So it's been around quite a long time. It became a city in 1816. Actually the first known system that was brought on line as far as water goes was in 1802, and that was just a series of wells where people went to the wells to gather their drinking water.

Moving on, the first pump system in the City of Pittsburgh occurred actually in 1828. That was the first home system. It was replaced in 1844. It didn't last very long apparently, unlike some infrastructure we have today and a new reservoir was put into place in 1844 for about 7.45 million gallons of water. Another one was added about 2.7 so at that time they added reservoirs into the infrastructure. Revisions were made in 1867 when the customer base at that time was 35,000. Then in 1870 it had a pumping capacity of about a million gallons a day.

In 1878 the population rose to about 106,000, they pumped 15 million gallons a day. In 1880 they increased the number of reservoirs. The Herring Hill (phonetic) Reservoir went on, the highest reservoir of the area, in the City of Pittsburgh. And

in 1897 one of the major infrastructures of the city was the Highland Reservoir Number Two, 126 million gallons of water.

All that in the first century actually was unfiltered with water. That was water brought right from the river and then with the diseases that occurred with the river water and the pollution that occurred there, in 1907 actually or at the turn of the century they began filtering water.

In 1907 they added the South Side and the consolidated everything, the South Side, the North Side and the city into one entity and then as I stated in 1908 they actually started to filtering water. That water was filtered in by --- I think 1914, it was finally dispensed to the entire city.

As you see, the background of where the city infrastructure headed has started from and early in 1950, 1950 was the first time we really had the introduction of chemicals other than the chlorination of water.

So if we move through to today, we have 83,000 water customers, 113,000 sewer customers and we do also take care of the stormwater since it is a combined system, predominantly, 990 miles of water main, 1,300 miles of sewer line and we are --- as

everybody saw in the presentation by ALCOSAN, the City of Pittsburgh makes up 33 percent of the infrastructure that ALCOSAN treats.

This business for us is very, very capital intensive. We have a tremendous amount of money we have to put into the capital and then we wait for a long-term return on that. Some of our assets were peaks of the pipeline we put in, we expect a life of about a hundred years. That's what we expect on it.

Since the system, as I stated before, came to fruition at the turn of the century we are now reaching a useful life of a lot of our infrastructure. Our O&M costs continue to rise and with the increased costs, increased materials going to China and different areas, we have seen increases in the industry we hadn't seen at least in my career over the last 30 years where chemicals and materials are going at 30 and 40 percent increases on an annual basis, and that compounds our need for capital money.

And we just took a major step forward and we actually restructured our debt this year and took on about another $100 million worth of debt. That $100 million is really going to go into a number of places. We have $10 million, $10 to $15 million going

into the distribution system for replacement of some water lines, hydrants, valves and things of that nature; $25 million is going directly into the sewer system to handle our consent decree with DEP; $43 million is going into the plant. The plant is in need of refurbishing and hopefully with the money that we have in the plant and the Breckwood (phonetic) pump station, that that will take out at least to the next 40 years. And we have a $25 million set aside for really projected growth in --- with the SEA, the URA, and the Port Authority and PennDOT and different things that we're required to replace at expansion occurs.

As I stated earlier, I feel like I'm actually in the circus at times. I'm juggling and I think it's more and more as I get into this I feel like I'm little Dorothy in Wizard of Oz, and actually what we're doing is coming to the Wizard to see if there's anybody out there that anybody can help us with and with these needs that we have.

And I think it boils down to the fact that it's funding and what we're able to pass on to our ratepayers in a very systematic planned staging because that's the task that everybody in this room faces, is that it's we are living with the sins of our

forefathers, the infrastructure that was designed and built has not been maintained properly over the years. And now we all as water and sewer professionals, we have to address this problem and we have to address in a very systematic planned stage so our ratepayers can afford that on an increased basis.

I thank you very much and we'll answer any questions if anybody has any.

SENATOR FERLO:

I just wanted to touch on one question. You know one of the recommendations is give me an amount capital infrastructure and debt that will have to be incurred either by the private sector, commercial sector, the ratepayers individually at the residential level. I know historically there's never been a case where Pittsburgh Water and Sewer Authority has entertained varying levels of rates; usually it's a one size fits all rate base. And I was wondering, given the potential capital investment that would be considered by this task force, one idea has come up to have some type of lifeline rate of some sort for a small individual residential user maybe below a certain level of 15,000, 20,000 gallons. I'm not sure what the level would be. Is that something at all that the PWSA Board has ever discussed or ---?

MR. KENNEY:

Yeah, there's many thought processes that goes on as far as rates go. Most authorities actually went on a declining block scale and when most rate studies are completed, what they find is that most water systems are really designed for two facets, the first facet obviously is for consumption purposes. The average residential homeowner might use 60,000 gallons of water a year, so if we built an infrastructure just to supply 60,000 gallons of water a year, we wouldn’t need the size of pipelines we have in the system.

The secondary purpose of actually supplying water systems for fire flows, and when you're looking at fire flows today seeing in a neighborhood of 2,000 to 3,000 a minute with the pumper trucks that they have today, we have to have an infrastructure in place to service those, the capabilities of extinguishing fires.

So that's where the need goes, so when most rate studies are completed, that's why in the lower block are a higher rate because of the need for the fire protection for the individual homeowner plus be able to turn that spigot on for such a low volume of water, seems to exceed --- where if you have an

industrial user who would be able to use maybe 200,000 gallons a day, the cost for us to actually provide a higher volume is lower than what it actually costs us to provide for residential customers. You can look at that different ways, there's a lot places now that are imposing a inclining rate blocks where the more you use the more you pay. So yeah, PWSA will continue to look at those rates and continue to look at the rate structure they have and pass it on to the rate base as they see fit. But it is, as I said, a very difficult task to do to where you need to reinvest back into the infrastructure at rate that you're right there and can afford, and that's the problem we all face and that's the task we have at hand.

SENATOR FERLO:

Thank you very much. Appreciate your time today. We have Suzy Meyer speaking next from Image Earth. My apologies. And then Myron, if he's here, and then we'll move on down to people who may or may not have registered.

MS. MEYER:

Good afternoon. Thank you for the opportunity to share my thoughts. I'm Suzy Meyer, a landscape architect and consultant. And for the last 12 years, I have worked with non-profits in the

Pittsburgh region mainly working on progressive environmental demonstration projects, doing research, writing, and communications. What I want to say is this; in order to improve and sustain water quality and to prevent floods and for the well being of thriving communities and for improved economies in poorer municipalities, it is critical to level the playing field with high quality development across our region, across the board.

In my opinion, land-use regulations should be taken away from the municipal level and be degregulated from a broader perspective, a multi-municipal and in many cases a multi-county watershed scale. In Allegheny County alone there are 130 municipalities, each with their own set of land development, land use and subdivision regulations. There's 47 municipalities in Washington County, 52 in Westmoreland. There's 5,000 in Pennsylvania.

Few topics bring together an array of such overlapping laws more than stormwater management. The combined sewage overflow policy, floodplain management act and subdivision and land development regulations, hazard mitigation plans, stormwater planning, stormwater discharge permits, and sprawl.

The solutions obviously are not simple.

But nothing short of an integrated approach would suffice. I'd like to review some the good changes and projects that are afoot. I know them because I've worked on them and then I'll go forward and outline suggestions towards the sustainable infrastructure. The Army Corp Engineer District --- what was his name and title?

SENATOR FERLO:

Colonel.

MS. MEYER:

Colonel Crall mentioned the stream project in Sheridan Park, which is removing hundreds of thousands of gallons of fresh water a day from one combined sewer and there's one CSO outlet in Chartiers Creek that will be restored as an amenity in a city park.

Frick Park is a great working model of a restored stream valley that was battered by floods continually from upstream communities and it's also a good example of residential rain barrel consciousness raising.

Pine Creek Watershed, there's one ordinance for multiple municipalities thanks to the undiminished efforts of one municipal engineer. Pennsylvania Environmental Council has a great

internet base, watershed education tool for the Allegheny and Monongahela Rivers that explains land use impacts on quality.

Lower Chartiers Creek Watershed Association has a handbook that explains jurisdictional responsibilities for water quality issues. What is the EPA responsible for, the Corps, FEMA, DEP, county, each municipality and each landowner.

And in 2006, Three Rivers Wet Weather in Washington County signed a bi-county agreement to work together on managing stormwater in the Chartiers Creek Watershed. Westmoreland Conservation District has numerous successful BMPs in place and this --- I've always liked this project, that Morgantown collects water for their stormwater management system based on impervious square footage.

These are numerous small success stories all over the map. Separately they are intelligent gestures of better ways to manage our impact on the environment. They prove a gestalt that we are capable of doing much, much better. Yet the hard part, true systemic land development reform, goes untouched. Upstream development still flows to downstream communities. More than laws need to be changed; minds

and behavior patterns need to be changed; old dysfunctional paradigms need to fall away in their creptitude or be surgically removed.

The Pennsylvania municipal planning code needs to be rewritten if not overhauled. The county needs to offer real fact-based guidance to municipalities, instead of facilitating taxpayer money for mountaintop removal, for retail development, the anchors of new sprawl.

A new entity which has been discussed over and over again needs to be new entity. It could obviously have many facets but I think it needs to emerge in a science-based and a non-political entity and derive its intelligence from multiple disciplines. It needs to boldly put forth policy and give guidance based on good objective data, and draw upon the natural sciences, civil engineering, watershed planning, computer modeling, and respect and understand the needs of all bionic communities.

I think planners need to be trained in natural system functioning, environmental economics, and need to understand and be able to use new objective quality data like those available from PA maps and then begin to rewrite the municipal ordinance codes.

I think the lawyers need to be proactive. They need to allow you a precautionary principle, if something seems to be doing harm, it's enough reason in and of itself to cease or desist or slow down what's going on. Instead, they continue to look at the municipal court claims where a municipality cannot be held responsible for an occurrence about which they had formal knowledge of potential failure, collapse or breakage. As an attorney explained to me when I was trying understand what the municipality's lawsuit against another, he said that the municipality had no reason to know the that dam was --- the detention facility was going to break. It never had an event like it before.

While I want to say that while we are surrounded by crumbling infrastructure and ill-maintained detention ponds and dams, proclaiming ignorance no longer serves us. A downstream community should not have to suffer because of it.

The funding sources at the state level needs to be rethought, I think. DECED gives money to multi-municipal planning. But few examples in the state have actually endorsed shared ordinances. DEP gives money for myriad small watershed based projects, yet few non-profit directors share the results of

their findings.

Finally enforcement is critical and it can be practiced now. The municipal codes that I have read through recently, all have are provisions for levying fines, revoking development permits, even imprisonment. None of them have been exercised though.

I believe a few years back that DEP was about to reinstitute a stronger enforcement penalties. The monies could pay for more inspectors and add teeth to those laws that are on the books. The arrogance attitude needs to be replaced with a can-do attitude.

And not so much finally but I do like this one developer that I met, and he said at a meeting on Allegheny County’s comprehensive plan, they are focus groups right now, and I sat in on the environmental one and he said we want uniform land regulations. He said we're fine if they’re raising the environmental bar, just so that they’re consistent across municipal lines. It takes us so much time and trouble to try to interpret what each municipality's ordinances are.

So I think that the next governor's budget needs to do something different. I think we need to have a summit on radical change for land use

and water quality. Maybe $5, $15 whatever billions needs to go towards integrated reform at the core of our water quality dysfunction. Maybe anticipated outcomes can include a new municipal planning code, a new land development/stormwater management entity. Incentivized attorneys, educated and redirected municipal officials. Maybe it's something that needs to be hammered out in six to nine focused months, hard-core basic implementation over the next 12 to 18. Obviously I'm a fan of the surgical removal of dysfunction.

As a consultant, environmentalist and citizen, I'm losing patience with the old dysfunctional paradigms that are slowing crumbling away. And I just want to say I came back from three months in India where I was working with an architecture firm and designing landscape responses to certified buildings and doing rain harvesting consulting. And it's just amazing how a country that has been so poor for so long and experiencing so much development has instituted some mandatory rainwater harvesting across the country. And they're not nearly as organized or have as much money or the many efficiencies that we do have here, and I'm thinking if they can do it in India, we can certainly do it in

southwest PA and all of Pennsylvania.

And then looking also at climate change and as things might get warmer and there's going to be --- and people might be looking to move to places where it's better climate and abundant water supply and a green city to live in, certainly it would behoove us to start taking care of the water that we do have here and not take it for granted. Thank you.

SENATOR FERLO:

Thank you very much. Appreciate your testimony and should try to move the testimony up to the front of this document that gets produced. So thank you very much. Our next speaker --- is Myron still available --- Arnowich, Clean Water? If not Dave Somback from Carnegie Mellon? I don't know if Dave is still here. Is Darryl Wrap available? Darryl Wrap. I might be saying it wrong. Is Darryl here? Is that you? Okay.

I can think more recently of the debacle of the Wal-Mart in Kilbuck Township, which obviously got voted down one small community quite sensibly for its economic benefit. I know they had to pay off a police pension, the chief was retiring, and they were hard up to come up with $300,000 something that they need to pay up front, but it was the downriver

Community that actually was forced by DEP to put in the sewage treatment system, which had no contributing benefit so I'm just trying to illustrate your point is very well taken. Dave, if you could give us --- Darryl, I'm sorry, if you give us an idea who you are representing today as well. And if you're representing yourself, that's fine.

DR. WRAP:

I'm representing myself as a citizen. I want to talk about three things that I would say are very generally and I'll get into a little bit more detail. The first is responsibility, next is standards and the last is leadership. Just as a little background, I have a mechanical engineering background from Potillo (phonetic) University and Penn State, where I have a Ph.D. so I do have some ability to analyze and think about some of these issues.

I have also taught at West Point, so I have some familiarity with leadership and some of the things that leaders are suppose to be doing and can do. Just to start, I moved to the area in 2000 and when I learned that there was raw sewage going into the rivers in the dawn of the 21st century, I was pretty appalled and I thought that the nation had decided about in the '70s or '80s that that was the

type of thing that we as a country were not going to do anymore, and I thought what has this area been doing for the last 20 years and it seemed like not a whole lot. To me that's just irresponsible. So we're now at a point in time where some of these issues are looking to be addressed.

First off, responsibility. Communities in society have various responsibilities going back to the U.S. Constitution. One part of it says we are to promote the general welfare, and providing safe drinking water, taking care of our wastes, is a basic responsibility in promoting the general welfare, protecting public health and so on.

So the executive order that created the task force says, to quote, one of the goals is to look at how to protect public health and safety and maintain water resources capable of supporting recreation and economic development for future generations.

I want to highlight future generations, I now have a two-year-old daughter and so I'm obviously thinking more about the future at this point and so I want the task force and various political leaders to think about those future generations. So with raw sewage flowing into the rivers and streams with dead

zones in the Chesapeake Bay and the Gulf of Mexico, water main breaks causing havoc on too much of a regular basis in this region, we as a society and a community are not managing our impact on others and the environment in a responsible manner, and that's where we all have to step up to the plate. We have to think about our responsibilities as individuals and as leaders, the elected leaders who said I want to take responsibility to make decisions. I want to have that responsibility. Those who do seek elected office have additional responsibilities that they have asked for and receive through the votes.

In terms of leadership, the elected officials as well as the directors of water and wastewater authorities have been hired or elected and paid to be knowledgeable and responsible with the public assets under their control and authority. To be honest, from my experience as a active person with watershed organizations, voters and ratepayers, our average citizen, is not knowledgeable enough and does not have the information necessary to really evaluate the condition of the infrastructure that's buried and so on, nor the financial status, the operation, and management of these water and wastewater utilities, so additional public education is necessary, and as Suzy

Meyer mentioned, it's --- lack of knowledge is not an excuse. If you're driving along and you're stopped because you are speeding and you say I didn't know the speed limit, you still get a ticket.

So the voters don't necessarily know the details of how badly deteriorated these infrastructures are and it's the leaders, the leaders of the utilities, the water and wastewater utilities and the politicians who are responsible for and need to become knowledgeable of those issues.

Under standards, I think this kind of ties in a little bit also with Suzy Meyer's issue, that standards need to be set for the operation and actions of these utilities in terms of maintenance of the assets and liabilities, in terms of maintenance liabilities and so on as well as the financial assets and liabilities. In one of the presentations listed on the task force's web site, Mr. Discon (phonetic) from the Public Utilities Commission has a quote that --- and my understanding is that Public Utilities Commission regulates public companies that are responsible for these things. And one of his quotes is deferral of maintenance is not allowed under Public Utility Commission regulations, particularly avoidance of prudent infrastructure investment and so these

public utilities seem to have been able to slip by that and have deferred maintenance.

The annual report, and this goes back to giving more information to the public, the annual report for drinking water gives the results of the bottom line compliance and how much contamination levels, or does it meet the regulations.

Wastewater we as a rate payer, the citizen gets no information on an annual basis from our --- whether it's the collection system, the community that owns the collection system or from the treatment system such as ALCOSAN, and neither give financial information that's user friendly. And you have to go out and look for it. If I own a stock in a public company, there's an audit by an independent auditor. There should be an annual audit of local ownership and the management of the collection system, its assets, its fees and these results need to be publicized to voters and ratepayers. Such audit should not just evaluate systems on bottom line compliance and levels of contamination, the evaluation should include the management structure, business and operating processes to ensure the bottom line compliance and its potential detrimental health impacts.

It's not just an accident waiting to happen and that also that, nor is that money being wasted. One possibility is to have the state as in an oversight role give grades on different areas since grades are something that the people have an understanding of. And that failure to manage a system, its assets, its financial situation, its operations, and so on, according to best management practice standards could result in, for lack of a better word, a bankruptcy or whether that could be a takeover or some kind of citation or whatever of that authority. I think that's --- those systems have to be managed adequately. And if they're not being managed adequately, that needs to be addressed and that is an oversight role that the state can apply.

So in closing, a couple things. This task force is empowered to evaluate the drinking water and wastewater infrastructure. The issue of stormwater infrastructure and its adequacy can be integral part of all this, especially in locations where combined sewer systems are present. Plus, responsibility to address the all-too-frequent flooding problems of this area attest to the challenges facing the management of stormwater and its infrastructure.

This should be highlighted in the final recommendations that stormwater is another area that needs to be specifically addressed. State officials need to be advocating for the federal government to support the national rebuilding of infrastructure, educating the public on the dire situation and how far from acceptable standards of the 21st century we are, and that the responsible thing to do is to get to work.

Now, what can we do about all the people who did not take care of the system and left current leaders, residents, and businesses a legacy of debt and deteriorating infrastructure? Well, we can't ask for retroactive fees but we can learn from the past. You as leaders can do what is right today, and the future, so that my two-year-old daughter, her children, their children, and so on will not look back on this time and be disappointed with Governor Rendell, the Sustainable Water Infrastructure Task Force, the elected officials and the voters of today.

Thank you for the opportunity to address the task force.

SENATOR FERLO:

Thank you, Darryl. I really appreciate your comments and if you let Steve from my office know

your address and phone so we can have a way of reaching you. I think both you and Suzy have explicitly made a number of suggestions that either through regulation and to some extent more likely legislatively could be addressed. And I'm willing to work with both of you and others in the room, in addition and separate and distinct from the work of the task force and recommendations that this task force will make.

But there are a number of specific things that came to mind at least in my head of a legislative nature, and I'd be happy to facilitate that at least by way of introduction and begin some level of education and advocacy on those points, so thank you very much for your comments.

Are there any other individuals who'd like to speak and get some information on the record? We'll go to the authority here and then this gentleman, yes. I know you're out in one of the townships. I forgot what the name of the township was. Former Lawrenceville advocate.

MR. PARKS:

We go back a little ways, the Lawrenceville days. I think everyone does. Still have a vivid picture in my mind as Senator Ferlo with

a classic recycling bag in the grocery store on his head, we talked about an abandoned railroad right of way for a trail, and his comments in promoting recycling in the city. So he's continuing in that vein today. But we're here to talk about water and wastewater and I appreciate the opportunity to speak. I'm with the Peters Township Sanitary Authority, and my position to remove inflow and infiltration from waste stream. Today we've been talking about regionalization, all of the ways to treatment problems, but what we have to do is take a step back and solve this problem, not treat it. Not build bigger pipes to convey more water and not build bigger pipes to treat more water, but to get rid of the water at the source. And that's been eliminated many times not only in context of rain barrels and I think street scapes to absorb the water, those are all excellent ideas, but through some of the investigations that I've been doing lately, it seems about 80 percent of the I&I inflow and infiltration of the systems comes from the private lateral. That's been touched upon briefly today that is the section of pipe between the sewer interceptor that the authority or municipality owns and the house. These lines are typically old, made out of terra cotta pipe, which was the very good

pipe at the time was put in the '50s and earlier. But that pipe is typically four to five feet long, with all those joints; all those joints are susceptible to cracks letting water come in, roots come and adversely exfiltration is letting the sewage out into the yards and you don't find that until the ground's sloppy and flies are around. So those are really about 80 percent of the I&I comes from private laterals, and other sources are downspouts. A lot of these sewer systems are combined, the rainwater goes into the sewage system and though has no business being there, and during the wet weather which is what Three Rivers Wet Weather's all about, we can get surcharged with vast amounts of fresh water that does not need to be treated. If we can take that in through rain barrels and into rain gardens, it benefits everyone and we don't have to pay to treat it or build bigger conveyances, build bigger plants.

And another source of infiltration is foundation drains. These are drains underneath the house; typically they just knock a little hole in the L-trap, in the foundation that drains the water right into the sewage and yet does belong there. It's not built to convey that water. Also sump pumps are tied into to sanitary drains. They don't need to be there,

that could be detected through dye testing and also camera-ing or close circuit television inspection of private laterals and other area drains, driveway drains, these are all sources of infiltration that we're paying to treat. We need to eliminate those and one way we can do that is by aggressive dye testing and video inspecting. A lot of municipalities are doing this at the time of sale. When you sell your house you have to do that. That's an excellent way to do that because it's fair when you sell the house you have to inspect, but doing a random inspection of properties just as they sell throughout your municipality doesn't eliminate a problem, a specific sewershed --- just like a watershed there's a sewershed. So what we are looking at is doing a targeted approach on areas that may be deficient. We know that the pipes are terra cotta not plastic, so they have infiltration. So these are some areas that should be addressed to eliminate the inflow into the system.

What it all comes down to is funding, no matter where you are. If you're in Millvale, Fox Chapel, Penn Hills, any community, no one wants to spend up to $5,000 to replace their sewer line. It's not sexy; it's underground. You expect it to work,

you expect to flush and it goes away. When I had the electricity done in my house, I was really proud. My dad came down and I said see my wiring. He goes, that's great, let’s go upstairs. That's what you get with the sewers, but you have to invest in the infrastructure and as a homeowner that's your infrastructure, but it's really forgotten about because it's out of sight, out of mind.

So private lateral replacement can up to $5,000 per resident. No one wants to spend that. They kind of forget about it and once we address that it has to fixed, what am I asking for is some type of funding to be put in place to assist homeowners, not a full ride. Let's not give them $5,000, but let's give them something, some kind of a fund as a grant that we say if you do a total line replacement, we can contribute x amount of dollars towards that or if you do a spot replacement, we'll give you a very small amount so the carrot would be let's replace your line. Let's make it all good so we eliminate that that infiltration in the line. We don't have to pay to treat it and we're not sending it down the line to everybody else and it ends up at ALCOSAN, which is landlocked, can't expand, everyone will pay more. Let's just try to get rid of the problem on a local

level, so again let's not try to treat it. Let's try to remedy. Thank you.

SENATOR FERLO:

Thank you, Gary. I know the sewer authority has some of type of insurance, maintenance policy for a small amount of money each month. They will come in eventually if the water and sewer lines need to be replaced. I don't know if that's true out in your township or not.

MR. PARKS:

There are national trends of assessing money on a real estate, on your real estate bill. Our authority would rather not do that and fund it internally. There are insurance plans, we're looking one insurance plan; however, nationally I've only found one plan that was willing to insure private sewer laterals, and again, the cost is $5,000 and people taking insurance out because they know they have a problem, get it fixed, and say, oh, I'm canceling. So again, this is not very risky and there's not a whole lot in there, so we are looking at that trying to get a program where after a time we will have the funds set aside from the premium to offer a program. But again, this takes a long time and with a little bit of the seed funding with some

money coming back to be administered through the authority, or some regional group. If we don't have to have all these individual ones but some regional group to grant money if you are repairing, I think that would go a long way to solve the problem locally rather than building a larger infrastructure.

SENATOR FERLO:

Is Peters Township part of the ALSCOSAN system?

MR. PARKS:

No, we're not. We have our own treatment plant. We have two treatment facilities and they're not part of the Allegheny County and that program.

SENATOR FERLO:

Thank you very much.

MR. PARKS:

Thank you.

SENATOR FERLO:

Yes, sir. If you could give your name and address or some way we can be in contact with you for the public record as well, it would be helpful.

MR. KRAYNYK:

Good afternoon. My name is Roy Kraynyk. I'm the Executive Director of Allegheny Land Trust, a land conservation organization and we conserved almost

1,500 acres in 17 municipalities throughout Allegheny and Washington Counties. I'm going to talk about preventing rainwater from flooding our streams and floodwater in our streets. We can spend more time or more water on addressing our water infrastructure problems at the source. We need to focus more attention and creative energy on how to prevent rainwater becoming stormwater. We need to approach, it emphasizes flood prevention strategies not just flood control strategies but control is necessary but it really is an end of the pipe solution that tries to litigate the problem after it was created.

We need to think upstream figuratively and literally. In fact, we just need to think up, straight up into the clouds and start thinking about how to treat that pure cloud of rainwater falling to earth before it comes before it commingles with a zillion others, and becomes rioting mob of polluted water in our streams.

This afternoon I want you to think about prevention and remember an ounce of prevention is worth a pound of cure. To illustrate that point, I'd like to tell you about a property that Allegheny Land Trust purchased for permanent green space along Chartiers Creek in 2001. In September 2004 we

estimated that there were 50 million gallons of water stored at this property during Hurricane Ivan. That's 50 million gallons that didn't make it to Carnegie, Heidelberg, Bridgeville, and other downstream communities damaged by that flood. These communities endure $61 worth of damage. If Greenfield Pines was developed with houses as it was permitted under local zoning, that number would have been higher because all that would have been lost under 15 feet of floodwater. Because it was not developed, there were no losses, no insurance claims to be filed, no federal, state, or county funds were necessary to bail out the property owners. Based on what ALT paid Greenfield Pines, that's 50 million gallons that were stored there for about one penny per gallon. I've been told that the design and construction of a detention system can be as high as $3.00 per gallon, so in this case you've got one penny of prevention, about a gallon cure.

This is what I mean by prevention. The conservation people at Greenfield Pines prevented additional damage downstream and it's hard to calculate how much, but for those residents and business owners who watched the water creep up their steps that night, every inch matters.

Woodlands and flood plains are the

region's most valuable water management system. Flood plains like Greenfield Pines and the companion wetlands are acknowledged nationwide as providing valuable environmental functions, while also providing habitat and recreational opportunities. Protecting them is almost university accepted to retreat. However, let’s not be lulled into some false sense of security because flood plains and wetlands are a great way to protect it. We need to turn our attention to another landscape feature that is prevalent in our region, and almost entirely overlooked for the contribution it makes in preventing raindrops from becoming stormwater in our streams and floodwaters in our streets. These are the woodlands.

Last spring Allegheny County invited Peg Coin (phonetic) of the Conservation Fund for Pittsburgh as part of ALT’s green print project. ALT’s green print project mapped the highly functional natural infrastructure in Allegheny County land where biodiversity, scenic character and water management functions come together. Peg and her team are working with Milwaukee, Chicago, Kansas City, and other cities of the Midwest to find non-structural solutions to similar water quality and flooding issues that we face in our Pittsburgh. In those cities, lands with

hydrosoils are being mapped and conserved for their water absorbing and purifying abilities. It wasn't long before Peg, who has a farming and soils background, saw our R-10, clay soils and steep slopes, and said you don't have hydrosoils to work with here, your hydrosoils soils are the woodlands. Woodland masses do more to prevent floods than flood plains do because woodlands intercept rainfall before it reaches the streams. Once water is in a stream and subsequently in flood plain, it's too late. Flood plains can provide the emergency overflow areas. Woodlands are the water interception and retention areas, so we can regulate flood plains for their contribution towards flood control, we need to better regulate woodlands for their contribution to flood prevention.

These are from the journal for surface water quality professionals. Rainfall interception, a lone oak tree can be up to 27 percent of the total precipitation. This means 27 percent of the rain that falls on single oak trees does not reach the ground. Rainfall interception of the forest canopy --- this is just the canopy catching rain drops intercepting their route the ground, ranges from 15 to 40 percent of annual precipitation in conifer stands, and more, 6 to

48 percent in hardwood stands. Total forest interception, the canopy, the trunks and branches of leaves and the ground litter on ground the inception rate can range from 13 to 76 percent of the rainfall. Seventy-six (76) percent of the rainfall not hitting the ground is pretty impressive, a lot of rain.

Now, what happens when these impervious surfaces and steep, highly-compacted cut and fill slopes, 300 percent more rainfall reaches the ground, increasing the amount of silt and water reaching streams. This increased rainfall can also act as a lubricant in our slide-prone soils. When woodlands are displaced, it's a lose/lose situation. The watershed loses its natural interception and retention capacity; drought decreases and flash flooding increases. Woodlands simply are our greatest nonstructural water management resources and they need to be treated as such.

Strategic conservation of woodlands needs to be the centerpiece of the multi-faceted intergovernmental watershed basin flood prevention plan. Through coordinated public and private actions that we can maintain, we can provide valuable flood prevention and water quality natural functions of the surfaces. Those are some of the short-list problems

as I see them from almost 20 years working in land-planning development and conservation. Municipalities are not cost accounting for the incremental loss of highly functional natural infrastructure like woodlands as development occurs. The woodland loss increases runoff and stormwater, which causes CSOs to surcharge. Downstream communities need to have a say, and perhaps even legal standing in the land use decisions on the upstream communities, especially in the area of stormwater management. The riparian threat is clear. Water runs downhill and will forever. However, the riparian threat accountability is not clear. How can one municipality knowingly make decisions that would impact downstream communities without accountability? In contrast to a solely regulatory approach, we need to enlist a market-based approach by the durable economic data that quantifies the economic services provided by highly functional natural infrastructure. We need locally-based compelling and sound economic data to complement the science we're compiling in ecological services. Empowered with sound economic data, local governments, which as you know control land use, can confidently regulate highly functional natural infrastructure.

A summary of possible solutions. The

land use and development decisions made by local government can work to reduce or unfortunately aggravate the flooding problem. We need to enlist, and in some cases educate local government on how to be a key part of the solution not part of the problem. Detention facilities need to be audited to determine if they are functioning as designed. The day after the detention pits are constructed, they begin to fill in with silt, losing capacity to hold water. In ten years, how much storage capacity have we lost; 5 percent, 10 percent? By that time the hundreds of detention pits out there we've lost a lot of storage. The concept of temporary land banking --- this is simply banking the multiple land in flood prone and CSL watersheds until the infrastructure's upgraded to accommodate additional stormwater, and inputs that new development brings. While the land is banked, new development codes and sustainable development practices can be being drafted and adopted. Once the infrastructure is fixed, the land can be sold at appreciated values to offset the cost of infrastructure improvements. The ALT is working on a feasibility study of this land banking concept. By contrast, new construction is being approved that increases stormwater in flood-prone watersheds. It

increases sanitary inputs in overstressed dysfunctional systems resulting in more frequent flood events and polluted waterways.

To wrap up, let's talk about rules for a minute. Municipalities, let's start being part of the solution not part of the problem by strictly regulating woodlands, especially on slopes exceeding 25 percent. Prohibit breaching unpolluted ridges. A ridge line the highly visible and vulnerable transition zone. When this zone is denuded of vegetation, runoff is increased and the risk of flooding and landslides can also increase. Landslides damage water and sewer lines another public infrastructure and private property. Don’t subsidize development in the form of tax incentives such as vertical tiffs (phonetic), and even variances in flood-prone watersheds and slide-prone areas. And don't subsidize development that displaces woodland slopes, ridges and woodland masses. Audit detention facilities to determine that they are functioning as originally designed. Funding to support this can be done by establishing a centralized fund that developments contribute to on a project by project basis.

Finally, Allegheny Land Trust stands

ready to enroll strategic land conservation to address the regional threats of flooding, sewer overflows, landslides and the loss of biodiversity and scenic character. ALT can help acquire key parcels that provide environmental services that if displaced by development would exacerbate existing problems. We can implement the land banking concept, and work with the government to audit development for its impact on highly functional natural infrastructure and help to implement locally-based land conservation initiatives.

We believe that land conservation is a proactive cost-effective and sustainable tool that can help address flooding, water quality, and landslides while providing communities with the attractive open spaces that enhance property values, provide quality wildlife habitat and places for passive recreation. Thank you for the opportunity to present these comments.

SENATOR FERLO:

Thank you very much. I just want to ask you, has the Allegheny Land Trust done any overlay on the GIS mapping of the woodlands?

MR. KRAYNYK:

Yes, yeah.

SENATOR FERLO:

Are they available online?

MR. KRAYNYK:

Not yet. The summary's being sent to the printer very soon, so we'll send a copy of that.

SENATOR FERLO:

Okay. If you'd let us be aware of that, I appreciate that. Again, other individuals like to speak up? I know comments were made by Suzy and Darryl and Roy. You know, this weekend I was participating in a private discussion with elected officials and the county executive and it was focused myopically on this issue of so called consolidation. And my argument was we shouldn't be talking about consolidation. It's really an irrelevant issue. The issue we should talk about is sustainability more so than whether or not eliminate the Pittsburgh City Council. Everybody in the Allegheny Conference is politically and myopically focused on some political issue, and to me that's completely irrelevant to what really we should be grappling with in the city. And I think three speakers in particular that just highlighted and really kind of speak to what we need to think about as a Water Infrastructure Task Force and the recommendations we make. They're a little bit more provocative. They're changing the paradigm but I

don't think this should come out well with this and the bricks and mortar that we need, and this is how we pay for it. I really think we have to be challenged along with the DEP staff to make a number of more provocative, if you want to use that phrase, resolutions and guidance to the governor and just to Secretary McGinty, so I really appreciate those folks and the testimony today. Are there others who would like to make any other closing comments? I know Nate wants to make one more point. Any other speakers? Yes, do you have a comment then?

MR. FLISS:

It's just to save a date. My name's Jeff Fliss.

SENATOR FERLO:

Oh, save the day. I'm sorry, I didn't hear. Save a date. Go ahead.

MR. FLISS:

My name's Jeff Fliss. I'm a watershed manager out of the Pittsburgh office. More importantly, though, I am a DEP rep for the Ohio River Basin Committee as part of the development of this state water plan. That comes about as a result of Act 220 which was passed in 2002, basically the gist of Act 220 was to say or answer the questions how water

do we have, how much water do we need, and will we have enough. Well, in the past four or five years, the committees not only from the Ohio basin but every basin around the state that was shown on the map before has been preparing their portion of what's going to go into the state water plan. On September 8th of this year, in Butler County of Seven Fields, which is near Cranberry --- and a lot of people get the specific, I guess, invitations or correspondence on this, we will be unveiling, I guess you could say, the Ohio River Basin portion of the state water plan. You're invited to come. It's a public meeting and it's on Monday, September 8th, from 5:00 to 6:30. It's an open house where you'll be able to view maps, ask questions on an informal basis. From 6:30 to 7:30 is the official meeting and at 7:30 on is the public comment, the official public comment. So as I said, they'll more information in the future but this would be a good honor to you at least give you some heads up on it.

SENATOR FERLO:

Are you located in the Pittsburgh Regional Office?

MR. FLISS:

Yes, the Pittsburgh Regional Office. If

there's any questions, my last name if Fliss, Jeff Fliss. If you have any questions, maybe wait 'til July to ask them there may be changes in this. It's beyond tentative but not official as of yet. Give me a call at the Pittsburgh office at 442-4000.

SENATOR FERLO:

Nate, do you have a closing comment? Are you standing up?

MR. WILDFIRE:

I want to leave with a math problem, calculation if you will. We heard earlier from the folks at ALCOSAN. Two of the solutions they propose were, I believe, $70 million for additional plant expansion and then somewhere around $60 million plus for the two off site remediation centers. So I was just doing a little doodling here and we know from our work in East Liberty that costs roughly about $500 to install two rain barrels on a house, $500. We also know that to buy one tree, flexi pipe to go from your gutter to that tree and bunch of gravel to bury the pipe, it costs about $500. Both of those treatments make your house zero water runoff for stormwater, and that's not every house because there's some big houses and some don't have yards. But that's --- roughly about 50,000 houses in the City of Pittsburgh qualify

for one of those options. You multiply 50,000 homes times $500, you get $25 million. $25 million will eliminate roughly --- and this is very rough doodling in the front desk here, but will eliminate roughly a third of the City of Pittsburgh's run-off problem. By eliminating one-third of the water that goes to ALCOSAN, you have now met federal standards for compliance. We need to. Now, that’s a logistical guide plan up to 50,000 different rain barrel and tree installations and good luck with that, but it's just an illustration that there are other ways to solve this problem that are a fraction of the cost and involve probably each one of us buying a rain barrel or something like that. But it's --- again, a lot of logistical problems with that, but I want us all to think outside the box. We don't have to just fill the giant pipe. Thanks.

SENATOR FERLO:

That's a good point to end on. Thank you, Nate, very much. If there are no other closing comments, I just want to thank the University as well once again for their hospitality, thank our stenographer for her hard work and all the DEP staff that are here today, thank you very much. Again, I'm very appreciative of the governor. And going back to

some of the other comments, I know we have two folks, the governor and Secretary McGinty, that are willing to step up to the plate but they need political allies in the House and the Senate on both sides of the aisle, Senator Regola's staff member there. So I'm hoping that we can step up to the plate and really make some significant progress that we need to make for the future and for our kids' sakes.

Thank you very much all for participating today. Thank you.

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MEETING CONCLUDED AT 4:15 P.M.

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