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# *Task Force Meeting*

## JOINT LEGISLATIVE TASK FORCE ON DRINKING WATER INFRASTRUCTURE

*“The Task Force will receive testimony from invited guests on the current condition of the State’s drinking water infrastructure and what improvements are necessary to ensure a safe and adequate drinking water supply”*

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**LOCATION:** Committee Room 11  
State House Annex  
Trenton, New Jersey

**DATE:** November 30, 2016  
10:00 a.m.

### **MEMBERS OF TASK FORCE PRESENT:**

Senator Linda R. Greenstein, Co-Chair  
Assemblyman John F. McKeon, Co-Chair  
Assemblywoman Elizabeth Maher Muoio  
Assemblyman John DiMaio



### **ALSO PRESENT:**

Matthew H. Petersen  
*Office of Legislative Services*  
*Task Force Aide*  
*Assembly Majority*  
*Task Force Aides*

Alison Accettola  
*Senate Majority*  
Kate McDonnell  
*Assembly Republican*  
*Task Force Aides*

Rebecca Panitch  
*Senate Republican*  
Thea M. Sheridan

***Hearing Recorded and Transcribed by***  
The Office of Legislative Services, Public Information Office,  
Hearing Unit, State House Annex, PO 068, Trenton, New Jersey

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LINDA R. GREENSTEIN  
Co-Chair

JOHN F. MCKEON  
Co-Chair

SENATE

BOB SMITH  
CHRISTOPHER BATEMAN

ASSEMBLY

RAJ MUKHERJI  
JOHN DIMAIO



MATTHEW H. PETERSON  
Office of Legislative Services  
Committee Aide  
(609) 847-3855  
(609) 292-0561 fax

**New Jersey State Legislature**  
**JOINT LEGISLATIVE TASK FORCE**  
**ON DRINKING WATER INFRASTRUCTURE**  
STATE HOUSE ANNEX  
PO BOX 068  
TRENTON NJ 08625-0068

**TASK FORCE NOTICE**

**TO:** MEMBERS OF THE JOINT LEGISLATIVE TASK FORCE ON DRINKING WATER INFRASTRUCTURE

**FROM:** SENATOR LINDA R. GREENSTEIN, CO-CHAIR AND ASSEMBLYMAN JOHN F. MCKEON, CO-CHAIR

**SUBJECT:** TASK FORCE MEETING - NOVEMBER 30, 2016

*The public may address comments and questions to Matthew H. Peterson, Committee Aide, or make status and scheduling inquiries to Pamela Petrone, Secretary, at (609)847-3855, fax (609)292-0561, or e-mail: OLSAideTDWI@njleg.org. Written and electronic comments, questions and testimony submitted to the task force by the public, as well as recordings and transcripts, if any, of oral testimony, are government records and will be available to the public upon request.*

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**The Joint Legislative Task Force on Drinking Water Infrastructure will meet on Wednesday, November 30, 2016 at 10:00 AM in Committee Room 11, 4th Floor, State House Annex, Trenton, New Jersey.**

**The task force will receive testimony from invited guests on the current condition of the State's drinking water infrastructure and what improvements are necessary to ensure a safe and adequate drinking water supply.**

Issued 11/21/16

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[First Reprint]

**ASSEMBLY CONCURRENT  
RESOLUTION No. 161**

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**STATE OF NEW JERSEY**

**217th LEGISLATURE**

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INTRODUCED FEBRUARY 22, 2016

**Sponsored by:**

**Assemblyman JOHN F. MCKEON**  
**District 27 (Essex and Morris)**  
**Assemblywoman MILA M. JASEY**  
**District 27 (Essex and Morris)**  
**Assemblyman TIM EUSTACE**  
**District 38 (Bergen and Passaic)**  
**Assemblyman JAMEL C. HOLLEY**  
**District 20 (Union)**  
**Senator LINDA R. GREENSTEIN**  
**District 14 (Mercer and Middlesex)**  
**Senator BOB SMITH**  
**District 17 (Middlesex and Somerset)**

**Co-Sponsored by:**

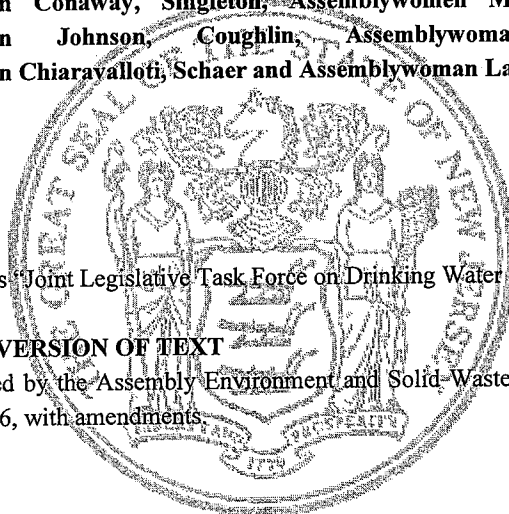
**Assemblymen Conaway, Singleton, Assemblywomen Muoio, Pinkin,**  
**Assemblymen Johnson, Coughlin, Assemblywoman Jimenez,**  
**Assemblymen Chiaravalloti, Schaer and Assemblywoman Lampitt**

**SYNOPSIS**

Establishes "Joint Legislative Task Force on Drinking Water Infrastructure."

**CURRENT VERSION OF TEXT**

As reported by the Assembly Environment and Solid-Waste Committee on  
March 3, 2016, with amendments.



(Sponsorship Updated As Of: 7/1/2016)

1 **A CONCURRENT RESOLUTION** establishing the “Joint Legislative  
2 Task Force on Drinking Water Infrastructure.”

3

4 **WHEREAS**, The water resources of the State are public assets held in  
5 trust by the State for its citizens and are essential to the health,  
6 safety, economic welfare, recreational and aesthetic enjoyment, and  
7 general welfare of the people of New Jersey; and

8 **WHEREAS**, Aging infrastructure and the deterioration of the physical  
9 assets of water supply systems present serious risks to the integrity  
10 of drinking water and to the environment; and

11 **WHEREAS**, Repairing and modernizing aging infrastructure is not an  
12 issue unique to New Jersey; and

13 **WHEREAS**, The United States Environmental Protection Agency  
14 estimated in 2013 that \$384 billion in improvements are needed for  
15 the nation’s drinking water infrastructure through 2030 for systems  
16 to continue providing safe drinking water to 297 million  
17 Americans; and

18 **WHEREAS**, New Jersey’s and the nation’s water systems have entered  
19 a rehabilitation and replacement era in which much of the existing  
20 infrastructure has reached, or is approaching, the end of its useful  
21 life, and this is a major issue that must be addressed so that New  
22 Jersey’s residents, businesses, and visitors can continue to have  
23 access to clean and healthy water sources; and

24 **WHEREAS**, The State has a history of being proactive in this area and  
25 has enacted numerous statutes aimed at protecting the State’s water  
26 supply, including the “Water Supply Management Act,” P.L.1981,  
27 c.262 (C.58:1A-1 et seq.), the “Water Pollution Control Act,”  
28 P.L.1977, c.74 (C.58:10A-1 et seq.), the “Safe Drinking Water  
29 Act,” P.L.1977, c.224 (C.58:12A-1 et seq.), and the “Private Well  
30 Testing Act,” P.L.2001, c.40 (C.58:12A-26 et seq.), and  
31 establishing entities such as the Drinking Water Quality Institute  
32 and the New Jersey Environmental Infrastructure Trust to work  
33 with the Department of Environmental Protection in order to protect  
34 and enhance the quality of the State’s drinking water and protect the  
35 public health of the residents of the State; and

36 **WHEREAS**, Recent news reports concerning the health crisis in Flint,  
37 Michigan related to lead-contaminated water points to the  
38 immediate need to focus on the issue of aging drinking water  
39 infrastructure in order to prevent a similar crisis in New Jersey and  
40 protect the public health and the environment; now, therefore,

41

42 **BE IT RESOLVED** by the General Assembly of the State of New  
43 Jersey (the Senate concurring):

**EXPLANATION** – Matter enclosed in bold-faced brackets [thus] in the above bill is not enacted and is intended to be omitted in the law.

Matter underlined thus is new matter.

Matter enclosed in superscript numerals has been adopted as follows:

<sup>1</sup>Assembly AEN committee amendments adopted March 3, 2016.

1 1. There is established the "Joint Legislative Task Force on  
2 Drinking Water Infrastructure." The purpose of the task force shall be  
3 to study and make recommendations concerning issues related to  
4 drinking water infrastructure in New Jersey. The task force shall seek  
5 to identify both short-term and long-term solutions and  
6 recommendations to address the quality and condition of drinking  
7 water infrastructure in the State.

8 In conducting its business, the task force shall call upon the  
9 Department of Environmental Protection, the New Jersey  
10 Environmental Infrastructure Trust, **'[and]'** the Division of Water in  
11 the Board of Public Utilities <sup>1</sup>, and representatives of investor-owned  
12 and government-owned water utilities<sup>1</sup> to offer their respective  
13 expertise and experience concerning the condition of the State's  
14 drinking water infrastructure, and what improvements are necessary to  
15 ensure a safe drinking water supply. The task force shall also call  
16 upon individuals in the academic community and representatives of  
17 the environmental community with expertise, knowledge, or  
18 experience in issues facing the State's drinking water supply and  
19 infrastructure. In addition, the task force shall investigate the steps  
20 other states are taking to address drinking water infrastructure issues  
21 and any funding mechanisms used to finance needed improvements,  
22 repairs, and updates.

23  
24 2. a. The task force shall comprise six members, three of  
25 whom shall be members of the Senate appointed by the President of  
26 the Senate, and three of whom shall be members of the General  
27 Assembly appointed by the Speaker of the General Assembly. No  
28 more than two members of the task force appointed by the President  
29 or the Speaker shall be members of the same political party. The  
30 President and the Speaker shall each designate one appointee to the  
31 task force to serve as co-chairperson of the task force.

32 b. The task force shall hold its first meeting within 30 days after  
33 the effective date of this resolution, and shall meet thereafter at the  
34 call of its co-chairpersons.

35 c. A majority of the membership of the task force shall  
36 constitute a quorum for the transaction of task force business, and  
37 action may be taken at any meeting by the affirmative vote of a  
38 majority of the membership of the task force. All public meetings  
39 of the task force shall be recorded and transcribed. All meetings at  
40 which official task force action is taken shall be open to the public.  
41 The task force may meet and hold hearings at the places it  
42 designates during the sessions or recesses of the Legislature. The  
43 co-chairpersons of the task force shall notify jointly the Office of  
44 Legislative Services, for posting and distribution to the public, of  
45 the time, place, and agenda of each meeting of the task force.

46 d. The Office of Legislative Services shall provide professional  
47 and clerical staff to the task force.

48 e. The task force shall be entitled to call to its assistance and  
49 avail itself of the services of the employees of any State, county, or

1 municipal department, board, bureau, commission, or agency, or  
2 any public institution of higher education in the State, as it may  
3 require and as may be available to it for its purposes, and to employ  
4 stenographic and clerical assistance and incur traveling and other  
5 miscellaneous expenses necessary to perform its duties, within the  
6 limits of funds appropriated or otherwise made available to it for its  
7 purposes.

8

9 3. Within six months after the date the task force organizes, it  
10 shall prepare and submit to the President of the Senate, the Speaker  
11 of the General Assembly, the Minority Leader of the Senate, the  
12 Minority Leader of the General Assembly, and the chairpersons of  
13 the Senate Environment and Energy Committee and the Assembly  
14 Environment and Solid Waste Committee, or their successors, a  
15 report containing its findings and recommendations, including any  
16 proposals for legislation and other appropriate legislative or  
17 regulatory action. Any member of the task force who does not  
18 concur with the report of the task force may issue a minority  
19 statement, which shall be included in the transmitted report of the  
20 task force.

21

22 4. This concurrent resolution shall take effect immediately, and  
23 shall expire 30 days after transmittal of the report required pursuant  
24 to section 3 of this resolution.

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**ASSEMBLYMAN JOHN F. McKEON (Co-Chair):** Welcome, everyone.

Before I turn it over to the Senator, I just ask that staff go through a roll call.

MR. PETERSON (Task Force Aide): Assemblyman DiMaio.

ASSEMBLYMAN DiMAIO: Here.

MR. PETERSON: Assemblywoman Muoio.

ASSEMBLYWOMAN MUOIO: Here.

MR. PETERSON: Chairman McKeon.

ASSEMBLYMAN McKEON: Present.

MR. PETERSON: And Chairwoman Greenstein.

**SENATOR LINDA R. GREENSTEIN (Co-Chair):** Here.

ASSEMBLYMAN McKEON: Senator.

SENATOR GREENSTEIN: Thank you, Co-Chair.

Good morning to everybody -- Co-Chair McKeon, fellow members of the Committee, Governor Florio, other distinguished guests, and the public. Good morning and welcome.

We come together, here today, as the Joint Legislative Task Force on Drinking Water Infrastructure to begin an important inquiry into the delivery of one of our most precious resources, water.

We set out on this task in hopes of ensuring, for current and future generations, the delivery of an adequate supply of safe, clean, economically sustainable drinking water to our homes, schools, businesses, and communities at large. This Task Force was first proposed back in February after the crisis in Flint, Michigan, where thousands of children were exposed to elevated lead levels in the public water supply over a period

of approximately 20 months, beginning in the year 2014. And the aftermath of the Flint debacle led to testing by various authorities around the country, including New Jersey. In March, State and Newark school officials reported elevated lead levels in drinking water in more than two dozen schools; and elevated levels were found in other parts of the state, including in a hospital.

As the EPA notes, this contamination may not be the result of water infrastructure problems, however. Public water systems treat water to prevent the corrosion of lead pipes. Most lead gets into drinking water after the water leaves the local well or treatment plant and comes into contact with the customer's plumbing materials containing lead, such as pipes and solders.

The problem of lead in our drinking water is, sadly, not a new problem or, for that matter, our only problem. In short, much of our underground piping system has entered what the Federal EPA calls a *rehabilitation and replacement era*. The EPA, in its most recent report to Congress, puts the tab for rehabilitation and replacement in New Jersey at \$8 billion. Other reports say the cost will be much higher.

Some of these systems are served by miles of underground piping dating from the 18th and early 19th centuries. As you might imagine with such an old system, it's estimated that we lose, through leakage, an estimated 20 to 30 percent of the treated water that's pumped into our communities. That's a downright wasteful and inefficient use of this precious resource.

The aging infrastructure often breaks, causing service disruptions and also causing other aging piping to fail because of steep

fluctuations in pressure. For example, from 2000 to 2012, Hoboken averaged 20 water main breaks a year, according to New Jersey Future in 2014. That number jumped to 30 breaks annually in the year 2013. The boil water advisories, low pressure, and water shutoffs that followed have been likened to problems more associated with the developing world.

The American Society of Civil Engineers, in its 2016 report card for New Jersey's infrastructure, gives our drinking water infrastructure a C. The Society also notes that New Jersey's water supply infrastructure was constructed largely during peak periods of growth in the cities between 1890 and 1930; and later, in the older suburbs, between 1950 and 1970. And of course, that doesn't include all of those pre-Civil War situations that I spoke about earlier. They say this will need to be overhauled in the next two to three decades.

The Society of Civil Engineers recommends a comprehensive review that would help map out and prioritize critical projects. Right now, we're operating mostly with a patchwork of emergency repairs, especially in municipal systems; and a potential future of holding systems together with what amounts to chewing gum and baling wire.

But the cost of putting our heads in the sand could be just as steep, and likely even more so. The Society of Civil Engineers says that important ongoing shifts we're seeing in people moving back to our urban areas will falter and fail if New Jersey's water infrastructure needs go unaddressed.

Jersey City's Gold Coast is a good example of what can happen when those needs are addressed. It was \$135 million in water and other infrastructure work there, beginning in the 1980s, that helped lay the

foundation for what today is a beautiful and vibrant waterfront anchored by the Goldman Sachs Tower, the Newport Center Mall, and market-rate condominium and apartment high-rises. And that's something to keep in mind: Rebuilding our drinking water infrastructure can lead to economic dividends. The U.S. Department of Commerce's Bureau of Economic Analysis estimates that for each additional \$1 spent on operating and maintaining water and sewer systems, \$2.62 in economic output is generated in that same year. The same analysis estimates that about three-and-a-half jobs are generated for every one job added in water and sewer.

I'm going to leave out the part about where the money will come from for those; because that's the hardest part, and I think we're all not sure yet.

Finally, I want to mention that the New Jersey Statewide Water Supply Plan, last adopted two decades ago, is long overdue for a revision. I understand there's a draft update in the Governor's Office, at least for the last year or more, according to a report called *Facing Our Future*. They are calling for the Administration to complete its work and release the plan.

What we learn in today's and in upcoming hearings about the condition of our water infrastructure will hopefully put us on the road to giving our critical resource -- water -- its proper due and to prioritizing its protection into the future.

Thank you.

Co-Chair.

ASSEMBLYMAN McKEON: Co-Chair, thank you very much.

I often laugh at myself -- as I'm looking at this beautiful, double-spaced typewritten statement that you have; and then I'm looking at my notes--

SENATOR GREENSTEIN: It isn't always so. (laughter)

ASSEMBLYMAN McKEON: --regarding as to what I have to say.

But I start by saying it will be an honor and privilege to work with you on this project; our respective staffs have combined wonderfully to get us to where we are. And since I don't know if I'll ever go to the Senate, I've been involved in a lot of these joint hearings now so I can catch up with you guys that way -- one of my former colleagues in the Assembly. (laughter)

I also want to thank Matt Peterson of OLS, who has done a wonderful job for all of us in putting this together; along with Kate McDonnell of partisan staff, our General Counsel; and Alex Keiser and Ken McPherson of my personal staff. Thank you all for making us as smart as we could be as we start on this adventure.

Assemblywoman Muoio, you are an amazing public servant. Thank you for being here today, and for all of the work that you do. I know you are swapping in for Raj Mukherji today, who is out of the country at a family wedding. But thank you for your expertise and being here.

And, where's John? And John DiMaio--

ASSEMBLYMAN DiMAIO: I'm on the wrong side. (laughter)

ASSEMBLYMAN McKEON: I'm on the right side; go figure. (laughter)

John is also a wonderful public servant, and I know he has personal experience in serving on the board of a public utility. So we'll look forward to that work.

And we didn't mention Senator Bateman and Senator Smith; I think all of you know their environmental credentials. They are both out of the country today as well, but they have been reading up and will hear everybody's testimony, and will be here at our next meeting in December.

So I just-- My view of the world on this, in like, six minutes or less, is -- you think of pot holes, right? And all of us either had to steer, probably, on the way here to avoid one, or maybe hit one unwittingly. And maybe others will look at something like the Pulaski Skyway and actually, maybe, get frightened. We would be equally as troubled and frightened if we could see into the subterranean world. We don't-- Out of sight shouldn't be out of mind. So a big part of what this Committee will do is to do deal with something that we don't often -- we certainly don't see, and don't often think about. But water infrastructure is just as important as other infrastructure that we're now finally meeting the challenge on.

So I think, like, how much -- how many pipes-- What are the numbers down there, Senator? And it's really -- it's hard. First of all, there's this crazy Byzantine system, no different than the electric grid, truthfully. The best number, at least, to work with today -- but that is part of what we're going to learn, as we go forward -- the former VP of New Jersey American Water said you can get to California, back and forth, ten times, based on just the number of water pipes that are subterranean. So in my dumb math, that's about 60,000 miles of pipes that we're dealing with.

How old are they? Many of the estimates that you see, 50 percent of those, or 30,000 miles of those pipes, were built in 1920 or before that -- meaning that they are all at the end of their useful expected life. That's a big task to have in front of us, and that's where -- as much as with lead bringing a lot of things to the forefront -- ACR-161 came from. And again, serving with Senator Linda -- the two of us sponsoring that in our respective houses -- this Task Force is literally to explore those issues and to deal with how we're going to deal with drinking water infrastructure.

We also recognize that it goes beyond that. Because we could start talking about stormwater; we could start talking about wastewater. Lead breaks off of that, because now we get into safety and quality. The future of flooding and climate change as it relates to having to deal with the stormwater part and to the extent that wastewater combines with the different combined sewer overflows that are in place. Development rules are a part of it, regarding how we're going to protect water sources and how that will all work.

So the task is gargantuan; but I guess our focus, really, is going to deal with the infrastructure of fresh drinking water -- the best we can stick to that, understanding it's a little more complicated.

So there are three major areas, right? Just to throw this out there: 1 in 9 people -- I mean, we're here in New Jersey -- but 1 in 9 people in the world don't have access to clean water. The average New Jerseyan uses 135 gallons of water every day. Interestingly, that hasn't changed all that much from the 1990s; but that's what that number is. Yet we know, depending on what statistic you hear -- and that will be a part of what we'll

do -- 30 percent leakage; 30 percent. And there is going to be leakage with water; 15 percent, they say, is the industry average. Thirty percent -- it's immoral, to start with; and it's just dumb. I mean, it's just-- Think of the cost on the ratepayer and on the taxpayer regarding what, basically, is oil in a different form.

So what is that cost? And my colleague, the Senator, mentioned that \$8 billion over 20 years. I looked at it a little differently -- at least at this point -- that that's-- If you look at that sum over 20 years -- now that \$8 billion goes back to 2011, so it's probably more than that. But that's only \$400 million a year -- each year, 20 years before. That's like 1.1 percent of our budget. So as much as, "Where's the money going to come from?" we're not talking about, "Oh, my God, it's doubling the State budget." It's a sum that we could ultimately figure out and deal with, especially because for every \$1 you spend -- all my friends from the unions are here -- you get \$2.50 back, as it relates to the economy that will come from spending that money.

And one place that it's not going to come from, by the way, is the Feds, because their sums have been down, going back to 1980 to today, by 75 percent. So the Feds are no longer supporting this. And you know, if you look at all the money they spend on infrastructure, the Feds -- only 4 percent of it goes to water infrastructure. So either there are lousy lobbyists, or someone is not paying attention down that way.

And I guess the last piece is -- it's going to be a little bit of philosophy that we have to deal with, right? Forty percent of the customers (*sic*) in this state are privately owned, shareholder utilities -- the New Jersey American Waters, the United Waters of the world. The other 60 percent

are publicly owned, like I mentioned Mr. DiMaio in serving on one of those. Publics are different, you know. Is it right to continue to sell or divest ourselves, as governmental entities, of our assets to privates? That's a philosophical question. Maybe leasing is a better way to go, as opposed to an out-and-out sale. But I do know, because the local privates -- the government-owned ones, if you will -- are operated -- have to deal with getting reelected. A lot of times they're deferring on their maintenance; they're just not doing it because they don't want rates to go up, because they want to get reelected again. And it's very interesting as a Legislature, as much as we have books of regulations on water safety, as it relates to water infrastructure there's a dearth of that. And it's a whole other issue. DCA is supposed to look over the budgets of all of the privates, and they do that. Call them and ask them for a list of all of the privates. "We don't have that." Call DEP to get a list; they don't return your call, at least so far. And on the other end of it, BPU -- they'll say, "Oh, there are only six private purveyors;" on their website, it says 35. So it's an area that we really need to get our act together on.

And I'll just leave you with this. New Jersey has so many -- has joys and vicissitudes, right? -- plenty of vicissitudes, as far as our challenges. But one of the joys, if we don't blow it, is that we have, really, a very affordable clean water supply. So as it relates to this infrastructure investment, for us to have the aforethought, in a very bipartisan way, for a long-term future -- where no one's going to remember any of our names who are probably here in the room -- this is something that can turn New Jersey into an economic juggernaut. It absolutely is, knowing what's

happening in the rest of the world, and in this country, concerning the delivery of water.

So with that, the Senator has given me the honor of introducing our first speaker. And to all the speakers -- everybody here is very prestigious, and we thank you, and look forward to your presentations.

The first is someone I'm very happy to call one of my political heroes, for certain. Beyond serving as our Governor, I harken back to a time when he was in Congress. And the beautiful beaches that we now enjoy that had routinely washed up medical waste, let alone sludge, from New York -- when they were taking some of these issues, that derived from these very things we're talking about, and dumping them off of the coast -- stopped happening, based on his leadership.

So someone that I think is an amazing public servant and an environmental hero -- Governor Florio, if you would lead us off.

And I note that we invited Governor Whitman; and Governor Florio and she have written on this topic, and she was unable to be here. But you will capably pick up that mantle.

**G O V E R N O R J A M E S J. F L O R I O:** Well, thank you very much. I appreciate the kind comments.

And to the Co-Chairs and members of the Task Force, I am very pleased to be here to help you in lifting the level of awareness to the importance of this question that we're talking about.

I think we have some questions about the capability to provide for the quality and quantity of water that the state needs, and the importance of infrastructure in providing for an adequate supply of water.

I think it's a matter of common knowledge that infrastructure funding in general is inadequate at this point, and likewise for wastewater supplies. I think that's something that we all appreciate and know fundamentally -- the importance of the availability for consumption, as well as for economic purposes. We don't always appreciate the importance of economics and water. New Jersey has very water-intensive industries; obviously, agriculture and food processing. But also energy, telecommunications, the chemical industry, and the pharmaceutical industry -- all these things are very important for the economic well-being of our state.

Cost is always a major consideration. But the first thing that should be done is get rid of the inefficiencies of the system so as to reduce costs for the money that has to be raised. I mean, 20 to 30 percent of the water in our mains is wasted as a result of leaking sewer pipes and leaking water mains, and that's something that is very important.

Flint, Michigan, has brought home to us the public health component, that we've experienced here in New Jersey, of the same problem -- the Newark school system and other things we've talked about.

And the question of cost -- we can save a lot of money when we think about the cost of not fixing the infrastructure; the sewer main reference was made to Hoboken as a place where this is a recurring problem. It is better to put money into the system upfront to invest in repairs for water mains than have to pay the extraordinary amounts of money for the sewer mains that are out there.

Job creation is a benefit, as well, for the infrastructure improvements that we should be having. One of the few things that there

seems to be a bipartisan consensus in Washington about is infrastructure; the infrastructure seems to be something that can get done fairly expeditiously. But to do that -- and the Senator made reference to the Water Supply Plan that's way, way behind renewing -- that should be done as rapidly as possible so as to be prepared to maximize the benefits from the infrastructure actions that are taken at the Washington level, for New Jersey to get its fair share of resources that might be available.

I think it's also an appreciation for the need to understand the linkage between wastewater systems, and stormwater systems, and drinking water systems as well. That's something that's extremely important. As was mentioned by the Chairman -- the Assemblyman, Governor Whitman and I have collaborated and serve as Honorary Chairmen for Jersey Water Works, a very interesting collaborative that's been doing excellent work. You will hear from them today on the details of the programs that they are putting forward as part of their *Agenda for Change*, as they talk about it. There are over 260 stakeholders, representing almost every facet of concerns about water and water infrastructure, that are coming out with reports that are going to be useful to this Task Force, as well as to the general public.

I think we're going to be trying in this effort to build public support; to build the political support. Because as was indicated by the Assemblyman, it's not an easy thing to start talking about the amounts of money that have to be raised to deal with these problems. Even the minimum amounts are fairly substantial, and there has to be the political will to overcome the inherent opposition to raising money. And I am a firm believer that if, in fact, you can lift the level of awareness of the public to

the cost of not doing things, then there's the capability of persuading people to make the decisions that are needed to have an adequate infrastructure.

One of the things I would like to focus your attention on, when you hear from Jersey Water Works, is the importance that they attribute to the wastewater systems -- the CSOs, the Combined Sewer Overflows. That is something they focus a lot of attention on, and that's something that really has to be understood.

I'd also talk about, and one of the things they specifically talk about as well, is cost reductions by more coordination between municipal, regional, private water companies, public water companies. There has to be a degree of collaboration so as to minimize the costs and the inefficiency of overlaps. New Jersey, interestingly enough, has statutory authority already for regional districts. There is a North Jersey Water District system in place. There is none in South Jersey, although the existing statutory authority to create one is there. So that may be something you want to look at, again, to facilitate maximizing the resources that may be available.

I want to recommend another report that Governor Kean and I are involved with. This is a report of the New Jersey Climate Change Adaptation Alliance. This is a report that is specifically looking at climate change; and one dimension of the climate change interaction with this problem is a report -- a thorough report, a very good report -- on what is happening as a result of climate change. Obviously, sea level increases are occurring; diminished flows of river water -- down -- is having an impact on saltwater intrusion. The salt line moving up the Delaware River is an example, as a result of sea level increase and the flow of the Delaware River

being reduced as a result of some of the semi-drought conditions that we're talking about right now.

Let me just conclude by bringing to your attention a problem that I don't think we pay enough attention to on its impact for water -- quality and quantity. A couple of weeks ago I attended a very nice ceremony in Edison, New Jersey. It was the ceremony that commended everyone for their work -- the EPA was present, and everyone else was present -- in cleaning up a Superfund site in Edison. And the nice part of that was a good thing; it took a long period of time, but it's done.

The problem is, is that there is 114 other Superfund sites in New Jersey. New Jersey -- for a whole lot of historic reasons, which are interesting -- has more Superfund sites than any others state in the union. It's important to note that we obviously have 21 counties; this means that we have an average of about 5 Superfund sites per county, which means that nobody lives very far from these things. And I would call to your attention -- Superfund sites are not just contaminated sites. These are sites that meet the criteria established under the statute, and EPA has concluded that these are "imminent and substantial dangers" to peoples' health and the environment. So this is not stuff that's minimum dangers; it's hazardous waste. And clearly the impact of these sites, in groundwater and surface water, is something that we just can't avoid paying attention to. So I would just urge you to take into consideration for that dimension of water contamination as you deal with the infrastructure needs.

So I commend the Task Force for the good work that you're doing, and pledge my support in any way I can be helpful to the Task Force.

So thank you very much. I'm happy to respond to any points or questions.

ASSEMBLYMAN McKEON: Governor, thank you.

And for the record, I know you put some thoughtful comments together in the form of written testimony, which was distributed to the Committee and will be a part of the record.

Questions?

SENATOR GREENSTEIN: I have one.

Governor, the issue of *who pays* -- obviously, one of the biggest problems here, after the planning of what we're going to do. Do you have some thoughts on whether the changes that we need to make are doable with the resources that we have or can develop?

GOVERNOR FLORIO: Well, I think it's important to realize that, obviously, the public sector's not running out of money. But I think this is something that can be an exception to the rule of austerity that's going across the country.

I think it's also a role to play for public-private partnerships. I've sensed that there are a number of private sector companies, private sector interests that are willing -- under the right circumstances -- to be able to contribute to some of these types of things. The difficulty with public-private partnerships, to this point, has been the inability of the public sector and the private sector to come to an accommodation to realize the needs of both. Because the private sector obviously wants to get a return on their investment; the public sector wants to retain some degree of control to maintain the public interest.

Good faith efforts on the part of both sides ought to be able to come to an accommodation. To this point, public-private partnerships have not been particularly successful because there hasn't been a real effort to accommodate both legitimate needs and to strike the balance between accommodation, and acceptability, and the resources.

So I'm convinced that there is the opportunity to do it. It's already happening on the wastewater side; it may very well be able to happen on the private sector-public sector, drinking water aspect as well.

SENATOR GREENSTEIN: Thank you, thank you.

ASSEMBLYMAN McKEON: Other members of the Committee have questions for the Governor?

Yes, Assemblywoman Muoio.

ASSEMBLYWOMAN MUOIO: First of all, any time you need a sub on this Committee, I'm raising my hand. Because I think this is -- the work you guys are doing is exciting and so critical. And I am completely on board with the more comprehensive approach to fixing the ills of our infrastructure and water system.

But the Governor mentioned global warming as something we ought to pay attention to and that will have repercussions for water treatment. And I wanted to also add that for water runoff, it's not only lowering river levels, but it's the severity of storms that is also increasing stormwater runoff, which is creating a problem.

A former director in the Stony Brook Watershed Association in our district, up in Hopewell Township, George Hawkins, now runs DC Water. They just did a new type of financial instrument to fund some capital projects. It's a green infrastructure project they're doing to help

improve water quality and deal with issues of stormwater runoff. They just did the bond with -- I think in September -- \$25 million, as part of a \$2.8 billion, long-term overhaul. I just think that would be something that might be interesting for us to explore -- how that works, and the success of that program.

Also, you talked about public awareness and how critical that is. I mean, we just came through the whole TTF issue. And it's tough enough when you can see the roads, and the problems, and the bridges that we have; but when it's underground, like you mentioned, it's tough to get people to truly appreciate.

DC Water, recognizing that, and the fact that they were going to need to increase their rates to deal with some of the infrastructure needs -- which, similar to New Jersey, a lot of their infrastructure was put in before Lincoln. I mean, it's been in a very densely populated, now, area. They changed their motto on their trucks to "Water is Life" to, sort of, push the fact, out there in the streets, about how critical the water supply is. So all of their trucks and their public notices all have that logo. And it's working down in D.C.

So I think that's-- You're right; I think public awareness is going to be critical in this endeavor. And that may be something we want to look at, as a state -- is trying to make sure people understand that the gallons of water we drink every year -- that John mentioned -- it's our lifeline. So the more we can promote that -- I think you're right -- the better.

GOVERNOR FLORIO: Well, you've touched upon a number of good issues, very important issues. And I think Jersey Water Works will provide you with some answers to some of those types of considerations.

I mean, the climate change issue is something that's already becoming a very serious thing for New Jersey. I mean, you have the first desalination plant down in the Cape May area, where the salt line is going up the Delaware River to the point that it's reaching the intake points before too very long -- into the aquifers. And if we pollute the aquifers with salt, serious problems exist.

And then, of course, the whole idea of public awareness is very important as well. Because to the degree that you can get people to listen and understand these things -- everyone knows we need water so, I mean, that's not a hard sell. No one appreciates the seriousness of the magnitude of the problem that we have.

ASSEMBLYWOMAN MUOIO: Right.

GOVERNOR FLORIO: And then the market forces -- pricing is not something anybody likes to talk about, but we're going to have to. More conservation and more efficiency -- pricing is going to have to be something that we roll into the computations as to how we go about using those resources most efficiently.

ASSEMBLYMAN McKEON: Assemblyman DiMaio.

ASSEMBLYMAN DiMAIO: Yes.

ASSEMBLYMAN McKEON: Oh, I'm sorry.

ASSEMBLYWOMAN MUOIO: No, go.

ASSEMBLYMAN DiMAIO: Are you done? Okay.

Thank you, Chairman.

Good morning, Governor; how are you?

GOVERNOR FLORIO: I'm fine, thank you.

ASSEMBLYMAN DiMAIO: You've been a friend for many, many decades now--

GOVERNOR FLORIO: Yes, yes.

ASSEMBLYMAN DiMAIO: --we've known each other.

I do sit on a local municipal utilities authority. And we're very proactive in -- we've already begun a program of, each year, replacing mains from the old cast iron to ductile iron because it's more flexible. We're constantly chasing down water leaks by listening devices to protect the water supply.

We live in a very unique area; it's a very small system -- maybe 16,000 users. But if we lose water out of our pipes, it goes back to our aquifer; and we pull all of our water out of the ground. We've done away with all of our reservoirs, and we're solely using wells now. What concerns me is, when we-- Before I go there, one more thing. We've also created water rates that, as you use more water, the price of the water goes up a dollar per thousand gallons used, every 10,000 increment -- so if people are wasting water watering their lawns or whatever, they are paying more and more money -- to try and promote conservation.

But one of the reasons that made me put my hand up to volunteer for this study is -- my concern is-- We're conserving water in other parts of the state -- the Highlands area, where I live, whether I totally agree with it or not. It's a concern; we need to conserve water. But on the supply side, that's happening. But has there been any discussion in your sphere with regard to -- when we move water from the reservoir for Jersey

City up in Boonton, to Jersey City, and it's lost in the ground-- I'm using -- and these are all hypotheticals, you know. If we're losing that water down there in the ground, how much more strain are we putting on those reservoirs by not properly upgrading the water mains so we're not losing that water?

GOVERNOR FLORIO: Well, inducing conservation is a very important consideration. I mean, when I was Governor, there were two things that I was fortunate enough not to experience, and I was very concerned about: one was a prison break with hostages; the other was a drought. Because I had come off the experience, in 1981, when New Jersey had a serious, serious drought; Governor Kean was in office. And I didn't want to have that happen, because that was traumatic for New Jersey -- neighbors fighting with each other about who was using water illegally and things of that sort. Fortunately enough, I didn't have a drought to deal with. But the interconnections taken after that were very, very important.

So the answer is "yes," we have to induce conservation and be able to have the ability to shift water from where it is to where it is not.

Incidentally, just as an aside -- preserving the integrity of the Pinelands and the Highlands is something that's emotionally and intellectually very important to me, being involved in both of those initiatives. But conservation is a very important part of this. And infrastructure improvements can facilitate that.

But the marketing of pricing is likewise something that is distasteful to have to talk about, but it's a real consideration that has to be understood.

ASSEMBLYMAN DiMAIO: Thank you.

ASSEMBLYMAN McKEON: Any other members? (no response)

I have one elder statesman question, if we're good.

And I guess that gets to that philosophical question about -- the 60 percent may be different than Assemblyman DiMaio's group that is having some aforesight in their infrastructure and planning. Many others, who haven't done so, are kind of ripe to modernize; to say, "Wow, we don't have the money, and now we need to -- someone else needs to step in."

What are your thoughts, just in general terms, about the local governments or county governments divesting themselves of the freshwater responsibility and asset, versus, like, Bayonne -- the public-partnership that they might have? And we're going to talk about how that's working later, but I am just curious as to your overview.

GOVERNOR FLORIO: Well, again, a lot depends upon the specifics. And I think in Atlantic County, they're currently thinking through how their water authority should be maintained. And the State now is taking over Atlantic City, I don't know how that's going to work out. But engaging in the discussion as to what, on balance, is the best arrangement for continuing water responsibility is very important.

First and foremost -- and this is almost obvious -- the Water Supply Plan should be updated. I mean, it's clearly out-of-sorts, in terms of timing; it's been a while since anybody looked at that. The Supply Plan ought to be the basic statement upon which many of these other decisions, as to the allocation of responsibilities, should be undertaken. And as I said in my remarks, the opportunity to take advantage of Federal infrastructure

monies would be very enhanced if we knew what we were talking about. It seems to be a principal that gets away from people recently.

So I would just urge that to be a good initial first step, in terms of allocating resources that may be available or that can be raised -- private sector, public sector.

I can remember when I first went to Congress -- in those days, the Clean Water Act provided grants -- huge grants of money for these types of infrastructure improvements. The Camden Municipal Utilities Authority, which is, I think, -- maybe I'm a little prideful of this -- the premier facility of its sort in the State of New Jersey -- most of that was financed by grants from the Federal government under the Clean Water Act in the 1970s. So we're not going to get back to that point, I suspect. But nevertheless, planning is a good idea, notwithstanding anything else. You ought to know what you're doing before you do it; and therefore, we're way behind the curve in not having an up-to-date Supply Plan.

ASSEMBLYMAN McKEON: So the bottom line, from your perspective -- it's horse for horses, so to speak. Maybe it works some places; maybe others-- As opposed to--

GOVERNOR FLORIO: That's right.

ASSEMBLYMAN McKEON: --"Okay, we should never sell the Turnpike."

GOVERNOR FLORIO: There's not a formula for evaluating all these things. It has to be project-specific, and you have to have good people who are good-faith negotiators doing that sort of thing.

Again, we're very fortunate in New Jersey to have a very good group of nonprofit organizations that are out there with no particular

financial vested interest in one outcome or another. They're there on the merits, trying to come up with thoughts.

Now, there are obviously differences of opinions as to the results of that. But I think having a good-faith effort to come to an accommodation is really the secret.

ASSEMBLYMAN McKEON: You have all of our humble thanks for being here and leading us off on our work.

Thank you so much.

GOVERNOR FLORIO: Thank you much. Keep up the good work.

SENATOR GREENSTEIN: Governor, your wisdom is always appreciated.

GOVERNOR FLORIO: Thank you; you're very kind.

SENATOR GREENSTEIN: Thank you so much.

The next two people who we have are Chris Sturm and Margaret Waldock. Ms. Sturm is the Managing Director for Policy and Water at New Jersey Future, a nonpartisan, nonprofit organization that promotes smart growth.

Ms. Waldock is the Environment Program Director for the Geraldine R. Dodge Foundation, a private foundation that supports leadership, innovation, and collaboration.

Both of these groups -- New Jersey Future and the Dodge Foundation -- are members of Jersey Water Works.

Thank you.

CHRISTINE STURM: Good morning, and thank you so much for having us.

And I also want to, again, thank Governor Florio for his great leadership on this issue; and his support for Jersey Water Works, as an Honorary Co-Chair.

So I am here from New Jersey Future because we provide the backbone staff support to Jersey Water Works. And I'm here with my colleague, Margaret Waldock, who serves on the Steering Committee.

I'm going to tell you a little bit about what we're doing that relates directly to your mandate; and Margaret will talk about the holistic, "One Water" approach and what that's doing for the City of Camden, as well as offer some strategies for how we build public support and political will for the investments that we need.

So Jersey Water Works is a new kind of animal; it's a collaborative. And the reason is, that this system is enormous; there are so many players. It needs to be transformed if we're going to upgrade all of this expensive infrastructure. And the way we're doing it is by engaging all of the stakeholders in being part of the solution.

The makeup of our Steering Committee reflects that diversity, and you see it here today. We have Steering Committee members testifying -- Dan Van Abs, Peggy Gallos, Andrew Hendry, and Joan Matthews representing Larry Levine -- as a few examples.

We are also always building new partnerships, and I'm delighted that the Plumbers and Pipefitters, and New Jersey American Water will be supporting our conference as sponsors on Friday.

Next year, in partnership with some of the state's water associations, we'll be sponsoring a new One Water Award to recognize innovation -- with AEA and, hopefully, AWWA.

We have over 260 members, and we reach over 2,100 people by e-mail. There's a growing interest in this issue.

So our members-- To focus our work, we've adopted 12 goals; and you have copies of those goals in your packet. You can't do everything, so you have to focus.

I'm going to talk about three things that we're doing. One is maintaining pipes through asset management; second is ensuring affordable access to everyone; and third is improving public accountability. And these are all issues that you've highlighted already.

As Governor Florio noted, our delivery systems -- those out-of-sight, out-of-mind pipes -- are not in good shape. And it's really hard for elected officials to spend money to improve them. The way utilities are tackling this is by creating asset management programs that treat these pipes as assets -- that catalog them, prioritize improvements; and then fully fund, through their capital budgets, the repairs that are needed.

This is difficult. And so the way that Jersey Water Works is contributing, is our Best Practice Committee has partnered with Sustainable Jersey, which is a voluntary certification program for towns -- over 400 towns are participating -- that want to be -- have the cache of being sustainable. And we're broadening that definition to include things like water loss audits and asset management programs, and really packaging up these approaches for elected officials so that they understand them.

We're also training utilities on how to be environmental champions and community anchors; and many already are. And you'll hear later from Peggy Gallos about this. But we've engaged DC Water -- thanks to foundation support from the Surdna Foundation -- to come in and give

us some of that George Hawkins magic about how do you talk about water, and why water is life, and how you plaster that logo on the shirts of every employee and on the trucks. And you let your ratepayers know what you're doing so that they are willing to support rate increases that are ultimately needed.

On the second topic: When it comes to affordable access, this is an acute issue in our older cities, especially the ones with combined sewer systems. They're the state's economic engines, outperforming in population and employment growth; but with double their share of the state's families living below the poverty line. And so we are currently researching the risk that rate increases would pose to the affordability of water and sewer services in those communities.

We'll also be exploring solutions from Philadelphia at our conference on Friday -- the way they're tackling this. And next year we'll be making recommendations, perhaps something similar to the home heating assistance program. We will likely be coming back to you all for support.

In addition to ensuring affordability, we also want to make sure that drinking water is safe for all our citizens, including kids. And our website has a compendium of resources on lead in drinking water and how to avoid it.

My final point has to do with public accountability and transparency. These are going to be enormous public expenditures; they already are. But we don't really know the state of our systems, as you've noted. As management expert Peter Drucker has said, "What gets measured, gets improved." And so we need to do a better job of cataloging our systems. This is one of Jersey Water Works' major projects for the

coming year, and you all have a handout that I encourage you to study later. We've taken our 12 goals, and we've figured out, "What do we want to have happen by 2100 for each of these goals, and how are we going to measure our progress?"

It is a little bit overwhelming, but we've boiled it down to cute pictures. So we're hoping it's a little bit friendlier.

ASSEMBLYMAN McKEON: You knew your audience, right?  
(laughter)

MS. STURM: Yes, that's right.

We'll be engaging all of our members -- from the DEP, to system operators, to really smart consultants -- to try to figure this out so that we have a better sense in New Jersey of who's providing these services and what kind of state they're in.

Finally, I just want to encourage you all to connect with us as a resource. We have a great website with lots of resources. We hope you will sign up for our monthly newsletter to stay on top of what's happening. And we know you share our goals, and so we hope you will join.

We also have a conference in Newark on Friday; 300 people are coming. We'd love to have you and your staff join us as our guests. So just let me know if you'd like to do that. We have over 35 commitments from our members that will be unveiled on Friday -- things that they'll be doing, in 2017, to improve water infrastructure.

We'll also -- our committees will be crafting their work plans in January. And if there are particular issues that you're interested in, I hope you'll let us know, because we can encourage them to focus on those things.

Thank you again.

Now I'd like to turn it over to Margaret Waldock.

ASSEMBLYMAN McKEON: Thank you.

**MARGARET WALDOCK:** Thank you for this opportunity.

Good morning, everyone. My name is Margaret Waldock; I'm the Environment Program Director at the Geraldine R. Dodge Foundation. You might have heard of us before. We're located in Morristown; and for 40 years, the Dodge Foundation has been focusing on the critical issues of our home state, New Jersey. We believe that philanthropy includes not just our grant making, but our ability to connect leaders across sectors, shaping expertise, and to promote collaboration to build movements around critical issues -- and water infrastructure is definitely a critical issue that we are turning our attention to.

You've heard from Governor Florio about the current condition of our state's drinking water infrastructure, and also a compelling vision for 21st century water infrastructure in New Jersey as essential to a prosperous economy and a healthy future for our state.

And my colleague, Chris Sturm, has introduced you to Jersey Water Works, a vehicle for mobilizing diverse stakeholders towards these shared goals related to improving water infrastructure statewide.

And I am here as a representative of the Steering Committee of Jersey Water Works, an honor I share with 20 other members and representatives from public agencies, the private sector, nonprofit organizations, academia, and utilities. And that Steering Committee is charged with setting the strategic direction of the Jersey Water Works initiative.

I am also here as a representative of the philanthropic sector -- for the Geraldine R. Dodge Foundation. Our focus on this issue stems from our interest in healthy and sustainable communities in New Jersey. We believe that clean and plentiful water is essential to the long-term sustainability of our state. The Environment Program that I have the privilege of managing has long focused our resources on water and land protection, mostly through conservation and restoration efforts. Water infrastructure is a natural evolution of this work, given the impacts of failing water infrastructure on the environment and our communities in New Jersey.

And we are not alone. There is a growing interest and involvement on the part of private philanthropy across the country to advance smart infrastructure investments that have triple-bottom-line benefits to communities: social, environmental, and economic benefits. Infrastructure connects to a multitude of philanthropic priorities -- from public health and safety to climate change resiliency -- and funders nationwide are deploying their resources to support research, convening, and community involvement in infrastructure improvements.

What I have come to learn from this work -- and it has been a big learning curve, I will admit that. We've been supporting Jersey Water Works since 2013, and what I've learned is that the complexities that Governor Florio spoke to -- including a fragmented water supply and management system, aging infrastructure, increasing costs, and strapped municipal and state budgets -- demand a new approach, one that does not consider drinking water in isolation, but rather in the context of a broader

water system that considers all water -- stormwater, groundwater, surface water sources, even sewage -- as a resource.

If we adopt an integrated water management approach, we will produce the most cost-effective solutions for community health, sustainability, and resiliency.

The good news is, is that utility directors and other water industry leaders nationally are advancing integrated water management solutions. We were fortunate to send a cohort of New Jersey delegates to a national conference in June, where we learned about One Water approaches happening across the country, from rural communities to cities, and of inspiring collaborations among organizations as diverse as utilities, community redevelopment organizations, the agriculture industry, conservation organizations, and government. Initiatives that link upstream source-water protection with downstream community redevelopment, that incorporate gray and green infrastructure approaches to water protection -- all to advance this One Water concept.

I say all of this to assure you that New Jersey is not alone. We have a lot to learn, but we can learn from those shared experiences of others. And we don't even have to go far to find compelling examples; there are leaders right here in our state who are starting to advance this One Water concept. Governor Florio mentioned the Camden County Municipal Utilities Authority; Andy Kricun -- who many of you may know of -- leads that entity. And Andy's organization serves some of the most economically distressed neighborhoods in the state. The City of Camden is at the end of the system, so to speak, where the watershed meets the river. And it bears the brunt of increasing quantities of stormwater, generated both upstream

and across the city, that overwhelm the city's combined storm and wastewater system, causing sewage to flood through streets and into basements of homes during average rainfall events.

Andy recognizes not only his obligation to provide basic wastewater treatment services to his customers, but also the opportunity that a One Water approach presents to mobilize community stakeholders in implementing and supporting integrated gray and green solutions that improve neighborhoods and waterways, create local jobs in a city that desperately needs them, reduces costs, and reinforces the value of infrastructure to people and businesses -- important to a city like Camden that is trying to attract investment.

It's that last piece that I think is most compelling, because I've come to appreciate that getting people excited about spending billions of dollars on what is largely invisible is the most challenging part of this work. Whether it's drinking water, sewers, or stormwater, we don't think about it until it's an emergency, and certainly this is what has caused this Task Force to form, right? The emergency of lead showing up in the water supply in schools and hospitals.

This is why Jersey Water Works is consequential and important, because the only way we're going to address the drinking water infrastructure needs of New Jersey communities in a cost-effective and successful way is to work in synchronicity to deal with water across the system to protect its quality, conserve its quantity, and get more value from it so we can all meet water-related demands across the state.

We also need to ensure that our time and money are spent wisely, benefits are distributed fairly and equitably, and transparency and

accountability are hallmarks of this work. We urge you to consider Jersey Water Works as your partner, and look forward to assisting in advancing our mutual goals for the betterment of our New Jersey communities.

And so on behalf of the Jersey Water Works collaborative, we thank you for your leadership on this issue, and for inviting us to testify.

ASSEMBLYMAN McKEON: Thank you very much.

Please -- Senator.

SENATOR GREENSTEIN: Okay.

I was glad-- Great work that you're doing in Jersey Water Works.

I was glad to hear that you're trying to come up with a list so that we can, then, prioritize the different programs. I guess that's essential to anything we do here in the state.

How far have you come, and where have you hit roadblocks with trying to get that information?

MS. STURM: In terms of where the status of the pipe systems--

SENATOR GREENSTEIN: Yes.

MS. STURM: --and the asset management programs? I think we've just come to an agreement that those are the things to focus on. And we're actually now setting up a meeting with the DEP to find out what information they are already collecting.

Our committees have representatives from the systems, for example, and there are some things that they can't share because it's a matter of security. But there are things they can. So we haven't gotten

very far, I guess, to answer your question. I would love to come back in a year and report to you on what we hope will be a baseline.

SENATOR GREENSTEIN: I certainly hope that that information is made available. Because one of the things you need to know is, does it exist at all? Does somebody have to go out and collect it -- which is another big job; that would be pretty expensive, but necessary.

MS. STURM: Yes.

SENATOR GREENSTEIN: Do you know if any other states have done this successfully?

MS. STURM: You know, we've talked to folks in North Carolina -- the University of North Carolina's Environmental Finance Center does a lot of work with water and sewer utilities, and a lot of cataloging of issues related to rates, and financing, and capital improvement budgets.

We've learned that in Canada they do a better job -- but, of course, in Canada they do a better job of cataloging information on the state of the systems. And you can ask Dan Van Abs as well; he's really our partner-in-crime here, and the brains behind the operation. But I don't think there are great models out there. In a way, we're forging new ground and we're really hoping to make New Jersey a national model.

SENATOR GREENSTEIN: And I know the Professor; I think he's the next speaker here. Is Rutgers directly involved? Because I would think it would always be great to have a university involved.

MS. STURM: Yes, we're working with Rutgers, both through Dan and the Rutgers Water Resources Program that Chris Obropta runs -- you know, all those great green infrastructure techniques. We also work

with partners at Stevens Institute; NJIT -- they'll be unveiling a commitment at our conference; and probably others that I'm forgetting.

SENATOR GREENSTEIN: Thanks.

ASSEMBLYMAN McKEON: Thank you.

Any other members -- questions at this time? (no response)

Just a couple of things: Number one is, thank you for inviting us to come along to the conference and any of your future work in that regard. I don't know whether any of my colleagues particularly will be there each and every time; but certainly our staffs will be represented, including this Friday. So thank you for that.

Just a couple of thoughts. You had made a point about New Jersey's not alone. I think the other statistics I have seen is that we've got -- there's like a trillion dollars needs to be expended nationwide. And New Jersey just is, maybe, in a position where when these types of water delivery systems began, like in the 1820s or 1830s, we were a state already. And thus we -- our problem is a little worse than the rest, but not for any other reason than we have just been around longer.

I guess, just in general terms -- and I'm looking forward to the Professor as well. On the lead issue, have you looked into the component of -- the fact that most of the issues with lead happen from the curb to the faucet, which is owned privately; you know, is not either the responsibility of municipalities, or government, and/or the private utilities. What thoughts are there relative to resources for that kind of work? I know in Colorado they require utilities, when they're digging in the area, to at least make that cheap as well for homeowners. But to me, that's just a-- If that's

the problem, from curb to faucet, that's a lot of burden on individual homeowners and taxpayers.

MS. STURM: Yes, it's complicated.

So one thing, I think, is just transparency and education so that those homeowners are testing, and using filters, or letting water run, and so on. I think Chris Cerf in Newark did a great thing when he let all the parents know just how bad it was, because then he's got tens of thousands of people who are watching and advocating for change.

You're going to hear from AWWA, who is working closely with the DEP on some programs. I know the EPA is unveiling a commitment at our conference on Friday about getting more financing out there in more flexible ways. And one of the concerns is how do you use this government financing for private homeowners, and how can you -- you know, within the existing laws.

So you may hear from Joan Matthews, the AWWA team, in addition to Dan, about those sort of financing solutions. I think that it would be great if the New Jersey Legislature and the Federal government -- which talks about getting into infrastructure finally -- you know, it would be great if they started funding water again which -- you are absolutely right -- they're not doing. And if the Legislature could match that with some funds that were targeted strategically at the toughest problems, including lead in drinking water, I think that would help.

Whenever you have, you know, matching grant programs in addition to loans, you get further.

ASSEMBLYMAN McKEON: Thank you very much.

ASSEMBLYWOMAN MUOIO: May I ask a follow-up to that?

ASSEMBLYMAN McKEON: Of course, Assemblywoman.

ASSEMBLYWOMAN MUOIO: You mentioned earlier a program that would be modeled on the home heating assistance program. Was that -- I missed the first part of your statement -- was that referring to curb-to-faucet type? It wasn't.

MS. STURM: No, that was basically-- EPA has a guideline that households shouldn't have to spend more than a certain percentage of their income on water and sewer utilities. And when you're a poor household in a city with rising rates, the rates might be above that threshold. So how can cities raise the money that they need-- Because that's pretty much where the money comes from, you know, whether it's a public-private partnership or a public entity -- it comes, usually, from rates. If they need to raise rates, how can they do that without overburdening these most vulnerable households? And one way to do that is to create a pool of funds that can go to people with low incomes.

ASSEMBLYWOMAN MUOIO: Okay. For the resource itself--

MS. STURM: To help them--

ASSEMBLYWOMAN MUOIO: --for the water and sewer. Yes, okay.

MS. STURM: Yes, to help them pay their water and sewer bills; or to forgive them for part of that, yes.

ASSEMBLYWOMAN MUOIO: Okay; all right.

ASSEMBLYMAN McKEON: Any other members? (no response)

The last little piece-- You talked about a year that you had -- some type of timeframe; you're coming up with a comprehensive approach.

I only ask because the Senator and I were whispering to each other. Our charge, at least, in our general resolution, was a six-month study and report. Maybe that's too aggressive, especially when you are dealing with a One Water approach. Can you talk about that a little bit?

MS. STURM: Yes. I mean, as Dan often reminds me, it took us decades to get to where we are; we're not going to get out of it overnight. I think we're using a time horizon, you know, really dependent upon the generosity of the Dodge Foundation and other foundations to work on this problem. We're looking at 2020 as, sort of -- we really want to be somewhere different in 2020.

I think reconvening in a year is a good idea. I mean, I think it's good to focus your efforts in the next six months, but--

ASSEMBLYMAN McKEON: Thank you, again; thank you both for the wonderful work you're both doing, and for the generosity of the Dodge Foundation towards this important area. And we're going to keep in continued touch with you as we work collaboratively.

SENATOR GREENSTEIN: Thank you.

MS. STURM: Thank you.

MS. WALDOCK: Thank you.

ASSEMBLYMAN McKEON: I get to go next.

In my lifetime, I once hope that somebody calls me *the brains of the outfit*. (laughter) So Dr. Daniel Van Abs, who was given-- That's a better introduction than I could come up with regarding all of your very well-chronicled credentials.

So welcome here, on behalf of all of us; and thank you.

**DANIEL J. VAN ABS, Ph.D.:** Thank you very much, Co-Chairs and members of the Task Force.

I really do appreciate the opportunity to discuss some of the critical issues with regard to water infrastructure; and not only drinking water infrastructure. When we talk about drinking water infrastructure, these issues apply almost entirely, as well, to wastewater infrastructure and stormwater infrastructure. So I'm going to focus on drinking water infrastructure, as you requested.

I should note, as with all Rutgers faculty, I am not speaking on behalf of Rutgers University; we don't do that. I'm speaking personally; nor am I speaking, really, on behalf of any other organizations.

My career has spanned 34 years in the water resources management field, in the nonprofit sector, with State government, and now with Rutgers. During my State service, I was the project manager for that 1996 Statewide Water Supply Plan. I'm currently the Governor's appointee to the New Jersey Clean Water Council and, as mentioned before, I am a Steering Committee member with Jersey Water Works.

So let's start with the good news. Drinking water treatment facilities, in general, in the State of New Jersey, are well monitored, well maintained, and working properly. And that's a critical issue, of course, because they have to meet drinking water standards and they must meet them every single day. These infrastructure components are generally above-ground, they're easy to look at, they're easy to monitor, they are metered, etc., etc.

So the real issue with regard to drinking water treatment is related to the quality and the quantity of the water that they get; and the

risk of damages from disasters and so on. After all, if you -- you can't provide what you don't have, or can't treat, or deliver.

So that's all I'm going to say about the treatment system, because our real issues are with regard to the distribution systems. These are the pumps, pipes, treated drinking water storage facilities that we rely on to ensure that water gets to customers every minute of every day. It is worth noting that, in most urban and suburban areas, for every mile of street we have three miles of water infrastructure: one mile of water supply, one mile of wastewater, and one mile of stormwater system. Single drinking water utilities can have thousands of miles of pipes, many pumps, many water towers. We know from national studies and anecdotal information in New Jersey that insufficient investments have been made in these physical assets overall. The American Water Works Association estimated, in 2010 -- the report that Assemblyman McKeon noted -- that the United States needed to invest roughly \$1 trillion -- that's with a *T* -- over a 20-year period. New Jersey has 2.8 percent of the nation's population and, therefore, if all were equal, our share of that \$1 trillion would be \$28 billion, all right? So that's an issue.

The key here is that infrastructure starts degrading the moment we put it in service. That is the nature of physics, and it cannot be changed. We can slow the degradation through proper operation and maintenance, but, in the long run, we must engage in repair, rehabilitation, and replacement of all of our water infrastructure or it will fail us. Physics doesn't care whether we have a strong or weak economy, it doesn't care who's in charge of the State House or any level of government, and it doesn't care whether we have other priorities. We can reduce the costs

through improved technology, planning, design, and implementation -- a process known as *asset management* -- but sooner or later we must pay the bill. The later that we pay, the more we pay; because infrastructure decline accelerates over time. And so the longer we wait, the worse it gets faster.

As such, infrastructure costs are unlike most other social priorities. If we invest half of what's needed, our systems will fail. If we invest three-quarters of what is needed, our systems will fail -- but more slowly, perhaps. We have no choice but to invest; but there are better and worse ways of investing. To succeed, then, we need improved asset management, capital investment, affordability, and leadership. And so I'm going to touch briefly on each of those points.

To manage our infrastructure properly, we need to inventory our assets. We need to know the current quality of those assets, which ones are more or less critical to system function, and the level of utility services desired. From all of this information comes a plan for repair, rehabilitation, and replacement, which then must be supported by capital improvement budgets. Comprehensive asset management, I will note, is increasingly being used by water utilities in New Jersey -- Assemblyman DiMaio mentioned the Hackettstown system, which is clearly doing that, and I know the Executive Director there quite well -- but this is not being done across the board, and relatively few utilities have complete programs, according to a recent survey done by the New Jersey DEP.

DEP has begun requiring asset management for certain utilities, but these requirements are not yet uniformly applied. Part of the difficulty -- and this is where things become a little bit interesting -- is that asset management must be tailored to the utility -- to their specific needs. They

vary in age; they vary in location, customer base, asset materials, and past management efforts. So there's no one-size-fits-all. It's not like drinking water standards, where you can say, "Meet  $X$  parts per billion, period. We don't care where you are, we don't care who you are. Meet that number." Asset management does not work that way.

So the question is, how do you set up a regulatory system that ensures proper asset management when the nature of the system is that it varies according to the utility being involved? How do you decide how good is good enough? How can we tell whether a utility's annual budget is sufficient to implement the asset management plan, given that that plan may be implemented over decades of time?

As shown in Newton last week -- which suffered a catastrophic loss of its water supply on Thanksgiving; just imagine the misfortune involved in that -- these issues aren't just a problem for our cities, but for everywhere in the state that the infrastructure is aging, which is pretty much everywhere.

ASSEMBLYMAN McKEON: Can you expand upon that a little bit, Professor? Because I don't -- I didn't know about what occurred in Newton.

DR. VAN ABS: Newton had a major water main break. It was out of service. They responded very quickly, fortunately for them -- actually, it's not *fortunate*. Because of good planning on their part, they actually had pipe sections that were available in their own yard so they didn't have to go out and find them. They dug up the street, and replaced the pipe section, and they put the system back in place.

But as is so often the joke with utilities, when do things go wrong? They go wrong on a Friday night, and they happen on the Mayor's street, right? (laughter) And so when you're paying double time -- overtime, double time, whatever it happens to be -- and so that's what happened in Newton. So they had catastrophic failure of their water main on Thanksgiving.

ASSEMBLYMAN McKEON: I'm sorry to throw you off. I just -- I didn't know if we all knew about that.

DR. VAN ABS: Not a problem.

So tied into the difficulty of standards for asset management is the issue of rate setting. In the drinking water field in New Jersey, we have hundreds of utilities. It's not like electric, where you have a handful; it's not like natural gas where we have a handful. We have hundreds of them. Roughly 40 percent of all utility customers are served by investor-owned utilities, which make their profits based on investment, not on operations. And so these utilities, therefore, have a strong incentive to invest. And the Board of Public Utilities is primarily responsible for making sure that they don't overinvest, or invest in the wrong things.

But how can the BPU know whether a utility is not investing enough? Clear and appropriate management standards can help provide answers to that. Government utilities -- whether municipal departments or utility authorities -- don't have the same price signals. They can't make a profit, and they are under constant pressure to minimize rates at times, regardless of future needs. The Division of Local Government Services in the Department of Community Affairs helps ensure that these utilities have sufficient revenues to cover operational costs, as they describe them;

reserves; and payments on debt. Again, how is DCA to know whether a utility is spending enough on asset management? And if so, if they did find out, what could they do about it? It's not their legislative responsibility to require that utilities increase their costs.

So in both cases -- third point -- an underlying deterrent to proper investment is affordability. In New Jersey, most customers can afford an increase in rates -- I can afford an increase in rates -- but many people cannot. We have cities where over 25 percent of all households are below the Federal poverty rate, which doesn't reflect the full picture of poverty due to New Jersey's higher cost of living, which is about 25 percent higher than the national average. People often oppose rate increases in part because low income and even moderate income households will be harmed. The results are underinvestment, which, in the long run, is a losing proposition -- the system will fail; or a call for grants. The problem with grants is that you wind up subsidizing those who can afford to pay higher rates so as to protect those who cannot.

And so we should recognize that putting off investments will hit the low and moderate income households even harder at some point in the future, when these costs all come due. So we need to have a way of encouraging the investments while yet not damaging those who are of low income means.

We should recognize that current statutes are unclear regarding infrastructure integrity. We have clear expectations with regard to drinking water quality. We know exactly what we want. With regard to asset integrity, we don't really know what we want except, of course, that we

don't want the systems to break. It's a great standard: You shall not break. (laughter) But it doesn't get us very far.

We also should recognize that the nature of water utility management is changing. Historically, water utilities have preferred to be the unseen utilities. If you're not in the paper, it means that nothing went wrong. Well, now we're facing a period of major investment, which will require significant revenues. And so utility leadership will be needed to help people understand the needs, how their money will be invested well, and how we measure success.

So in summary, I would recommend that the Legislature look at these four interconnected issues.

Asset management. We need to ensure that all water utilities thoroughly understand their assets, critical components, investment needs, and management concerns, without being unduly prescriptive with regard to the specific technical approaches for doing the asset management program.

We need adequate capital investment levels. So we need to ensure that both the investor-owned systems and the government-owned systems have incentives and regulatory requirements that ensure sufficient, cost-effective, but not excessive capital improvements. And these regulatory efforts will require really close coordination between the New Jersey DEP, which understands the infrastructure side of things; and the Board of Public Utilities and the Division of Local Government Services, which are oriented toward the financial and rate side of things.

Affordability: Ensuring that lower income households are not harmed by utility rates that are necessary to support proper asset

management. And as Chris Sturm mentioned, our household energy assistance program could serve as a possible model. The problem is, the household energy -- the energy assistance program involves a relatively small number of utilities, and they're all regulated by the Board of Public Utilities. Not so on the drinking water side or the wastewater side. Hundreds of utilities, all sorts of different ownerships -- they're not all regulated by the same people with regard to their rates.

And finally, leadership. We need to ensure that all those who are involved in utility management understand the need to step up and exhibit leadership toward sound water infrastructure that can support New Jersey for many decades to come.

I will say that, fortunately, there's a lot more attention to and interest in water infrastructure management than was true in 2010, when the New Jersey Clean Water Council -- on which I sit -- concluded that New Jersey can maintain a viable economy with a sound environment only if it ensures that its water supply, wastewater, and stormwater infrastructure is effectively maintained in a manner that produces the lowest life-cycle cost -- not the lowest current cost -- the lowest life-cycle cost. Action is being taken at the utility and State government levels, and Jersey Water Works is developing a strong collaborative approach, as mentioned. The Legislature can play a key role in reinforcing all of these efforts.

I thank you for your attention to the issue of drinking water infrastructure, and I look forward to assisting you in your efforts in any way that I can.

Thank you very much.

ASSEMBLYMAN McKEON: Senator.

SENATOR GREENSTEIN: Professor, thank you very much for coming; we appreciate it.

I remember, in looking at the old, I guess, 1996 version of the Water Supply Plan, I saw your name in there.

DR. VAN ABS: Yes.

SENATOR GREENSTEIN: Were you one of the authors of this original?

DR. VAN ABS: I was Project Manager for it; so I was responsible for making sure that it got together. And I was also a co-author of it, yes.

SENATOR GREENSTEIN: Do you have a sense of what's sitting on the Governor's desk right now; what the new plan would look like, and why we're not getting a copy of that yet?

DR. VAN ABS: To the last part, no; I don't know why we're not getting it yet. I know what it looked like in 2011, when I last saw it as an advisor to the Water Supply Advisory Council. I, along with all of the others, signed a confidentiality agreement with regard to that draft, and I have not seen a draft since.

SENATOR GREENSTEIN: I mean, the only thing that I can surmise -- and that's all that it is, surmising -- is that it has something to do with Superstorm Sandy and changes that would come about as a result of that. Because that was right after that time.

DR. VAN ABS: The Department of Environmental Protection has made public statements at the Water Supply Advisory Council meetings that completion of the Plan and its forwarding through the Administration was delayed by Hurricane Sandy; which was, now, four years ago. So I

know that there were delays, and they were very understandable delays because of that process. Because let's face it -- the whole recovery process sucked up all of the oxygen with regard to the Administration, and that is very understandable. What it is now, I don't know.

SENATOR GREENSTEIN: Do you agree that having this Plan is really a basic first step for us to proceed on some of these things? Obviously, we have to move ahead; but it would certainly help to have this Plan.

DR. VAN ABS: The Water Supply Plan is primarily focused on issues of supply -- how much supply we have, how much supply we need, where we find constraints on supply, and where the changes in water quality might affect supply. The topic here is much more focused on the nature of the infrastructure, and the age of the infrastructure, and so on. And so the Water Supply Plan historically has had a lot less to say about those issues. Do we need a new reservoir? The Water Supply Plan is great for that. Do we need to repair X pipes? It's less useful from that perspective. Could it talk about those issues? Absolutely.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: Professor, a couple of things.

Just from 30,000 feet, as far as where New Jersey sits at the present time -- compared to not the rest of the world, but to other states -- part of it is, obviously, our climate. But concerning the current natural resources that are hopefully going to be preserved -- whether it's the Pinelands or the Highlands -- assuming we invest in infrastructure, does that put us, instead, being well ahead of most all the other states, and even in the Northeast, regarding having that asset, going forward?

DR. VAN ABS: It varies a lot by where you are in the region. So for instance, New York City has ample supplies, based on reservoir systems that they've built over a long period of time. But I would not want to be Atlanta right now because they have had an enormous drought situation in northern Georgia and northern Alabama, blossoming in a six-month period. And they have very little in the way of regional water supplies compared to us.

We're in a pretty good situation. We've invested a lot in supply. And the past Water Supply Plans have been pretty good in terms of figuring out where we were short of water and then resulting in construction of, for instance, the Manasquan Reservoir, and the Monksville Reservoir, and the various pump stations and interconnections, and so on. Where we are running up against more and more problems is with regard to groundwater supply as population has migrated out into suburban and rural areas of the state. Groundwater is much harder to come by, in terms of concentrated supplies.

So where is New Jersey, relative to other states? Some places are in better shape than we are; after all, if you're Chicago sitting on Lake Michigan, you're not going to run out of water any time soon. But we are definitely, in parts of our state, stressing our systems.

ASSEMBLYMAN McKEON: Thanks for that thought.

Relative to the-- And again, it's not painting one versus the other, because there may be very many -- like John's -- private concerns that are -- have the aforethought to plan for infrastructure. But general versus public versus private -- concerning infrastructure: Is there a difference, or are they all equally as bad, or is it one versus the other?

DR. VAN ABS: I've talked with a lot of people who are responsible for both investor-owned and government-owned systems. And the point of common perspective is that any moderate-to-large size government-owned utility should be able to operate in just as cost-effective manner as any investor-owned system. The investor-owned systems, as I mentioned, have an incentive to invest because that's how they get their profits -- their returns on investment. That's what it is. The government-owned utilities don't have that same price signal. And so those that are operated very well do so because they have a culture of managing their systems well. They have bought into the whole notion that asset management is *the* way to go, it's the only way to go, and they better get with it and do it.

And so some of the public water -- I shouldn't say *public* -- some of the government-owned water systems, either departments or utility authorities, are very well run and equal to anything that you're going to see in the private sector. The private sector utilities -- the investor-owned utilities tend to be larger; they tend to have more access to capital than many of the very small publicly owned systems. And so that's where I think you're going to find more of your problems -- is on the very small publicly owned systems, because they just don't have quite the heft that the larger systems can do.

ASSEMBLYMAN McKEON: And just as an overview, the shareholder-owned services, beyond whatever access they have to their own venture capital -- some of them are international companies -- they could go to BPU as it relates to setting a particular rate, in part, for infrastructure. Whereas that's not the way that the privates work. I mean, it's really,

literally, the users or the taxpayers -- especially in small communities -- who would feel the burden of that.

I guess there's the Environmental Infrastructure Trust Fund, but that's as much a bank as it is--

DR. VAN ABS: The Environmental Infrastructure finance program is a very, very valuable way of getting low interest loans for systems.

ASSEMBLYMAN McKEON: I agree.

DR. VAN ABS: But again, if you're a very small system, the amount of money that you're going to be going for is not going to be as large; and the cost of getting it may work against you. So again, the small systems are at a disadvantage pretty much any way you look at it.

ASSEMBLYMAN McKEON: Who does the inspection or oversight, if there is such a thing? You know, the DCA -- as I maybe said earlier -- overlooks the budget of the government-owned utilities.

DR. VAN ABS: Yes.

ASSEMBLYMAN McKEON: Does DEP come out annually and say, "Hey, your infrastructure is in terrible shape. You should fix it."

DR. VAN ABS: The Department does have water infrastructure inspection teams that do go out. They are focused, primarily, on the treatment systems. That's what they inspect, that's what they can see. I don't know how frequently they do that, but they are doing those kinds of inspections.

And of course, the utilities are submitting drinking water quality reports to the Department routinely, showing that they are complying with the Drinking Water Quality Standards. The Department

also has a few people -- I don't know how many -- who are responsible for assisting utilities that are having problems, helping them figure out how to work through any problems that they're having with regard to their treatment systems. So there is an assistance program there as well.

Could they use more? Inevitably. Could they inspect more frequently? Certainly. But the Department does have those programs

ASSEMBLYMAN McKEON: Just a couple other quick areas.

One, as someone mentioned before, homeland security. Can you comment in general as it relates to homeland security and how infrastructure might play into that?

DR. VAN ABS: The critical issue is putting too much information out in the public as to where your critical facilities are. Because, after all, if somebody wanted to put together a bomb and make use of it, you don't want them to do that on your pump station, or in your treatment plant, or whatever. And so there are limits to what the utilities will make available in terms of information on the physical location of the infrastructure.

That being said, we all know that where there is urban development or suburban development, there is water infrastructure. And all you have to do is go from fire hydrant to fire hydrant and you know pretty much where it is. So there's a limit to how much that needs to be kept secret, but there are definitely some constraints from a public homeland security perspective.

ASSEMBLYMAN McKEON: All right; I appreciate it. Hopefully, Professor, others may have questions, and we can continue to

count on you as a great resource, as the whole state has, on these topics as we go forward.

I guess there was one last area. I read that Manhattan is making just a huge investment in, I guess, underground storage vats relative to combined sewer overflow that will literally store the effluent when there's a major storm. And I guess cities like Newark, and Elizabeth, and Jersey City, and others have a similar kind of a situation set up. Is that an area we should be moving toward?

DR. VAN ABS: So Chicago has enormous underground tunnels for taking combined sewer flows during a storm, and then they pump it out and they treat it. It cost them about \$5 billion. The treatment costs are very expensive because, of course, the cost of pumping that out is very energy-intensive. DC Water has just completed a better-than-a-billion-dollar tunnel to do the same thing.

The 21 cities in New Jersey that have combined sewer systems are, right now, in the process of developing their combined sewer overflow long-term control plans; that's a mouthful. They will then be deciding what is the most beneficial, the most cost-effective way of doing that. And they will be taking a look at how much of it has to be handled by gray infrastructure -- things like tunnels, and tanks, and so on -- and how much of it can be handled by what's called *green infrastructure* -- which New York City, and Philadelphia, and others are doing -- where you basically are trying to keep the stormwater out of the system to begin with so that you don't have to treat it, so that you don't have it overflowing as combined sewage.

So all of that process is going on right now, and will be -- those plans are supposed to be completed and adopted in the year 2020, which is one of the reasons that Jersey Water Works chose 2020 as its target year, because they're tied together. So they're only about a year-and-a-half into that process right now.

ASSEMBLYMAN McKEON: That used to seem like a long time into the future; I guess not.

DR. VAN ABS: I'm old enough to recognize that three-and-a-half years is just not a very long time anymore. (laughter)

ASSEMBLYMAN McKEON: All of us; I hear you.

Any other members-- And I'll turn back to the Senator in a moment.

Assemblywoman, Assemblyman?

Senator, anything further? (no response)

DR. VAN ABS: Thank you very much.

ASSEMBLYMAN McKEON: Thank you very much.

SENATOR GREENSTEIN: Next, we'll hear from Andrew Hendry and Bob Brabston. Mr. Hendry is President and CEO of the New Jersey Utilities Association; Mr. Brabston is Vice President and General Counsel of New Jersey American Water, the largest water utility in New Jersey.

**(Mr. Hendry arranges visual aids on table)**

ASSEMBLYMAN McKEON: I thought they were gifts; I was going to tell you if they were more than \$50, we can't take them. (laughter)

**A N D R E W D. H E N D R Y:** Are you sure you don't want that? (laughter)

So yes, we come bearing a few props. (places pieces of pipe on witness table) And thank you very much for having us.

Again, I'm Andrew Hendry, and I'm the President of the New Jersey Utilities Association. As many of you know, we represent the investor-owned, or nongovernmental utility companies in New Jersey. That includes electric, natural gas, water, and sewer companies.

And the water companies that we represent -- many of you have heard of -- include New Jersey American Water; Suez, which was formerly known as United Water; Aqua; Middlesex Water Company; Gordon's Corner Water Company; and Shorelands Water Company.

To my right is Bob Brabston; he is Vice President and General Counsel of New Jersey American Water. American Water is the largest water utility in the country, the largest in the state; and they are headquartered right here in New Jersey, and that's something that we are very proud of.

My organization recently turned 100 years old. There's a lot of history in this state, in terms of utilities; that also means that a lot of infrastructure is old in this state -- but making use of my first little prop here (picks up piece of pipe).

So keeping in mind all the discussion that has gone on, and then I'll talk a little bit more about the costs associated with the treatment and the complex infrastructure pipes, and tanks, and towers that it takes to get you and your constituents clean drinking water.

The average cost of a gallon of water, through our companies' systems -- and I suspect it's the same for the governmental utilities as well -- is a penny for a gallon of water. So this morning I picked up my favorite

frozen mocha frappachino; and with what I paid for this, I would receive 571 gallons of water through my water utility. So I think that that just helps a little bit with perspective in keeping in mind that, yes, we do have some tremendous investments to make. It's about setting priorities, and there are ways that we can do what we need to do.

And by the way, water utility bills, on average, are the lowest bill that a customer will pay.

The previous speakers and the Chairs stole my thunder, to some extent -- which I'm totally fine with -- in terms of describing some of the challenges and some of the benefits for investment in infrastructure. Chairman McKeon said something that not a lot of people know, which is, in New Jersey our investor-owned utility companies serve about 40, 45 percent of your constituents -- which is unusual, relative to other states. Other states are in the neighborhood of 15 to 20 percent.

Dan Van Abs touched on this a little bit, but one of the challenges I think we face-- So we represent six water companies. There are 475 public community water systems in this state. Our companies represent about 300 -- provide service in about 300 municipalities. So what that tells you is if 6 companies are covering that much of an area, then the remaining 469 systems tend to be pretty small. In fact, more than half of New Jersey's systems have a design capacity of less than a million gallons a day. That may sound like a lot, but American Water is in the neighborhood of 30 million gallons a day; and even the smallest company that we represent -- Shorelands Water Company, which serves a portion of two municipalities -- is at about 10 million gallons a day.

Obviously, our organization agrees with what everybody has said and what you have said, and, frankly, have been heartened by a lot of what you have said about the need to invest. But our state's economy and our future depends very heavily on the quality of our infrastructure, whether it's roads and bridges or pipes and wires.

I believe it was Senator Greenstein who mentioned the peak periods of development in the state and, as a result, meant much of the water network in the state was built during those periods. And this statistic has been used that, roughly, 20 -- 15 to 20 percent of our water pipes are 100 years old.

One thing that's important to remember: While age is certainly an important factor in measuring the health of a water system; it's not the only factor. And in fact, there's technology in terms of cleaning and lining the pipe system that has come a long way. And the rule of thumb in the industry is that a pipe without other defects that is cleaned and relined -- you can get another 50 years out of.

But what this all means is that failure to invest in those kinds of things -- whether it's new pipes or that kind of maintenance -- is going to result in a higher cost down the road, damage to our state's economy and, of course, deterioration of our quality of life.

I just wanted to quickly note that, as was mentioned, we are very active in Jersey Water Works. We think that their efforts are critical and I believe, as a number of people have said, sort of getting the public to understand the needs of our infrastructure and the benefits of investing first -- fixing it first -- are really a critical part of this.

On the second page of the written testimony I gave you there's a little table. It says, "Understanding CapEx Requirements in a High Fixed-Cost Business." Really, I just showed that to you to show that if you-- What the chart shows is the amount of capital expenditures that is required to earn a dollar of revenue in the water utility, relative to other utilities. And you'll see that that is much higher for water than for many other types of utilities -- almost double electric and almost three times, or roughly three times natural gas distribution. And so one of the challenges is clearly going to be that investing in water infrastructure, relative to other types of infrastructure, is expensive. And of course this is due in part to the fact that a lot of the infrastructure is underground; and of course, we are -- the water companies are responsible for treating source water and meeting DEP and EPA requirements.

Our companies have been rising to that challenge and have been making those investments; I'll detail that a little bit. I was going to talk briefly about the investor-owned utility model; you really already kind of touched on some of the important aspects of that. First of all, just to be clear, public sector utilities, private-sector utilities -- we're all subject to the same EPA and DEP requirements for testing and maximum contaminate levels in our drinking water. Our companies have an excellent proven track record, and I urge you to look that up for yourselves and you'll see that what I'm telling you is accurate.

We are, as Chairman McKeon said, rate-regulated by the Board of Public Utilities. A lot of people don't know that we, essentially, go through a quasi-judicial process with an evidentiary hearing; a record; the Division of Rate Council, which is a very zealous advocate for the

ratepayers of New Jersey. When we want to modify our rates, we have to prove that our investments are reasonable and prudent. The burden is on us.

And as has been touched on by a number of people -- yes, these investments have an impact on rates. But one thing that we and me, as the head of our organization, try very hard to impart is that it's important for ratepayers and policymakers to understand that, first of all, there is this balanced, transparent process to develop our rates; and that consumers can have confidence that the rates they see in their bills reflect the actual cost of the capital and investment in the system.

And as a number of people have said, thankfully, there is a significant cost to not making investments in the system and not making them proactively. Our companies estimate that it's about 10 times more costly to make emergency repairs than to upgrade infrastructure proactively.

There was some question about how some of the utilities are monitored and inspected. We are subject to BPU -- the Board of Public Utilities regulation and oversight. I mean, Bob can give a couple of examples of the kinds of things that they're looking into in our system.

**ROBERT J. BRABSTON, Esq.:** Sure, yes. Thank you.

And thanks for having us here.

A couple of things that the utilities are subject to that -- the BPU-regulated utilities are subject to, that other utilities are not, include things as mundane as annual hydrant inspections and testing, annual or semiannual -- or, in the case of the largest valves, a little less frequently -- valve inspection and maintenance. These are critical assets in the distribution system that we have every incentive to inspect, test, maintain,

and replace if necessary. All utilities have that incentive, but we're required by the BPU regulations to do so. The municipal systems do not face any such requirement. And it's very unusual for them to have as aggressive a schedule as an investor-owned utility. And that's just one example.

MR. HENDRY: And so as I mentioned before, my testimony includes a number of examples of the kind of investments that our companies have been making over the past few years. And obviously I'm giving the-- I'm about to interfere with your lunch; I'm not going to go through all of them.

But our companies are investing hundreds of millions of dollars a year. We estimated, roughly, \$2 billion over a five-year -- the past five-year period. And I wanted to give you a sense of some of those kinds of investments, because a lot of the talk is about pipes. And there's a lot more that goes into the system, and there's a lot more CapEx involved in a lot of the piping systems than some may expect.

So I'll read you a couple of examples.

So New Jersey American Water is currently spending \$45 million on its Howell Transmission Main. And that's a five-mile main, so we're talking about \$9 million a mile. And that is going to connect its Oak Glen plant to its Lakewood system. They are spending \$28 million to expand their Oak Glen Water Treatment Plant.

I talked a little bit before about cleaning and lining being another option to replacement. Well, there is still an expense associated with that. They are doing that, currently, in Westfield; and the cost for cleaning and lining of those pipes is about \$4 million.

Suez, our second-largest company, owns a number of dams in the state. And they recently spent \$25 million for the Woodcliff Lake Dam and \$14 million on the Oradell Dam. So there are significant investments in that part of the infrastructure as well.

And another example you wouldn't think of -- they actually just spent \$10 million to upgrade an electrical substation at their Hayworth Water Treatment Plant, which just had its 50th in 2016.

Another thing really interesting that Suez is engaged in right now -- and I think one of the benefits of a larger company that's able to draw on the capital and expertise of the company as a whole -- but they're rolling out a smart meter system in New Jersey. And you probably heard about smart meters in the context of electricity. But what their system will do is provide real-time data to users and to the company about water usage to educate customers more about when they're using water and what they do that consumes more water; and also to alert them and the company when there's potentially a problem or a leak. And they've -- just a statistic -- they've installed about 10,000 smart meters in Bayonne, covering about 90 percent of the city. And in only the first few months of operation, over 1,000 homeowners have been notified of potential leaks on their property as a result. So that's a way that technology is helping us to identify leaks in our system, as well as on the consumer end.

New Jersey American Water tower -- a 750,000 gallon water tower, \$5 million. There are hundreds of water towers and standpipes throughout the state that have to be maintained.

So I could give you numerous examples like that. One other thing in terms of the capital expenditures that I wanted to say was that our

companies do take advantage of the Environmental Infrastructure Trust; the EIT is a very valuable resource for our companies. And the low-cost capital that we're able to get through them gets directly passed through to our customers. It doesn't line the company's profits; it gets directly passed through to the customers.

And so we've been -- our companies have been very aggressive; American Water recently got \$130 million through the EIT for one of its water treatment plants. And even Shorelands -- that small company that I mentioned earlier -- constructed its last water treatment plant using EIT funds.

ASSEMBLYMAN McKEON: Can you explain what you just said? So in other words, if you get the loan, if you will, from the EIT, it doesn't run through your regular finances? It just appears separately on the bill, commensurate with payback?

MR. HENDRY: No. So when you go in for-- So the rate making process -- and you can kick me if I get any of this wrong (laughter); I had to go to rate school in order to learn this -- but part of the calculation that goes into the rates that are set is what it costs you for your capital. So there is argument over what you need to return to stockholders; but then they actually look at your debt and are able to use the exact numbers from your debt to figure out what the cost of your debt capital is. We know what the EIT's debt capital cost is. So that -- there's a lower percentage on the cost of that capital through the EIT. It directly reduces the amount we're able to collect through rates as a result.

That's a vast oversimplification, but I would be happy to follow up with more information too.

ASSEMBLYMAN McKEON: I think we'd all like to understand that better, at some point.

MR. HENDRY: Okay, sure.

ASSEMBLYMAN McKEON: Senator.

SENATOR GREENSTEIN: Thank you.

I didn't know if you were finished speaking.

MR. HENDRY: I had one other thing I was going to add.

SENATOR GREENSTEIN: Yes, go ahead.

MR. HENDRY: But, obviously, you can interrupt me; it's your prerogative, if you would like to.

So one of the reasons that the companies in New Jersey have been able to invest aggressively in recent years is we're one of only 11 state-- We wanted to point this out to you -- something that is beneficial about New Jersey and that we think, as policymakers, that you should be focused on. But we have what's called *Distribution System Improvement Charge* in New Jersey; again, one of only 11 states. It was adopted in 2012 by the Board of Public Utilities; it's a regulatory mechanism. And what it allows is contemporaneous recovery of expenditures on rehabilitation and replacement of aging infrastructure. So as you're making the capital expenditures, the company is able to recover. And this is a departure from the typical rate-making process, where a rate case looks at what you've done in the past and what your capital -- your base was in the past. And so -- and when you go in for a rate case, there's not certainty that you're going to be able to recover all those costs. This creates more certainty for a utility, in terms of its recovery; and as a result, it significantly sped up the

replacement cycle of a lot of infrastructure. Bob can give an example from American Water that is pretty remarkable.

MR. BRABSTON: Yes. I think for the industry, generally, the Distribution System Improvement Charge mechanism has allowed the companies to take advantage of it to accelerate our main replacement schedule from once in 250 years or longer, to less than once in 150 years. Now, the significance of those numbers is -- by all accounts in the academic literature, industry literature, even the most long-lived pipes, on average, have an estimated service life of about 130 years at best. So if you're not turning your system over in about 130 to 150 years, as Dr. Van Abs pointed out, it's going to fail. It's just a matter of time.

We were able to accelerate our replacement rate from once in about 250 years to once in about 150 years; and some parts, even a little bit better than that.

Now, those investments are not made blindly. That's all driven by our asset prioritization models, where we take into account the condition and the system needs. But as Andrew pointed out, it's a great mechanism; it's used in some of the most forward-looking states. Pennsylvania has had it for 15 years; it's made a tremendous difference there. For us, we're starting to see some impacts in areas like nonrevenue water, which was a subject of some discussion earlier today. Just by way of example, New Jersey American Water's statewide average of nonrevenue water this year is about 16 percent. That includes some areas that have very high system pressures in mountainous parts of the state -- to the extent New Jersey has mountains -- northern New Jersey, Summit, the Watchung area. We're pumping large quantities of water over those ridges. Those areas are prone

to leaks. Through this mechanism, we've been really able to tackle a lot of that.

MR. HENDRY: And I bring it up because the regulations for *DSIC*, as we call it, expire in June of 2017. The Board of Public Utilities staff and our company representatives are actively working on re-adoption of those regulations. It's certainly something we hope you would be supportive of. We've been advocating for some changes, for example, to expand the DSIC -- in New Jersey it does not include sewer systems, in other states it does. And given the needs that have been expressed -- I mean, you can't have a discussion about water infrastructure without the significant needs in sewer and CSO issues in the state. It would be something that policymakers would like to look at.

And so, that's pretty much all I had.

I don't know if you wanted to just point out what the pipes are, real quick. I mean, obviously, they're pipes. (indicates pipe visual aid) (laughter)

MR. BRABSTON: Yes; as Andrew mentioned earlier, cleaning and lining is one of the approaches we use to try to extend the life of pipes.

On the left, here, (indicates) is a pipe that has what we call *tuberculation* in the pipe. This is a collection of sediment -- iron, manganese, typically. These are naturally occurring; they are not typically removed during any sort of water treatment process unless you're specifically treating for it. Low levels are permitted by every regulatory agency, but they do tend to accumulate in the pipe. This pipe was in service in Haddonfield, New Jersey; we recently removed it as part of our main replacement project in Haddonfield. As you can see, there's a little bit of build up here. In

some other parts of the state with high mineral content, you'll see a lot more buildup.

This stuff comes loose. You might see sediment in your tap water; it's perfectly safe, but it's unpleasant to look at, it's unpleasant to have in your laundry or in your appliances. This is one of the things that we try and tackle when we're doing a cleaning and lining project.

From an operational standpoint, we also like to get this stuff out because this tuberculation slows down the velocity of water. And it also allows bacteria to build up, which requires us to use more chlorine residuals in the distribution system.

This is what a new pipe looks like (indicates); this is what a cleaned and lined pipe looks like after we do a cleaning and lining project (indicates). So you can see there's a significant difference. As Andrew mentioned earlier, as long as we have adequate pipe thickness and structural integrity, we can clean and line a pipe like this and we'll get another 50 or so years out of it

MR. HENDRY: So we offer ourselves as resources to the Committee. And please feel free to ask any questions and to reach out to us any time in your deliberations.

Thank you.

SENATOR GREENSTEIN: Thank you; thank you very much. That was very interesting. I could barely see the pipes, but now I see them. (laughter)

MR. HENDRY: We can bring them up. (laughter)

SENATOR GREENSTEIN: Okay.

As sort of a 10,000-foot question -- still trying to understand -- okay, so you represent investor-owned companies. A tremendously large percent of the population; about close to half of the state population is in this group. Because you're investor-owned, you're going to pay attention to what's best for your system. Is it profit, is it considered profit-making?

MR. HENDRY: Well, obviously, we're profit-making businesses.

SENATOR GREENSTEIN: Right.

MR. HENDRY: And at the end of the day, if we didn't make a profit, we wouldn't be able to provide the service.

SENATOR GREENSTEIN: Okay.

MR. HENDRY: Providing services as efficiently as possible is something, certainly, we do.

SENATOR GREENSTEIN: So you're going to look at what's best for your business. If pipes need to be replaced, or cleaned, or whatever else it is, you're going to do that. So your main nexus with the public sector would be using the Environmental Infrastructure Trust. Do you get loans or grants from that, or both?

MR. BRABSTON: Typically, from the EIT, it's loans.

SENATOR GREENSTEIN: Okay.

MR. BRABSTON: On rare occasions when they're available, there will be loan forgiveness for eligible projects. But we go through the same process as everyone else to qualify for those.

SENATOR GREENSTEIN: Okay.

MR. BRABSTON: Typically, it's loans; and we're pretty good about paying those back.

SENATOR GREENSTEIN: So you're getting loans from them; you are also -- you can go to the Board of Public Utilities to get a rate increase, if you need that?

MR. HENDRY: Yes.

MR. BRABSTON: Yes.

MR. HENDRY: So there's a petition process at the Board. And I can say with utmost certainty that a utility does not end up getting typically what they ask for in their file.

SENATOR GREENSTEIN: Right. But those are the two ways you have a nexus with the public sector. Other than that, you're making your decisions on a business basis. So if you think your pipes need to be replaced or whatever, you're doing that. Do you feel that you either lack funding to do what needs to be done, are you satisfied with how you're keeping up your system -- if you can answer? I mean, is that something where you feel, "Gee, if we had a lot more money, we'd be able to do a lot more," or do you feel pretty satisfied with how it's going?

MR. BRABSTON: Speaking on behalf of New Jersey American Water, we're generally satisfied with the regulatory process in New Jersey. Of course, we feel that there are things that we could change to make things more efficient. Access to capital is not one of our problems. The timely return on our reasonable and prudent investments is an ongoing debate that we have with the regulators, and it's a place where reasonable people can differ on what's appropriate. I don't think that access to capital is generally a problem for any system in the state -- and I'm going to speak personally here -- I think that the problem is the willingness to pay, not the ability to access the capital.

SENATOR GREENSTEIN: Is the willingness more on the part of the public systems, rather than the private, investor-owned systems? Would you say-- Do you think it's political in nature, in a sense?

MR. HENDRY: Well, I mean, I'd say-- Look, there are different challenges between public and private sector in terms of how they raise capital. And the public sector utilities have some challenges, such as local politics, that we don't. But as numerous folks have said, there are a lot of very well-run public systems in New Jersey that surpass those challenges and are able to provide great service.

SENATOR GREENSTEIN: Do you represent all the investor-owned systems in New Jersey?

MR. HENDRY: We represent the largest six. Now, as Assemblyman McKeon talked about the fact that BPU said there are 35; I believe there are a number of--

ASSEMBLYMAN McKEON: The website said that.

MR. HENDRY: --smaller systems that are technically investor-owned, but may serve a very, very small population. So we don't represent them, and I couldn't even tell you what the names of those organizations are. So we represent the bulk of the-- And again, it's our folks that serve, roughly, 40 percent of the public.

MR. BRABSTON: And if I could just mention on those-- When I was at the Division of Rate Council, before I came to New Jersey American, we used to refer to those smaller companies as *shoebox systems*, because the principals would come in with their shoebox of records to do their rate cases.

SENATOR GREENSTEIN: So generally speaking, the issue that we're talking about in this Committee is really not a problem for almost 50 percent of the systems, is what I'm hearing from you. Because you're dealing with the issues as they come up. You don't see replacing the piping as, "Oh, my gosh, we can't afford to do this; we're not doing this." It's not a problem to you, because you deal with it as a business decision and you have the capital to do it. And is that an accurate statement?

MR. HENDRY: Let me take first crack at that.

So I think that our companies would all say that there is a problem with aging infrastructure in the state. And Bob mentioned that even with an accelerated replacement cycle, we're talking about replacing every 150 years -- a section of pipe. You know, of course we would support efforts to accelerate that further.

I'll give you an example of one of the ways that we've been advocating for that, which may or may not work out at the end of the day. But with the DSIC process at the Board of Public Utilities, currently there is a cap. And obviously regulators were looking at the potential impact on ratepayers, so there's a 5 percent cap -- I believe it's 5 percent -- on the distribution system improvement charge. Pennsylvania has a higher cap, and we've been arguing that we should use Pennsylvania. Companies tend to invest where they get the greatest return, and there's competition for capital, and that should be looked at.

If we were able to do that, we would be able to accelerate that process even further. But we are actively prioritizing, and replacing, and upgrading our infrastructure on a day-to-day basis in the state.

MR. BRABSTON: And if I could just add.

Senator, I believe that from our perspective, you heard right: The ability to invest is generally there for the investor-owned companies. Where we have a big disconnect is in the accountability and affordability, where many of the water purveyors, to whom we're compared, have rates that are much lower than ours. And we believe that that's largely driven by a failure to invest. And that drives the public discourse in the wrong direction, we feel.

And we also take a look at the scenarios, or these situations. And of course, public officials are accountable to their voters. Even the most long-lived municipal officials don't have tenures as long as the pipes.

SENATOR GREENSTEIN: I hope not. (laughter)

MR. BRABSTON: With our investors, though, we're bound by a rigor -- a discipline to invest that exceeds my career, my lifespan, anything else. So we're driven to make these investments, regardless of an election cycle. We're making them, and we'll continue to make them, and the corporation will continue to make them. That rigor, that discipline, does not extend to municipally owned systems.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: This is really great questioning, and very interesting. And I think we all need to drill down on that because, at the end of the day, it would seem like your 50 percent -- or at least 40 percent -- is taken care of. Your beef is that, "Our rates are higher because we take care of it," is what it comes down to.

MR. HENDRY: We know we can always improve, and are always seeking to improve and to invest more.

ASSEMBLYMAN McKEON: Can I-- And, you know, I kind of asked the Professor that question before, because, again, it doesn't mean all 60 percent of the government-owned ones don't do the right thing. But that's where it would seem -- at least you're going to pose that's where the issue is, as far as infrastructure. And trust me, I'm not picking on you. Do you have -- if you just take your six, or if you want to do it for New Jersey American Water -- it's been about 40 percent for the last five years, give or take?

MR. HENDRY: Give or take, yes.

ASSEMBLYMAN McKEON: Okay. So I don't know if you want to look at profit, or shares, but these are all very profitable companies. Is that fair to say? What's been the growth?

MR. HENDRY: You know, so when people look at utility company stocks, for example, they're viewed as stable and a source of regular dividends. I can't tell you off the top of my head, although I'm certainly happy to go back and look at the reports and let you know what the company's profits or losses were during a period of time.

But if we're not able to make that stable return -- and a lot of people invest in our stocks specifically for that reason -- then we're not able to raise capital. So yes, absolutely, the-- But keeping in mind that the profit is, to a large extent, also returned back to shareholders. And that shareholder, oftentimes, is-- I've heard portrayed around here -- a utility shareholder is a fat cat sitting in a back room, smoking a cigar. No, it's you and me; it's, maybe, our 401(k) plans, our retirement accounts where we have institutional investors investing in our stock; or seniors who like the steady and dependable dividend of the utility stock.

So I don't know if I answered your question, to be frank, but--  
(laughter)

ASSEMBLYMAN McKEON: Oh, I know I always bought Water Works when I played Monopoly, so I think it's a pretty steady source of income. (laughter)

MR. HENDRY: Right.

ASSEMBLYMAN McKEON: How many ratepayers does New Jersey American Water have?

MR. BRABSTON: We have 650,000 water customers, and about 50,000 wastewater customers.

ASSEMBLYMAN McKEON: And take away wastewater; just on the 650,000. And again, I'm not picking on anybody. I love the fact that you guys are here, but I just think it bears asking. How many shutoffs did you have last year?

MR. BRABSTON: I don't know the number off the top of my head. It's probably in the low-- I'm assuming, now, you're talking about shutoffs for nonpayment?

ASSEMBLYMAN McKEON: Yes.

MR. BRABSTON: Yes, it's probably in the single-digit-thousands, at most, on an annual basis.

ASSEMBLYMAN McKEON: Like 5 percent -- something like that?

MR. BRABSTON: We might do 2,000 or 3,000 a year.

ASSEMBLYMAN McKEON: Okay.

MR. BRABSTON: And we have pretty stringent guidelines, and we adhere very closely to the BPU regulations on what's allowed before

we shut someone off. The balance has to be over a certain amount; it has to be several hundred dollars, and it has to be more than six months before we even consider it.

ASSEMBLYMAN McKEON: I get a shutoff notice if I miss one month, truthfully. I mean, that's aggressive, and that's a good thing to do -- just if I get lazy and don't want to pay my \$50 bill until the next month and make it \$100. But I notice that seems like a pretty aggressive policy.

MR. BRABSTON: There are a lot of steps between the notice getting generated by our automatic system and actually shutting someone off.

ASSEMBLYMAN McKEON: Is that pretty consistent with the other privates?

MR. HENDRY: You know, I'd have to go back and ask them what kind of rates of shutoff there are. I mean, obviously, they're all following the BPU protocol. And incidentally, I'm a Trenton Water Works customer; I had the same experience. They're a public entity.

ASSEMBLYMAN McKEON: I'm sure.

MR. HENDRY: But I don't -- I didn't have a BPU 1-800 number that I could call to explain to -- raise concern about the fact that I didn't receive the prior month's bill.

ASSEMBLYMAN McKEON: And P.S. -- you know, I partially own a business, and I better make a profit. So I'm not -- I'm happy that you do.

MR. HENDRY: No, no, no. I'm just -- I'm pointing out that for the private sector utilities there is an additional layer of protection for

consumers, and that they can call the Board of Public Utilities. There is a Division specifically tasked with consumer protection and working with consumers who may be in arrears with their bills, and working with the utility to try and work things out.

ASSEMBLYMAN McKEON: Okay.

I can't thank you enough.

Do other members have questions? (no response)

Seeing none, you guys are terrific.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: Thank you, both.

MR. HENDRY: Thanks a lot.

ASSEMBLYMAN McKEON: Is Mike Maloney here?

Michael, come on up.

Mike is the President of New Jersey State Pipetrades, part of the UA. And I mentioned our friends in the unions before, who I'm sure have a particular thought about this as a practical matter, as the men and women who are actually performing these repairs and maintenance.

Michael, welcome.

**M I C H A E L K. M A L O N E Y:** Is this on? (referring to PA microphone) Okay.

Good morning, members of the Joint Legislative Trask Force on Drinking Water Infrastructure.

My name is Michael Maloney; I am the Business Manager and Financial Secretary of Plumbers and Pipefitters Local Union No. 9. I am also President of New Jersey State Pipetrades. The Pipetrades, consisting of 14,000-plus members here in New Jersey, are a part of our international

union that is called the United Association. The United Association consists of all plumbing, pipefitting, steam fitting, sprinkler fitting, and HVAC service local unions in the State of New Jersey, as well as the United States and Canada.

Although I am not an expert witness in this matter, I am, for the record, a licensed Master Plumber in our State. I am also on the Board of Master Plumbers as its Vice Chairman. I am also a licensed HVAC contractor; and also a member of the Board of HVAC examiners, as its Chairman.

I am also a licensed Plumbing Inspector and a Mechanical Inspector in our state. I also sit as a member of the Department of Community Affairs Plumbing Subcommittee; and lastly, I am a member of the Board of Directors of the National Standard Plumbing Code. That is the Code that has jurisdiction over the State of New Jersey.

Thank you for allowing me here to testify in front of this Committee.

As I stated before, my union is a member of the United Association, which consist of 340,000 members. Our members build and maintain water and wastewater systems. Our members also serve as plumbing inspectors for water systems; and we also serve as industry-related boards to the water industry, like the National Standard Plumbing Code, which I am on.

Like many components of U.S. infrastructure, our water and wastewater systems are failing and are in need of major work. According to the American Society of Civil Engineers, our water systems received an abysmal grade of *D* per the latest ASCE report card, in 2013, and it will

require billions and billions of dollars in funding to fix these systems. But do we really have a choice?

It is an absolute crime, in this day and age, that you can have a tragedy like we've seen in Flint, Michigan, where some 8,000 innocent children were literally poisoned due to inexcusable actions and inactions of the government that failed to ensure safe water. Even worse, Flint is only one of thousands of water systems in jurisdictions across the country that are in the danger zone for unsafe levels of lead, copper, and other contaminants.

Also, in October -- I just printed this, this morning (indicates news article) from nj.com -- 20 schools in Trenton came up positive for lead. So that will tell you that this building -- I will bet you a cup of coffee -- has lead in it. I worked in it, I installed pipes in it, so I am sure it does.

ASSEMBLYMAN McKEON: The Governor is about to make a big announcement about that. (laughter)

MR. MALONEY: He did yesterday.

These are big cities and small towns, and, in many of the worst cases, these are water systems that serve our children's schools. Added to all of this is the fact that we're seeing almost a quarter-of-a-million water main breaks per year that result in the loss of tons of precious resources, and also cause extensive property damage and other problems; and that we have wastewater systems failing routinely during storms, resulting in discharge of literally billions of gallons of untreated wastewater.

The widespread failure of these essential infrastructure systems has massive negative consequences, including economic damage, and serious dangers to public health, and harm to the environment. The fact that all of

this is happening in one of the wealthiest, most advanced nations on earth is simply unacceptable, and likely something that drives average taxpayers crazy. We need action, and answers, and plans, and we need them now to start turning things around.

In short, the answer lies in education, education, education of the public, and policymakers, and all the industry stakeholders. Our education efforts need to be transformed into mobilization and activism so we can convince government at all levels -- Federal, State, and local -- to take this issue seriously and come up with a plan and some real solutions.

We have to fully fund this critical infrastructure, and police the operations of these systems once they're built, and develop good enforcement tools to guarantee safety standards are met and public health is fully protected going forward into the future.

According to the EPA, the U.S. will need some \$655 billion over the next 20 years to repair and replace drinking water and wastewater systems, which translates to almost \$33 billion per year. So the bottom line is that ratepayers are going to have to understand that their water bills are going to be higher in the future. But who can argue this, when we're talking about public safety and health? In contrast, look what we all pay in monthly cable or cell phone bills.

What the benefits of rebuilding our systems are-- In modern society, in the United States of America in the 21st century, clean drinking water and safe sanitation systems should be guaranteed and they should be a given. The cost is what it is. So while we must fix these systems as efficiently and cost-effectively as possible, the need to do this is simply beyond debate.

In terms of benefits, the number one benefit is protecting the health of our children and our grandchildren. On top of this, there are numerous major economic benefits that come from ensuring safe water systems on one the hand, and the tremendous costs -- astronomically, really --that we'll face if we fail to act on the other. For example, a key benefit is jobs, jobs, jobs. A recent report by the national BlueGreen Alliance found that we could create 2.7 million jobs rebuilding our water infrastructure. Also, the American Society of Civil Engineers' 2011 report found that by investing \$84 billion over several years, we could protect another, one, 700,000 jobs; two, \$541 billion in personal income; and three, \$6 billion in U.S. exports.

Now let me turn you back to Flint. Flint is a tragedy; there's no doubt about it. My International had 100 of its members donating thousands of hours to help the city recover, and it still has a long way to go. But we can look beyond Flint and we can see that it was an absolute crisis. A comprehensive investigative report this year from *USA Today* revealed that the testing of almost 2,000 water systems across the U.S. showed extensive levels of lead contamination that impacted at least 350 schools and daycare centers serviced by these systems.

But it gets worse. According to a another recent National Resources Defense Council report, there are over 5,000 community water systems across the U.S. that are currently in violation of the Environmental Protection Agency's lead and copper standards. That makes you wonder whether the *D* we got from the American Society of Civil Engineers was generous. Of course, that was the latest report, which was in 2013, well before all of this broke and before the full extent of the problem was clear.

If these facts, and statistics, and reports cannot convince policymakers that we need to rebuild our water infrastructure, something is very wrong.

And talking in terms of benefits and costs may not be the best approach. Safe water should be the basic right, not subject to a cost-benefit analysis. After all, would anyone find it acceptable to allow water to be contaminated to the point of it poisoning our children?

We have to start getting creative by looking at things like a National Infrastructure Bank, the expansion of Build America Bonds, and new strategies for local water utilities to take the case for new infrastructure to their ratepayers.

Water supply systems, including water mains and the lines that run right up to your house -- these and our wastewater systems need to be a big priority. BGA estimates that we may need to replace up to 7.3 million lead water lines that run from water mains to single- and multi-family residences and other buildings, such as schools, hospitals, and daycare centers. And they're right here in New Jersey, make no mistake about it.

Likewise, fixing outdated water mains to prevent 240,000 water main breaks that occur annually and cost about \$2.6 billion per year in damage, not including the loss of critical clean water supply.

Updating wastewater and sewer systems is also essential since inadequate capacity of these systems result in overflows during storms that drive the discharge of billions of gallons of untreated wastewater that has to be stopped.

Water conservation projects should also be a priority. Our union has been doing some extensive R and D in this area in certain parts

of the country affected by droughts, especially the West. We should also be developing rainwater and gray water catchment systems to preserve and conserve water.

There's an old saying in our trade; and now, more than ever, does it ring true: The plumber protects the health and welfare of the nation.

Thanks for your time, for letting me talk on this matter.

ASSEMBLYMAN McKEON: Thank you very much

I have a question, but I'll defer to you.

SENATOR GREENSTEIN: (Indiscernible)

ASSEMBLYMAN McKEON: Mine is just-- You know, going back when a lot of my friends in the trades would talk a little bit off the record about the Exxon site and just say, "Man, it's a terrible mess in there." Off script, what's your feel, with your members being in and around the current infrastructure?

MR. MALONEY: What are their feelings -- that they get to work near that?

ASSEMBLYMAN McKEON: Is it, you know--

MR. MALONEY: That's the business we chose, unfortunately.

ASSEMBLYMAN McKEON: No, no; I'm not saying in that way. I mean, do you visibly say, "Hey, John, I'm there and we're working on a main that broke, and we're looking as to what it's attached to. And man, it's a disaster. It's just going to happen again." I'm just curious--

MR. MALONEY: Well, it's all over. This happened to be at Exxon; it could be at--

ASSEMBLYMAN McKEON: I apologize; it's a bad question.

MR. MALONEY: Okay.

ASSEMBLYMAN McKEON: I mentioned Exxon because it was more from an environmental perspective as to what some of the trades were saying who were on site.

I'm now talking about anywhere, just in general terms, what you hear from your members who do get involved in repairs and the like.

MR. MALONEY: They know it's a catastrophe waiting to happen. Every day there's a water main break; every day, in some part of the city or country, you know? And it affects a lot of businesses and whatnot. So yes, it's a problem, and our members are aware of it, absolutely.

ASSEMBLYMAN McKEON: If you came into my house, you'd look at the pipes and say, "Wow, you better do something about it." So I'm just wondering what your views are, just from what you hear, from the men and women on the street.

MR. MALONEY: Go in my house, I'd say the same thing, because it was all soldered with 50/50, you know what I mean? That's 50 percent lead that was in the solder, so-- Yes, there's a lot of-- Every house around here has it in it.

So they would all have to be replaced. And the gentlemen before me -- or the lady before me was talking about from the street into the house. Yes, it's a big problem, and a lot of it is lead, a lot of it's galvanized, a lot of it is going to fail very shortly, if they're not failing already. So there's a problem there.

ASSEMBLYMAN McKEON: Senator, or--

ASSEMBLYWOMAN MUOIO: I have a quick question.

Mike, we heard earlier that it cost 10 times more to fix -- to repair broken infrastructure than to just replace. Does that sound right to you?

MR. MALONEY: Yes, I would agree with that; yes.

ASSEMBLYWOMAN MUOIO: Okay.

MR. MALONEY: You're just putting a Band-Aid on it.

ASSEMBLYWOMAN MUOIO: Yes; okay, right. Thanks.

ASSEMBLYMAN DiMAIO: I have lots of questions, but (indiscernible). Go ahead, Senator.

SENATOR GREENSTEIN: Okay. (laughter)

Hi, Mike; how are you doing?

All right. I just wanted to ask you, in terms of the lead issue -- which really hasn't, so far, been the main focus of this Committee. It's kind of a side, important focus only because there are statements -- the EPA says that lead contamination may not be the result of water infrastructure, because it tends to get in-- Most of the time it tends to get in when you get close to the house. The customer's plumbing materials like pipes, solders as you were talking about, and other places.

So lead, in other words, gets into the drinking water after the water leaves the treatment plant or the local well. It seems like what happened there in Flint was a weird situation where it got in because they changed systems, and it was a mess.

But here in New Jersey chances are -- I think I'm asking this in a bit of a convoluted way -- chances are it's getting in later, after the treatment plant; and that there's treatment of the pipes to prevent

corrosion and that sort of thing. Is it your experience that that works well? Are those pipes generally treated, or is that overlooked sometimes?

MR. MALONEY: I don't work in the plants, like Trenton Water Works or the other plants that are around. I'm sure that they have to meet standards. So yes, I would agree with that. When that water leaves the plant, it better meet EPA standards or whatever standards it has to meet.

But you are correct. When it gets to the--

SENATOR GREENSTEIN: To the customer?

MR. MALONEY: --pipe-- Yes, running from the street to the house, yes-- But that's infrastructure; that's also part of the infrastructure.

SENATOR GREENSTEIN: Yes.

MR. MALONEY: Okay? And that's where the problem begins. It's from the street to the house.

SENATOR GREENSTEIN: In terms of the--

MR. MALONEY: And that's a huge pipe; it's not just for residential homes, it's for the State House, it's for right here, you know?

SENATOR GREENSTEIN: Right. I mean, in terms of the lead issue--

MR. MALONEY: It's for hospitals, it's--

SENATOR GREENSTEIN: --that's definitely where we have to look, and all of that does need to be replaced. I guess, here, we're looking -- going back in the process, looking at those original pipes; and a lot of it is age, but obviously there are other causes as well. Because we heard the private companies say that they're keeping up even very old pipes. So

maybe it's a matter of making sure that we do the right things to keep those old pipes up.

MR. MALONEY: Oh, I'm sure they are; there's no doubt about it. There's a street ripped up in every town I go into, and they're replacing water lines. So yes, they are keeping up with their commitment, there's no doubt about it.

SENATOR GREENSTEIN: Do you have any particular recommendations that you would make, at this point, for priorities -- helping us set priorities?

MR. MALONEY: Again, I'm not a professional in that field, but I'm a plumber; make no mistake about it. But you know, I would love to see what the testing is done, and see where you have failures; and that should be your number one priority. The number one priority should be schools, okay? You have schools that have lead in them, all right? I mean, I know that's -- maybe that's not the main purpose of this Task Force, but that should jump to number one because it's poison. And every school has it, probably every hospital has it, every-- You have bathrooms in here, drinking fountains in here. You have it, so that should be the number one priority -- is, how do you eliminate that. That's just my opinion.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: John, did you have something?

ASSEMBLYMAN DiMAIO: Yes.

ASSEMBLYMAN McKEON: Please, go ahead; and then back to Liz.

ASSEMBLYMAN DiMAIO: I hate to say this, but if I knew I had a school in my municipality that had a lead service pipe, I would start

with that school and I would change that on my own with my local budget. I would not wait for the State to act. I mean, that is just absurd to hear, in this day and age.

But the 50/50 solder, for example -- the additive that's put in the water supply is called orthophosphate that lines the pipes to protect from erosion. For your own personal house, Chairman, if you run your water for a minute or so in the morning it will flush out those lead concentrations and help a little bit.

But there certainly are a lot of issues that we need to deal with, and to wait-- And if any organization, whether it be the private guys who -- listening to their water rates as a penny per gallon is about four times as much as what we're charging in ours. I'd like to see water rate schedules for all of our locally owned municipal utilities, just so we can compare that to see if they're charging anywhere near that. I have a guess that they're not.

And so they have the revenue to do the work and our municipal utilities, for the large part, may not be charging enough to make those investments. These investments are critical; we recognize that in our municipality. We're very small, I'll admit it. We've changed pipes that were put in in the early 1960s -- mains that were cast iron, they broke, they're gone, to cut down on the lost water.

But as far as the lead goes, that's an issue that the property owner needs to deal with. And I wouldn't wait for the State. I didn't mean that to rhyme like that, but-- (laughter)

MR. MALONEY: I agree with you.

ASSEMBLYMAN DiMAIO: I would get moving on it now. Thank God newer facilities now are having (indiscernible) and plastic pipes

put in so that, as far as we know, in this day and age, it doesn't put anything into the water supply. But some of these things need to have proactive action at the local level too. If you have that level of issue, I would start one at a time, pulling them out in the bigger cities and get it done. And we'll figure out the money later.

It's not that expensive to change a single water service line to a building, if it's that situation.

But there are chemicals that are put in the water to line the pipes to protect from the erosion, and there are things that can be done in the morning, what they call *first draw*, which means run your water for a while and flush those pipes out to help.

MR. MALONEY: That's true.

ASSEMBLYMAN McKEON: I mean, I hear -- again, not to be-- That happens--

ASSEMBLYMAN DiMAIO: That's not a long-term solution, but it's things that can be done in the interim until we can attack this problem and really come out with a solution that matters.

ASSEMBLYMAN McKEON: And I understand, John, the first draw thing. That's why schools are more susceptible to it because they are not open on weekends. It's certainly not the summers, for the most part. They close at 3:00 p.m., so--

ASSEMBLYMAN DiMAIO: They are doing it now. I read a report where they're going in the morning -- maintenance guys are flushing the lines.

ASSEMBLYMAN McKEON: Liz.

ASSEMBLYWOMAN MUOIO: Okay.

Mike, while you're here, since you're pretty much the expert on this whole piece of it -- you will be; wait for my question. (laughter)

And this may be as -- this is just a naïve question. I'm not sure how -- it's two parts. How would you replace -- what would you do about fixing a house with curb-to-faucet issues? Would you pull out the entire-- How would you fix something like that, if we were to not Band-Aid it, but essentially--

MR. MALONEY: Well, you would have to identify what it is-- whether it was galvanized copper, lead, whatever -- and then you go from there. Usually, if it's copper, it's rolled and there are no joints that were soldered. So that piece would be okay -- if it's copper -- from the street to the house. If it's from the house--

ASSEMBLYWOMAN MUOIO: How do you even determine what's between the street and the house?

MR. MALONEY: You can tell what's coming in before it gets to the water meter--

ASSEMBLYWOMAN MUOIO: Yes, okay.

MR. MALONEY: --what the material is, whether it's copper--

ASSEMBLYWOMAN MUOIO: Where it's connecting up; okay.

MR. MALONEY: --or it's iron pipe, galvanized pipe. It will tell you what it is.

ASSEMBLYWOMAN MUOIO: Okay. Because we have statistics on paint remediation; I mean, because the bulk of lead poisoning comes from actually paint. And we have statistics on roughly what it would cost to remediate a house that has paint issues for lead, and it's several

thousand dollars. And they use the statistic to compare it to -- for a child who ends up getting lead poisoning, it's tens of thousands of years over their life time to help them cope with the effects of the lead poisoning. Would you have any sense of what it would cost per house-- I know some houses are huge, some are smaller -- to replace curb-to-faucet infrastructure?

MR. MALONEY: No, because every house would be different. Because a lot of the pipes are behind the walls, you have to take the walls down. So that would be -- each house would be different.

ASSEMBLYWOMAN MUOIO: Okay.

MR. MALONEY: You know what I mean? So that would be a very hard--

ASSEMBLYWOMAN MUOIO: Okay, okay.

MR. MALONEY: You mentioned lead paint. You also -- there's mold, asbestos; I mean, there are all--

ASSEMBLYWOMAN MUOIO: Oh, yes.

MR. MALONEY: There's everything out there.

ASSEMBLYWOMAN MUOIO: The gift that keeps on giving, right?

Okay, thanks.

ASSEMBLYMAN McKEON: Any other questions? (no response)

Seeing none, thank you for your thoughtful testimony.

SENATOR GREENSTEIN: Thank you.

MR. MALONEY: Thank you.

ASSEMBLYMAN McKEON: We'll be in touch.

MR. MALONEY: And I'm just going to--

ASSEMBLYMAN McKEON: Yes, please.

MR. MALONEY: I made copies of them, so I'm giving them to you.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: Yes, please. That will be very important. Thank you.

SENATOR GREENSTEIN: Okay; thank you very much, Mike.

And our next people are Peggy Gallos, Dave Harpell, and Pam Carolan. Ms. Gallos is the Executive Director of the Association of Environmental Authorities of New Jersey, which represents utility authorities and municipal utilities departments; Mr. Harpell is the Water Committee Chair of the organization, and Executive Director of Jackson Township Municipal Utilities; Ms. Carolan is Executive Director of the Mount Laurel Township Municipal Authority.

Thank you.

**P E G G Y G A L L O S:** Thank you so much for the invitation to be with you today to talk about this really, really important subject.

I also serve on the Steering Committee of Jersey Water Works, and I am very happy to be part of that wonderful effort.

And Dave and Pam are here with me, because I haven't graduated from rate school yet, so they might have some answers for you that I can't give you.

I'm going to talk a little bit about our Association, and I'm going to talk about the public agencies that provide drinking water service in New Jersey, and give you some of our perspective on the matter of how to ensure adequate and safe drinking water in New Jersey.

The mission of Association of Environmental Authorities is to deliver information, education, and advocacy programs and services for our member organizations so that they, in turn, can provide excellent service.

We also strive to help the public understand and value the work of AEA members. Our members include the public agencies that provide drinking water, wastewater, and/or solid waste utility service to millions of people across New Jersey. Hackettstown MUA is a member of AEA. We have, as part of our membership, 23 public agencies -- both authorities and municipal -- in 11 counties that employ many hundreds of men and women, and provide drinking water to about three-quarters of a million people in the state.

Authorities were created in the 1960s and 1970s in response to the Clean Water and Safe Drinking Water acts, to help our state modernize its wastewater and drinking water delivery systems. The authority model is a good one for delivering water services. It leaves management to professionals. It puts the system and, perhaps, more importantly, its funding somewhat apart from the rest of the local government; and at the same time, it allows local officials to exercise oversight.

In the case of municipal water, the elected governing body oversees the system directly. In New Jersey, many hundreds of elected and appointed officials on authority boards, freeholder boards, and/or municipal governing bodies are overseeing these systems. This includes approving the budgets, borrowing, and capital spending plans. Quality of service and rates are ultimately their responsibility.

In addition, the New Jersey Department of Community Affairs annually reviews municipal water and sewer utility budgets, as well as

authority budgets. The DEP and, to a lesser extent, the Board of Public Utilities, have roles in regulating public agencies that provide water.

When it comes to infrastructure and, for that matter, sewer systems, they are never really completed -- and your opening remarks, Chair Greenstein, made quite an articulate reference to that fact -- that they are really ongoing projects. They are not put in and finished. Public agencies that provide drinking water are, in fact, investing millions in their systems.

And I'd like to give you some examples.

Jackson Township MUA, in the last 10 years, has invested \$30 million in its system. Hamilton Township MUA, in Atlantic County, in the last five years, has invested \$4.5 million in its system.

Morris County MUA, which serves about 50,000, has invested \$5 million in the last five years, and expects to invest another \$5 million in the next 10 (*sic*). Willingboro MUA has invested \$10 million in the last five years and expects to invest another \$30 million in the next five.

Monroe Township in Middlesex County has invested \$15 million in the last five years, \$ 2 million this year, and expects to invest \$20 million in the next five years. Mount Laurel has invested \$7.4 million in the last five years, is investing \$1.3 million this year, and is planning to spend another \$11.3 million in the next five years.

And in the case of Jackson and Mount Laurel, they are actually returning about one-third of their revenues into investing in their systems.

Evesham MUA has invested about \$14 million in the past five years and expects to invest something like twice that in the next five.

These investments make quality service, protect public health, and economic prosperity. But it isn't just the dollars that matter. Public

systems that are well managed have the tools and human resources to help assess their needs and plan for the future. They are led by professionals who understand how to manage expenditure and debt. They have elected and appointed leaders who value long-term planning and who are partners, with the professional staff to explain to ratepayers the connection between ongoing investment and system quality.

The systems I have mentioned have that kind of leadership -- leadership that values steady investment, repair and replacement, long-term capital and financial planning, with projects that are timed to keep rates stable, even while maintaining the system well.

Now, when it comes to the human side of well-managed systems and infrastructure, we're here and we'd like to point out a couple of matters of significance.

First, in New Jersey, and actually across the country, many employed in the utility sector -- and, to some extent, in the community of regulators -- are at or near retirement. AEA is working to address that succession planning issue within our member organizations, and we would certainly be willing to work in other contexts on that matter.

The second issue, relating to the human side of water system management, is the need for well-informed decision makers. Local officials responsible for public systems are key gatekeepers. They make sure that the funds collected from ratepayers are there for the system, and they avoid diverting funds for other uses. There are several factors that actually, unfortunately, work against this type of leadership. Existing statute allows local governments to divert water and sewer funds for other purposes, even

though those funds have been collected for the purpose of maintaining the infrastructure.

In one set of less than 100 New Jersey municipal and authority budgets we studied, we calculated that about \$80 million had been transferred in one three-year period. That's enough to cover the entire budgets of some systems. Some municipalities become very dependent on these annual diversions, and they supplement their municipal budget with them. This is especially problematic in communities where the ratepayers and the taxpayers are not the same group of people, or are not entirely overlapping.

Funds also disappear when authorities are dissolved. Fund balances, which are on hand to cover emergencies and to limit borrowing costs, disappear into municipal budgets. In one case, after an authority was dissolved and its emergency funds were absorbed into the municipal budget, the capital spending plummeted. In the three years after the authority was dissolved, the community invested all of \$6,000 in its system.

Municipal officials also are not being encouraged or educated as well as they can to abandon shortsighted water system management and decision making. And I'll give you an example. There's a worksheet that the municipal governments fill out that asks them a variety of questions related to best management practices. One of the questions on the 2015-2016 questionnaire was: Does your municipality require its elected officials to attend, on an annual basis, at least one instructional course covering the responsibilities and obligations of elected officials? And then there was a list of the types of courses that may include.

The question endorsed the usefulness of training, even though it did not specifically mention continuing education for water systems. We would have been very happy to see, in a subsequent year, the reference to training about water systems in that question. Unfortunately, the actual question was eliminated as part of the streamlining of the questionnaire.

In contrast, appointed planning board members and school board members are required to have a baseline orientation to help them understand their vital role in their respective spheres. Similar requirements for appointed and elected county, authority, and municipal officials would be useful. Such new legislation could be modeled on existing requirements for planning board and board of education members -- that within the first year of taking office or being appointed to a term, local officials get some base level of orientation so that they understand how the system is financed, what best practices are, and how water systems are operated. This kind of smart decision making is kind of what a place like Jersey City MUA was able to employ when it entered into a contract to manage the system. The Jersey City contract has a lot of efficiencies and safeguards to regulate and manage the system. And that's an example of smart decision making.

Today seems a good time, as far as we are concerned, to also stress the value of a robust regulatory framework that is science-based; a framework that creates standards and benchmarks. It provides communities with the support they need to run their systems and, if necessary, to affect changes that protect the public.

According to Water Online, "EPA consent orders now compel \$50 billion of municipal investment over the next 20 years, resulting in

construction, jobs, and improved water quality in the targeted communities.”

We also want to note the importance of the New Jersey Environmental Infrastructure Trust, which is supported by State Revolving Fund monies. It is an absolutely indispensable and highly successful player in water infrastructure in the state.

Asset management is another area which you’ve heard about extensively already. AEA, and AWWA, and other players in the water infrastructure in this state, were very much involved in partnering with the DEP to provide them with feedback and to help them create a survey so that they could gather some baseline information about asset management.

Affordability is another matter that concerns us. With regard to that, we have two points: One is that to really address lead in water infrastructure -- as was mentioned -- we need to look at homes. We believe that the Legislature could explore ways of using NJEIT funds to create local low- or no-interest loan programs -- something perhaps modeled on the Clean Energy Energy Efficiency Home programs -- and that homeowners could use these programs to remediate lead in their homes -- lead in the pipes of their homes.

Maintaining public ownership and operation of water systems is another way of addressing affordability, because public systems can be efficient at a lower cost and local officials can keep a weather eye on how they are managed. Rates for public systems in Ocean and Monmouth counties, for example, are considerably lower than rates for investor-owned utilities. A public system customer with a three-quarter-inch water meter and 24,000 gallons of usage pays, on average, \$113 a quarter, compared to

the same customer for the area's investor-owned utilities, who pays \$229 a quarter.

Affordability is one of the factors that prompted AEA to oppose the Water Infrastructure Protection Act, WIPA, which was signed into law last year. WIPA limits the public's ability to have input when a system is being considered for sale, and it limits the ability of the Board of Public Utilities to protect ratepayers from unnecessarily high water rates.

As Chris Sturm mentioned, this year, as part of its annual awards, AEA is partnering with Jersey Water Works and others on an award for excellence in water infrastructure. It's going to be called the *One Water* award. The name reflects that fact that local, county, State and Federal officials, regulatory agencies, investor-owned utilities, and publicly owned utilities, as well as the public, all work together to address water issues. The name is also a reminder that water, wastewater, and stormwater systems are connected, as has also been mentioned in today's testimony. We think it's really important not to be too reductionist in looking at these issues --that drinking water and wastewater and stormwater are profoundly connected.

New Jersey's public water agencies can be your great partners. They have experience, they have relationships within their communities, and they have the know-how to help address emerging issues. Jackson MUA partnered with the local school district to test their drinking water. Authorities are helping to address the stormwater in their communities as well. Local public agencies can also help promote home plumbing remediation programs that I discussed earlier. They are ready and able to help.

That also includes a willingness to be involved in shared services or to create public-public partnerships. We also would like to just point out that there has been mentioned public-private partnerships, and that there is also another area that can be considered, which is public-public partnerships. In Lehigh County in Pennsylvania, the Lehigh County actually purchased the Allentown Water and Sewer System. And so we think it's important for local communities, if they're looking at the future of their system, to look at a full range of possibilities -- public-private partnerships, public-public partnerships, or simply accessing NJEIT funding and addressing whatever their capital planning needs may be.

So I just want to thank you for the opportunity to be here today. We're happy to answer your questions, and we're certainly ready to assist the Task Force in any way that we can.

ASSEMBLYMAN McKEON: Thank you for your thoughtful testimony.

Members with questions?

Senator, please.

SENATOR GREENSTEIN: Hi, how are you?

Similar to the questions that I asked the utilities authority representing the investor-owned-- So you represent 23 community, is that correct?

MS. GALLOS: Well, those are the drinking water providers within our membership. So our membership is -- most environmental authorities in the state belong to AEA; they are not required to belong to us, they belong to us because they wish to. And so about, I'd say, somewhere around 80 percent of the wastewater and solid waste authorities belong to

us. Of that group, there are drinking water providers; and those are the 23 I'm referring to.

SENATOR GREENSTEIN: Okay. And their source of funding generally -- how do they -- what are the different ways that they get their money? I assume a lot of it is public, most if not all of it. But what are the different ways that they get their funding?

MS. GALLOS: Well, why don't I let Dave address that?

DAVID HARPELL: Thank you.

It is primarily through rates. I mean, we also access the NJEIT funds; but really, for the funding sources, through our ratepayers.

SENATOR GREENSTEIN: Okay; so the BPU -- are you with the BPU or not?

MR. HARPELL: We're not really regulated by the BPU to any great extent. It mainly is through our individual rate-setting process.

SENATOR GREENSTEIN: Okay.

Let's see -- so what is your overall opinion of what we're looking at through this Committee? Do you think that the-- Are your particular groups that are part of your agencies -- do they have a lot of very old pipes, what's the age of the pipes, what is your sense of this problem, and what are the problems in solving this?

MR. HARPELL: Do you mind if I jump in on that real quick?

MS. GALLOS: Yes, go ahead.

MR. HARPELL: We really think AEA is very proactive, as we mentioned, with some of the other systems we're dealing with. We're also very proactive on the infrastructure. Again, in Jackson, we spent \$30 million the last 10 years, and we have \$30 million we're actually bidding

this year for infrastructure improvements. So we really, fully, support what the Task Force is looking for here. We really think reinvesting in infrastructure is one of the best things we can do for this state, from an economic as well as a public health standpoint. So we think this is a wonderful opportunity.

I think the one thing-- Hearing the testimony today, I think the public utilities really have a big role to play here, you know? Some of the big, I guess probably, upsets we've seen over the years have been investor-owned. It's not just a public utility problem, in our mind. You know, this is something that -- both sides have to deal with this issue.

Now, having worked at Brick MUA years ago -- we took over a failing investor-owned utility to make it a public ownership in Howell Township.

MS. GALLOS: I think that the key here is good management; which is, again, why I talked about the importance of the local commissioners on the authority boards, and the mayors, and town councils where there are municipal systems. They're key gatekeepers. They need to make the decisions that put the resources where they need to be. And they don't need to sell their system to do that.

Now, you know, New Jersey is a great home-rule state. Every community needs to determine its own future, and we certainly wouldn't quarrel with that. But when communities are considering their options, what they need is good management; and going to NJEIT, borrowing the funds, and coming up with a good capital program. And with the right kind of management, they can do that. So we just want them to consider the full range of options.

SENATOR GREENSTEIN: In your experiences, have politics -- local politics played a role? Or do you find that the towns -- the elected officials are very willing to do what needs to be done; and is there the funding to do what needs to be done?

MS. GALLOS: In the communities that I made reference to, absolutely. These are communities where the leadership is very much committed to creating these kinds of asset management and capital planning programs that will continue to provide the investment that the community needs. So I think, you know, you have to look at the individual community.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: A quick question: Again, you may not know, based on the limitation that you have, but are the 60 percent of the government-owned -- are they pretty much contiguous to each other? Is it just -- are they just oddball, everywhere? (laughter)

MS. GALLOS: We don't call them oddball. (laughter)

ASSEMBLYMAN McKEON: I'm just asking, because there are so many joint meetings -- like, wastewater is often--

MS. GALLOS: Right.

ASSEMBLYMAN McKEON: --still a government-owned--

MS. GALLOS: Right.

ASSEMBLYMAN McKEON: --but a bunch of them together-- I'm wondering if there is that possibility?

MS. GALLOS: Right. No, I mean, they're not necessarily contiguous. I think one of the rationales for something like the sale in

Haddonfield was that New Jersey American owned -- operates the system around Haddonfield. So it depends a great deal.

These systems-- I think part of what happened is that the communities were given the freehand to be entrepreneurial about how they set up these systems. So some of them chose to set up municipal utilities authorities. Early in the process in the 1970s, when they were giving out grant money, the DEP was encouraging systems to regionalize, and some of them did. Some systems that started as municipal systems became regional systems. And so it does vary. But that kind of entrepreneurialism is one of the things that the system can take advantage of. They can-- And someone was discussing that earlier. They need to be looking at their own needs, in their own communities, and responding to that.

ASSEMBLYMAN McKEON: Thank you very much.

Any other members have questions? (no response)

Seeing none, again, thank you for your thoughtful consideration.

MS. GALLOS: Thank you; thank you so much.

MR. HARPELL: Thank you.

SENATOR GREENSTEIN: Thank you; thank you very much.

ASSEMBLYMAN McKEON: We have-- Just from a planning perspective, we have two more groups left; and that certainly will get us completed well before 2:00 p.m. So everyone can plan, because we have--

SENATOR GREENSTEIN: (Indiscernible) three.

ASSEMBLYMAN McKEON: Well, but they're going to come up together.

SENATOR GREENSTEIN: Okay.

ASSEMBLYMAN McKEON: Go ahead; you can -- if you want to call up--

SENATOR GREENSTEIN: All right.

The next group -- Mike Furrey, Chris Andreasen, Steve Blankenship. Mr. Furrey is President and owner of Agra Environmental and Lab Services, and Chair of the New Jersey Section of the American Water Works Association, a non-profit, scientific, and educational association to improve water quality and supply. The members of that group are most of the state's public and investor-owned water utilities.

Mr. Andreasen is the Director of Engineering at Middlesex Water, and the Director of AWWA New Jersey. Mr. Blankenship, Executive of the Hamilton Township Municipal Utilities Authority -- is that in Atlantic County?

**STEPHEN R. BLANKENSHIP:** Correct.

SENATOR GREENSTEIN: Okay. And is Chair of AWWA New Jersey's Infrastructure Management Committee.

Thank you.

**MICHAEL J. FURREY:** Okay; thank you everybody.

Good afternoon. I want to thank the Task Force for giving us the opportunity to speak today.

My name is Michael Furrey; I'm the owner of Agra Environmental and Laboratory Services. I'm also the Chair -- the current Chair of the American Water Works Association, New Jersey Section. To my right is Steve Blankenship, the Executive Director for Hamilton Township. He serves as our Director for the national organization. And on my left is Chris Andreasen; he's the Director of Engineering for Middlesex

Water. As you can see, we have a pretty diverse group of individuals here. Chris represents the investor-owned; Steve comes from the public side; I have laboratory background, and I also represent -- we also represent a lot of small-to-medium systems.

The American Water Works consists of 1,200 different members in the State of New Jersey. We're made up of licensed operators, engineers, consultants, vendors. We represent the public side of -- public water utilities and the investor-owned utilities. So we come from a pretty diverse background.

We consider ourselves the leading authority in drinking water for the State of Jersey; not only here in the State of New Jersey -- there are about 50,000 members nationwide in the American Water Works Association. So considering the Section's large and diversified water professional membership base, the Section believes it can provide the Task Force with a valuable perspective, and welcome the opportunity to become an active participant in the deliberations.

Some of the most significant advances in water treatment came from the State of New Jersey, from actual AWWA members, specifically in the area of disinfection and filtration -- Jersey City Water, Passaic Valley Water Commission, North Jersey Water.

Recent events in Flint, Michigan, and the City of Newark schools have heightened awareness of the value of drinking water professionals and regulatory agencies in the protection of public health, especially with the dangers of lead in drinking water. In spite of all these events, I can assure you the vast majority of public water suppliers -- whether it's investor-owned or publicly owned -- are providing high-quality

drinking water to their customers, and are complying with monitoring and treatment requirements for currently regulated contaminants, and are routinely reporting this information to the public.

The Flint, Michigan, task force report, issued March, 2016, concluded that there were serious failures at all levels of government that can never happen again.

While Flint was not an infrastructure failure, it triggered greater concern by the public and by the elected officials on the state of the nation's water infrastructure. It is important to note New Jersey also has infrastructure issues that need to be addressed.

As we address this need, we must make every effort to not repeat the missteps made in Flint, Michigan, which jeopardized public health and, most importantly, eroded the public's confidence in our water supply infrastructure.

So with this, I'm going to it over to Chris Andreasen.

**G. CHRISTIAN ANDREASEN Jr.:** Thank you, again for this opportunity.

Much of what we had in our prepared testimony you've heard already with prior speakers. So we're going to go through this a little bit in the interest of brevity, trying to hit some of the points that maybe weren't really explained or spoken to.

Just for background: Water infrastructure generally was installed as part of the new construction for real estate development throughout the state. This construction occurred as part of the overall road system; utilities construction that occurred, with the buried utilities installed first, and then the road systems and everything else built on top of

it. That resulted in a very cost-effective approach; total cost for installing -- the initial cost of all of this infrastructure. That's important to consider as we consider the reinvestment and the replacement of all this infrastructure, going forward. Also, typically, a lot of those costs were included in the overall real estate of the homes and commercial establishments that were adjacent to that infrastructure.

So we all know that investment in the infrastructure has been a challenge. It has not really been a priority over the last 20 years, mostly due to the lack of full understanding of the condition of that infrastructure. But also the *out-of-sight*, that we have heard from other speakers, and also the excellent reliable service that the public has received. And also the reluctance to raise utility rates.

As described previously, New Jersey residents are very fortunate to be able to have the level of service that gives them this service at their tap 24 hours a day, 365 days a year, with minimal disruption to service.

This service is provided at a very low cost, especially when you compare it to bottled water, other utilities -- cable, cell phones, and other nonessential services that people are more than willing to pay extended costs for. Yet the public's willingness to pay for higher utility bills, just for the long-term sustainability for the future of the infrastructure, continues to be a need, and an issue that needs to be addressed.

As we have heard today, there is broad recognition of the need for consistent reinvestment in our utility assets. I won't go into that in depth; I think we've heard quite a bit of that today.

But I would like to mention that while the infrastructure condition that is shared with many of our other infrastructure -- roads,

bridges, and other utilities -- has a lot of similarity, the added criteria of being buried and out-of-sight has additional issues. This of course is something that the public takes for granted until there is a failure and causes damage, disruption of services, and inconvenience.

We share our locations of most of our distribution assets in rights-of-ways with other roads, utilities, and everything being buried, and the public has to -- and we have the added challenge of operating these facilities in these shared locations. These challenges include the ability to be able to go in and locate our assets to assess the condition of these assets. It's easy to be able to go out and look at bridges, and you can see they're failing, but the challenges we have to assess buried infrastructure -- miles and miles, as we've heard today, that exist -- is something that there's new technologies being developed, but it's not an easy solution to be able to prioritize a lot of these assets that have to be replaced.

Also, when we do the work, or we have a disruption of service, it results in disruption to other adjacent utilities and roads, creating disruption to the public; and the public considers, we found, roads and the public access in these public rights-of-way are the most important thing that they're interested in. They want to get their roads back in service.

So to help these challenges, the Section certainly supports all the things you've heard here about asset management principles, asset management planning, moving forward with -- it's a professional discipline that's out there that proactively and effectively helps us identify all of our aging assets, prioritize what needs to be done so we can address it with the limited resources that are out there, and assure that there is a deliberative and efficient approach to addressing the most important needs first.

Simply stated, asset management is a program to provide an agreed level of service in the most efficient, cost-effective manner for present -- and here's the key part that's very difficult for people to grasp -- and for future customers. Forms of asset management have been practiced informally for many years by all of our utilities; they just may not have been as formal as what we're talking about doing now. These have included operations and maintenance plans, that are routinely conducted by utilities, and capital improvement plans. Recently, there has been more awareness on a formal and structured asset management plan -- what those plans actually entail, and how they can be used across all utilities -- public, investor-owned -- to be able to go out and prioritize the replacement of these assets, and address the needs of the aging infrastructure and the financial requirements that are going to be necessary to do this.

We've put in our testimony here just, again, trying to define a little bit what an *asset management plan* is. There's a lot of different research out there, and standards of people addressing with asset management plans. But essentially it boils to a five-step process where it may seem very simple, but to go ahead and apply that to your distribution and your utility assets can be quite challenging.

First you start with performing an inventory and condition assessment of all your assets -- knowing what you have. It seems like it should be intuitive and you should know this, but, again, most of these assets were buried; and as we heard from Dr. Van Abs, as soon as they go in the ground, they start deteriorating.

Once you do that, you define the level of service goals that are to be provided by these utilities. Again, it seems like a simple aspect going

here, but the public, right now, has an expectation that they have the water out of the tap, 24 hours, 7 days a week, with no interruptions. That's not a realistic objective; there has to be a certain level of service that everybody has agreed to. And then the infrastructure can be replaced to be able to achieve that level of service.

Obviously, you then go through a prioritization of all these assets; you determine what the total life-cycle cost is of the assets -- and that includes the operation, and maintenance, and the rehabilitation and replacement costs.

And then, of course, you determine your long-term funding strategy.

With that, I'd like to just talk about the financing and give it to Steve Blankenship.

MR. BLANKENSHIP: I mean I think-- You have our paper that we submitted. So I'm going to, kind of, go rogue a little bit here.

I mean, one of the things I think you're going to understand is any utility manager -- whether you're a public utility or a regulated utility -- we're really stewards. We're stewards of these assets. And you noted, these assets can last quite a long time. So we're just here for part of that journey.

But that's a key thing. We have to think of ourselves as stewards. And as part of that, then that goes into the sustainability.

So we can't wave a magic wand and say, "Okay, we're great stewards and we're great into sustainability," because we need money. So the key is, how are we going to raise that money, and how much money are we going to need to raise?

Asset management -- as we talked about earlier here, and through the other speakers -- is a way to prioritize how you're going to spend money. So it's easy enough to figure out where your assets are; it's a little harder -- you can determine which ones are critical. But then you have to do assessments. So how do we do that?

On some of the larger utilities, they may have more funds available to do that; some of the smaller utilities, that may be a little harder. And that's one of the things we need to think about.

When you go and you have these assessments, and you have criticalities, then you can start to do an analysis to say, "What's the risk? So where do I concentrate the money?" I'm never -- you're never going to have enough money to do all this. Anybody in the State of New Jersey or any other place knows that, because we never do.

But the key is, where can we smartly invest our money? So that's what asset management, and parts of asset management allow us to do. And so that's a key. Now, how can we help some of the public utilities and smaller utilities do that? Well, we have great resources here. We have State universities that have engineering departments and things along that line. Can we not harness them to take a look at what kind of technologies are coming up to do assessments? What kind of issues can we use as far as the life-cycle costing of some of the materials that we're using, and some of the different materials that we can use?

So that together will help some of the smaller and mid-size utilities, that wouldn't necessarily have that money to go out and do that type of research, bring that research to them.

One of the things that I've seen is -- AWWA put out a report called *Buried No Longer*. And with that came a toolkit. And it was for the water supply. And basically what it does is it allows you to take a system, plug in your pipes -- the age of your pipes, things that you're doing -- whether you're growing or whether you're not growing; and start to develop some type of baseline financial fundamentals as to how much you should probably be reinvesting. So that kind of starts to give you an idea at your utility what you might need to be looking at.

In the future, they are supposed to also release a piece on the wastewater side to do the same thing as we talked about.

But the key thing is, again, for those utilities that haven't started, they need to start. It never gets cheaper. Because as was mentioned earlier, especially for those of us who are more suburban, a lot of our development, especially on the public side, comes when a developer comes in, they build a residential or a commercial property, and they pay for the initial cost. But a lot of that initial cost, when they put pipes in the ground, is cheap, because the paving and everything comes later. Now when we come back to do repairs, if I'm in the middle of a neighborhood, or if I'm in the middle of a commercial corridor, my costs to do those repairs are greatly higher than what they were at the beginning. Because now I'm dealing with traffic; I'm dealing with closing roads, I'm having to repave things. So that's a problem. So there are still those costs.

But again, it really does take all of us working together to try to prioritize; and I think that's what the asset management system allows us to do. Somebody who has also worked in other public ventures -- I would say asset management is probably one of the greatest things government could

take a look at. Because basically we all have assets, and how do we use those assets and how do we prioritize those?

And don't forget, our assets are also our human assets. You talked about people, like, technical knowledge; people who are aware of the systems. So those are some things that we need to do, and I would encourage other branches of government to start to look into those. Because I feel many of your local municipalities probably -- maybe they're doing some of that; but there's not a formal program. And again, if you're going to understand long-term development, long-term reinvestment, you have to start to think long-term. Having an asset management plan helps with that.

Basically, that's kind of what I have. So we're open to any questions. Mike, I--

MR. FURREY: I want to-- We talked about lead in drinking water, and I wanted to bring that up.

One of the interesting things in the City of Newark, where the schools -- one of the schools -- and I found this out because we did the testing there -- was built when Abraham Lincoln was President. So that gives you an interesting perspective of how this infrastructure is. And the lead issue is a complicated issue. So a lot of these small, medium, and large systems are making considerable efforts to reduce the lead in drinking water. One of the things that we're particularly looking at is the issue of service line replacement. The industry is particularly focused on full, rather than partial, lead service replacement. The Section highly recommends full lead service line replacement, via funding made available to the water systems and the final ultimate consumers of the water distribution system.

What I mean by that is a lot of studies have shown that partial lead replacement can actually make things worse; it could make the lead issues worse.

And the other thing we wanted to talk about is a lot of other sources of lead in drinking water that we have to consider: lead solder, brass fittings, certain types of valves. These are very difficult to control. The Task Force will have to study and consider the pros and cons of full-scale plumbing replacement due to its extremely high remediation costs. It is going to be extremely expensive to do so.

And most importantly, the Section strongly emphasizes -- and we say this over and over -- there is no safe level of lead. The industry wishes to continue to work with legislators and the environmental regulators to determine pragmatic and sensible lead and copper regulation that protects public health at a reasonable and realistic cost.

So in summary, we all feel this is going to be a collaborative approach between DEP and the water supply industry to address all these rehabilitation efforts and lead in drinking water, and all water quality issues.

We're going to have to avoid overreactions and shoot-from-the-hip solutions to address the crisis of the day. This is something that we've seen over the last year. The funding and resources for the New Jersey Department of Environmental Protection need to be ensured so that they can be properly staffed and supported to meet the challenges at hand.

Again, in summation the New Jersey Section of the AWWA appreciates the opportunity to present our testimony today. And it is hoped that our offer of assistance, request for resources, and a collaborative approach is seriously considered by this Committee and the State.

So with that, I'd like to just open it up to any questions that anybody has.

ASSEMBLYMAN McKEON: Thank you very much.

I don't have any questions per se; but per your title, if you will, as the foremost experts in the state, we're going to certainly draw upon your continued wisdom as we go forward.

And thank you for being here.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: Nice job going rogue as well.

(laughter)

MR. FURREY: Going rogue. (laughter)

SENATOR GREENSTEIN: Thank you, thank you.

ASSEMBLYMAN McKEON: Any members?

MR. BLANKENSHIP: I just had one thing I wanted to add.

ASSEMBLYMAN McKEON: Are you asking us a question?

Hold on a minute; you really are going rogue. (laughter)

MR. FURREY: He's going to ask you a question. (laughter)

MR. BLANKENSHIP: If I may.

With regards to NJEIT loans, my authority has utilized those, and that's worked out very well for us. But one of the things is, when you do asset management, you're really at the end of a job. We have design allowances, we have the construction costs, and the construction inspection done. But there's really not anything to basically create records and information, which is required to do your asset management program. And that's one of the things I think, going forward, that needs to be looked at as part of a funding allowance for utilities.

ASSEMBLYMAN McKEON: Thank you, again, very, very much.

We're good, members? (no response)

We have our last two scheduled witnesses.

MR. FURREY: Thank you.

ASSEMBLYMAN McKEON: The first -- we're pleased to have with us the Director of -- the former Director of Clean Water Division of the United States EPA for our Region 2 which, of course, is New York and New Jersey; and now the Senior Attorney for the head of the Urban Water Management Team, NRDC -- Joan Matthews.

David, are you still interested in testifying?

**DAVID PRINGLE:** (off mike) Sure.

ASSEMBLYMAN McKEON: Come up, please. I'm glad that you are.

And called up, along with Ms. Matthews, Mr. Pringle who is well-known to all members and staff as Clean Water Action's chief strategist, and someone who is an expert as well.

Thank you both for being here.

**JOAN LEARY MATTHEWS, Esq.:** Happy to be here.

ASSEMBLYMAN McKEON: Ms. Matthews.

MS. MATTHEWS: So we're the closers.

ASSEMBLYMAN McKEON: Yes.

MS. MATTHEWS: That's great.

ASSEMBLYMAN McKEON: But as you can see, nobody's moved here. (laughter) So we're very riveted by all of the speakers today.

MS. MATTHEWS: It was really interesting to hear all the prior speakers. And I know that the information that they have given to the Task Force will really help to inform your work. So it will help to inform NRDC's work as well.

So thank you, and good afternoon, Co-Chairs Senator Greenstein and Assemblyman McKeon, and members of the Task Force. I am Joan Leary Matthews, the senior attorney in the Water program at the Natural Resources Defense Council. And I appreciate the opportunity to have us testify today.

NRDC is an environmental advocacy organization with over 57,000 members and online activists in New Jersey, and more than 2 million nationwide. NRDC works to safeguard the earth -- its people, its plants and animals, and the natural systems on which all life depends.

I lead the NRDC's Urban Water Management team, overseeing NRDC's urban water, green infrastructure, and water-efficiency efforts, with an increasing emphasis on integrated water management. Until this past spring, I served for several years as the Director of the Clean Water Division of the U.S. EPA, Region 2, where I directed the Federal Clean Water Act, Safe Drinking Water Act, and other programs for New York, New Jersey, eight Indian Nations, Puerto Rico, and the U.S. Virgin Islands.

Additionally, my colleague Larry Levine, at NRDC, who was unable to attend today, serves on the Steering Committee of the Jersey Water Works collaborative, which other speakers this morning have described.

Our team of water experts at NRDC works on these same issues as the issues that the collaborative works on in states around the country, and at the Federal policy level.

As you have heard from today's witnesses, New Jersey's water infrastructure problems are multi-faceted, widespread, and critical to the health and well-being of every resident of this state. And so I would like to focus on a number of issues. I have a more summary form that I will offer now; we have a more extensive version, that we handed up this morning, in our written testimony.

The first topic that I would like to address -- and some of the speakers have touched on this as well -- are the links between drinking water infrastructure, and wastewater and stormwater infrastructure. Now, I know that the resolution creating this Task Force focused on drinking water infrastructure, and with good reason. The crisis in Flint reminds us all of the degraded state of our drinking water infrastructure, its centrality to the health and well-being of all people and to the economic vitality of our cities, and the vulnerability of disadvantaged communities to chronic underinvestment in and neglect of these systems.

It is important for this Task Force, as well, to understand our drinking water infrastructure needs as part of a wide set of interconnected municipal water infrastructure issues, including wastewater and stormwater infrastructure. Understanding these linkages will enable the State to comprehensively address its water infrastructure needs.

Certainly, as we've heard today, one critical linkage is money. The estimated costs to fix New Jersey's drinking water infrastructure represent less than one-third of the estimated total municipal water

infrastructure needs. And all of these water infrastructure systems ultimately rely on the same principal sources of funding: revenue generated from utility ratepayers, and to a lesser extent, property taxes, and State and Federal grants and subsidized loans.

We know that water service overall remains underpriced -- and we've heard that several times today -- to fund the full costs of service, including infrastructure operations, maintenance, replacement, and upgrades necessary to protect human health and the environment. Households commonly pay less for these essential services than for other discretionary services, such as cable television. We all don't like to pay those cable television bills, right? Mine is only about \$150; I'm told that's not that much compared to other households. I sure don't pay that much for my water infrastructure in my household, and there's something wrong there with that, in my view.

A second set of linkages is operational. The more drinking water is used, the more wastewater is generated and must be treated. So they are certainly interconnected. And so water use efficiency -- or inefficiency -- affects the capital and operating needs and costs of both drinking water and wastewater systems. And because of this linkage, EPA allows Federal wastewater infrastructure funds to be used for drinking water conservation efforts. It makes sense; there's the linkage.

There are many opportunities for the State, and for individual water utilities, to adopt policies that improve water use efficiency. Some of these are cost-free -- such as incorporation of modern water efficiency standards into State and local building codes -- and others will pay back the investment many times over.

A further example relates to landscape irrigation and stormwater management. I don't know how many people think about this, but when we water our lawns, we're watering the lawns with drinking water -- with treated drinking water, right? And so if there's a way to redirect the stormwater or to capture some stormwater so that we could then use it for our gardens and for our lawns, then that would improve the efficiencies.

Improving stormwater management -- especially through the use of green infrastructure solutions like porous pavement, green roofs, parks, roadside plantings, and rain gardens that stop the rain where it falls -- can cost-effectively help address both wastewater and stormwater infrastructure needs. And I don't know that many of the speakers today really focused on green infrastructure; certainly that's something that NRDC is really invested in, and a lot of communities in New Jersey are invested in, and in other parts of the country as well. It's very successful -- good green jobs out there -- and it rebuilds communities.

New Jersey has two critical opportunities to use the Clean Water Act to jumpstart green infrastructure implementation. The first is that New Jersey DEP issued new permits in early 2014 to the communities with combined sewer overflows, directing them to develop long-term control plans to reduce overflows within five years. The permits require robust consideration of green infrastructure as part of these plans.

And so New Jersey DEP is providing substantial support to the permittees to guide them on how they can get there with green infrastructure. And New Jersey Water is also providing that technical support -- and its members in the non-profit, government, and private sectors -- to develop and implement plans that embrace the full potential of

green infrastructure. And we would encourage all State agencies to do the same, since green infrastructure touches on so many aspects of urban development and redevelopment, including roadways, housing, and land use.

The second opportunity concerns New Jersey DEP's Clean Water Act permits for municipal storm sewer systems, and the agency's Stormwater Management Rules, both of which have not been updated in more than a decade. NRDC and a coalition of about 10 New Jersey-based organizations filed a legal petition with New Jersey DEP in early 2014 calling on the agency to modernize its municipal stormwater permits, and to make green infrastructure practices a cornerstone of the permit's requirements. In parallel, updates are needed to the agency's Stormwater Management Rules to make green infrastructure the default approach to managing runoff from new development and redevelopment.

I would like to move on to funding and financing, and I know a lot of the discussion today was focused on that.

It's beyond dispute that more spending on water infrastructure is needed to solve the challenges faced by New Jersey and states around the nation. The question is where these funds will come from and how, ultimately, responsibility for bearing the costs will be allocated among Federal, State, and local government, and among various categories of ratepayers.

Many water and wastewater utilities in the state need investments at a level that exceed their ability to pay for them, under a business-as-usual approach to funding and financing water infrastructure. That is not to say that utilities cannot, or should not, raise more revenue

locally to increase investment. As noted above, water and sewer service is typically underpriced relative to the cost of service. And while increasing water and sewer rates can adversely affect low-income households, those effects are not inevitable and can be avoided with more equitable rate structures and low-income customer assistance programs -- some of which you heard a little bit about today -- thereby allowing utilities to generate more rate revenues without undue burdens on those least able to afford rate increases.

Further, no municipalities in New Jersey currently have stormwater utility fees, an essential funding mechanism used in over a thousand communities nationwide, but which does not have clear legislative authorization in New Jersey. Stormwater fees, based on impervious area -- which is used as a surrogate for the amount of runoff a property contributes to public sewers -- equitably allocate the cost of stormwater infrastructure and create a dedicated revenue stream, while creating incentives for property owners to reduce runoff.

The Governor of New Jersey has vetoed legislation authorizing local stormwater fees. The Legislature should again pass such legislation, and we hope that the Governor would sign it.

Current Federal funding for water infrastructure falls far short of the enormous need. We heard that a lot today. What was a Federal grant program, decades ago, has shifted to a loan program, and many communities don't want to participate in a loan program, or feel that they can't repay the loans.

While it remains unclear what form any infrastructure funding proposal from the new Administration -- the new Federal Administration --

would take, and even what types of infrastructure would be included, the State should be at the forefront of pressing for the inclusion of new Federal funding for water and wastewater infrastructure, and for prioritizing the use of such funding in low-income communities and in communities of color. The ARRA legislation -- several years ago, when the environmentalists and the states went to Washington and pleaded to have water and wastewater infrastructure included in that program, the answer was “yes.” But I don’t think it would have happened unless there was that full support and encouragement from the environmental groups and from the various states and cities.

But I have to tell you that New Jersey does not need to wait for Federal action to increase its own commitment to water infrastructure funding. For example, in 2015, New York state launched a new statewide water and wastewater infrastructure grant program, that was expanded in 2016, and totals \$425 million in state appropriations to date. And that’s a new program. A broad coalition, including utilities, the construction industry, local governments, and environmental organizations backed this initiative, and continues to seek further expansion of the grant program. And any new state funding should be prioritized for low-income communities and communities of color.

Another topic that I would like to briefly touch on is measuring and reducing water losses. Losing water is not a good thing. You lose a valuable resource; it’s not efficient.

We know that old, deteriorated pipes, sometimes in combination with excessive water pressure within a distribution system, result in *water losses*, which is the technical term for leakage from a drinking

water system. These water main breaks and leaks can cost utilities and their ratepayers millions of dollars; they damage roads, businesses, homes, and other property; they allow pathogens to penetrate the system or multiply in areas of decay; and they waste huge volumes of water. As the state's current drought warnings remind us, we cannot afford to waste water in this way.

Water loss audit legislation has actually been introduced in the New Jersey Legislature every session since 2002. But the bill is based on outdated audit methods, and has never advanced out of committee. NRDC's model legislation provides a template for the Legislature to take that prompt and effective action on this issue. I would also point out that New Jersey DEP and BPU have the authority to require these audits by regulation.

Three other brief topics I would like to touch on: one is lead in drinking water in schools -- and some of the prior speakers have spoken about this. Now, certainly the crisis in Flint highlights the long-neglected problem of lead drinking water pipes, which can leach harmful lead into drinking water in homes, schools, hospitals, and businesses. There is no safe level of exposure to lead, and it is especially harmful to children because exposure can cause irreversible damage to developing brains and nervous systems, even at very low levels. Lead can decrease a child's cognitive capacity, cause behavior problems, and limit the ability to concentrate -- all of which, in turn, affect the ability to learn in school.

Now, we know that the ultimate solution to lead in drinking water is removal of all lead water service lines. And I have to say that there is some good news here. New, lower-cost techniques for replacing service

lines in Lansing, Michigan, and elsewhere, demonstrate that innovative approaches are bringing costs down.

I would like to highlight one short-term critical need in New Jersey, concerning the remediation of lead in public schools' drinking water. In March 2016, the New Jersey DEP announced that the annual testing of water taps in the Newark Public Schools district revealed that 30 schools recorded levels of lead above the Federal action level set by the U.S. EPA at 15 parts per billion. Since then, annual water testing data from the Newark district has been released, dating back to 2010, indicating that more than 80 percent of the school facilities assessed had a sample in excess of the Federal action level.

While news of lead-contaminated water throughout the Newark school district made headlines this spring, the City of Newark and its environmental justice communities have struggled for years with the greatest number of lead-poisoned children in New Jersey. Children in Newark face multiple health challenges due to cumulative impacts from environmental burdens, including poor air quality causing asthma and lost school time.

I would like to briefly mention -- just a few words on other drinking water contaminants, because we do have a good example here in New Jersey. Far too many drinking water treatment plants in the United States continue to rely solely upon outdated technologies for treatment, such as coagulation, sand filtration, and chlorination. These technologies can work well to remove some basic contaminants, like certain microorganisms, but cannot remove many of the modern contaminants,

such as pesticides, industrial chemicals, pharmaceuticals, and other chemicals that are widespread in water.

We need to invest in modernizing our treatment plants, as some leaders in the industry have done. In many cases, the Federal government has failed to set standards for these newer contaminants in drinking water. States like New Jersey can help to fill the gap.

And we would like to commend New Jersey DEP for setting a strong maximum contaminant limit for perfluorooctanoic acid, known as *PFOA*, a synthetic chemical that was used, among other things, to manufacture Teflon. We all thought Teflon was the greatest thing; not so much in drinking water. The U.S. EPA has found that PFOA is linked to severe health effects, including cancer, fetal growth problems, and high cholesterol.

In a regulatory universe where the EPA has failed to act, New Jersey has stepped up to protect its citizens, setting what may be the most stringent advisory standard for PFOA in the nation. At 14 parts per trillion, New Jersey's advisory level is significantly lower than EPA's new health advisory of 70 parts per trillion. Of course, to ensure the effectiveness of this standard, it will have to be vigorously enforced, and we will be watching carefully to see that this enforcement takes place.

And the last topic that I would like to, briefly, touch on concerns the impacts of climate change. I wish to emphasize that climate change will increase the stress on New Jersey's drinking water, wastewater, and stormwater infrastructure, underscoring the need for comprehensive and long-term solutions to the state's water infrastructure challenges. And you have experienced Superstorm Sandy, so you know exactly what I'm

talking about here. New Jersey cannot afford to wait to address the state's drinking water, wastewater, and stormwater infrastructure challenges. And, in doing so, the State must ensure that new policies and capital investments are tailored to accommodate not only the precipitation patterns of today, but also those that we can anticipate for decades to come.

So thank you for allowing me this time, and for inviting us today.

Thank you.

ASSEMBLYMAN McKEON: And thank you -- and we have all of your thoughtfully put-together testimony that will be a part of our record and our continued study.

MS. MATTHEWS: Thank you.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: Assuming no questions -- David, thank you for being here.

MR. PRINGLE: Thank you.

Again, my name is David Pringle; I'm the Campaign Director, here in New Jersey, for Clean Water Action. We have over 100,000 members in New Jersey, and over a million nationwide.

I want to thank the three of you for still being here and listening. It's a sign that -- because you have a lot of work to do, so this is a good first step.

Also, thank you for being among the dozens, on a bipartisan basis, to sign on to a letter urging the State to reject the PennEast gas pipeline because of the water quality impacts. It's great to have bipartisan support across the board there, and it is very related to this issue here.

Over the past 20 years, I have been-- Clean Water Action is the advocate here in New Jersey, pursuing our mission of clean, plentiful, and affordable water. For eight years, ending in 2010, I was the Assembly Speaker's appointee to the Drinking Water Quality Institute; leaving around the time that Governor Christie decided that that entity shouldn't function any longer.

Clean Water Action has been around since 1972; it was founded by David Zwick, one of the original Nader Raiders. And his charge, under Nader, was the lead citizen advocate for the Clean Water Act, which passed in 1972; and he founded Clean Water Action to watchdog its implementation.

And the Clean Water Act and, a couple years later, the Safe Drinking Water Act, are really the primary drivers for water policy in the country. And I guess they decided one big bill was too difficult; because although they are very interrelated, there's a huge disconnect. Too often, the folks making pollution discharge decisions in DEP aren't talking to the folks who are regulating the drinking water intakes, even when they're directly impacting each other.

So Assemblyman McKeon, you really nailed it when you talked about stormwater, wastewater, tap water, climate change, and development being all wrapped in. And they really are all infrastructure. Folks think of infrastructure as cement, but it's much more than that. The best infrastructure is the forest, and not polluting in the first place and controlling it the way nature does.

So it really comes down to, do we have enough water, how clean it is, and at what cost. And we've heard a lot on the traditional side

today -- the pipes, and the leaks, and all that. We actually heard less on lead than I thought we would; and I could have talked more about lead, but I'm less prepared for that. So I'm not sure what future hearings are, but if you want more folks coming in on lead, we can certainly arrange that.

I did, really, want to focus on what I see as the primary driver to a lot of this stuff -- especially because it does leave an impact on the chemistry of water, which then impacts lead -- which is development. How much development, where it occurs in proximity to water, what kind of development -- whether it's cluster or sprawl, ranch or two-story houses, redevelopment or new -- has huge impacts on water quantity and water quality. And over, roughly, the past eight years, since beginning around 2008, significant weakening changes in the state's water policies -- with the changes in the Water Quality Management Planning Rules, for-permit extensions, flood hazard, weakening of the Highlands Act, and implementation in many ways in the Pinelands -- has really made things worse. So as bad as it is with our infrastructure, we're not only not fixing the infrastructure, we're making that infrastructure worse; not only by disregarding the failing infrastructure, but creating more failing infrastructure. So I wanted to dig down on that a bit.

So in terms of water quantity -- as we develop, we're increasing impervious cover; to some degree, that's unavoidable. But again, how much and where has huge impacts. Increasing impervious cover has a double whammy. We're decreasing the recharging of our aquifers, at the same time we're increasing withdrawals. So we're increasing demand, we're decreasing supply, we're using up the groundwater, we're reducing the storage for our surface water. And other than right after a rain, the water in our rivers and

streams come from the ground. So when we're taking water out of the ground, we're taking water out of our streams. And that really matters when -- notwithstanding the past 24 hours -- we're in a drought. And development, done the wrong way, not only makes droughts worse, but they make floods worse. And so we need to really come to grips with that.

And we haven't. As we heard, we still don't have a Water Supply Master Plan for 15 years. It's not because there isn't a problem; it's a cover-up, short and simple. And it didn't begin with Governor Christie; it began with Governor McGreevey, and followed up with Governor Corzine, refusing to do the Plan. We saw drafts of the Plan; we saw stakeholder meetings over and over again in 2002, and 2003, and 2004, and 2005, and 2006, and 2007, and 2008, and 2009 -- before Governor Christie came in. But Governor Christie has certainly made it worse; partially, the longer we wait, the worse it is. But also he has really, by weakening other policies, exacerbated the situation.

And it really comes down to one point. Either the Governor is so pro-development at any cost he doesn't care about any of the other impacts; or his position is, we can't handle the truth. Because the truth is -- and it varies from place to place -- we have water problems, we have water shortages, and we're going to have water shortages. And that Water Supply Master Plan is information, and information is power, and withholding information is power. And that is what has been going on for 15 years, on a bipartisan basis, because they don't want to have to make the tough decisions when we don't have enough water. We're going to have to say "no" to development in some places; we're going to have to change

development in some places; we're going to have to spend money to develop new water resources to fix our existing water resources.

So I know that's the charge of this Task Force, so I thank you for doing it. And I apologize if I'm beating a dead horse here.

And that's just the water quantity side of things. In terms of water quality-- Well, first of all, the water quality is exacerbated by water quantity -- as we're reducing the quantity, we're increasing the concentrations of pollutants. Because the pollution isn't getting less; it's just the water that can dissolve it is getting less, so the concentrations are getting worse.

And whether it's nonpoint source pollution from nutrients, and pesticides, and volatile organics from our lawns and our roads; or whether it's sewage discharge and the nutrients, and the bacteria, and the pharmaceutical agents that come from that -- we're getting more algal blooms; we're decreasing the oxygen levels in our waterways. It's increasing the cost of treatment; it's increasing the disinfectant byproducts that come as a result of that; it increases the nitrate levels.

And it is such that, in low-flow conditions and, until 24 hours ago, the Passaic River was certainly in a low-flow condition; it's in the worse category under DEP's system right now, in terms of water flow. There are over 60 sewage treatment plants upstream of the lowest intake on the Passaic River. So typically, the Passaic River is about 80 percent treated sewage. Yesterday, it was probably awfully close to 100 percent -- 98, 99, 99.9 -- and that's treated sewage. So it meets -- generally speaking, it meets standards and all; but there are levels of pollution in there that are very

significant, such that the nitrate levels get to the point of violating the drinking water standard.

A nitrate is one of the two chemicals -- actually, I probably would say three when you factor in lead -- along with bacteria that cause acute health effects. Most drinking water standards are regulated to reduce the health risk over drinking two liters of water a day for 70 years. But bacteria and nitrates -- with too much of them in one glass of water, it can cause immediate health effects. In nitrate incidents, it depletes a baby's oxygen and blood; it's called *blue baby syndrome*. And that nitrate is coming from the development upstream on the Passaic River, above the Passaic Valley water supply intake.

And so on low-flow conditions, we really have challenges, especially given that one of the latest improvements in our water supply was the pump station to move river water at the confluence of the Pompton and the Passaic up to the Wanaque River. But they can't pump in the summer months, because the Passaic River is too polluted and it would spur algal blooms in the Passaic River. And they may be pumping today, because the water is higher today. But think of all the rain that didn't happen in the last three months, and think of all of the stuff that is getting into the Passaic River from the 60-plus sewage treatment plants, and the streets, and the most-developed flood plain in the country. And that water is either getting into the Passaic Valley water supply's intake or it's getting pumped up into the Wanaque Reservoir.

So those are the kinds of infrastructure things we need to be dealing with, not just leaky pipes and such.

All of those changes also -- those are some chemical changes. Those chemical changes lead to changes in acidity and salinity. Those development changes also lead to higher temperatures in water; there's less shade cover, there's less water so it gets hotter faster. Temperatures, salinity, and acidity are three major factors in how much lead can leach into water. So it doesn't matter how great your phosphate protections are; the more acidic the water is, the more lead will get in there. And we're not talking about -- it's levels of acidity that we wouldn't even notice; minor changes, going from a PH of 6.9 to 6.8 can significantly increase the levels of lead. And all of those levels are constantly fluctuating, and it's a very difficult task for water purveyors to sometimes be adding *X* amount of a chemical and sometimes not, depending on what the raw water is.

So again, the better job we do at maintaining our water quantity and preventing the pollution in the first place, will go a long way to reducing the cost we need, which is in the billions; it's only a question of how far into the billions.

And that's just all on the Clean Water Act side. On the drinking water side, we have the Drinking Water Quality Institute, which unlike all the other advisory bodies -- Water Supply Advisory Council, Clean Water Council, and the like -- has a regulatory function, and is charged with recommending, on a scientific basis, standards for drinking water contaminants that are prevalent in New Jersey and that cause serious health effects, including cancer. It is charged with recommending to the DEP what that standard should be. It was created in 1984, under the Safe Drinking Water Act; and for its first 25-ish years, not one recommendation

was rejected by the DEP and by the Administration -- whether it be Democrat or Republican -- from 1984 until the mid-2000s.

Unfortunately, that changed. And it was very divorced from political pressure -- it was purely on the science. Unfortunately, that started changing late in Governor Corzine's tenure; he rejected several standards, the most notable of which is radon. Radon is a naturally occurring gas that's more of a problem in people's basements because it's a lung, respiratory carcinogen. However, it also does dissolve in water; and as it dissolves in the water, eventually it comes back out and you can be inhaling it as you're taking a shower. Same with lead -- the concentrations are higher when the water has been running for overnight or for a weekend.

And I mention radon, because of all of the contaminants we're talking about, radon is killing more people in drinking water in New Jersey than any other contaminant, and we don't have a standard for it. And we don't have a standard for it because-- And it was a reasonable standard that balanced cost from water purveyors, and water purveyors were on-- It was a unanimous recommendation when the Drinking Water Quality Institute recommended that to Governor Corzine.

If we come up with a standard for radon, that's going to mean increased infrastructure costs, and we already have infrastructure costs. And under Governor Christie -- he took that to a whole new level and prevented the Institute from even meeting for five years. So it's great that we're moving forward again on PFOA, but we should have been moving forward on PFOA five years ago.

I was on the Institute from 2002 to 2010; we were working on chromium at the very end. Recent reports have shown how widespread

chromium contamination is, and-- Well, we already knew it was widespread in New Jersey, but we now have the latest data to find out how widespread it is. The standard is ridiculously weak; we were recommending a standard about -- somewhere on the magnitude greater than what the current standard is. And it's not even on the radar again. So the Institute is back and running, but it's not running as strong as in the past because of this political interference. And some critical chemicals -- like perchlorate, like radon -- aren't even on the radar.

One other thing the Institute was working on, and DEP -- and it has progressed at a snail's pace, but it has proceeded -- which is what I call the *family of chemicals*. Backdating when the Toms River cancer cluster developed in the 1990s, the State did an excellent job trying to figure out what the heck was going on, and eventually identified an unregulated contaminant coming from a Superfund site. And they found it because there was a spike in a gas chromatograph from the 1980s that they ignored when they were cleaning up the Superfund site because it wasn't one of the priority pollutants. So they didn't care that it was there. They didn't know what it was; it wasn't their problem, because they didn't have to worry about that because the law told them not to worry about that chemical.

So they looked back years later, found it, and spent millions of dollars trying to figure out what the heck it was. And we don't have a smoking gun, but it's the likeliest cause of the cancer cluster in Toms River.

One of the things-- And it cost millions of dollars to identify that one chemical; and that's a problem. Recent research by Rutgers has identified over 600 chemicals in water supplies in New Jersey that are unregulated -- that they don't have standards for, they don't have tests for.

Even if we didn't have any of the other problems we've been talking about today, there is not enough money in the State to develop standards for 600 chemicals. Can't do it.

So the DEP was trying to figure out what to do about that under the McGreevey Administration -- one good thing that the McGreevey Administration did -- and recognized the vast majority of the chemicals were organic compounds. And granulated carbon is an extremely effective filter for organic compounds. So rather than attempting to come up with a standard for each individual chemical, we started tossing around the idea of a treatment technique. A treatment technique is like with lead; you know, you aren't solving the source of the problem under current drinking water laws; you know, when there's lead in somebody's drinking water, you're not -- we ultimately need to remove every lead source or whatever. But in the short term, you have to be doing the lead action plan of education, and flushing, and putting in the anticorrosives, and all of that.

So the idea was, if circumstances were such that we believed there was a significant amount of organic compounds in the water, rather than testing for those individual compounds, rather than doing the health studies necessary to know what the health effects were, rather than figuring out what the appropriate treatment techniques were -- even if they did all that, almost always the answer would have been granulated carbon. So if X, Y, or Z circumstance is met, you just require a carbon filter.

It turns out the vast majority of these compounds are present when a significant component of the source water is treated sewage and/or if the source water is near a contaminated site. And so the idea would be if you were close enough to a contaminated site and/or your raw water source

was a significant enough percent of treated sewage, just put on a carbon filter; problem solved.

Again, that's another infrastructure cost. It's the only way we're going to get this stuff out of our water until the pharmaceutical companies change their practices. And the problem with all these pharmaceuticals -- it's not because we're flushing pills down the toilet; it's not because of the effluent coming out of the pharmaceutical plants. It's because the way the drugs are made and the way your body deals with them. The vast majority of the medicine doesn't get used by your body and it just goes out in your waste. That's why when you take a vitamin of 1,000 percent recommended vitamin C, you're not metabolizing 1,000 percent of recommended vitamin C. It's basically saying that you're only going to absorb 10 percent of it. You're going to have 90 percent of it go out in your urine.

So the caffeine, the estrogen, the testosterone -- as Jeff Tittel calls the *Viagra Falls* out there (laughter) -- all that stuff is coming from our waste. And until we change how drugs are manufactured -- even if we could -- that's going to be out there. And it's going to be increasingly in the environment unless we filter it out.

So I thank you for your indulgence. In conclusion, what do we do about this? First, we stop making it worse. The rules they talked about -- the rules that have been weakened need to be fixed. The rules that they're trying to weaken need to be stopped -- like the Highlands Rule; Assemblyman McKeon has a resolution in to do just that. To put that Highlands Rule in effect-- The Highlands Act was passed to protect the core contiguous force of the Highlands that supplies 55 percent of the

state's water; 70 percent of the towns get at least some of their water from the Highlands. And the weakening changes in that Rule would allow more development than all but two of the State Parks. Only two State Parks in New Jersey are larger than the amount of development that will happen if this Rule change goes through. And those two are pretty big State Parks -- High Point and Wawayanda.

Other things we need: Don't make it worse. Don't put Pilgrim Oil pipeline over the Oradell Reservoir, and crossing the Passaic River three times upstream of drinking water sources. That is infrastructure; not putting in a pipeline is infrastructure.

Don't sell water to New York. In the middle of this drought, North Jersey Water District Supply is contemplating -- even though the Wanaque Reservoir is practically empty, even though they can't pump water from the Passaic River because it's so polluted -- they're thinking about selling some water -- despite New Jersey public investments in that water -- to New York, to Rockland County.

Second: Plan; we need a Water Supply Master Plan, and we need a plan with teeth. And that plan can't overengineer. Engineers answer the question *how*, not *if*. And before we ask how, we need to ask if. Some infrastructure projects contemplated will make things worse. They solve one problem and create another. A terrific example is the confluence project at the confluence of the Millstone River and the Raritan River, where the proposal would be to pump water from there up to the Raritan Valley Reservoir. It would solve one problem -- we'd have more water in the Raritan Valley Reservoir -- but it would create another problem: That until we have the appropriate rules in place, we're going to continue having

more sprawl in Somerset and Hunterdon counties because of that additional development that that water feeds. And so we're going to actually exacerbate the water problem in the long-term.

Third -- some ideas on money: Natural Resource Damages; the Feds. And I know there's no way-- And the Feds are going to have to fund, probably, half if not more of all of this stuff. They can print money; we can't.

And regardless of your politics, one thing it sounds like President-elect Trump is interested in is infrastructure. So that is something-- But again, there's good infrastructure and bad infrastructure. So let's make sure we fund the good, and don't fund the bad.

Jersey Water Works has done some good work on economic rate of return. And I know it's hard to contemplate, and it kind of sounds like trickle-up economics, but the economics are there. For every \$1 we invest in infrastructure, you get over \$2.50 in return in that same year. That's significant. So we have our challenges in this state, but this is a perfect example of "you have to spend money to make money."

New revenue -- the ultimate dirty word here in New Jersey. There are lots of good new revenues; certainly the wealthiest could afford to start paying the estate tax again. There's the plastic bag fee bill; there's the impact fee bill. People talk about affordable housing; and it's critically needed, but we're paying for -- we're going to pay for it one way or another. Let's have the cost of housing be reflected in its price. The builders are the ones who are going to be paying for most of it, and they're doing pretty well.

Water fee. I like the analogy with the cable television. A cup of coffee a month, per person, would bring in hundreds of millions of dollars. It's paying for water to pay for water. It should be a bipartisan thing. The majority of the fees -- the revenue will be coming from Democratic districts for democratic projects. But a majority of the money will be going to Republican places to buy up the land we need to prevent the pollution in the first place. And we can provide the equity that is deserved by the folks who were impacted, within reason, under the Highlands Act.

Finally, New Jersey is really going to have to lead. Most of the things that we've talked about, with the exception of-- Water is different than climate change and different than the Clean Air Act. The vast majority of our water pollution and water supply problems come from New Jersey and are only going to be solved by New Jerseyans. So we're really going to have to lead.

And that's going to be especially true if we take President-elect Trump at his word. Other than infrastructure, from an environmental perspective he has said a lot of scary things. He wants to get rid of the EPA; he wants to severely restrict where the Clean Water Act applies in the country; he wants more oil and gas, and we're already suffering tremendously by oil and gas here in this state; he wants to get rid of the Clean Power Plan and the Climate Action Plan. All of those things are going to have tremendous impact on New Jersey's water infrastructure. So we have to get ahead of the curve, and the clock is ticking.

And since you're still listening more than four hours later, I know you are committed to doing that. So thank you very much.

ASSEMBLYMAN McKEON: David, thank you.

I know as you were a little bit of a last-minute addition to the agenda, you haven't reduced your testimony in writing.

MR. PRINGLE: I have it; I will type it up and get it to you.

ASSEMBLYMAN McKEON: Would you? Especially the last four or five points you made, as it relates to action plan.

MR. PRINGLE: Yes.

ASSEMBLYMAN McKEON: And I know all the Committee can speak for themselves, but the two of you -- your passion, as well, comes across to all of us, as well as your knowledge. And we'll soldier on collaboratively.

MR. PRINGLE: Thank you.

ASSEMBLYMAN McKEON: Any questions for either of the two witnesses? (no response)

Seeing none--

SENATOR GREENSTEIN: Thank you both.

MS. MATTHEWS: Thank you.

ASSEMBLYMAN McKEON: It was a great-- You know, I think we're all on information overload (laughter) after four hours and fifteen minutes of some of the greatest minds in our state on these respective points.

We have our work cut out for us; there's a reason we took on this task. And we both thank the Senate President and the Speaker for putting us in the position of being Co-Chair, as well as the other members -- through either the Minority Leaders or Speaker -- who have made it here as well.

Our next meeting is -- Co-Chair?

SENATOR GREENSTEIN: Is it December 15?

MS. McDONNELL (Task Force Aide): December 14.

ASSEMBLYMAN McKEON: December 14. So I believe 10:00 a.m. -- we will be here on December 14. We'll get a list out of invited guests to that as well.

And Professor, we hope you're doing nothing that day -- that you can come around and maybe we'll give you a seat up here with us.  
(laughter)

SENATOR GREENSTEIN: And I'd like to say this. I found this very enlightening, and really great speakers. I think it was a very, very good meeting.

So thank you all.

ASSEMBLYMAN McKEON: Okay. You want to hit the button?

SENATOR GREENSTEIN: Go for it. (laughter)

ASSEMBLYMAN McKEON: Thanks to everybody.

SENATOR GREENSTEIN: Thank you.

**(MEETING CONCLUDED)**