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CITY OF NEW YORK

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TRANSCRIPT OF THE MINUTES

Of the

COMMITTEE ON CONSUMER AFFAIRS
JONINTLY WITH THE COMMITTEE ON
ECONOMIC DEVELOPMENT AND THE
COMMITTEE ON ENVIRONMENTAL
PROTECTION

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CHAIRPERSON GARODNICK: Good morning and welcome to a joint hearing on the Economic Impact of New York's Failing Infrastructure. I want to welcome members of the Economic Development Committee of the City Council. Today is Wednesday, June 18, 2014. My name is Dan Garodnick and I have the privilege of co-chairing this committee along with Council Member Donovan Richards who is the Chair of the Environmental Protection Committee and Rafael Espinal, who is the Chair of the Consumer Affairs Committee.

This is the first in a series of hearings that we will convene on assessing the economic impact of New York's failing infrastructure. Today, we will be looking at New York's water mains, sewers, natural gas, and steam. I will refer to it as the state-of-our pipes hearing. It is no secret that New York's infrastructure is outdated. It seems hardly a week goes by without a headline, which demonstrates the vulnerability of our aging system. This has long been a concern of mine.

In 2007, a steam pipe burst in my council district near Grand Central Station burst killing one person and injuring a number of other people. This

explosion reveals the dangerous reality about the age, and about the replacement techniques for New York's steam pipes. Following the explosion, then Council Member Tish James and I chaired a council task force on infrastructure. More recently, the explosion in East Harlem exposed the vulnerability of our gas lines. In February, the Center for an Urban Future published a report *Caution Ahead: Overdue Investment for New York's Aging Infrastructure*, which presented some alarming facts both about the age of our infrastructure and about the rate in which we are updating it.

We've convened this hearing today not just to dwell on the state of our infrastructure, but to begin a conversation about what we can do to improve it. We hope that both DEP and the utility companies are here today will begin making assessments about what infrastructure improvements need to be accounted for in their budgets based on the real needs as opposed to just a historical precedent. For too long, we have skirted the responsibility of fully investing in our infrastructure, and I hope that this will be the beginning of a conversation on how to change that.

We will hear from the Department of Environmental Protection, that's DEP, about the state of our water mains and sewer lines. While PlaNYC set a goal of replacing 80 miles of water mains per year, we're averaging only 27 miles per year. In the 15 of the last 16 years, we've seen more than 400 water main breaks annually. That is more than one per day. We also lose 24% of the water in the system to leakage, more than twice the national average. Our sewer system is also in grave condition, with leakage and overflows a common occurrence. And, of course, the unfortunate reality that when we have a heavy rain, much of our sewage gets dumped right into our waterways.

We look forward to hearing what DEP's plans are to update the infrastructure, and what we can do to improve our system. And whether that's through greening above ground or other below ground initiatives. We will also hear from utility companies about their plans to replace and repair steam and gas pipes. Particularly, we expect that the restrictions on heating oil 4 and 6 will increase the demand for natural gas. We would like to hear

from the utilities about what they will do to address this, and to deal with the increased demand.

Finally, we want to explore some new solutions such as better coordinating when street work occurs. Considering whether there should be incentives for property owners who are able to limit storm water runoff. And exploring whether we can do better planning for the overall repair of our aging pipes no matter what type.

I want to note we've been joined by a number of our colleagues, Council Member Karen Koslowitz, Rory Lancman, Mark Weprin, Inez Barron, Vincent Gentile, Ruben Wills, and Daneek Miller. And now before we go to our first panel I'm going to turn the microphone over to Council Member Donovan Richards, who is the Chair of the Environmental Protection Committee.

CO-CHAIRPERSON RICHARDS: Good morning. I am Chairman Donovan Richards, Chair of the Environmental Protection Committee. And today the Environmental Protection Committee along with the Economic Development Committee and the Consumer Affairs Committee will hold a joint oversight hearing on assessing the economic impact of New York's

failing infrastructure on gas, steam, and water or as Council Member Garodnick put it, the state of our pipes.

The modern conveniences of life we all have come to depend upon at a cost to the environment that we also depend on for life. Especially in a city like New York, as one of the first cities established in the nation, many of the conveniences that we rely on are very old. Wooden water mains carried water through the city in the 1820s, and old cast iron pipes were installed by Con Edison in the 1800s.

Gas Infrastructure. More than 8.3 million people live in New York City, and most use natural gas for cooking, while many use natural gas for heating as well. But as an older city, much of New York City's natural gas infrastructure is older than our grandparents, and in just as good shape. Con Edison has been installing natural gas lines underground since the early 1800s. Both Con Edison and National Grid have jointly installed more than 6,300 miles of gas pipelines under the streets of New York City. The aging gas infrastructure routinely leaks with nearly 10,000 leaks reported in their

combined aging infrastructure in 2012 alone. Gas leaks can cause explosions. While every leak does not lead to an explosion, which requires and ignition source, there have been more than 22 significant ignitions in the city including one full-fledged explosion killing three people and injuring 22 others in the last decade not counting the East Harlem blast.

With nearly half of the mains installed before 1940 and more than half made of cast iron or unprotected steel vulnerable to corrosion and cracking in the winter, the issue is not so much there will be another significant explosion as to when and where it will take place. Similarly, New York City's water infrastructure maintained by DEP is very old with only 50% being built before 1941. In 2011, DEP lost 24% of water in its distribution system due to leaks. In most areas of the city, sanitary and the industrial wastewater, rainwater, and street runoff are collected in the same sewers, and then conveyed together to the city's 14 sewage treatment plants. The city maintains 6,785 miles of water mains and 6,400 miles of sewer mains, 66% of which were installed before 1940.

While the City tries to maintain a 100-year replacement cycle, DEP actually replaced only 27 miles of water mains a year, and only 50 miles of sewer mains per year were replaced during 2007 and 2013. When precipitation causes the 14 sewage treatment plants to exceed their capacity, untreated sewage and industrial waste is discharged to New York City's Rivers and streams. A bypass violation of the Clean Water Act.

At today's hearing, we expect Con Edison and National Grid will testify respecting their gas main infrastructure plans to improve its efficiency. We also expect DEP to testify about its water distribution and sewer line maintenance. And how these systems will improve their efficiency, advance economic development, and control costs in New York City. Now we'll turn it back over to Council Member Garodnick. Thank you.

CHAIRPERSON GARODNICK: Thank you very much, Mr. Chairman, and now we'll hear from the Chair of the Consumer Affairs Committee, Council Member Rafael Espinal.

CO-CHAIRPERSON ESPINAL: Thank you, Dan. Good morning and welcome to today's Joint Oversight

Hearing on Assessing the Economic Impact of New York's Failing Infrastructure, which will focus on the city's gas, water, and steam systems. I'm Council Member Rafael Espinal, Chair of the Committee of Consumer Affairs. I want to thank Council Member Garodnick and Council Member Richards for holding today's hearing with me on this very important topic. I also want to acknowledge the members of the Consumer Affairs Committee who are here today, which Dan actually acknowledged earlier. Finally, I want to thank everyone who will be providing testimony.

As we all are aware, sustainable gas, water and steam infrastructure is critical for maintaining safe and reliable sources of energy and water for residents, business owners and visitors of New York City. Both Con Edison and National Grid have jointly installed more than 6,300 miles of gas pipelines under the streets of the city. As with the aging underground pipeline that transports the city's gas, water and steam breakdown, the potential for gas leaks, flooding, sewer overflows, and other service disruptions is likely to increase.

For instance, New York City's aging gas infrastructure routinely leaks with nearly 10,000

leaks reported in the infrastructure in 2012 alone. Under the right conditions, gases can cause explosions as witnessed in the recent tragic explosion in East Harlem. Furthermore, there have been more than 22 significant ignitions in the city including one dozen full-fledged explosions killing three people in the last decade. According to Con Edison, replacing all of the unsafe gas mains now would cost as much as $10 billion.

We can all agree that improvements to the city's infrastructure is paramount, but funding for such improvements should not be placed on the backs of consumers who presently pay a great deal for services. In addition to gas supply, Con Ed operates the largest district steam system in the world, which consists of 105 miles of main line, and serves more than three million customers. Steam is a very important utility for our city especially for consumers who are in the laundry and dry cleaning services.

In closing, I'm looking forward to hearing testimony from Con Ed, the administration as well as other interested parties with regard to the

City's infrastructure system. With that, I will now turn the microphone back to Chair Garodnick.

CHAIRPERSON GARODNICK: Thanks very much, Chair Espinal, and without any further ado, we are going to go to the New York City Department of Environmental Protection, and hear from the Deputy Commissioner James Roberts as well as his team. We thank you for being here, and Committee Members, you should now have a copy of the testimony. And we thank the members of the public who are here today for their flexibility on the start of today's hearing. You know, today is right in the midst of our wrapping up the City budget. So there are a lot of things moving around as well as a full Stated Meeting of the City Council this morning, which was added to accommodate a few home rules that we needed to send up to Albany as they finish up their session. So I thank you for your patience. With that, Mr. Roberts, welcome.

DEPUTY COMMISSIONER ROBERTS: Chairman Garodnick and Espinal and Richards, and the members of the committee. My name is James Roberts. I'm the Deputy Commissioner of the Bureau of Water and Sewer Operations at New York City's DEP. I'm joined today

by James Garin, who is my Director of Engineering and Budget within our organization, and Joseph Murin, who's the Assistant Commissioner for the agency's overall budget, and our other DEP staff. We thank you for the opportunity to testify on the de Blasio Administration's efforts to improving New York City's underground infrastructure.

One of the most important challenges we face in managing the nearly 15,000 miles of water and sewer infrastructure that is very much the lifeblood of the city. Like many older cities, our infrastructure is aging, and I believe that's not a secret to anybody. But what sets New York City apart has been our standing commitment to making the necessary investments to continue to improve and rebuild that infrastructure. Keeping this commitment has at times been difficult. We understood the challenges of escalating water and sewer charges during some difficult economic times. But we also understood that investments in critical infrastructure are essential.

This year with the support of Mayor de Blasio, we were able to deliver the lowest water and sewer increase in nine years while increasing our

spending on water and sewer projects in the city. And through the support of the Mayor, and returning part of the rental payment, we'll be spending an additional $100 million per year on a program designed to accelerate replacement of some of the older -- oldest assets we have in the ground. And I'll say more about that program shortly.

In the past decade, we have invested almost $3.5 billion in our water and sewer infrastructure, which is in addition to the $4.7 billion that has been spent on City Tunnel No. 3 since the 1970s. This past fall, as many of you will remember, we activated stage two in Lower Manhattan of City Tunnel No. 3, marking for the first time in my 30-year career, or almost 30-year career a place where we are no longer singly dependent upon City Tunnel No. 1 within Manhattan in particular. And City Tunnel No. 1 was put into service over a century ago in 1917.

During the past decade we've also invested $3 billion in our new Croton Water -- Croton Drinking Water Filtration Plant, the first of its kind in city history. $1.6 billion on our state-of-the-art Catskill-Delaware Ultraviolet Light

Disinfection Facility ensuring the quality and public health of the eight and a half million city residents, and approximately nine million New Yorkers who enjoy the best water in the nation.

We've invested $5 billion, an extraordinary amount, in our Newtown Creek Wastewater Treatment Plant. Investments like these account for harbor water quality being the best it has been in a century. And while many of these investments are mandated, thereby putting uncomfortable pressures on our water rates, we were also able to make critical investments in pieces of the system that are not as obvious to everyday New Yorkers. Projects like the new $225 million Staten Island Siphon to ensure drinking water supplied to the Borough of Staten Island, and the rehabilitation of Gilboa Dam at the farthest reach of the watershed are examples of our commitments to keeping the system sound and reliable. We've budgeted $262 million for reconstruction of our dams, and three watersheds and $40 million for pressurization of its 2-1/2 mile segment of the Catskill Aqueduct, which will increase the volume available to the city and re-establish DEP's ability

to bypass Kensico Reservoir when necessary to assess the highest quality water.

At the same time, our commitment to improvement of our intercity has never waivered. Since 2002, we've constructed or reconstructed over 500 miles of sewer and over 510 miles of water main. We've constructed 61 of 127, what we call best management practices treatments on Staten Island's Bluebelt Program for Storm Water Management. They will serve as part of the storm water management system for one-third of Staten Island. For example from Fiscal Years '02 through '13, DEP spent $430 million on sewers, and $210 million on water mains in Southeast Queens alone. Going forward, DEP has $582 million in the four-year plan for Queens, of which $283.8 million is budgeted for Southeast Queens including almost $195 million for sewers, and almost $90 million for water mains.

Also in Queens, work two shaft sites connected with the Brooklyn-Queens section of stage 2 of City Tunnel No. 3, is budgeted for $43 million. We project $143 million to evaluate, assess, and restore ground water wells in Southeast Queens for the purpose of providing additional water during the

round out bypass construction and during any drought or other instances in which the city surface water supplies are not adequate.

In Staten Island, the Executive Budget projects a total $492 million, of which $321 million is for much needed sewers and $182 million for Bluebelt programs. The Snug Harbor Bluebelt Project is budgeted for nearly $24 million. Repairs to the Oakwood Beach Wastewater Treatment Plant and to the Hannah Street Pumping Stations are projected to cost nearly $80 million. In the Bronx, the Executive Budget projects $533 million of capital spending from Fiscal Years '15 through '18. Approximately $143 million is budgeted for the Hunts Point Wastewater Treatment Plant including $50 million for new centrifuges and $91 million for new digesters to reduce combined sewer overflows into Huntsley Creek [sp?] and Long Island Sound DEP has budgeted $72 million in FY15 for construction of a parallel sewer that will help divert flow from the creek. And for sewers we have $84 million in water main, and $93 million in the program.

In Manhattan the Executive Budget allows for $720 million between FY15 and '18. The largest

single project is the $175 million Cogeneration Project at the North River Wastewater Treatment Plant. The Cogen Project will replace existing equipment for recycling digested gas with a more efficient system that will allow more of the plant's energy needs to be generated by the plant itself. Thereby reducing our energy costs and air emissions. Another $270 million for several projects at the Wards Island Wastewater Treatment Plant. Construction of final tanks, reconstruction of the Boiler Complex, and insulation of new water main centrifuges.

In addition to the funds budgeted for City Tunnel No. 3, $116 million will be funded for the construction of water mains connecting the two -- two of the City Water Tunnel 3 shafts with a local water distribution system. Again, sewer and water is broken down into $35 million and $162 million during the Fiscal '15 through '18 years for Manhattan and Brooklyn.

The Executive Budget includes $860 million for plan commitments in the 26th Ward Wastewater Treatment Plant and the associated sewer work to reduce CSOs into Fresh Creek, account for

$282 million. An additional $102 million is projected in FYs '15 through '18 for Coney Island sewers. Sewers overall in Brooklyn are budgeted for $259 million and water mains are at $118 million.

Over the past six years, we've also improved our Maintenance and Repair Program significantly, driving our water main breaks to record lows and decreasing sewer backups and flooding issues across the city. There is admittedly much work to be done, but I believe it's important to highlight that. For example, all water main break per 100 miles has been between 5 and 7 per hundred. While accepted benchmarks across the nation are in the 22 to 25 breaks per 100 mile range. We've reduced our catch basin repair backlog to less than 500 in a total of almost 150,000 basins citywide. And our critical hydrant repair numbers have been reduced from what had been 17 days to three days on a basis of nearly 110,000 hydrants.

So, the news is not all bad. In some cases, it is very promising. At the direction of Mayor de Blasio and Deputy Mayor Shorris an underground infrastructure working group comprising key city agencies and private utility partners was

established. And tasked with improving emergency response, coordination of underground construction, and accelerating the pace of improvements.

DEP is currently working on a pilot program to partner with the private gas utilities, Con Ed and National Grid to identify potential areas of mutual need and concern. By sharing data on maintenance history and planned replacements, we believe we can seize upon the natural nexus between the age of each system and the neighborhoods they lie in, and accelerate the replacement of the old infrastructure in our systems, most of which is cast iron. Most of which the critical older infrastructure is cast iron.

DEP is currently working with both utilities to map areas of potential opportunity, and we hope to begin actual construction on one or more of the locations by the end of the summer. We believe that that in addition to the synergy of replacing the old infrastructure there will be an opportunity for efficiencies with street opening and repair as well. The Department of Design and Construction already performs coordination on major capital projects it executes for both DEP and the

Department of Transportation. But we intend to create a focused population of locations to be administered for the purpose of this accelerated program of $100 million per year of additional spending.

Finally, we have asked DDC to look at all our current projects for opportunities to include any older or cast iron and facilities that may not have been included in the original project with an eye towards reducing the inventory of cast iron water mains more rapidly than we had planned. That completes my prepared statement. Thank you for the opportunity to present testimony, and I look forward to answering any questions you may have. And if I could, before I take questions, just to sort of clarify a comment that Chairman Richards made, the CSO, the overflows are permitted overflows. So our system is constructed in that way, and we are cognizant that they are -- that they do overflow. But they're permitted overflows and not violations. I just want to make sure that we're clear on that record.

CHAIRPERSON GARODNICK: Well, thank you very much. I want to let you know that we've been

joined by Council Members Ulrich and Levin, and I'm going to turn the microphone over to Chair Richards in a moment, but let me just jump in with a few quick questions of my own. Can you give us a sense of the percentage of pipes within your system that are currently in a state of good repair?

DEPUTY COMMISSIONER ROBERTS: So Council Member, the definition of good repair is, and many would choose to use age as the sole proxy for that. And while there is obviously a correlation to it, it's not necessarily the sole determinant. Roughly speaking, if this is an answer to the question, we have roughly speaking about -- two-thirds of our distribution system is cast iron. And that would be some age before 1970, which was about the time when we transitioned to Ductile iron pipe.

CHAIRPERSON GARODNICK: And it is a priority for you to replace cast iron pipes, is that correct? When you have the opportunity, you take that opportunity.

DEPUTY COMMISSIONER ROBERTS: That's a fact, and what has been historically the agency's approach to it, has been to decade by decade move that population of cast iron water mains forward.

So, for example, up until frankly January of this year, the cutoff date for cast iron water mains that would have been included in the project, had there been no other reason. If we didn't have an indication that the main had been subject to failures before, it would have been 1945. So a main that was in the street that was a 1950s vintage wouldn't have made the cutoff.

In the late fall last year myself and my engineering staff really looked at it and said, you know what, let's just make the jump from the 1945 to the next decade and just bring it to the 1970. The increase on our budget in terms of spending was not significant enough to cause us not to do that. So had already sort of started that ball rolling back in the turn of this past year.

CHAIRPERSON GARODNICK: Can a pipe be both cast iron, and in a state good repair?

DEPUTY COMMISSIONER ROBERTS: Absolutely

CHAIRPERSON GARODNICK: Okay.

DEPUTY COMMISSIONER ROBERTS: Yes.

CHAIRPERSON GARODNICK: So do you know where all these pipes are in the system? Can you, if I were to say, take Broadway and Murray and say --

DEPUTY COMMISSIONER ROBERTS: [interposing] Yes.

CHAIRPERSON GARODNICK: --what have you go underground there, you would know?

DEPUTY COMMISSIONER ROBERTS: Yes.

CHAIRPERSON GARODNICK: So you have a map, which shows exactly where two-thirds of the system that is cast iron exists?

DEPUTY COMMISSIONER ROBERTS: That's correct.

CHAIRPERSON GARODNICK: Okay.

DEPUTY COMMISSIONER ROBERTS: And I'll just caveat that by saying that any mapping system is subject to some plus or minus, some accuracy issues. But overarching, we have an inventory, and a fairly robust system of where our assets are.

CHAIRPERSON GARODNICK: You stated in your testimony that relative to the national average, that New York City's water main break is considerably better than what is expected nationally on average. You said that we have between five to seven relative to 100 miles. Whereas the national benchmarks are around 22 to 25 per 100 miles. How does that jive, in your view, with the leak rate? The leak rate, as

we see it, shows that we lose about 24% of our water from leaks, which is double the national average. Help set us to a point of clarity here as to which we should be most concerned about. It seems to me anything which is double the national average is going to be a real concern for us despite that good stat that we had in your testimony.

DEPUTY COMMISSIONER ROBERTS: So, the second point of clarification that I was holding for you to ask me that question was the reported 24% leak rate that's in the report that was done by the other group. I believe what they're referring to there is what we would term for unaccounted for water, right. So that would include water that we don't bill for. Our leak rate is somewhere -- You know, it's an estimated rate based on -- and I can explain how we get to that -- but it's estimated between 5 and 8%. The balance of the number that's in question, whether it's 24% or some number that's slightly lower than that is, I think, more unaccounted for water. Grounds keeping water, for example. Things that are not directly accounted for when they look at the amount of water coming into the city, the amount of water that passes through the tunnels, and the amount of

water that's billed out to each property, if that makes sense.

CHAIRPERSON GARODNICK: I'm not sure that it does. So grounds keeping water is considered lost or unaccounted for water?

DEPUTY COMMISSIONER ROBERTS: If it's not metered. So any water that isn't metered or that goes, that we don't recoup money on is lumped into that bucket.

CHAIRPERSON GARODNICK: Okay, last question from me, and then I'm going to Council Member Richards, is the construction and reconstruction of the sewer and water mains. You had cited in your testimony that you constructed or reconstructed over 500 miles of sewer and 510 miles of water mains since 2002. That comes out to an average of around 41 or 42 miles per year. The City's PlaNYC goal was if water mains do 80 miles per year, DEP's goal I believe was around 68 miles per year. It seems like there are a lot of very big projects --

DEPUTY COMMISSIONER ROBERTS: [interposing] Right.

CHAIRPERSON GARODNICK: -- that DEP is spending capital funds on, but should we be focusing more on the nuts and bolts of the system, and dealing with the fact that we're having on average more than one water main break a day in New York City? What do you say about the goals versus where we are on the replacement?

DEPUTY COMMISSIONER ROBERTS: I think again in generalities, I wouldn't argue about the percentages on the margins. I think in general our goals have always been one percent or the 100-year cycle, as Council Member Richards mentioned. And for a period of time in the early 2000s, before we started to get hit with some of the bigger projects, I think you characterized it well. We spent a lot of money on very focused projects, and that did impact sort of the replacement rate.

We also need to be a little bit more attentive to capturing the replacement that gets done outside of the DDC world. So we roll that into our metrics now. DEP, independent of DDC, the larger capital projects, does replace water mains on a block-by-block basis as needed, and so on and so forth. So I think from where we sit, we are very

much interested in putting as much new pipe in the ground as we can. Such that the industry can support it. So that the neighborhoods that we're working in can support it, and we're also always involved with trying to dovetail to work with DDC.

The coordination between the highway work, and the other city work. And that was really the reason for the creation of DDC back in '96 was to try and coordinate that work better. So short answer: We're more interested in doing more pipe work day to day. I'd love to see the number be 200 miles a year. We're working towards that. We think that the Mayor's commitment of this additional $100 million a year, just for that focus older asset program is a step in that direction.

CHAIRPERSON GARODNICK: Thank you very much, and I'm going to hold for now and go to Chair Richards, and I thank you.

CO-CHAIRPERSON RICHARDS: Thank you again. Good to see you again. So, before I begin, I just wanted to raise a question, I guess. You said that you guys were not in the Clean Water Act violation. Did you guys sign a consent with DEC to recognize that overflows were an issue?

DEPUTY COMMISSIONER ROBERTS: Yes, but there were consent orders related to our drinking water and wastewater systems that have gone on for long periods of time. There are currently negotiations for different consent orders being hammered out right now. My point is that CSO overflows as we -- as you characterize them, and as we understand them, are permitted. We have permitted outflows. It's understood, and New York is not unique in this position, the older infrastructure the systems were built to be combined. They were built to allow for that sewer relief when the storm flow came about. So in a typical--

CO-CHAIRPERSON RICHARDS: [interposing] So you weren't in violation with them?

DEPUTY COMMISSIONER ROBERTS: No.

CO-CHAIRPERSON RICHARDS: Even though you signed a consent order with DEC?

DEPUTY COMMISSIONER ROBERTS: I think the consent orders that we sign, and I'm not the lawyer. I'm the engineer on the team, but the consent orders are more designed to align ourselves with making both sides happy, you know to--

CO-CHAIRPERSON RICHARDS: [interposing] But you would sign a consent order if you were in violation of something?

DEPUTY COMMISSIONER ROBERTS: That's not necessarily the case. I don't believe, but again, I'm not the lawyer. So I'll defer to the legal team on that.

CO-CHAIRPERSON RICHARDS: Okay. All right, I'll move from that. So I wanted to go into the water mains, and the first question I wanted to raise is how many water main leaks did we experience last year?

DEPUTY COMMISSIONER ROBERTS: To be candid with you, Council Member, I don't have that specific number with me. It's very attainable. We'll get it to you. I can tell you that our leak rates have trended down over the last five years on average. One of the things that we've been able to sort of cull out over that same period of time, as we've been able to drill down on the data more, is that roughly two-thirds of the leaks that we respond to are on private service lines. So that was very telling to us. Up until the point where we were able to really use the data more effectively, it wasn't as

transparent that water service lines and private sewer laterals, for example, are much more of an impact that we had thought previously.

CO-CHAIRPERSON RICHARDS: So would you have said we had -- Because it seemed like every time we turned on the news this year, there was a water main beak. And would you say we had an increase this year, or just more press around these issues?

DEPUTY COMMISSIONER ROBERTS: [interposing] We -- we-- this past year--

CO-CHAIRPERSON RICHARDS: [interposing] Because I know in Rockaway in particular you --

DEPUTY COMMISSIONER ROBERTS: [interposing] Yeah, I know, this past year we did -- our numbers did rise.

CO-CHAIRPERSON RICHARDS: Do you know what percentage of the rise?

DEPUTY COMMISSIONER ROBERTS: I want to say the numbers were in the low 400s for the fiscal year.

CO-CHAIRPERSON RICHARDS: But that was an increase?

DEPUTY COMMISSIONER ROBERTS: That was absolutely, and, in fact, I want to say it was on the

order of about 20%. Somewhere around that number, and I think we had figured that to -- We had a really, really bitter winter. One of the things that I get asked often is, you know, is it just the cold? And while we have never been able to make the direct correlation, we believe that the impact of the sort of freeze/thaw, if you'll recollect, we had some spells during this past winter where we had very, very frigid temperatures. And then two days later, we would be 20, 25 degrees warmer, and then it would drop down again.

That sort of off and on with the temperature is not our friend with regard to some of the older -- You know, the cast iron pipes in particular. The bulk of the breaks that we do experience are what we term circular breaks. So breaks that happen when the pipe is either -- it's either due to settlement or moving in the ground. The cast iron pipe because of the nature of the metal sort of severs itself. It just slides and cracks. We're able to repair those reasonably quickly and effectively. We have far fewer breaks that are catastrophic, and make the news. I'd like to avoid those where I can.

CO-CHAIRPERSON RICHARDS: So would you say the cast iron pipe is the most efficient pipe to use. And what are they doing in other cities? Have you guys looked at what they're doing in other cities who--?

DEPUTY COMMISSIONER ROBERTS: [interposing] Absolutely, yeah.

CO-CHAIRPERSON RICHARDS: So obviously if cast iron is not efficient enough during the winter, we need to be looking at ways to come up with more efficient materials?

DEPUTY COMMISSIONER ROBERTS: Yes. But we haven't used cast iron pipe since the early '70s. There were actually a couple iterations of cast iron pipe in history. There was what we call unlined cast iron. It was just the inside was the same as the outside, if you will. It was just cast iron material. Somewhere in the '40s or '50s they out with what they term lined cast iron where they were able to put cement lining in to make the flow characteristics of the pipe a little bit better. It was better for water quality. It helped with corrosion. So cast iron, we don't use cast iron in the sewers.

CO-CHAIRPERSON RICHARDS: [interposing] So what are you using now?

DEPUTY COMMISSIONER ROBERTS: We use Ductile Iron.

CO-CHAIRPERSON RICHARDS: Duct--?

DEPUTY COMMISSIONER ROBERTS: Ductile, D-U-C-T-I-L-E.

CO-CHAIRPERSON RICHARDS: Okay, and that's more efficient than -- ?

DEPUTY COMMISSIONER ROBERTS: Far more forgiving, and able to be subjected to higher pressures, and that's for distribution work pretty much the industry standard.

CO-CHAIRPERSON RICHARDS: So with the cast iron, do you know on average how much cast iron pipes still exist

DEPUTY COMMISSIONER ROBERTS: [interposing] Yes.

CO-CHAIRPERSON RICHARDS: -- in the city?

DEPUTY COMMISSIONER ROBERTS: Yeah.

CO-CHAIRPERSON RICHARDS: And can you give us a that, please?

DEPUTY COMMISSIONER ROBERTS: [interposing] It's roughly two-thirds of our inventory of 7,000 miles of pipes. [sic]

CO-CHAIRPERSON RICHARDS: And how many are prone to leakage?

DEPUTY COMMISSIONER ROBERTS: Well, again, I don't know that we can break it down. We can tell you the areas where we've had specific mains that have exhibited problems, right? And where we're able to -- One leak or one break doesn't necessarily mean that the entire block has to be replaced. We do look at that. But where you have recurring breaks in a certain geography -- And that's one of the things we're focusing on more acutely now with the Mayor's office is where can we-- To use the term "buy down the risk" where can we identify the riskiest pipe looking at all the attributes not only age, material, history, etc. So it's not just one. It's clearly the most -- I think it's the most significant. I don't think it's the sole, you know, factor that you look at.

CO-CHAIRPERSON RICHARDS: So where are the locations that are the most problematic? And then, the other thing is how soon are you guys

replacing that with the ductile iron, if that's the case?

DEPUTY COMMISSIONER ROBERTS: Where are they? They're everywhere. They're non-discriminate in terms of where they've been installed because that was immaterial.

CO-CHAIRPERSON RICHARDS: [interposing] Can you tell us where?

DEPUTY COMMISSIONER ROBERTS: They're in all five boroughs. I mean they're in every neighborhood. They're in every borough. There's no neighborhood that doesn't have them.

CO-CHAIRPERSON RICHARDS: So what's the plan to move away from those particular pipes, and use the more efficient pipes?

DEPUTY COMMISSIONER ROBERTS: Right, so the plan has always been to, as Council Member Garodnick pointed out, you know, our target and our target was the NYC target. We would like to have hit that 80 miles a year. With our normal capital program, we would be targeting those areas where we had needed to replace those types of mains. We're not taking ductile iron water mains out of the street, being the newer stuff. I think the

difference now is really the Mayor's commitment to adding this additional funding that is going to be used exclusively for the water and potentially sewer repairs in areas where -- The best case scenario where we can make a correlation with the private gas utilities at the same time. That would be the win-win-win.

CO-CHAIRPERSON RICHARDS: So with the extra money that you just said the Mayor is plugging in, how close will we get to replacing 80 miles a year?

DEPUTY COMMISSIONER ROBERTS: I think this year we should potentially get to or above that number. I think 80 is a realistic target this year. I'd like to do better, but if you're going to let me just commit to 80, I'll be glad to that

CO-CHAIRPERSON RICHARDS: [interposing] No, no, we want you to keep going.

DEPUTY COMMISSIONER ROBERTS: [interposing] I understand, I understand.

CO-CHAIRPERSON RICHARDS: Right, but you're saying that you can --

DEPUTY COMMISSIONER ROBERTS: [interposing] I think 80 -- I think 80?

CO-CHAIRPERSON RICHARDS: -- you believe you can surpass 80.

DEPUTY COMMISSIONER ROBERTS: I think 80 is a realistic target for this year.

CO-CHAIRPERSON RICHARDS: Okay. I will come back to a second round. I just want to get -- ask a few more questions. So, in your testimony you spoke of Southeast Queens, and obviously I represent the Rockaways, Rosedale, Laurelton, and Springfield Gardens, and you know those areas very well. And Daneek represents St. Albans, so I'm sure he'll mention that. So in this year's projected budget you said $238 million is budgeted for Southeast Queens out of the $582 million four-year plan? And then in the next paragraph of your testimony you speak of $143 million to evaluate, assess, and restore the groundwater wells in Southeast Queens. So that's two separate factors of money?

DEPUTY COMMISSIONER ROBERTS: Yes.

CO-CHAIRPERSON RICHARDS: Okay, got you so that's $426 million, and you say 'project.' You said projected $143 million. So can you elaborate on what 'project' means? Does this mean it's going to happen that this money is there, or ...?

DEPUTY COMMISSIONER ROBERTS: The money is budgeted. I think the money is budgeted against projected expenses. So, as you're aware, we're still in the process of sort of pre-design on the pieces of the groundwater system that we intend to rehabilitate. So it's premature to try and nail down a number. We project that spending to be on the order of about $143 million.

CO-CHAIRPERSON RICHARDS: So we believe we're going to spend all of this money this year?

DEPUTY COMMISSIONER ROBERTS: We're going to be spending -- Well, it won't be spent all this year.

CO-CHAIRPERSON RICHARDS: [interposing] Over the next--

DEPUTY COMMISSIONER ROBERTS: [interposing] Yes, exactly.

CO-CHAIRPERSON RICHARDS: --four years?

DEPUTY COMMISSIONER ROBERTS: Right, and we're going to spend what we need to spend, and that's what we're budgeting because that's what we project it will cost.

CO-CHAIRPERSON RICHARDS: Okay, how much a year do you project or can you give us that?

DEPUTY COMMISSIONER ROBERTS: Do you have the breakdown?

JAMES GARIN: It's about $50 million a year.

DEPUTY COMMISSIONER ROBERTS: They have it broken down on about a $50 million per year, and that's going to come out to $200 million, but that's what happens when you talk to the budgeting guys.

CO-CHAIRPERSON RICHARDS: So, two --

DEPUTY COMMISSIONER ROBERTS: [interposing] It's $200 --

CO-CHAIRPERSON RICHARDS: So there's $426 million budgeted, budgeted, but $50 million a year for the next four years.

DEPUTY COMMISSIONER ROBERTS: So, it's the ground water. [sic]

ASSISTANT COMMISSIONER MURIN: Councilman Donovan, yeah, we have for the sewers $206 million for Southeast Queens of which about $50 million for '15; $90 million for '16; $10 million for '17; and $3 million for '18. So you can see it's rather frontloaded, as you can see. [sic]

CO-CHAIRPERSON RICHARDS: Okay.

ASSISTANT COMMISSIONER MURIN: [I'd have to -- I don't have the water main work broken down, but we'll get back to you with that number as well.

CO-CHAIRPERSON RICHARDS: Okay, I appreciate that. I'm going to defer to my colleagues for the next questions. I just want to raise the last few questions. So in your testimony again, you spoke of the underground infrastructure working group, which compromises city agencies and private utility partners and all of that good stuff. Are advocates, are you guys having conversations with advocates or community boards or elected officials in terms of this? Because they would know where the majority of this flooding is happening as well. So are they engaged in the conversation. And if not, how do you guys plan to engage them in the conversation?

DEPUTY COMMISSIONER ROBERTS: So the short answer is that at this point in time we have not engaged community input on those. I think this is a program that we're just trying to get off the ground. We're just trying to work through the details about how to coordinate. Something that's not, as you're aware, traditionally done, and the

focus is really on the water supply infrastructure. Not as much the collection side, the sewer infrastructure except to say that where there is an issue that we think needs to be addressed that can be expedited with regard to sewer repair. We'll certainly do that.

But I don't think this conversation is really about flooding, if flooding is the question. I think we've got a lot of other conversations that are going on about that independently. I do know that the Mayor was particularly concerned to make sure that the city agencies, which included Police and Fire, OEM, ourselves, DOT, DDC that we were all at least coordinated and looking at it holistically.

CO-CHAIRPERSON RICHARDS: All right. I would just urge you guys, although I understand this is new, and I think you should be having conversations at the very least with elected officials on what they believe should be moved up Because we would know. If you're trying to fast pace things, we know the particular areas in our communities who go through flooding, who need infrastructure and upgrades. And, you know, it would be good if you guys communicated with us so could at

least give you priorities in different particular places we know that are problematic where mains have burst before. That may be on your radar, but it's communications are going to be key here.

The last question is DEP is currently, and your testimony also spoke of your mapping areas of potential opportunity, and hope to begin construction on potential locations at the end of the summer. Which locations are being targeted, do you think, and can you speak to those?

DEPUTY COMMISSIONER ROBERTS: So the primary areas that we're looking at are the areas where our older cast iron infrastructure exists.

CO-CHAIRPERSON RICHARDS: Where are those area?

DEPUTY COMMISSIONER ROBERTS: Again, Council Member, it's in every borough and it's in many parts of the borough. For example, I mean Downtown Brooklyn would be a place where there would be a nexus. It's a very broad spectrum. It's not one neighborhood versus the other necessarily. But what we're looking to do, and again this has traditionally not been done by the city in partnership with the private utilities. There were

contract issues. There are some challenges to getting from where we are to where we want to be. I think what is very important is that both sides see the wisdom of doing it, and there's a willingness to move the ball in that direction.

So we'll take the locations that they have on their radar as being subject to replacement. And we'll look and we'll see do we have something there that we should replace while they're there? And we're going to do the same thing with our stuff and their stuff, and try and line those pieces all up. So it will be on a case-by-case basis, and it will be across all five boroughs.

CO-CHAIRPERSON RICHARDS: Well, I'll appreciate that if you can get back, and Council Member Garodnick if you can get back to the committees on where-- Maps in particular where the oldest locations are, we would really appreciate that. You know, we applaud the Administration obviously on their investment, and obviously working towards making sure we can achieve those PlanNY goals. And we're going to look forward to seeing concrete things as we move forward in terms of the 80 miles or more being done a year. So thank you.

CHAIRPERSON GARODNICK: Thank you Chair Richards. I want to note that we've been joined by Council Members Constantinides and Treyger. We're now going to go to Chair Espinal, to be followed by Council Member Barron.

CO-CHAIRPERSON ESPINAL: Thank you Council Member Garodnick. I want to go back to the unaccounted for water rate. And so when a pipe gets compromised and the water leaks so that falls into a compromised water leak, correct?

DEPUTY COMMISSIONER ROBERTS: That would be leakage. If this 24%, and again this is somebody else's interpretation of a number. So to be able to drill down on the specifics of it would be a little bit difficult for me here.

CO-CHAIRPERSON ESPINAL: But if there's a leak, it falls into the unaccounted for water rate?

DEPUTY COMMISSIONER ROBERTS: If it's -- Yes, yes.

CO-CHAIRPERSON ESPINAL: So what's the protocol? What's the process? Can you walk me through that? What do you do to make sure if this pipe has been compromised that gets fixed?

DEPUTY COMMISSIONER ROBERTS: So we have a Leak Detection Program where our crews what we call scan. There's acoustical instruments that they use. They listen to the noise on the pipes in the ground. So they scan community board by community board, the City on a regular cycle. And where they identify leaks, the leaks are then investigated, and remediated whatever the cause is. Sometimes, often times the cause would be a private service line, in which case we'll notify the property owner. If it's something attached to the City infrastructure we'll correct the condition.

CO-CHAIRPERSON ESPINAL: So the unaccounted for rate calls, would you say that DEP puts it in the books as a loss?

ASSISTANT COMMISSIONER MURIN: Mr. Chair, I'm Joe Murin, Assistant Commissioner of Budget, but what we I think as Jim alluded to before, we have what is the delivery rate, which is what the sewer operations accounts for is what they get through the reservoirs and then distribute the system. We as what we bill for system, what the customers see is what their usage is. So that's the basis of what we will bill, and raise as revenue there. So that

accounted for -- unaccounted for water as characterized does not go into that calculation of what is billed. That's based on what is the usage by owners, tenants, industrial users, and commercial users.

CO-CHAIRPERSON ESPINAL: I guess my concern is that every year we have water rates going up in the city and the cost of living is increasingly high, as we all know, because we live here. And I just want to see there's ways that the DEP can create -- find ways to cost -- to cut, you know, the cost for our consumers.

DEPUTY COMMISSIONER ROBERTS: And I think that that is a shared goal. I know it's a shared goal. Again, if you look at the MMY data on our leaks overall, they have trended down. We can, in my view, attribute that to a couple of things, one of which is we spent a considerable time, and it does dovetail with the water main break decline as well. We've spent a significant amount of energy over the last several years controlling what we call pressure gradients, right. So making sure that the city is broken up, and not everybody is -- It's not transparent to every citizen, but the city is broken

up into different pressure gradients, pressure zones depending on how high the city is.

So, for example, a place like Washington Heights, which has a very high elevation with regard to our reservoir is at a different pressure gradient than the Rockaways, for example, or Coney Island where you're out by the beach. So we've spent time doing two things. One, making sure that the areas that are bounded off are bounded off both effectively. Meaning that the gates are closed. Not the gates are closed, but the areas between the pressure zones are actually separated. And then with equipment that manages that -- that pressure differentiation is operating. So we put in place a program a couple years back to really commit to the repair and maintenance of the valves that control the pressure.

So that's one fact of the low -- the better you manage your pressure, the less leakage. If all other things being equal, if the hole in a pipe, or if the end of a pipe is the same size, the greater the pressure the water is going to come out of it. So by controlling the pressure, you'll reduce the leakage. We do the Problematic Leak Detection

and we identify leaks there as well. And then we've also rolled out the program for the service line protection, which we think will be of benefit to the property owners.

And lastly, our AMR program, the investments that we've made in the automated meter reading has really helped us gain clarity into. And the property owners, which is probably more important, into what's happening in their individual homes. We can really look with a high degree of resolution, and say, You know what, and something is going on here. Your usage despite whether it's a leaking toilet or something, and there are ways that our customer service communicates with the billing parties to notify them. All those things coupled together, in a perfect world we'd love to have zero leakage. I think that's the ideal we shoot for, but overall I think we'd made improvements with managing it.

CO-CHAIRPERSON ESPINAL: Thank you.

CHAIRPERSON GARODNICK: Thank you Chair Espinal. Now Council Member Barron to be followed by Council Member Gentile.

COUNCIL MEMBER BARRON: Thank you to the Chairs that are conducting this hearing and to the panel for your testimony. So if a person's water bill goes up, you notify them that there may be a problem, and that they should check to see if they have a leaky toilet?

DEPUTY COMMISSIONER ROBERTS: That's a Leak Notification Program that's associated to -- The computer is keeping track of what the normal usage in your home might be. So for example, Council Member, if -- I'm really making this up, but if you use 50 gallons of water a day or 100 gallons of water in your day on average in your property on average, and all of a sudden it's spiked to 100-- I forget what the percentage is, but it's 200% I'm being told. There's a notification process where we'll call you, or we'll make contact with you and say, Listen, we're noticing this spike in your usage. Maybe you had visitors in, you had more people in the property. Maybe it's the holidays or something.

COUNCIL MEMBER BARRON: [interposing] So what is the percentage, what is the change difference that initiates you contacting somebody to say that there's a spike?

ASSISTANT COMMISSIONER MURIN: Well, I think -- I'm sorry, Council Member, but I believe what we do, to just clarify what Commissioner Roberts is saying, it's what we would characterize as the Leak Forgiveness Program. What they involve--

COUNCIL MEMBER BARRON: [interposing] A Leak Forgiveness Program?

ASSISTANT COMMISSIONER MURIN: A Leak Forgiveness Program, and this is something that the Administration did implement, will be implementing with the new rate that is -- will take effect on July 1st. And we can get you the details. I'm going to paraphrase if you're with Bedford-Stuyvesant [sic]. But with the AMR since the individual can now detect, see how their usage is going, if there is, you know, a spike in usage that is larger than might normally have been seen for that individual, they will then get a notification from our customer service bureau that they're having a significantly higher use.

COUNCIL MEMBER BARRON: So is this a new program?

ASSISTANT COMMISSIONER MURIN: [interposing] Yes, it is a new program.

COUNCIL MEMBER BARRON: So it has not calculated yet?

ASSISTANT COMMISSIONER MURIN: It will start July 1st. It will start in July, and what it will entail is that those individuals where if you had a very large usage that you will be able to go and be able to say that, you know what, this was a leaking toilet. I've now gone and fixed it, and we'll be able to go back, prove that you did that. And we'll be able to forgive that bill, that incremental portion on your bill because of that leak that was there.

COUNCIL MEMBER BARRON: So that incremental portion will be forgiven for the entire period of time that that use--

ASSISTANT COMMISSIONER MURIN: [interposing] I don't want to say something that's going to be incorrect. You know what I think we'll do is we'll-- I'll talk to the customer service people when I get back.

COUNCIL MEMBER BARRON: Okay.

ASSISTANT COMMISSIONER MURIN: And I think we can get your office, as well as the other council members the details on that program.

COUNCIL MEMBER BARRON: Thank you. The other question I had regards sewage backup. My district is East New York, and has the sewage treatment plant for Ward 26, which I believe received quite a bit of money when President Barack Obama had programs in 2010 or '12. I believe they got a sizeable amount of money. I would like to know if you know what that money went for, and what the money that you've identified is going to be given coming up? What that money is for, the $282 million.

DEPUTY COMMISSIONER ROBERTS: So, Council Member, let me address the first part, and we are regrettably aware of the problems that happened in your district with regard to that storm that impacted the Spring Creek facility. And we believe we've identified the culprit in that particular event. We believe very strongly that that specific event was a runoff. The issue with regard to the funding, and I'll let Joe speak to.

ASSISTANT COMMISSIONER MURIN: Council Member, we received a number of, you know, over-- I believe it was $200 million for the Reinvestment and Recovery Act from President Obama back in 2009. Some of those funds were allocated to the 26th Ward. I

don't recollect off the top of my head what the specific projects, but we can go back and we can get that information as well.

COUNCIL MEMBER BARRON: Okay, I appreciate that. Now, in terms of the major problem of the runoff, I would like for you to give me the details of how that happened. I understand that there was a new system, or new equipment that had been put in. It was supposed to be automated, and there was some failure with that process. And that subsequently someone was there with the next big rain to manually make sure that the problem did not occur. So if we just put in some equipment at whatever cost it was, and it failed. Why didn't we know at the time that it was failing, that there was a problem?

DEPUTY COMMISSIONER ROBERTS: Council Member, that's a perfectly legitimate question to ask. As I understand it, there was a sensor that went bad that was the primary bad actor in this event. Sensors do go back. So parts do go bad. Your question about the notification, why we didn't have notification ahead of time I think is under investigation right now. We're really drilling through those details, and I think the second part of

your statement in terms of us manning that facility, having personnel there, is a commitment that we've made. Through and until we both have confidence that we've drilled down and found the problem, and two, that we've corrected it and we're satisfied that it's corrected. So we do know that it had to do with the sensor that controls the operation of a gate. The exact cause is under investigation, and the personnel are at that facility now as a matter of routine until such time as we've corrected the problem, and are satisfied that the problem is corrected.

COUNCIL MEMBER BARRON: Thank you and then finally so all of those persons who incurred loss because of that, they will be made whole?

DEPUTY COMMISSIONER ROBERTS: That--

COUNCIL MEMBER BARRON: [interposing] Those who have filed a claim with the City?

DEPUTY COMMISSIONER ROBERTS: That's a matter for the Controller's Office to make that final determination. We are working with the Controller's Office, and we'll certainly share with them all of the insight that we have about the defective -- You know, what actually transpired when we are able to drill through it. But again, I know that the

Commissioner has spoke to you, and your constituency to make sure that those claims are in, and they'll be processed in the Controller's Office is really the last voice for it.

COUNCIL MEMBER BARRON: Thank you.

CHAIRPERSON GARODNICK: Thank you, Council Member Barron, and before we go to Council Member Miller, who will be next, let me just follow up on one line of questions on the combined sewer overflow, the storm runoff. It always surprises my constituents when they hear that when we have a heavy rain that our system simply can't handle it, and that we dump sewage into our rivers.

There's been a lot of discussion about ways to contain water above grounds so it doesn't go into our system. Do you think that there could ever be enough capacity to contain water above ground so as to eliminate this problem? Or, do you think that the only way to ultimately deal with it would be to build more pipes and more treatment plants, et cetera?

DEPUTY COMMISSIONER ROBERTS: Right. That's a difficult question to answer. The first question -- the first part of it that I think is easy

to answer is, Do I think we could build enough tank storage, or storage capacity somewhere to capture every drop of rain that fell? I think the answer to that is no.

CHAIRPERSON GARODNICK: Wait. Let me then clarify.

DEPUTY COMMISSIONER ROBERTS: Yeah.

CHAIRPERSON GARODNICK: I'm not just suggesting the city building tanks and things like that.

DEPUTY COMMISSIONER ROBERTS: [interposing] Right.

CHAIRPERSON GARODNICK: I'm really thinking about if you gave incentives to private property owners to green their property, green roofs, and this idea. All of the things that you could possibly do in a city the size New York, could you above ground deal with it?

DEPUTY COMMISSIONER ROBERTS: [interposing] I think--

CHAIRPERSON GARODNICK: It sounds like the answer is probably still no.

DEPUTY COMMISSIONER ROBERTS: I still don't believe, and what we've done. I think the

answer would be no. From a practical standpoint I think it would be no. However, it doesn't mean that we cannot make things incrementally better. So our Green Infrastructure Program, for example, is designed around just that point. Trying to capture storm water before it gets into the system to allow it to be detained where possible. And then reintroduced to the system after the storm has passed.

Realize that the challenge with the combined system is really this, it's when it's running at the peak flow of a really high intensity, high duration, long duration storm that creates the capacity issue. So combined systems, and this is rules of thumb, might be designed for 8 to 10% sanitary flow. And the other 90% is for storm flow. So they're really designed for that storm element. What we want to do is we want to try and hold as much water as we can from getting into the system for as long as we can. The gray infrastructure the CSO tanks and those of things are -- they do perform a certain service for the local water quality.

We don't believe that they are necessarily the best investments that we can be

making. And lastly, on the private side, we did enact I guess it was to years ago, a storm water rule that basically requires on-site detention by any development that has gone forward in the last two years where they're holding back 90% of their developed flow onsite. So I think it's a combination of things. I don't think that there's a magic bullet with regards to managing it. I think we just need to be strategic and thoughtful about the ways we try to apply the science that we know.

CHAIRPERSON GARODNICK: So you don't think that there would ever be a way to completely eliminate the challenge of putting our sewage in our waterways?

DEPUTY COMMISSIONER ROBERTS: Ever is a long time, but I think practically speaking what you are talking about is total sewer separation. So reconstructing the city to where there are no combined sewers. There are sanitary sewers and storm sewers. I don't see that that's practically going to happen in any of the foreseeable future.

CHAIRPERSON GARODNICK: How many days a year-- And then we'll go to Council Member Miller.

How many days a year do we have this overflow issue on average?

DEPUTY COMMISSIONER ROBERTS: And so when I really -- I work hard not to do this, but I can get you that number back. Only because you're starting to get into the details of the shop that I don't have the direct day-to-day on. We know what that number is. I apologize. I don't have it with me today, [sic] but we'll certainly have staff get it to you.

CHAIRPERSON GARODNICK: Okay, thank you. Council Member Miller.

COUNCIL MEMBER MILLER: Thank you, Chair Garodnick, also the Co-Chairs and to the Panel for bringing this important information not just to the Council, but to the community at large. So back to the water mains, and not just the broken but the leaks. I was unclear. Are there acceptable amounts of leakage that go unrepaired that we could just kind of go on with the day-to-day?

DEPUTY COMMISSIONER ROBERTS: I think that there are -- I think that there are always going to be leaks in systems. I think the question, the question is the balancing point. Let me start by saying technologies change. Along with those cast

iron mains, that we've been talking so much about appropriately, the technology in terms of how those mains are joined together, frankly allowed for leakage when they were constructed. So there was some sort of implied understanding that you were going to have a certain percentage of leakage. I think from an industry standpoint, I think being in the area that we're in is fairly respectable. Would we like to be lower? Yes. I don't see it necessarily as a real red ticket item at this point.

COUNCIL MEMBER MILLER: So aside from the initial construction, that type of leakage, is there anything else that would kind of fit into those numbers of acceptability?

DEPUTY COMMISSIONER ROBERTS: To what causes the leakage?

COUNCIL MEMBER MILLER: No just as a -- Yeah, is it something other than that, that contributes to those numbers? Is that also acceptable? This is not the big breakage we're used to seeing, but what I'm trying to get at is it-- When it becomes a significant enough number do we then address it, or at what level is it still acceptable?

DEPUTY COMMISSIONER ROBERTS: Okay. So Council Member I apologize. I may not have understood your question the first time. If we know about a leak -- if we know about a leak, we're going to fix it. So we won't let the leak go unattended to. It may or may not be prioritized based on how much it's leaking at a given point in time. And again, most often, the dynamic is between the private property owner -- The homeowner's service lines. That's why we think that this service line protection is such a good concept to put forward. Because it becomes an unexpected expense, right. You wake up on Tuesday morning and by the way you need $3,500 to $5,000 to effect it. So we can get those done more quickly. What we've historically done is we've tried-- Where the leaks are not causing damage to the roadway or the surrounding street, we've tried to work with the property owners to give them a reasonable period of time to engage a plumber in a responsible way.

COUNCIL MEMBER MILLER: Okay, I was kind of referring to city owned infrastructure, but coming from a district that's about 65% homeownership, we're out there all the time. I have not experienced that

reasonable response. It's almost like two days or we're going to shut you down, or it has been. And perhaps depending on the severity it--

DEPUTY COMMISSIONER ROBERTS: [interposing] Right.

COUNCIL MEMBER MILLER: --but they have not been so compliant as far as that is concerned. So perhaps that is something that we can address offline. But, as we start talking about prioritizing or balancing, when you have a system of this age, there is a lot of work that needs to be done. Is most of this work-- How is the working being done in-house as opposed to contracted out? What are the numbers and who is doing what?

DEPUTY COMMISSIONER ROBERTS: We do the majority of the leak repair work in-house. We do a significant population of break repair in-house with city forces. Most of the stuff that is given our emergency contractor is given to them for a handful of reasons. One, complexity. If it's complex enough to require special equipment, bigger equipment. Deeper excavations where they have a greater expertise with that than our folks. If it impacts a larger piece of the surrounding street. So if the

restoration is going to be a big part of the job, we'll give it to the contractor. They're better at that, and our forces can work on the things they're better at. So we try to match their skill sets, but mostly it's complexity.

COUNCIL MEMBER MILLER: Okay, so that's pretty much what I was getting it. Because the majority of the work is done by the in-house, by the City workforce. And that you match the skill set with those particular jobs where necessary, then that would not directly have a real impact on progress moving forward. When we say that we have budgeted for projected projects, these unintended consequences and breaks and so forth has kind of been factored into that?

DEPUTY COMMISSIONER ROBERTS: Independent.

COUNCIL MEMBER MILLER: Okay, great. So my next and almost final question would be as it pertains to Southeast Queens. What exactly are some of the projects? When we talk about the 2014, 2015 going out projects, the more immediate projects will we be seeing there? I know we have some long-term

really big capital sewer projects. What are we looking at?

DEPUTY COMMISSIONER ROBERTS: I'm going to let Mr. Garin give you that answer. I can tell you that specifically on the water supply side, and again there were some references in the report to miles of pipes of various sizes. So again, as yourself and Council Member Richards are well aware, that area was previously serviced by a private water company. And we have a couple of really major projects in terms of footage. We have 50,000 plus square foot distribution jobs where we're just replacing water mains in local blocks with larger sized, newer pipes. So that will have the benefit of a couple of things. It will have the benefit of a couple of things. It will have the benefit of getting rid of the older stuff obviously. It should improve water quality. It should improve fire protection and pressures in the area.

So I think we've got at least one that's out on the street, and one that's hot on it's heels if it isn't out on the street. With that, I'm going to pause and let Mr. Garin give you a snapshot. I think the length of the list might be fairly long.

We can give that to you in writing, but maybe if you can just touch on a couple of big ones.

JAMES GARIN: Sure. Hi, I'm Jim Garin. I'm the Director of Engineering, and some of the work that we've done in Southeast Queens, and have planned for Southeast Queens, we've done a significant amount of work in the Springfield Gardens area. Right now we have probably a most similar type Bluebelt project that we've done out there at Springfield Lake. Very similar to what we do out in Staten Island. Also out there we're tackling a lot of work around ponds. So we have a project that's projected for Baisley Pond. We also have some projected work at Twin Palms.

A lot of upgraded infrastructure work in the Far Rockaways. We have a project that just started on Chandler street, which is very important. And a lot of significant build-out in the Far Rockaways. That just kind of gives a snippet, but we do have a significant amount of work. A lot of our budget, overall budget goes for storm water improvements in Southeast Queens, particularly Council -- Community Boards 12 and 13.

COUNCIL MEMBER MILLER: And how much of these projects will really impact the reduction of

flooding? Is it really designed for flooding because I know the long-term infrastructure pieces that the Deputy Commissioner mentioned, and then this is something separate and apart. So I think that's a big issue in being able to alleviate that. How much relief are people going to see immediately?

DEPUTY COMMISSIONER ROBERTS: So I'll attempt to answer that. The two-prong approach, and while we are focusing on the build-out of the storm system with any of the projects that we do where the storm system is -- needs to be upgraded whether it is in Southeast Queens or Staten Island. Any time we're going in there, we're looking at the sanitary infrastructure as well. So we'll be replacing or rehabilitating sanitary infrastructure and water infrastructure in any of those projects. So the driver is really the extension of the storm system, but everything comes along with it when we go. As we will replace the sanitary and the water supply side.

In terms of quantifying the relief, we can be able to talk about it in terms of miles of extension. You know, again as you're aware, one of the things that we've sort of changed fundamentally about our approach is looking now to areas where we

can do smaller more targeted projects that hit certain known areas. And we've found that to be so far successful. It's still the overall progress of building out the entire system down there is extensive. It's several decades of work, but every step we take forward is a step in the right direction. I would say that each of the projects that extend the storm system, are probably on the order of anywhere from $20 to $30 million projects. We try to bundle them in sizes that are manageable by given contracts.

And so you don't put all your eggs in one basket. If you run into a problem with a contractor, or one specific contract issue, then everything stops. So the projects do tend to get bundled in projects that range in that area, maybe $20 to $30 million. Sometimes a little bit more and sometimes a little bit less. I hope that answered the question.

COUNCIL MEMBER MILLER: So that's been very helpful, and I just again want to thank you for your hands-on work that you've done in Southeast Queens, and kind of walking me through a lot of this. I really appreciate that. And finally, on some of those larger projects, something I had experienced is

the coordination between some of the utilities as to getting them done. You know, I know you've got to pull some pipes out to put water in, and those take sometimes years for completion and has a real impact on the quality of life. How are we doing with those coordinations as we move forward on our Build-out Program?

DEPUTY COMMISSIONER ROBERTS: And I just want to add that it's been very helpful, and we appreciate your support, and the support of Council Member Richards with regard to the things that we are trying to do. And many of the other council members around the city. Your support and input is helpful to us. So it's my pleasure to be able to try and push some of those things along. With regard to the coordination on the bigger projects, DDC does spend -- one of the reasons that are sometimes a little bit more nimble than DDC is as I have explained to you on these sort of strategic projects like these more localized projects is because there is less overall design effort that needs to be put into it.

DDC's work is a little bit more illustrative [sic], and one of the things that they do work very hard at, and it's a challenge, is

coordinating the input from all of the utilities whether it's gas, electric, underground cable. You name it, it's down there, and they have coordination meetings in the early design phases where the utilities are given a sort of heads up on what's coming, and what needs to be done. So, again, always room for improvement. I'm sure everybody can do a little bit better at everything. But there's a significant -- At least there's a significant -- at least a significant mechanism in place that allows for that coordination that was not there 20 years ago.

CO-CHAIRPERSON RICHARDS: All right. Next we will have questions from Council Member Costa Constantinides?

COUNCIL MEMBER CONSTANTINIDES: Thank you Chair Richards, Chair Espinal, and Chair Garodnick. Good to see you guys again. Just a couple of questions. One, as you know, I represent Astoria. We've got the Bowery Bay Sewage Treatment Plant. I'm scheduled to come through a walk-through. Give me a sneak preview. I know there have been some capital projects going on there relating to infrastructure that's been sort of causing us snow in our neck of

the woods for about a month and a half now every time it rains. So I just wanted to check up on that and see where things are.

DEPUTY COMMISSIONER ROBERTS: If you'd be patient with me for just a second, I'm going to ask Mr. Murin and to try talk to that. And again, I apologize to some degree, we're a little overloaded on the infrastructure on the street representation. So there might be some details about the wastewater treatment plants that I don't have.

ASSISTANT COMMISSIONER MURIN: I'd have to say can we follow up with you on that, Council Member, because I don't have I think all the specific details --

COUNCIL MEMBER CONSTANTINIDES: [interposing] Okay.

ASSISTANT COMMISSIONER MURIN: --that I could get at my fingers right now for Bowery Bay in terms of-- But we could get you a list of what the projects are that are in there, and what the timeframe is on those as well. So I know there is, again, some work that's planned regarding the order of control [sic]. As well, I know there is also some work as the Commissioner testified in terms of the

Flushing Bay, which I don't know how much that comes over on your side in terms of the dredging project that is planned for there.

COUNCIL MEMBER CONSTANTINIDES: The second question is our neighborhood, and I think it's piggybacking on my colleague Council Member Miller's conversation about new projects. You know, our waterfront is exploding in Astoria, and things are getting rezoned rather quickly. It will go from an R4 to an R7A. And what was traditionally a manufacturing zone goes to high-rise buildings rather quickly. And how nimble are we with those projects that have come up that the infrastructure keeps up with the growth that we're seeing in these neighborhoods?

DEPUTY COMMISSIONER ROBERTS: That's a great question, and one that I am happy was asked, and one that I'll do my best to respond to. So sometimes those things come up fast for us as well. I think we work very closely with City Planning, and very closely with, for example, Economic Development or whoever; private developers quite frequently in areas. Our staff, the staff under Jim, reviews every proposed sewer connection or water connection to any

part of our system. So at the end of the day without our consent and approval, the project can't go forward, which sometimes doesn't make us the most popular people in the room. But it does serve an important gatekeeper role.

And one of the things that we look very closely at is the capacity of the existing system versus whatever change might be necessitated by rezoning or what have you. Where necessary, we'll take the time to redevelop the drainage plan for that area in its entirety. The infrastructure has to match what's being built out. We have been battling with that, and working with that for the last seven or eight years at a minimum. We do pay very strict attention to it.

COUNCIL MEMBER CONSTANTINIDES: And whose responsibility doe sit become with these large buildings? Is it the developer? Is it the taxpayers? Where does it sort of -- where does it fall when these large buildings are going up--

DEPUTY COMMISSIONER ROBERTS: [interposing] Well, at --

COUNCIL MEMBER CONSTANTINIDES: -- and with that infrastructure in mind?

DEPUTY COMMISSIONER ROBERTS: So at the end of the day, the best of all worlds is that our proposed work matches up with an area that's going to be developed. If there's a particular developer that wants to move a project ahead of the schedule of what we might be doing, and there's a need to upgrade, they'll make a judgment as to whether that investment in the infrastructure to allow them to build is worth it for them economically. So control on both sides. It's a business -- it becomes a business decision on the development.

Where we can, and I think for example, Coney Island would be one place that comes to mind where we've done a redesign of the drainage plan. And we've worked with DDC to sort of support that. Some of the more localized -- I'm going to use the expression one-offs [sic] -- more local developments are often handled by the private developers.

COUNCIL MEMBER CONSTANTINIDES: Well, I would just say as we grow, and we're going to continue to grow and thrive, the infrastructure has to keep up. And if you guys and Con Ed and the gas, we've had our challenges in Western Queens. And we've been able to work past them. It's almost ten

years now, but as we grow, we're going to get to a place where we need to make sure all the infrastructure is keeping up with it, whether it's gas or water. Whatever it is, it can't lag behind.

DEPUTY COMMISSIONER ROBERTS: No, we agree and we're working hard towards that. In fairness to the other utilities, they have a hard day today.

COUNCIL MEMBER CONSTANTINIDES: [interposing] Oh, yeah.

DEPUTY COMMISSIONER ROBERTS: I won't speak for them but they--

COUNCIL MEMBER CONSTANTINIDES: Thank you very much.

DEPUTY COMMISSIONER ROBERTS: Thank you.

CO-CHAIRPERSON RICHARDS: Before we go to Steven Levin, I wanted to raise a question. One of the things my father often taught me is if you want to keep your suit in good condition, you need to make sure you're putting in the cleaners. Right? So I want to know what is DEP doing in particular in terms of their maintenance budget to keep the pipes and everything else in good shape, the green infrastructure? What is your operational budget, and

how are we not just responding to leaks when they happen, but what are we doing to prevent it ahead of a leak happening? What I'm getting at is we don't want to see what happened in East Harlem ever happen again. Residents don't want to go through these water main breaks across the city, businesses?

So what is the operational budget? What do you plan to put into it to maintain what we have? You know, we're not building out as of new year, and also in terms obviously of the Mayor's Housing Plan, we're going to be building a lot more housing in New York City. And we need to know that the investment is there in the long term and short term to make sure that we're just not building onto systems that can't hold. If we can't hold what we have already, how can we expand on these things without investing much more capital in infrastructure? So operational budget first, maintenance on what we have, and then what are we looking to do as we move forward?

DEPUTY COMMISSIONER ROBERTS: I'm glad you brought the back flow into it, because I was trying to remember. So operationally, Council Member, again I think it's a good story. You know, it is not a pleasant experience for anybody if you've

had a problem with a backup. Whether it has to do with our system or your private lot, it's not a pleasant experience. One of the things that we have worked very hard at over the last several years is exactly that, targeting, focusing, and withstanding the areas that are having the most problems. And diving down into what the root causes are.

Our performance metrics in those are, I think in some cases pretty laudatory. We've been able on a system that is broken down into over 150,000 segments of sewer. The definition of a segment is block to block. We've been able to drive the number of chronically -- chronic problematic segments down below or around one percent of the overall system. Which is again, if it's the one percent, if you're in that one percent block on a given day it's an unpleasant experience. But from a standpoint of the overall system, we think the performance has improved.

We're certainly focused on it like a laser beam. We have changed our operation to be attentive to that. We do on the order of 10% or thereabouts, maybe a little bit more of the system gets cleaned. Ten percent, and let me be clear about

that. We do about 10% in terms of miles over -- The number miles cleaned over the number miles of the system. We don't clean 10% of the entire system because frankly we feel very strongly that 10% of the -- Much of the overall system doesn't need that same attention. We've run into, and we've got a lot of clarity, on areas where again give years ago I don't think we had this clarity where we have residential grease problems.

Residential grease was never a transparent issue to us. It is now. Roughly 65 to70% of the problems that we have on any given block that has a back up, can be tied back to a residential grease or a grease issue in a residential area. So we're doing a number of things. We do a lot more proactive cleaning, programmatic cleaning in those areas. We've done outreach. We have pamphlets, and we do outreach in those areas trying to get the message out to cease the grease. And so on the collection side, that's really how we've managed it. We've reallocated the resources to focus crews on doing specific tasks to do that.

On the second part of your question, which is how do you keep pace? It's challenging. We

work again as the other Council Member asked, we are the gatekeeper for those developments. You can't put the building up. You can't build the auto ramp [sic] by the sea You can't build those things until we work out the details of how that's going to happen. So in many cases it's new infrastructure whether it's being supported by a development or us. Or, in cases the infrastructure is adequate to support what is being proposed.

Realize that when we build out a sewer in any given block we build it out to what the full -- we cal the full drainage plan. So that contemplates maximum usage. Every lot fully occupied the whole nine yards, and that's really the case. So we take a close look at the capacity and conditions of all those things as they come along.

CO-CHAIRPERSON RICHARDS: All right. I thank you for that. I just want to make sure that we don't lose sight of that, an especially in terms of green infrastructure because I've seen where green infrastructure has gone in the past. And I want to make sure as we move forward, especially EJ communities, and in particular where a lot of, it seems to me a lot. A lot less money has been spent

on green infrastructure that those investments--- And I know the Commissioner spoke to it in her testimony, but I want to make sure that as we move forward, that communities that have these longstanding problem are getting the attention they need in terms of equality. I terms of where the money is going, and I will leave it at that.

CHAIRPERSON GARODNICK: Thank you, Chair Richards. We'll now go to Council Member Levin.

COUNCIL MEMBER LEVIN: Thank you very much, Chairs. Thank you, gentlemen for your testimony today, for being here. I just want to ask about -- Well, first up following up on the previous question or your previous thing about grease collection. What are the efforts? What is the proper methodology of disposing of grease? Is it in the garbage, but it's not compostable, right? Is there a way to safely compost it?

DEPUTY COMMISSIONER ROBERTS: You know, I'm going to tell you that I'm not the total expert on the sanitation side of it. It is solid waste, right?

COUNCIL MEMBER LEVIN: Right.

DEPUTY COMMISSIONER ROBERTS: For example in the pamphlets, and the outreach programs that we developed. You know we have simple things like grease -- like caps for grease cans. When I was a kid growing up, you couldn't open the freezer without mom's can of grease from the bacon that she made yesterday --

COUNCIL MEMBER LEVIN: [interposing] Right.

DEPUTY COMMISSIONER ROBERTS: --being frozen in the refrigerator. I think it's become to trendy. It's too easy for many to just clean the frying pan, or the pan out, and pour it down the drain. So holding it and disposing of it as solid waste would be garbage.

COUNCIL MEMBER LEVIN: I'm just trying to think of how we can work with the Department of Sanitation on having innovative ways of disposal on their end. Because they're doing a huge amount of organic waste pilot program right now. We're now in a pilot program. We're expanding the program for organics and involving -- Somehow involving us with their organic disposal would be I think a good idea.

Because it's effective where it's being tried out right now.

DEPUTY COMMISSIONER ROBERTS: And again, the industrial commercial waste. The commercial waste has always been sort of managed. There are requirements and regulations --

COUNCIL MEMBER LEVIN: [interposing] Sure.

DEPUTY COMMISSIONER ROBERTS: --to get that hauled. [sic] It's the--

COUNCIL MEMBER LEVIN: [interposing] It's the residential.

DEPUTY COMMISSIONER ROBERTS: It's the residential, and well I mean the good news is certainly Commissioner Garcia having worked very closely with us for the past several years is intimately aware of that issue. She was an integral part of a lot of the conversation. So if there's an opportunity to sort of jump on -- tie those two things together--

COUNCIL MEMBER LEVIN: [interposing] Sure.

DEPUTY COMMISSIONER ROBERTS: --I can't seen anybody more positioned, in a better position than her to do it.

COUNCIL MEMBER LEVIN: I think part of it is it's addressing habits. And so, if you can shift the paradigm of people going with habits that would be good. [sic]

DEPUTY COMMISSIONER ROBERTS: [interposing] We do education to, you know, secondary schools, get the kids to yell at their parents as opposed to us. Sometimes that's the most effective way. But it is. It's a big part of it, education and breaking habits.

COUNCIL MEMBER LEVIN: Okay, and then my other question is around GIS. So I happen to be very close with a -- Close friends with a woman named Wendy Dorf [sp?], who worked for DEP a long time ago, and helped create the GIS System at DEP. What do we do-- there's a lot of advancements going on with GIS these days.

DEPUTY COMMISSIONER ROBERTS: Yes.

COUNCIL MEMBER LEVIN: It's a professional association in New York. Google is very involved. There are just some very exciting things

happening with GIS and with technology. What is DEP doing right now to utilize new GIS technologies, new mapping technologies, Google and other things to best track where your problem area. And/or anticipate future problem areas may be? How are you using GIS in today's technological world?

DEPUTY COMMISSIONER ROBERTS: Yeah, and so that's-- Again, that's a great question. The agency invested close to $30 million. The program was ongoing when I took this position in late 2006. And we really, I want to say 'took possession' of it, right? We took it out of the development and started to roll it out closer to 2010. There were earlier iterations of technologies that were not GIS. As everybody understands it today, the GBS.

There are different acronyms and different ways of mapping. But we douse it extensively. Three years ago, I had no -- Maybe four years ago, I had really no dedicated staff that was involved with it. Now I have a staff of close to 30 that work. They do analysis. They do the hydraulic modeling. We work very closely with ESRI is at the vanguard of--

COUNCIL MEMBER LEVIN: [interposing] Yes.

DEPUTY COMMISSIONER ROBERTS: -- of the entire industry. So, you know, no matter who is doing what, it's usually ESRI on the back end.

COUNCIL MEMBER LEVIN: [interposing] Right.

DEPUTY COMMISSIONER ROBERTS: And so we work day-to-day ESRI if there's a particular challenge that we're looking to -- we don't have a solution for, we have the ability to bring them in. They work side-by-side with us. So it's been a powerful tool. It's been something that I think has helped us manage the work more effectively, and certainly the planning piece of it is ongoing, but I think we're doing -- we're making progress in that area as well.

COUNCIL MEMBER LEVIN: And it has a dedicated budget? I mean you said there are 30 staff members?

DEPUTY COMMISSIONER ROBERTS: Well, they're all assumed in the overall bureau headcount. So we've got roughly a little around 1,300 employees within the Bureau and 180 million plus or minus PS OTPS Budget. We don't have a direct budget, but

there is not necessarily-- There's no need that I'm aware of that they don't have.

COUNCIL MEMBER LEVIN: Okay, and the technology is that part of your capital budget, or is that part of your OTPS Budget?

DEPUTY COMMISSIONER ROBERTS: It's actually -- it's not part of our capital budget, although I believe the upgrade, the actual project that created the GIS system that we have was a capital program. But that's since been closed out.

COUNCIL MEMBER LEVIN: Okay, we'd love to kind of hear what advancements are happening, and how that is going, and how could we, you know, best augment would help from the private sector and stuff like that.

CHAIRPERSON GARODNICK: Thank you very much, Councilmen, and a couple of clean-up questions before we go to our friends at National Grid and Con Edison. In your testimony you had noted that there is a pilot program, and that his is something, which looks like was announced as part of the National Grid and Con Edison. In your testimony you had noted that there is a pilot program. And this is something which looked like was announced as part of the

underground infrastructure working group to find areas of particular sensitivity, and have DEP work with the utility companies to actually do work together at the same time. One of the points that was noted in that report issued today was that to fully coordinate perhaps beyond ten pilot locations, that you might need to have an outside entity not the city do the coordination. Like have an academic institution because of the sensitivity of data. What is that all about? What is t he sensitivity here, and why couldn't the City manage this information and coordination itself?

DEPUTY COMMISSIONER ROBERTS: So I'm guessing, Council Member, because I'm not aware of it. Was there an announcement that was made this morning?

COUNCIL MEMBER LEVIN: There was, you know a--

DEPUTY COMMISSIONER ROBERTS: [interposing] Okay, I hadn't seen it. I apologize.

COUNCIL MEMBER LEVIN: [interposing] It must have been a coincidence with the data of the hearing.

DEPUTY COMMISSIONER ROBERTS: I can't imagine that.

COUNCIL MEMBER LEVIN: But there was an announcement that there would be among other things a pilot program. As you noted in your testimony--

DEPUTY COMMISSIONER ROBERTS: [interposing] Right.

COUNCIL MEMBER LEVIN: --to do some level of coordination, which sounds right.

DEPUTY COMMISSIONER ROBERTS: Right.

COUNCIL MEMBER LEVIN: But one of the things that it noted was that there's sensitivity of data, and that perhaps it could not be done by the City itself.

DEPUTY COMMISSIONER ROBERTS: So we think-- I think where that, and I don't-- certainly don't want to be in conflict with a statement that I haven't read yet that came out of the Mayor's Office. I think everybody can understand that. I do believe that we have the ability between both ourselves, our city partners, and the private utilities that have been mentioned to coordinate. As the Council Member just mentioned, GIS has come a long way. The electronic technology has come a long way. We all

have capabilities. Overlaying data sets is fairly easy for us to do. There are sensitivities frankly as I suspect, Chair, that you're aware. There are sensitivities to the water supply infrastructure, for example.

The water supply infrastructure is still guarded by Homeland Security rules and so on and so forth for the reasons that are obvious. So I think what we always need to leave open is the opportunity to -- The third party opportunity may be around technology that has more higher level planning, location based, project based planning, as opposed to asset level details. But we have the ability to manage the assets, but we want to leave nothing on the table with regard to trying to get it right, if that answers your question.

COUNCIL MEMBER LEVIN: Well, at least in part, but I also don't want to put you on the spot on something you haven't read.

DEPUTY COMMISSIONER ROBERTS: [interposing] Thank you.

COUNCIL MEMBER LEVIN: It just was odd to me the notion that the city would say something is too sensitive for us, the City to handle. Therefore,

we're going to try to have somebody else handle, but we'll figure that out together. And we'll resolve what they have in mind. But the last question that I have for you is put the pilot program aside for the moment. The idea that there could be a city agency that has access to say all of your maps, and all of Con Ed's maps, and all of National Grid's maps, and everything else to say, Wait a minute. Somebody is opening the street for a particular purpose here. We want -- we happen to know that on average that the age of the pipes under that street that is now about to be opened--

DEPUTY COMMISSIONER ROBERTS: [interposing] Yep.

COUNCIL MEMBER LEVIN: --one week from now is 75 years old for all of those systems. Here's your chance. Come and fix it altogether. Is that a practical level of coordination that you think that the City could do if it were so inclined?

DEPUTY COMMISSIONER ROBERTS: I think that we -- I think that we do it as we speak. I think we can do it better. I think one of the -- The paradigm shift here is really what the specific driver is for a given project, right. And so, as I

mentioned earlier, we're often trying to dovetail a highway construction project with the needs to rehabilitate a water main or a sewer in a given block or area. And the utility companies at that point come in with us. What the program that we're looking to roll out with the Mayor's direction is really about is focusing now on --

So the lead concern being those critical assets, the older cast iron, if that's the determining factor in either population whether it's on the private side or ours. So now with that being sort of the goal, we'll bundle locations into bite sized pieces. Whatever the right number is, $10 million projects. Given them to DDC and DDC will have the ability to coordinate that. DDC gets information. They work seamlessly with us now. They work with the utility partners now. They work with the utility partners now in terms of having that information available. So I do think that there is opportunity to improve it, but I think the capability is there. And then I think there's some opportunity to make sure-- And this may not have been as crisp. It will certainly be moving forward. I think the underground infrastructure group has identified this.

The communication between the non-city agencies and the private partners about the work that they're doing independent of us or vice versa may not have been as crisp. But I think we've started to put in place some protocols that will address that.

COUNCIL MEMBER LEVIN: Well, we look forward to following up with you on that because building and doing coordination of these efforts I think both helps people's quality of life. But also more quickly gets the work done in a way that otherwise has been done in a much choppier or piece meal fashion. Before you're free, I have one of my colleagues, Council Member Ulrich who has a couple of questions for you. So I apologize. I thought I was the end but we're glad that he's back. Council Member.

COUNCIL MEMBER ULRICH: We saved the best for last here. So thank you Chairman for your indulgence, and thank the panel especially Commissioner Roberts I want to thank you. You have been a tremendous help to my district over the years, and as you know, we've had so many issues since Hurricane Sandy that have just been exacerbated, of course, by the storm. I know that you and your staff

have gone out of your way, literally, above and beyond. So I want to commend you, and thank you for that.

DEPUTY COMMISSIONER ROBERTS: Thank you.

COUNCIL MEMBER ULRICH: The question that I have are two questions very quickly. First, is there any update on the report that DEP was supposed to do following the investigation into what happened at the Spring Creek facility when we had that big rainstorm in Lindenwood and Brooklyn where we had the flood? And the second part is in the budget I know that we have funded, and the Commissioner had testified previously at the last hearing that we have funded bioswales and other flood mitigation projects, small ones. But they were only going to be designated for certain areas, and that was something that we had asked for consideration. In Lindenwood and in parts of Brooklyn could we consider putting those bioswales and other flood mitigating things that DEP is engaging in those areas, even though they're not part of those designated areas?

DEPUTY COMMISSIONER ROBERTS: And I thank you for the recognition, and again a lot of the success that we've been able to have has been in

partnership with both yourself and colleagues on the Council. So it's a two-way street. With regard to Lindenwood and Council Member Barron was here earlier and asked a question in a similar vain. What we do know at this point is that the root cause to have been a sensor that malfunctioned, and a gate that did not open as a result of that malfunction. The investigation of it is ongoing. We've got engineers both internal and contract engineers, consultants looking at why that happened. Should it have been prevented? Should it have been prevented? It should not have happened. That's crystal clear. But understanding why it happened, and how do you go about ensuring that it does not happen. I know that we made the commitment to have that facility manned until not only the problem is solved to our satisfaction, but until it's demonstrated over some period of time that it's solved to our satisfaction.

On the second issue, and again, this sometimes I would say is misunderstood in terms of our motivation with regard to the citings of the Green Infrastructure Program citywide. The areas that we chose to start that work in, was really coupled with work that we're doing to reduce CSO in

specific areas. So there is a pilot program that we've been running and moving forward with success. Having said that, I know that Commissioner Lloyd is particularly committed to looking at exactly the question that you raise, which is where can we leverage that technology or that approach to other areas for mutual benefit? It's not for everywhere. There are challenges with its application in given geographies, but I think Commissioner Lloyd is on record as saying that she's committed to that. So more as we move forward.

COUNCIL MEMBER ULRICH: Thank you and again, thank you to the Chair. Thank you for your testimony. You're doing great, great work. Thank you.

DEPUTY COMMISSIONER ROBERTS: Thank you.

CHAIRPERSON GARODNICK: Thank you for that, and now we have a few follow-ups, and we will follow up with you at the staff level. But we thank you for your testimony, and all of your time today. We appreciate it. And with that, we are going to call up our next panel, which will be comprised of representatives of National Grid and Con Edison of New York, Brian DeMarinis of National Grid; Edward

Foppiano, Vice President, Con Ed, and Melovan Blair of Con Ed. Welcome. That's all right. Thank you.

[Pause]

CHAIRPERSON GARODNICK: Thank you, gentlemen, and whenever you're settled, we will get started.

[Pause]

CHAIRPERSON GARODNICK: Welcome. Who would like to kick it off?

[background discussion]

MELOVAN BLAIR: I'll go ahead. Good afternoon, Chairman Garodnick, Chairman Richards, Chairman Espinal. I'm Melovan Blair, Senior Vice President of Central Operations. I'm going to talk to you today about our Steam System, which I am responsible for. Our steam system started back in 19-- in 1882 at the New York Steam District Heating System. We have generating stations that produce steam, and then we send it out to customer via pipes on the ground. The steam customers use it for heating and to cool high-rise buildings, hospitals, dry cleaners, and other businesses also use steam for cleaning, climate control, and sterilization. We're the largest commercial steam system in the Unites

States, larger than the next nine largest systems combined. We have approximately 100 miles of main and serviced as part of our infrastructure.

We provide steam to more than 1,700 customers. Some of our more famous customers are the United Nations, the Empire State Building, Metropolitan Museum of Art. Steam is good for the environment. You don't have to use oil boilers in the buildings or gas fire boilers that take valuable building space. Using steaming conditions offsets 375 million watts of electric system. Two-thirds of our steam is produced by cogeneration with an efficiency of 85%, which is much better than a cogen which is 55%.

Con Ed Steam Supply reduces pollutants including 1.6 million in terms of carbon dioxide annually, the equivalent to taking 275,000 cars off the road each year. Roughly, 23 billion pounds of steam flows through our system every year. For example, for our summer peak we have about five million pounds of steam per hour. We have a comprehensive maintenance plan. We inspect our steam trap six times per year, and we inspect our manholes once per year. We have installed remote monitoring

on the system so the operators can add real time information on the operation of the system. We have added natural gas to two of our major plants, which, of course help in reliability and security.

Since Super Storm Sandy, we fortified our energy system spending -- In 2013, we spent $60 million. In 2014, we already spent $50 million and we are going to spend $145 million between 2014 and 2016. And, of course, our always to provide safe and reliable steam energy to our customers and respond to their needs quickly.

EDWARD FOPPIANO: Good afternoon. So Chairman Garodnick, Chairman Richards, and Chairman Espinal and members of the City Council. Thank you for the opportunity for us to be here today to speak about our gas safety and maintenance. I'm just going to give a quick summary of my testimony.

CHAIRPERSON GARODNICK: Also, introduce yourself.

EDWARD FOPPIANO: My name is Ed Foppiano and I'm the Vice President of Gas at Con Edison. So I wanted to start off by saying that myself and all the folks at Con Ed are deeply saddened by the tragedy that happened in East Harlem, and we're 100%

committed to make sure that we determine what happened, and try to prevent this, or anything like this from ever happening again. We're working with the National Transportation Safety Board on the investigation, and because of working with NTSB, we're limited on what we can say at this time regarding the recourse.

So I'm here today to really give you a sense of the scope of our gas system. So we have 4,300 miles of main, and about 368,000 gas services. We service Manhattan, parts of Queens, the Bronx and Westchester to about 1.1 million customers. Public safety is our number one driver. We've recently redoubled our efforts to examine our maintenance and leak detection practices. This included educating the public with a multi-lingual campaign on the importance of reporting gas leaks. I can't emphasize enough the importance of someone calling 911 if you smell gas. We have a little slogan, "Smell Gas. Act Fast." And we're looking for folks to get away from they're smelling the gas, and report it to 911 or they can call the utility.

Leak detection is an area that we're trying to improve. Currently, we do a one-week

survey a year of our mains, and at least once every three years on our services. I'm pleased to announce that about a week ago we started a pilot. What we're doing is we're combining a pilot of what we call a straight voltage vehicle that looks for contact voltage where it shouldn't be in manhole covers or street lights.

We're combining that equipment with gas leak detection equipment. Our stray voltage equipment goes out-- They do a complete survey 12 times a year, and we're hoping that this will be a way for us to increase the number of leak surveys that we do in a year. Since the East Harlem strategy -- tragedy, we have also met with city emergency officials on how to improve response to gas odor calls and other events in the city infrastructure. So one major initiative is working with the Fire Department, and have more calls go -- possibly all calls go through 911, and having the Fire Department respond to those calls. The Fire Department can get there within less than eight minutes. In 2013, our average response time was 22 minutes. So, we feel that working with the Fire Department and partnering with them, that would help with emergency response.

We've also nearly doubled our main replacement program in recent years. Right now we're doing 65 miles a year for the next three years. Our capital budget is about $500 million a year, and about $215 million of that goes towards the replacement of gas mains. The cost to replace all of our remaining cast iron and gas steel piping is about $10 billion. So that's a significant amount. We respond to about 33,000 reports of gas odors each year, and I mentioned our response time. And we currently interact with the Fire Department on about 4,500 of those responses.

Natural gas is the nation's cleanest fossil fuel, and buildings in New York City as part of the Clean Heat Program are converting from heavier dirtier oil to natural gas. We accept our responsibility to provide energy safely, and we take it very seriously. It is our duty to protect the people who live in our communities, and we are your neighbors and keeping all of us safe is at the heart of our mission. Thank you. Oh, one other comment. We have the Stray Voltage, combination our Stray Voltage and Gas Leak Detection van. It's actually outside opposite 250 Broadway on this side of 250

Broadway. S o if you'd like to see this afterwards, you're more than welcome. We have folks here that can tell you about the equipment that we use. Thank you.

CHAIRPERSON GARODNICK: Thank you. Thank you very much.

[Pause]

ROBERT DEMARINIS: Good afternoon, Members of the City Council. Thank you for this opportunity to appear today to discuss New York City's utility infrastructure. My name is Bob DeMarinis. I'm responsible as Vice President of National Grid for all of the gas operation in the State of New York. I've got 33 years experience with the company or its predecessor companies in power generation, electric, and gas operations. To put things in perspective as far as National Grid in the State of New York we own and operate the distribution utilities that provide service to approximately 2.4 million customers in Upstate New York, Long Island and the boroughs of Staten Island, Brooklyn, and Southern Queens.

We have about 21,000 miles of gas transmission and distribution pipelines throughout

the state including 4,100 miles of main in New York City. National Grid's number one priority is, and always will be safety to our employees, our customers and members or the public. To that, we are committed by prudently investing in our gas infrastructure maintaining a safe and reliable operation. We have invested more than $2.2 billion in our gas infrastructure in the State of New York in the past five years. Approximately half of that occurred right here in New York City.

One of the larger projects, the BQI, for example, is going to provide a new pipeline supply delivery into New York City. This project is going to enhance the reliability of our system, specifically to the Rockaway Peninsula, and permit us to get greater quantities of natural gas to this region in an economical manner. We've converted nearly 15,000 customers this past year to natural gas. Over 1,000 of those are here in New York City. We've partnered with the New York City Clean Heat Initiative to accelerate the phase out of heavy oils in 750 buildings here in New York City, and we've got approximately 128 remaining. And in much of our

investment over the next couple of years is going to allow us to do that.

In addition, our capital investment program has, and continues to include projects to strengthen the resilience of our gas system following Super Storm Sandy. We've done significant system upgrades in the hardest hit areas, in particular the Rockaway Peninsula where we've replaced more than 30 miles and upgraded pressures on that peninsula as well as parts of Southern Queens, and the Newdorf and Midland Beach areas of Staten Island. Our gas business faces the challenge of improving the integrity of a system that is amongst the oldest in the United States while also at the same time meeting the growing demands of new customers.

Over the next two years, we'll invest more than $1.4 billion in gas infrastructure projects in New York State. More than half of that will occur here in New York City. These investments are going to increase jobs; improve reliability and safety; convert additional customers that want natural gas, as well as benefitting the environment.

I'd like to just speak to a couple of key points as part of our business plan, and where I

think where we've got the opportunity to improve specific initiatives going forward. Number one is more engaging and effective public awareness programs. We need to engage critical stakeholders, the first responders to schools. We've launched a new Power to Serve volunteer effort in the schools with regards to gas safety. As part of that gas safety education, not only recognizing the odor of gas and who to call, but also a huge effort on damage prevention. We have 200 damages in the City of New York on an annual basis. If we can educate more and more about the use of 8-1-1-- I know a lot of people know about 911. They know about calling the Mayor and his special hotline. We need to educate the public on 8-1-1 to call before you excavate. We have less than one percent of damages occur when we've got one call, and we're able to get out there and mark out facilities. So we've really targeted a program there with the youth. Again in the schools as well as with the Fire Department.

The second thing that we need to do is accelerate the replacement of our leak-prone pipe. Forty-seven percent of our distribution system in New York City is leak-prone pipe. We had a plan that

replaced approximately 4,300 miles a year. The good news is, and you heard from the DEP earlier about half of the main that we replaced is done in conjunction the DDC and these coordinated projects. But we're going to be doing much more investment here in the future. We're going to be increasing to a point of about 70 miles per year here over the next five years that will enable us to reduce and eliminate leak-prone pipe from what was about 45 years to below 30 years. That is a major undertaking that we believe is a great opportunity, as you heard earlier, to continue to coordinate on these projects. We'll be able to do it in a much more cost-effective manner.

And then finally, technology and innovation. This is at the heart of what we do at National Grid. We've always been an industry leader with regards to new technology. Working with the American Gas Association and NYSEARCH, we've been able to deploy, and are still looking at new technology around methane detectors, and enhancing leak detection. As a bridge to replacing all of this aging infrastructure, we're looking at new and innovative ways to renew the pipe that we've got so

that we're able to go after the higher priority leak-prone pipe with pipe lining.

We've just completed a technology called CISPA [sp?] with our colleagues at Con Edison where we'll be able to go through a 6x6 excavation, and renew the large diameter cast iron joints. It's working very successfully in our New England operation, as well as in our U.K. operation. It's been tested and proven by Cornell University to the fact that we'll be able to renew those large diameter pipes for another 50 years, and give us the time that we need to invest the dollars to eliminate the infrastructure as we go.

Another great example of how we're using technology is we worked with the New York City DEP on a project called the Newtown Creek. It's the first project in the United States that will directly inject renewable biogas that's currently being flared to the atmosphere with technology to inject into our gas distribution system from that wastewater treatment facility. It should be up in operation in two years. It's going to turn 600 to 800 cubic feet of biogas, million cubic feet of biogas that currently is flared into our distribution system with

enough volume to heat 2,500 residential homes on an annual basis.

Also, another benefit is it's going to reduce CO2 emissions to the equivalent of removing 3,000 cars off of the streets. So again, a lot going around us trying to work together, deploy new technology. We know this infrastructure replacement is going to take a lot of time and money. So we need to get more creative, and those are just a few examples. National Grid is one of the largest gas utilities in the United States, and we take great pride in the fact that we leading around technology deployment in the field, and we take that very seriously.

I want to thank you all for this opportunity to address the committee, and I'll answer any questions at this time.

CHAIRPERSON GARODNICK: Thank you very much, and we appreciate your testimony and your presence here today. We're going to start with our Chairman of the Consumer Affairs Committee Rafael Espinal

CO-CHAIRPERSON ESPINAL: Thank you, Chair Garodnick, and thank you for your testimony. I think

my first question is how old on average are the pipes that you changed?

ED FOPPIANO: For the gas system at Con Ed the average age is 55 years.

CO-CHAIRPERSON ESPINAL: 55 years? Do you believe that the primary cause of gas leaks happen to be because of the age of these pipes, or is there another reason?

ED FOPPIANO: Yeah. No, it's not the age. Age is just one factor. Old doesn't necessarily mean bad for gas piping. For example, I mentioned that we replaced 65 miles of pipe. We actually have a program that helps us to that. It's a relative risk model, and a relative risk model uses a whole bunch of factors. So age is one, but things like diameter, pipe material, soil conditions. There's a number of factors that go into it. So, for example, say cast iron. Small diameter cast iron would have a very high priority because it's relatively brittle, and the smaller the diameter, the less beam strength they call it that cause it to break. So that would have a very high priority. So age is just one factor. There are a lot of other things that go into it like material and diameter.

CO-CHAIRPERSON ESPINAL: So how do you determine what part of the city you want to target when you're changing these pipes?

ED FOPPIANO: So actually we have -- Our system is broken down into segments, and there's actually literally hundreds of thousands of segments. Because a segment would be any time you have a diameter change, a material change, the segment in this model would actually take all-- the entire system including actually in Westchester. And we would prioritize it based on relative risk. So it's regardless of community or whatever, it's really based on the pipe conditions, and that's what determines what pipe would be replaced next.

ROBERT DEMARINIS: Now, I see and just one point because it's very similar at National Grid, but one other thing that we do is we do try to leverage the ability to go out into those streets once. So we have a good look at the DDC of the five-year plan for infrastructure replacement in the city. So we will prioritize somewhat because we've got some flexibility in order to coordinate that work going forward.

ED FOPPIANO: Just one other comment. We're actually doing the same in trying to do the same in trying to improve upon that right now working with Jim Roberts who was here trying to coordinate. So if the city is doing sewer work or water work, we want to go in there with them, and hopefully do this in a fashion that we could reduce costs, share costs for excavations, possibly join with them and that would really help a win-win for all.

CO-CHAIRPERSON ESPINAL: I know you mentioned earlier that it takes time and money to replace these pipe, or patch these pipes. They're almost $2,000 per foot. What do you guys do you represent? Break it down. What's the cost of labor and the materials and the service disruptions?

ROBERT DEMARINIS: From the National Grid perspective you'd be surprised. The restoration could be in excess of 50% of the work. That's why we're so diligent in trying to coordinate work. You know, you heard from Jim earlier. We do a great job on planned work but this initiative is really going to take us to the next level on reactive work, both Con Edison and National Grid as well as the DEP you heard do reactive work that they've got to go out and

do. If we can start to coordinate that better that will significantly reduce costs going forward.

CO-CHAIRPERSON ESPINAL: I know in the past and you currently have the machines to test the stray voltage, and now you're expanding it to test for leaking gas. Why do you feel that now is the time to expand now? Why weren't we doing this in the past when we had stray voltage? [sic]

ED FOPPIANO: We really started this and looked into it after this East Harlem tragedy. And we're looking at all different options, and this was an idea that we had that we said this could be a way to increase the amount of leak surveys that we do, and also do it in a cost-effective manner because we're going out doing the stray voltage. This would be a good addition. We're also looking at other technology. There's a new type of leak detection device that we are actually going to be demonstrating in the month of July that if it works the way it's supposed to, you could survey the mains, the gas mains that are out in the street and the services that go from the street into the buildings all at one time. So we're going to look at that. So we're really looking at all opportunities on how we can

improve leak detection, and the overall safety for our customers.

CO-CHAIRPERSON ESPINAL: So how much does it cost an average consumer when a gas service pipe leaks?

ED FOPPIANO: I'm sorry. Can you repeat?

CO-CHAIRPERSON ESPINAL: If you translate the cost of the replacement of the gas pipe after it leaks, how does that translate to someone's bill?

ED FOPPIANO: I don't think I have it. Like say -- say right now. We have about $500 million, but I mentioned $250, about $500 million capital is in our rate case right now, in our rate structure, and our increase in, it was -- I think it was about 3%. Yeah, I forget the number in our last rate case what the bills actually increased by, but I can get back to you with that information.

CO-CHAIRPERSON ESPINAL: I just think it's important to find ways to do these repairs, and I find capital dollars with having to hit our consumers. You know, I think earlier this year, they were sticker shocked by the amount the rates have gone up between electricity and gas bills, and we want to stop that from happening in the future.

ROBERT DEMARINIS: Well, you know, just something to answer that, if I may, from National Grid's perspective. In our rate case all that $1.4 billion and I -- what I spoke to in the next couple of years, that is covered by rates right now. It's a unique time in the gas business because of the gas pricing being so favorable right now, and it's stable into the future. So we're able to make these investments with having minimal impact on the customer's bills, which is really what we're utilizing to enable this work that has to be done.

CO-CHAIRPERSON ESPINAL: Thank you. You know, as consumers we're always trying to find ways to cut our costs. And we cut our costs, and a year later our bills go up to-- I guess make up for those costs we cut. So, you know, it would be great to see a way where we can start lowering the impact we have on the consumers.

CHAIRPERSON GARODNICK: Thank you, Chair Espinal. Let me jump in with a few -- with a few question here. First, I want to focus on the gas question, and the safety of the system. We all obviously are eagerly awaiting the results of the NTS, the investigation as to what happened on 116th

Street. But I took note of your testimony that you get 33,000 calls a year reporting gas odors. Forty percent of them are not leaks, but 60% of them are. So there's about 20,000 calls a year to Con Edison alone of reported and actual gas leaks out there. How should New Yorkers take that news to know that there are 20,000 validated gas leaks a year, and how dangerous is that?

ED FOPPIANO: So, let me start off by answering that question by out of that-- out of the 60% that we described, about two-thirds of all leaks are inside customers' facilities on customer piping. And about one-third are outside either in the mains or in the services that are outside in the streets and under the sidewalks. So, when we respond to the two-thirds, the customer locations, we make them safe on the first visit one way or another. We either can do a repair, or sometimes it's not a leak at all, but 40% of those are not leaks as well, or, we'll shut off the service to the building. And if we find a leak on customer piping, then the customer will have to make that repair. So those are made safe. Again, very important for the customers to call us because that's the most important step is call -- call 911.

Call us. We'll get there, and we can make that repair.

The other third that are outside, we -- About half of those we find ourselves either with our leak survey equipment or our own company employees. And about half are called in from the public, and we react to those. I mentioned that we get there within-- Our average in 2013 was 22 minutes to respond, and if it is a leak that we deem hazardous, we actually work it continuously until made safe. So we get there within 30 minutes. If it's a hazardous leak, we will work it continuously until made safe. Now that could be a temporary repair. It could be venting because sometimes particularly in Manhattan, it may take several days to make a permanent repairs. But there are all types of requirements to put the street back to good condition, compaction tests and all. But those hazardous leaks we make safe, and wee won't leave until we make it safe.

CHAIRPERSON GARODNICK: Okay. So I take from what you're saying that -- so if we break down the 33,000 calls, 19,800 of them are actual leaks and about more or less 14,000 are from inside a private

whatever it is. And around 6,000 or so come from outside--

ED FOPPIANO: [interposing] Right.

CHAIRPERSON GARODNICK: --of which half are detected by Con Edison, and half are detected by somebody else?

ED FOPPIANO: [interposing] That's exactly right.

CHAIRPERSON GARODNICK: It's 3,000 and 3,000. Okay. Any leak is a danger to the public, correct?

ED FOPPIANO: Yes. If anybody smells gas, we want you to call because potentially it could be a danger. But when we get there, our -- like I mentioned, if it is a dangerous leak we'll work it continuously until made safe. Some leaks are actually -- we classify them as Type 3, or what they refer to a non-hazardous, and that has to do with distances from buildings or from structures that cause harm. But those we respond to, again, within that--

CHAIRPERSON GARODNICK: [interposing] How many of your 6,000 that would have to be in the 6,000 because they have to be away from a structure, and

the 14,000 or so are within a structure? How many of the 6,000 are Type 3 non-hazardous?

ED FOPPIANO: Oh, it's probably about-- I don't know the exact number, but it's probably on the order of about three-quarters.

CHAIRPERSON GARODNICK: Three-quarters are non-hazardous.

ED FOPPIANO: Right.

CHAIRPERSON GARODNICK: Okay. So, we'll it 4,500 of the 6,000 are non-hazardous, and about 1,500 are actually hazardous. So we have 1,500 outside leaks [bell] that are deemed to be hazardous. Are all of the inside leaks also because of where they are deemed to be hazardous just by virtue of being indoors?

ED FOPPIANO: I would say yes. And again, those we make safe one way or another upon our arrival.

CHAIRPERSON GARODNICK: How much of a leak do you need to have to cause an explosion that would bring down a building?

ED FOPPIANO: So the explosive range of gas is 5 to 15%, and if you're within that-- and that's percent of gas in air. And anywhere within

that range you just need a spark, and you could have an explosion. Below that range, it's too lean. Above that range, it's too right. But in that range, gas is explosive, and that's again why it's important for the public if you smell gas we want those calls, and we want to react to that. And we will react to every one of those calls and respond. Because it's very important for us to get there, and hopefully make the condition safe.

CHAIRPERSON GARODNICK: How else could there be a concentration of gas in the air more than 5 to 15% that would cause a spark that would be significant enough to cause an explosion other than a leak? Is there any other way? I don't -- I can think of any, but I don't know if there is one.

ED FOPPIANO: No, I can't either. No. I mean there's -- besides natural gas, there could be methane, and that can also be explosive from sewer gas. It may not be natural gas, but if there's methane, which is the major component in natural gas. But it could come from a gas pipe, or it could come from like I mentioned a sewer. It would also be an areas that you can get methane gas.

CHAIRPERSON GARODNICK: Okay, are you aware of the report that the Mayor's Underground Working Group issued today on the subject of who should be responding where there's a smell of gas?

ED FOPPIANO: Yeah, I actually just saw it. I didn't really read the whole thing, but I just saw it right before I came in.

CHAIRPERSON GARODNICK: We haven't seen it yet either I should note. But it's our understanding that it says that the Fire Department should respond contemporaneously with Con Edison or National Grid when there is a report of the smell of gas. Is that a change in the current practice?

ED FOPPIANO: It's an increase to the current practice. About five years ago-- We always partner with the Fire Department on certain leaks and certain conditions. But about five years ago, we at Con Ed and National Grid is doing something very similar. We came up with a process called our code -- We refer to it as our Code MURRE Response, and MURRE is M-U-R-R-E. It stands for Multiple Resource Responses Events. So what we do is when leaks come in to our call center, they get classified and there's certain triggers. And also, if we respond in

the field on a leak, and there's certain triggers that would initiative a Code MURRE Response, and on each one of those Code MURRE responses we bring in the, you know, we call in the Fire Department to help us. And the reason for doing that is the Fire Department can get there much quicker, with sirens and going through lights and so forth. And there are a lot of different locations with all the firehouses. So they can get there much quicker than we can. So we partner with them, and with that team and that report that you just mentioned I think is Building Line is that we know that the Fire Department can get there before us. If we could take advantage of that, have the Fire Department get there and respond to all gas odors would be the concept. Con Edison, of course, would go as well, but getting there that much quicker can help. Because if there was some type of condition, minutes count. And that's why it's so important for people to call, and to call 911 if there is a problem. [sic]

CHAIRPERSON GARODNICK: [interposing] So let me just make sure I understand this. The system today with a certain type of call that comes in, you evoke Code MURRE--

ED FOPPIANO: [interposing] Right.

CHAIRPERSON GARODNICK: --which brings the Fire -- which sends the Fire Department ahead of you, is that true?

ED FOPPIANO: [interposing] Right.

CHAIRPERSON GARODNICK: You'll get there on average in 22 minutes. They'll get there faster, but you are the ones who invoke that protocol?

ED FOPPIANO: Yeah, we initiate it, but it can happen in two different ways. It can happen either from when the call comes in from the customer, or it may be upon our arrival. For example, if we arrive on location, and we test the sewers, and we find gas in the sewer, that's a potentially dangerous situation because it can get into many homes. And you need a lot of boots on the ground quickly. That would initiate a Code MURRE because instead of a single responder, or a couple responders, now you could have a company with probably 20 fire fighters helping to get into homes quickly to evacuate. So another example being, Bob a contract for damage. If we have a contract for damage, and that gets reported to our call center, that contractor who is working out there that would initiate it right at the time of

the call. And then, the Fire Department would likely get there well before us. And those are the type of conditions where working with the Fire Department can help. We've been doing that at a high level. I think I mentioned about 4,600 times a year we are out there together with the Fire Department. On these Code MURREs, it's about a thousand a year that turn into what we refer to as a Code MURRE. And we think what the Mayor and all are proposing with having all gas leak response calls go through 911 and sending out the Fire Department could definitely help the city.

CHAIRPERSON GARODNICK: [interposing] But certainly. And now, of course, it sounds like it will give prompter attention to the issue. That's 30,000, 33,000 more calls a year that the Fire Department now has to answer to beyond what its obligations are today.

ED FOPPIANO: [interposing] Right.

CHAIRPERSON GARODNICK: Or maybe 33,000 more than what they do today. They get 1,000 Code MURREs from you guys, and that's it? Now they're going to have 33,000 more calls that they're going t respond to. Do you think that that-- You know, this

is not really a question for a power company. But do you think that that is too much of a burden on the Fire Department? You know, that seems like a pretty big additional task. I don't even know what the total number of Fire Department runs are that they respond to fires every year. But this seems like -- I mean at least in the ballpark of the number. What do we take from that?

ED FOPPIANO: So let me answer that in two ways. So, one, the 33,000 is for all Con Edison, which includes Westchester. So about 60% in New York City, and 40% in Westchester. So it's a small number. I don't have -- I can't answer for the Fire Department, but we are working with the Fire Department on this. And I could tell you that they are looking at their capability of doing this for all gas odor calls coming in from New York City for both Con Edison, and for Nat Grid.

CHAIRPERSON GARODNICK: Okay, well obviously it's disappointing that none of us were made aware of the recommendations in advance of the hearing today because we would have been able to have a more intelligent conversation. But we certainly will take a look at that, and we'll be following up

with you, and with the Fire Department. And to consider what the implications of this are. I mean, there's no question that the Fire Department can get there faster, and that's important. But it is obviously a lot, whether it's 20,000 more trips for FDNY or 32,000 more trips. That's a very, very big number. Okay, let's just talk about steam for a second. I don't want to neglect steam. It's one of my favorite topics. The remote monitoring devices that you've now installed throughout the distribution system, is -- You now have that at 1,300 locations.

MELOVAN BLAIR: 1,300.

CHAIRPERSON GARODNICK: Were most of those put in after the -- 2010. What was the date of the --?

MELOVAN BLAIR: [interposing] 2007.

CHAIRPERSON GARODNICK: 2007 steam --

MELOVAN BLAIR: Yes, the remote monitoring was out there.

CHAIRPERSON GARODNICK: Okay, and is that the proper number for you all, or do you aspire to be at 1,500 or 2,000?

MELOVAN BLAIR: So at this point, as you indicated, we are monitoring 1,300 locations. We're

going to do another 125 this year, and then the remaining will probably bring it up to about 1,500 approximately.

CHAIRPERSON GARODNICK: 1,500 is the ultimate number?

MELOVAN BLAIR: Approximately.

CHAIRPERSON GARODNICK: Okay.

MELOVAN BLAIR: And other locations, if we think is required. [sic]

CHAIRPERSON GARODNICK: And you are able today monitor the functionality of all of your steam traps?

MELOVAN BLAIR: No, at this point, we have 850 steam traps. Six hundred and seventy of those we can monitor remotely. The 125 that I mentioned, those are steam trips that we're going to do this year, and then the remaining steam traps we'll do -- the remaining number, which is about 55, I would think we're doing next year.

CHAIRPERSON GARODNICK: So you will have a monitor, a remote monitor --

MELOVAN BLAIR: [interposing] Monitoring of steam.

CHAIRPERSON GARODNICK: --for all of your steam traps by the end of the next year?

MELOVAN BLAIR: That's correct.

CHAIRPERSON GARODNICK: Okay. It has been the protocol of Con Edison to respond with crews during a heavy rain to particularly sensitive locations where water tends to sit, and cool your pipes. Is that still the protocol for Con Edison? Has the number of locations changed in any way, or what's happening with that?

MELOVAN BLAIR: Yes, so right now we have about 29 locations.

CHAIRPERSON GARODNICK: [interposing] Twenty-nine, you said?

MELOVAN BLAIR: Twenty-nine locations that we call have Priority 1. If we get three-quarter inch of rain of over a three-hour period, we will mobilize. We'll actually pull those areas. We also have, you know, monitor levels there as well. So we will pull if we see that-- We will respond if we see three-quarter inches of rain in a three-hour period.

CHAIRPERSON GARODNICK: So, that's incredible. I mean steam, as we have come to learn,

is a very delicate sort of beast, and it's amazing, though, that three-quarters of an inch of rain would prompt the need for 29 crews to go pump water. But I understand the danger of that, and we've seen the danger of that. Of course, the explosion back in 2007 was right after a very, very heavy rain. When you go to patch the pipes, if you have a leak that is more than just a non-dangerous leak. But if you're actually patching the real serious leak of a steam pipe, what are you using to patch that? Back in 2007, we were talking about a particular Epoxy glue, as I remember. Are you using the same materials? How have you advanced the patch work of old steam pipes since that time?

MELOVAN BLAIR: So, we're not using the same Epoxy to remediate the leak. I find the water material that we do use, but in a case where we call it a Priority 1, what we will do is we'll actually do a shut off to make sure not that we're doing a temporary repair, but we're going to do a full repair. So instead of patching, we're not going to patch. If we decide it's a Priority 1, we could then fix it permanently.

CHAIRPERSON GARODNICK: In terms of the age of the pipes, and forgive me if Chair Espinal elicited the specific to this question, but do you know precisely, and this is a question for both Con Edison, and for National Grid on the subject of both gas and steam. Do you know, precisely where your oldest pipes are in the system. You could actually lay it out on a map and say, There it is. Council Committee, here is where we've got our highest concentration of old, and recognizing that old is not the only factor. You have to have the age of the pipes and are able to identify them?

MELOVAN BLAIR: Yes, we do from a census. [sic]

ED FOPPIANO: You know, we do for all of them.

CHAIRPERSON GARODNICK: Both National Grid and Con Ed for that.

ED FOPPIANO: It's on our maps and we have all that information.

CHAIRPERSON GARODNICK: Okay, and how about the width of the pipe. As you noted before, the diameter is perhaps a bigger concern when talking about gas. Do you know both the age and the width

ED FOPPIANO: Yes, we do.

ROBERT DEMARINIS: It's called diameter, the diameter.

CHAIRPERSON GARODNICK: The diameter. Thank you. Okay.

CO-CHAIRPERSON RICAHRDS: I have a question.

CHAIRPERSON GARODNICK: Council Member Richards.

CO-CHAIRPERSON RICHARDS: Before I begin, I just wanted to second what Council Member Garodnick voiced in terms of the FDNY. I am very concerned about the staffing levels obviously at the FDNY, and if they would be able to obviously handle this particular capacity. So I just wanted to second that. I wanted to ask, and this is a question for both National Grid and Con Edison. So in terms of gas leak complaints, do you guys have a plan to increase your staffing levels to help obviously supplement what the FDNY is going to do as well? Is there any plan to do that, to respond to gas leaks?

ROBERT DEMARINIS: I mean despite the change in the policy that's something that we do on an annual basis anyway.

CO-CHAIRPERSON RICHARDS: Speak to some more specific terms.

ROBERT DEMARINIS: Well, we actually have emergency response performance targets with the public commissioner, and if we don't meet them we're penalized.

CO-CHAIRPERSON RICHARDS: Okay.

ROBERT DEMARINIS: So it's something that we're constantly monitoring to make sure that we've got the right amount of crews, and the right locations to respond.

CO-CHAIRPERSON RICHARDS: And how long does National Grid take to respond? Because 22 minutes seems like a very long time to me. I know Con Ed mentioned 22 minutes to respond to a gas leak, I believe. How long to you guys take?

ROBERT DEMARINIS: It varies. I mean but the average is close to that number.

CO-CHAIRPERSON RICHARDS: Okay. So can you take me through -- do you guys have particular staffing in each borough or does it work if someone calls in a gas leak? Do you have locations in each borough where they would be dispatched from?

ROBERT DEMARINIS: Yes, and we were constantly monitoring that.

CO-CHAIRPERSON RICHARDS: And how much? Can you speak to each borough? How much would each borough have?

ROBERT DEMARINIS: You mean a specific number of employees?

CO-CHAIRPERSON RICHARDS: Yes.

ROBERT DEMARINIS: I don't have that specific number.

CO-CHAIRPERSON RICHARDS: If you could get that back to the committee.

ROBERT DEMARINIS: For just emergency response?

CO-CHAIRPERSON RICHARDS: So if someone calls in, and obviously there's a gas leak, we want to know how much staff is dedicated for those particular issues?

ED FOPPIANO: We can get back to you as well on that, but we do -- calls actually come into a common location. We have what we call Gas Emergency Response Center. We have people located in different regions. They can actually track locations of the vehicle. We have equipment that can do that so we

know where they are. And then when we get a call, we dispatch the crew that is closest that can get there quickest. And Nat Grid does the same, and we do have coverage 24 x 7. We actually if we need to, what we do is we can supplement our weekly response folks with contractors as well that can do this work for us. We utilize them during -- we utilize them during a strike or whatever. So we have other opportunities for resources, but I can get back to you on those numbers.

CO-CHAIRPERSON RICHARDS: So you would say that you have adequate -- would you guys both say that you have adequate staffing levels to respond to these particular issues?

ED FOPPIANO: Yes.

CO-CHAIRPERSON RICHARDS: Con Edison, you're saying you have adequate staffing as well?

ED FOPPIANO: Yes, yes.

CO-CHAIRPERSON RICHARDS: No need for any increase you're saying?

ED FOPPIANO: We always evaluate that, but if we need -- And as Bob mentioned, we have goals that we try to meet as far as response times. So we would adjust them and hire as needed to do that.

CO-CHAIRPERSON RICHARDS: Okay. You also spoke of coordination with DEP. Would you say that -- and obviously this is a new administration, and we're moving into a newer direction, but would you say that coordination is a plus, or I don't want to say or give a letter grade. But can it better with the city? Can coordination be better with the city?

ROBERT DEMARINIS: I can speak from experience. I was Director of Construction in New York City, and worked very closely with the DDC, and yes, we are aligned. We've got very good vision of five-year plans. We relocate, if necessary. Con Edison does the same to try and do what's right for that particular street. But I think, and I did mention this, where we can improve coordination is on the reactive work. Other than the plan's major restructuring, some of that reactive work and the additional DEP funding that you just heard of. So we'll build on that collaboration, and that relationship that we've got right now with that additional funding. Again, to replace more infrastructure in a cooperative manner, and it's basically the same answer for Con Ed.

CO-CHAIRPERSON RICHARDS: Oh, okay.

ROBERT DEMARINIS: Very Similar.

CO-CHAIRPERSON RICHARDS: So you're going to have better coordination with DEP? You foresee that happening?

ROBERT DEMARINIS: Right, and we've been working very closely with Jim Roberts right now on work that's coming up and trying to coordinate. And again, we've been looking at possibilities of joint bidding. Which I think would be a positive step for all involved.

CO-CHAIRPERSON RICHARDS: So once a year, and I believe this is in your testimony, Con Edison, 4,300 miles of gas mains are serviced at least once every three years. So can you speak to that, and are there any plans to service lines more than once every three years. Because obviously you don't want to see what happened obviously in East Harlem, and no one woke up that morning happy to see that. But we need to make sure that we have really improved preventative things in place and ensure that it doesn't happen. So it seems to me that to service lines every -- once every three years, would you say that's adequate or does that need to happen more.

And National Grid, you can pitch in here, too, on this.

ED FOPPIANO: So that's exactly why we're doing this pilot of combining stray voltage and our gas leak detection equipment in order to get more surveys per year. And again, you're welcome to take a look at the vehicle at the end of this. But that's the idea. We want to do more surveys per year.

CO-CHAIRPERSON RICHARDS: Okay.

ROBERT DEMARINIS: It is a code requirement to do that walking survey every three years. But in this particular winter, just for example, we decided that we were going to go above and beyond the code. And we actually implemented a winter patrol for frost conditions above and beyond what the code actually says you're required to do during those conditions. So we continuously monitor all of our cast iron infrastructure on a daily basis every 15 days.

CO-CHAIRPERSON RICHARDS: So you're saying all of your--?

ROBERT DEMARINIS: The entire cast iron infrastructure. We implemented prior to going into this winter a patrol in a quantity that would get

through the entire system every 15 days. And that's something that we're now studying what did we learn from that. We're sharing it with AGA, Northeast Gas, our colleagues at Con Edison to see whether or not that was a prudent decision.

CO-CHAIRPERSON RICHARDS: All right, so the last question is so DEP has this leak detection system they have with their water, and I was wondering if you guys were pursuing or looking at some sort of similar technology that you would be able to put in buildings perhaps. Or if there is a gas leak, there would be some system that alerts. You know, obviously it goes back to your base, but perhaps alerts the building owner or homeowner that there is a leak. And is that something you guys are looking at outside of the voltage? You know, the things that you guys are looking to do the patrols? Are you looking at systems to test that?

ED FOPPIANO: Yes, so both Nat Grid and Con Ed we're part of a collaborative R&D, research and development collaborative. We're doing work with them on a residential methane detector. There are residential methane detectors that are out there that you could buy today at Lowe's and Home Depot. We're

working on a newer technology that would even be improved. And we're also looking at what we can do with the residential methane protectors that are out there today maybe have more industry advocate for the use of those residential methane detectors.

CO-CHAIRPERSON RICHARDS: And it won't cost the rate payers anything, I hope?

ED FOPPIANO: No, actually this would be for customers to install?.

CO-CHAIRPERSON RICHARDS: So the same thing with--

ED FOPPIANO: [interposing] And they're relatively-- They're like a $65 device that you could buy today in Home Depot.

CO-CHAIRPERSON RICHARDS: But the customer would have to pay for it, right? So can you speak of you guys? Is there some sort of rebate or is there, you know, is there some sort of incentive for customers if they do install this?

ED FOPPIANO: That's something that we need to look into.

CO-CHAIRPERSON RICHARDS: I would applaud you if you did that. I think that it would be an incentive to really get people to utilize this

system. And I know DEP is doing at no cost for residents across New York City. So I would hope that there is some sort of incentive. Maybe you're taking, I don't know, $20 off their monthly bill to make sure that this is something that we have. It's going to cost you more in the long run anyway if there's an explosion.

ROBERT DEMARINIS: That's a valid point, and it's something that we always look at. We're actually working very hard with research and development at our expense on behalf of our customers.

CO-CHAIRPERSON RICHARDS: Thank you, Mr. Chairman.

CHAIRPERSON GARODNICK: Thank you, Chair Richard, and before we release you guys, I realize that I have one follow up on the subject of the Fire Department, which was the geographic location of your reported leaks. We have the specific number for Con Ed. I don't know if we actually have the specific number for National Grid in terms of the number of leak reports that you all get every year.

ROBERT DEMARINIS: When you say 'reports,' the repairs that we make?

CHAIRPERSON GARODNICK: Well, the stat, which we were toying with at Con Edison was the question of how many calls do you get about leaks. They said 33,000. Sixty percent of them were actually leaks. Forty percent of them were not. A certain percentage of them were inside. A certain percentage were outside. What's the total number of calls that you get related--

ROBERT DEMARINIS: [interposing] It's approximately 40,000 a year.

CHAIRPERSON GARODNICK: You get 40,000 a year?

ROBERT DEMARINIS: And about -- our numbers are running a little bit lower. It's about 45% of them are actually gas leaks.

CHAIRPERSON GARODNICK: Okay, that's a big number. Okay, so then this question becomes even more important then, which is the geographic location of where these leaks are happening, do you have a map which shows where your leaks-- Your leak reports, your actual leaks, not just the reports, but the actual leaks. Although if the Fire Department is going to be involved in this, the leak report also becomes an important question. Do you have something

that could illustrate to us where those calls are coming in, and where the leaks are actually happening?

ROBERT DEMARINIS: We know where all our -- We do know where all the leaks are, yes.

CHAIRPERSON GARODNICK: Can you share that with us? Do you have that information in a format, which shows where in New York City the calls are coming in, and overlay that with where the actual leaks are.

ED FOPPIANO: So that's something that we're working on right now. Right now that information is not available to the public. It's something that we're looking into, or we're working on. We're going to be meeting with city officials and the Public Service Commission on that. But we're actually putting something together right now on, you know, a pilot.

CHAIRPERSON GARODNICK: A pilot?

ED FOPPIANO: Well, maybe pilot is the wrong word, but we're looking at it right now. And again, we're going to be -- We're doing that with the City, the emergency officials, and with the Public Service Commissioner.

CHAIRPERSON GARODNICK: Okay, let me be more direct about it. Will you share with this Committee, the location of your calls reporting leaks, and where leaks are actually found?

ED FOPPIANO: I'm sorry. I think that's something we'll have to get back to you on.

CHAIRPERSON GARODNICK: National Grid, the same to you?

ROBERT DEMARINIS: Well, I mean, yeah, and I have to same answer at this point in time.

CHAIRPERSON GARODNICK: What is the issue here about sharing just so -- ?

ROBERT DEMARINIS: I can tell you my concern is that we want a customer, a resident any member of the public whenever they smell gas to call us so that we can respond to it, and perhaps in conjunction with the Fire Department in a more prescriptive manner going forward. I'm fearful if somebody thinks because of a graphic that they go online and say, Oh, I don't have to call. There's already a leak there. See, it's on the system. We have to be careful about that, because we need to respond, and we do respond to the same leaks sometimes. You've heard of some of those non-

hazardous leaks, those Type 3s where by code you only have to monitor those on an annual basis. So we do get some repeat calls on those --

CHAIRPERSON GARODNICK: [interposing] I got it, okay.

ROBERT DEMARINIS: -- and we do respond to each and every one of them.

CHAIRPERSON GARODNICK: For whatever it's worth, I don't share your concern --

ROBERT DEMARINIS: [interposing] Okay.

CHAIRPERSON GARODNICK: --about the public's ability to discern whether a chart is a historical reference or active leaks going on at that moment that they're looking it up. But most significantly, it is not about the particular address that we are concerned about. I'll speak for myself. But if you're going to -- if we are going to invoke the resources of the Fire Department for every gas leak phone call, it would be important for us to understand which particular fire companies and units would actually be called upon to respond in that situation. And that is what we're interested in.

ROBERT DEMARINIS: Okay.

CHAIRPERSON GARODNICK: So I'd like you to take that back, but I also would like you to share it with us in a form that we actually can evaluate what impact this will have on the City Fire Department resources, and the cost versus the benefit here. Because it's a -- this is obviously a very important issue, and we want the Fire Department there as quickly as possible in those Code MURRE situations for sure. The question here is whether or not this is the right response, and this has never come to this committee. We've never considered it at all. We're hearing about it today, and almost, you know, we're shadow boxing here. But it's an important question for us knowing that they're now is a recommendation from the Mayor's Office to have the Fire Department respond to every one of these gas leak calls. Any further response on that?

ED FOPPIANO: Well, I was just going to say we are working with the Fire Department, and Net Grid and looking into this and we're at early stages. There's a lot of details to work out. And so, once we have those details worked out, we can get back to you with a better answer for your questions.

ROBERT DEMARINIS: It's no different than our own operation. We need to work with the Fire Department so that they do understand where the call is coming in, where are the leaks. So that they're adequately staffed, and can respond to them.

CHAIRPERSON GARODNICK: We appreciate that you want to work with the Fire Department. We want you to work with the Fire Department, too. I think you understand the question that I'm asking. And I hope that you will be able to give us a little more information, so we can evaluate this most recent proposal. So I hope you'll take that back. With that, we thank you very much for your testimony, and we are going to call our next panel, which I believe just constitutes the Center for an Urban Future, which was the author of that great report which I cited in my opening testimony, Adam Furman, I believe the floor is yours. And we thank you for your patience because much of what you had in that report animated a lot of the questions and inquiries that we engaged in today. So we thank you for that. And gentlemen from the power companies, we appreciate you being here today, too. Thank you.

[Pause]

CHAIRPERSON GARODNICK: Mr. Furman, if you're ready? Whenever you're ready, you can get--

[Pause]

ADAM FORMAN: Chairman Garodnick, Chairman Richards, and Chairman Espinal, and Members of the Joint Committee, thank you for inviting me to testify. My name is Adam Forman. I am the Research and Communications Associate at the Center for an Urban Future. The Center is a research institute devoting to growing diversifying the New York City economic, expanding economic opportunity, and alleviating obstacles facing low-income working class neighborhoods. We recently published a comprehensive report highlighting the challenges New York City faces with its aging infrastructure. Title, Caution Ahead, our report identified numerous vulnerabilities like in the City's utility and transportation infrastructure and building stock.

That report was released one day before the tragic March 12th explosion in East Harlem. The report's findings were not surprising. New York City's infrastructure is old. Over 170 school buildings and 165 bridges were constructed over a century ago. The city's public hospital buildings

are 57 years old on average, and 531 public housing towers were built prior to 1950. Gas, steam, water and sewage lines unfortunately are no exception. The city's 6,800 miles of water mains are 69 years old on average. Over two-thirds are made of unlined cast iron or cement line cast iron. Materials susceptible to internal corrosion and prone to leak, 51% are narrower and 12 inches.

And according to the Army Corps of Engineers, more likely to break than wider pipes. To expedite the replacement of old and narrow water main, Bloomberg's PlaNYC Report promised to replace an impressive 80 miles of mains per year. Since then, it has replaced only 27 miles per year. The City's failure to achieve this replacement rate is regrettable. Neglecting this aging infrastructure will increase the frequency of water main breaks and leaks leading to corrosion of surrounding utility pipes disrupting automobile, pedestrian and public transportation, and stymieing [sic] local economic activity.

In 2013 for instance, there were 430 water main breaks across the city including that disrupted East House [sic] on Ludlow Street including

the iconic Castelli, but earlier there was one on 13th Street as well. Leaking and ruptured mains are responsible for a significant amount of waste. Citywide the unaccountable for water rate -- The difference between the amount of water that enters the distribution mains and the amount that reaches customers is a staggering 24%, double the 10 to 15 industry standard. Conditions are especially bad in the Bronx, Brooklyn and Manhattan. There was question about what that unaccounted for water rate means. If you'd like, I can follow up on that.

The average age of New York City's 6,400 miles of sewage mains is approximately 84 years. Nearly 4,000 miles of sewer pipe are made of vitreous clay. These older earthenware pipes are more susceptible to cracking, leakage, and groundwater infiltration. Since the Turn of the Century, the number of sewer lines constructed or reconstructed has fallen. From 2000 to 2006, DEP installed an average of 42 miles of sewers per year. From 2007 to 2013, this fell to 17 miles per year. Like many older cities, New York City has a combined sewer system. During rainfall, excess flow is diverted to a non-sewage overflow. There is about 27 billion

gallons of raw sewage that includes storm water going into New York Harbor every year as a consequence.

To address this problem, DEP has launched an aggressive lean infrastructure campaign making the City more permeable to absorb rainwater before it enters the sewer system. The City plans to commit $2.4 billion in private investment over the next 18 years to increase these efforts. Green infrastructure is a tremendous asset to the city. It simultaneously beautifies New York's neighborhoods while alleviating severe gaps in storm water management system. However, a city should -- city officials should consider investing in more traditional mitigation efforts as well if they intend to dramatically reduce CSO discharges.

An underground retention facility near Paerdegat Basin. For instance, decrease CSO discharges by 1.3 billion gallons. Excuse me. Yeah, 1.3 billion gallons per year. In comparison, the City's 2,500 green street sites capture 105 million gallons annually, and its 100 bioswales retain 18,070 gallons apiece. The City would need to install 700,000 bioswales to capture the equivalent rainwater of the Paerdegat facility.

Moving on to gas, Con Edison and National Grid each manage one of the oldest distribution networks in the country. Con Edison's 2,200 miles of gas mains serve 833,000 customers. Their mains are 53 years old on average, and 22% of their gas services carrying gas from mains to individual buildings were installed prior to 1960. In 2012, their distribution system experienced 3,300 leaks. National Grid serves approximately 1.2 million customers via 4,128 miles of gas main. The average age is 57 years old, and 7% of their gas services were installed prior to 1960. In 2012, their distribution system experienced approximately 2,500 leaks.

In 2011, a state of deadly natural gas incidents, the Obama Administration issued a call to action to accelerate the repair, rehabilitation, and replacement of highest risk pipeline infrastructure. Then going out pipelines constructed of cast or raw iron and bare steel. In New York City, 60% of Con Edison's mains and 24% of the services are made of these leak-prone materials. Forty-eight percent of National Grid's main and 5% of its services are made of these materials.

While gas explosions are mercifully rare in New York City, the environmental consequences of leaking gas pipes are significant. According to Bill McKibben, a prominent environmentalist, methane released from unburned natural gas is 20 to 100 times as potent as green house gas as carbon dioxide. If two to three percent of gas escapes into the atmosphere from the point of extraction to its final destination, natural gas can do more damage to the climate than coal.

In New York City, 1.5% of National Grid's gas is unaccounted for, and 2.2% of gas entering Con Ed's mains and servicing pipes did not reach a final customer in 2012. Theft and inaccurate meter readings play a part, but so do leaks from old mains and services. National Grid and Con Edison's line losses compare favorably to peer companies in Philadelphia, which leaked 2.7% and in Boston 4% unaccounted for, but it is still a cause for concern.

Today, it is more important than ever to address the City's aging natural gas infrastructure. Natural gas accounts for approximately 65% of New York City's heating needs, and fuels 98% of in-city electricity generation. Gas usage is set to grow

significantly in the coming decades in large part due to significantly cheaper prices for natural gas. And the recent citywide ban on No. 4 and No. 6 home heating oil. To accommodate the growing demand across the five boroughs, New York aging gas distribution system will need to be upgraded and expanded. Con Edison and National Grid have actively replaced their aging mains and services, and should accelerate the replacement of cast iron and bare steel services and mains. While the State is responsible for regulating these utilities, the City can assist Con Edison and National Grid's replacement effort by better coordinating its work with the Department of Transportation and the DEP.

Rehabilitating New York City's aging infrastructure is, of course, an expensive and long-term proposition. Our recent report *Caution Ahead*, estimated that it would cost $40 billion over the next five years to replace the city and its authority's transportation, utility and building infrastructure to a state of good repair. While this is daunting, the benefits of an expansive public works program are considerable. According to a 2009 University of Massachusetts Study over $1 billion

invested. Oh, excuse me. Of every $1 billion invested, in water infrastructure generates 12,000 new jobs. $1 billion invested in roads and bridges, creates nearly 15,000 positions. Importantly, the repair and maintenance of existing infrastructure is bound to generate more jobs that construction.

To facilitate infrastructure rehabilitation in the coming years, the City should prioritize state of good repair investment over new projects. It should also encourage the OMB to improve its Asset Information Management System Report, a condition assessment of city-owned buildings, parks, bridges, and piers. The current inspections are cursory, wholly integrated into capital planning process, and do not include water and sewer assets, public housing, East River bridges, or agency vehicles.

To improve the water and sewage assets specifically, we recommend two reforms. First, New York City should follow Seattle, Philadelphia, and 500 other cities by replacing its sewer charges, currently assessed at 159% of the water rate with a more nuanced storm water management fee. Property owners would be charged according to the percentage

of rainwater captured on their lot before it enters the City's overburdened sewer system. This would incentivize increased water retention and private property with customers paying a lower fee as they introduced new green elements such as swales, porous pavement, and green roofs and trees. This could be coupled with a credit program repaid each month via utility or property bill to help customers finance the installation of green elements.

Second, the City should eliminate the rental payment it charges the New York Water Authority. The fee no longer serves its original intent, and gives the age -- and given the age and condition of New York's water and sewer assets, the City should not be diverting money from these infrastructure systems to its general fund. Thank you for considering my testimony. I look forward to your questions.

CHAIRPERSON GARODNICK: Thank you very much and we appreciate your testimony as well as the entire report, which was thoughtfully done, and certainly raises a number of the issues including $47 billion worth of potential investments that the City could be making. Let me just pose a couple of

questions for you since we have a number of additional panels, which are here to testify. I'm sensitive to the time of day. One, I want to ask about the sewage question, and the combined sewer overflow issue and your proposal that you just described a moment ago. And the other is about the Fire Department and gas.

On the first, when I was asking the question of DEP about whether there is a way above ground to actually deal with the combined sewage overflow problem, the answer was no or not in our lifetime, or no it's not practical or something along those lines. My question for you is, if we were to implement changes like giving a credit for people that are limiting their storm water runoff, or changing the Building Codes to require more capture of more water, or whatever it is, do we have the ability to make a dent in that? And if not, what should the City's plan be to be able to address that question to actually solve the problem?

ADAM FORMAN: I'm actually surprised. I must have missed that part of the testimony where he said, It's not in our lifetime that we can capture water above ground in order to deal with this

problem. Because they have invested, as I mentioned in the other testimony. [sic]

CHAIRPERSON GARODNICK: Well, let me be clear as to what exactly he said.

ADAM FORMAN: Okay.

CHAIRPERSON GARODNICK: It was that the problem can't be solved by just capturing water above ground, and that to redo the rest of it is not a practical solution. So just to be clear as to what exactly.

ADAM FORMAN: Okay, I mean they are investing $2 billion in green infrastructure on city public property. And as I mentioned in my report, while that's a fantastic initiative in terms of beautifying the city, it takes a very small percentage in comparison to retention facilities like we have in Peardegat, and other retention facilities in the city. And so I think it's going to have to be that gray infrastructure underneath the ground that really gets at this problem. It's more expensive. It doesn't beautify the city. Constituents don't see it, and it might not be as -- The political catches might not be the same. However, this is where the real major attention is happening in these retention

facilities underground. However, getting private property and private property owners involved can make a large dent.

And I have not run the calculations in order to determine what dent that would be. Right now, new buildings have to retain the first inch of water during rainfall. So that we can actually have more aggressive provisions, Department of Building provisions to make sure that greater retention happens on property. And we think that this storm water management fee is a great way to do that, to incentivize buildings, private building owners to retain water.

CHAIRPERSON GARODNICK: Okay, and then let me pose the other question, which we were talking to National Grid in comments a few moments ago. And there you heard that colloquy. What is the right way to respond to these leaks? Do you think that there are more vulnerabilities in the gas system than what were described? And is this the role for the Fire Department to be the first responder to every call here. Give us a sense as to where you think that should change?

ADAM FORMAN: Given my research background, of course, my first instinct was to look at the numbers. So I looked at the FDNY Report, and saw that matter of 70,000 calls that they respond to. So it's significantly more than the 30,000 by Con Ed and 45,000. But it's still about a 7% increase we could see in fire calls if we have the Fire Department be the first responder. Seven percent is significant. That means a larger budget for the Fire Department. Who pays for that? Actually, Con Edison and National Grid they're reimbursing the Fire Department, and now the Fire Department is making -- doing the work that they used to be doing. I think there is definitely room for some type of joint agreement where the utility companies are helping to subsidize fire departments active use.

CHAIRPERSON GARODNICK: Okay, I'm going to go to Chair Espinal before we go onto the next panel. So thank you.

CO-CHAIRPERSON ESPINAL: Just going back to the last question Chair Garodnick asked, in regards to figuring out where all the gas leaks are actually happening and tracking all those calls and reports. Do you think that if you were able to put a

map together of where all these leaks are happening, do you think it would be beneficial figuring out where Con Edison and National Grid can target and where it changes pipes? And what its actually put the resources into?

ADAM FORMAN: Yeah, absolutely. I think that map is critical for realigning the Fire Department frankly. If we know that it's getting more calls from the Fire Department, it means that the staff of those fire departments in those areas. So having that data is critical for reorganizing the fire department to make sure that they have the staffing necessary and to respond to those increased fire calls connected to gas. And in terms of their own activities. I'm certain that they, as I said, they know the math and I'm sure they're according to where the oldest material is.

I was very encouraged by the increase on replacement for cast iron and steel. But in terms of greater transparency, I'm always a supporter. In terms their suggestion that it will lead to less calls if that data was released because they would think it was already taken care of, if anything, I think there might be more calls. Because people will

now get increasingly paranoid. They see a big patch of leaks in their area, and now every time they smell anything they can be calling, which mean more calls for that fire department. So we need to think of those behavioral issues.

CHAIRPERSON GARODNICK: The last question from me. In your report you had noted the statistic of 24% leakage from DEP's water main system, and cited that as twice the national average. DEP testified no, no, that's not accurate. In reality, we're leaking a lot less, maybe 5 to 7%. The rest of that is magical disappearance or whatever it was called.

ADAM FORMAN: The Parks Department.

CHAIRPERSON GARODNICK: What was it called?

ADAM FORMAN: The Parks Department is what he said.

CHAIRPERSON GARODNICK: Yeah he said the Parks Department. He called it just-- He had a word for it, but it was something along the lines of we're not billing for it, and therefore, it's an unbilled use of water, not a leak. What's your reaction to that?

ADAM FORMAN: It's correct. We've quoted unaccounted water rate. That's how we refer to it. It's not leakage. So that doesn't account for fire responses and the water they use and not use at the Parks Department. But the 24% unaccounted for is double than the national average. So that means the leak rate is also double, or on the other hand the leak rate is the same. But for some reason the Parks Department is using four times as much water as the rest -- as their average peer city. So either the leaks are double as well, or we need to be investigating the Fire Department and Parks Department about why they're using so much more water than others use.

CHAIRPERSON GARODNICK: Okay, that makes sense.

ADAM FORMAN: So it's still an interesting subject to look into.

CHAIRPERSON GARODNICK: Thank you. Thank you very much for testimony. Okay, we're now going to call the next panel, and we're going to start up our clock of two minutes. We have Bruce Farina, Eileen Gonzalez and Johnny Stevens. Welcome. Sorry

folks. I realize were are -- we have a lot of people left to testify.

[Pause]

CHAIRPERSON GARODNICK: Welcome.

BRUCE FERINA: Welcome. Good afternoon.

CHAIRPERSON GARODNICK: You can have a seat, if you'd like.

BRUCE FARINA: Chairpersons Garodnick, Espinal, Richards, and City Council Members. My name is Bruce Farina, and I'm currently a business agent for Local 1-2. I represent the Con Edison workers who work in gas operations throughout Bronx, Queens, Westchester, and Manhattan. Prior to that in 1973 to 2005, I worked in Gas Operations for Con Ed. So right now, I'm not going to read the testimony. I won't have time for that, but I just want to touch on a couple of issues. As I heard today, I heard cast iron mentioned a couple of times from Con Ed and DEP, but nobody has ever mentioned in the 1,800 miles of cast iron gas main in Con Edison, there's a connection every 12 feet. So somebody take out a calculator and figure that one out. Every 12 feet in the 1800 miles of main there's a potential leak.

So, God knows how many of those repaired. Probably a small percentage of them. And also going back many years ago, when we did a main replacement as was mentioned today, we would do corner to corner. In the '70s and '80s and '90s, that's what we did. Going back 15, 20 years ago we started doing 100 feet, 200 feet, and that still consists today. We call it piecemeal. We're not doing the whole job. For example, down at Park Avenue between 116th and 117th Street, there is only about 100 feet of brand new plastic main installed in 2011. Then that was tied into the existing eight-inch main, which was put in 1897. So that's just something for our people to wrap their heads around of where we've come in the last 35, 40 years in the time I've been around in gas construction.

MALE SPEAKER: [off mic]

CHAIRPERSON GARODNICK: We'll have questions.

BRUCE FARINA: And also -- My time is up. One more minute. [bell]

CHAIRPERSON GARODNICK: We'll give you a chance during questions--

BRUCE FARINA: [interposing] Thank you.

CHAIRPERSON GARODNICK: --to be able to extrapolate that.

BRUCE FARINA: [interposing] Thank you, and also the fact to maintain the systems we have a lot of contractors now, which again they were around when I was here in 1973. And now they do more soup to nuts, and my question is our workers are qualified and re-certified every three years. Because we come under DOT and the NGA, the Natural Gas Association Recommendations. Contractors they get 18 days of training, and then they're thrown into the field as crew leaders. Where my members take two and a half to three years to become a crew leader to get to that point.

CHAIRPERSON GARODNICK: Thank you. Thank you very much. Go right ahead.

EILEEN GONZALEZ: Good afternoon. My name is Eileen Gonzalez, a resident at Taft Houses, NYCHA. I'm here today to give my community a voice, as well as for myself. The issues in our community are more than just a gas explosion. My community is very diverse in culture. What was once Italian, Puerto Rican, and Black community has turned into an immigrant community. The immigrants, whether they

have papers or not are afraid to participate in political events fearing deportation. I'm not an immigrant. I was born in Harlem, raised in the South Bronx, residing in Harlem at Taft Houses for 24 years. I was homeless, a single mother of two young boys at the time. Twenty-four years later I'm still experiencing the abuse of power and neglect of our government.

I currently don't have a stove that is a gas issue. This month makes a year. I put myself in a position to take a stand. I allowed myself to be arrested. The case was dismissed last month, but I still don't a stove. I have a leak in the bathroom. It turned off the bottom. It doesn't go off. The main line has to be shut off. I've gone to court, I've complained, I've called 311. When are they going to come out and do their jobs? My window, if I lift my window, my window falls on me. Both of them in the living room. So I have about three issues: The leaking and running water. The hot water in the bathroom I can't turn it off. The building needs to turn the main water line off in order to repair it. The washer is stripped. I can't replace. I don't know what to do. I've gone to court. I'm here

showing you, Hi, I'm Eileen. Remember me? So I'm expecting results.

CHAIRPERSON GARODNICK: Thank you. Thank you very much.

[Pause]

JOHNNY STEVENS: Thank I'm Johnny Stevens, and I represent the New York Consolidated with Survivors and the Community of East Harlem. It's an ad hoc coalition that was formed at March 4th, an aftermath of over 47 organizations. Our members have been monitoring the situation for those who were suffering the unlimited loss from the failing infrastructure on March 12th. We thank the Council members and the staff today, and the group for having this hearing as a first step toward preventing further tragedies. I would like to be put on record for our group proposal on the responsibilities of Con Ed and certain government bodies to the public. Since March, we have been speaking with tenants, business owners, and other throughout East Harlem.

The following ideas, but not yet been met. What we wanted to do number one is the national -- we propose that the National Transportation Safety

Board should use its authority to call for a public hearing. What aids the survivors of March 12th explosion is still needed, and what must be done to prevent further disaster and displacement citywide. We feel that since the NTSB is the overall body there that the community, the small businesses, the housing, and the people in Taft Housing like Eileen need to be a part of the part of the investigation. And we're asking them to hold a public hearing within East Harlem. And we're asking the Council here today, all three Council persons and their staff to actually endorse that hearing. The families affected by the blast are still homeless. As you can see from the Daily News article where a critical injured 16-year-old youth actually wrote to President Obama and asked him could he see about some housing, about the immigration question.

The community needs to investigate the liability of Con Ed and the disaster. Could this have been prevented? Is Con Ed doing all that it can to make retribution to our barrios. We proposed that with the unemployment so high in our barrios that Con Ed should hire people from the community for

infrastructure repair and service programs, and Con Ed should pay for apprenticeship training.

Number three, the Environmental Protection Agency must have a public -- must hold a public event to warn the community of environment danger from 1644 to 1646 Park Avenue. It was built before 1974. So it has less paint and asbestos, which has floated into the air and water affecting thousands residents in CAP [sp?] Housing on James Weldon Housing, and the other areas in the neighborhood.

CHAIRPERSON GARODNICK: [interposing] If you could summarize the rest, it would be good.

JOHNNY STEVENS: Okay. Based on this, we think that the post -- that the post March 12th, should have a free walk-in clinic there to address these environmental concerns in East Harlem. Only about two more. We ask that the public commission -- the Public Service Commission monitors Con Ed investigation for the March 12th explosion. We have already initiated a proposal Con Ed records for payment to the survivals in the aftermath. And I have copies of that, which we sent a certified letter

to Con Ed. And I just passed one of them to the Con Ed reps.

In summary, we hope that the Council would endorse our call for an MTS hearing from the community where the disaster happened so that people could be more a part of it and more part of the village. We had a couple of people that had to leave from the Chelsea Housing Coalition, and wanted to make sure they were there. A community group in Chelsea, who works around the Spectra Pipeline, and were very much concerned with what was happening in East Harlem. And we had a survivor, a Ms. Ivy Parker, from the Katrina, a survivor which is a permanent member of our group who is sharing her experience, and that this accident took place.

CHAIRPERSON GARODNICK: Okay. I think we're going to have to leave it there, but we thank you for your advocacy, and we thank you for your presence here today.

JOHNNY STEVENS: [interposing] Okay.

CHAIRPERSON GARODNICK: We know you've been through a lot. So, thank you. Okay, we're going to call our next panel. It will be Bob Ackley, Gas Safety NYC; John Zimmerman, Damascus Citizens for

Sustainability; Rebecca Smith, also Damascus Citizens for Sustainability. Oh, boy --

[background discussion]

CHAIRPERSON GARODNICK: So Ruth Hardinger. There you go, Ruth. Thank you. I'm sorry. Hardinger, Hardinger [sp?], also from the Damascus Citizens for Sustainability. We welcome you.

[Pause]

CHAIRPERSON GARODNICK: I see you have some graphical materials up here.

RUTH HARDINGER: Yes, I do. [laughs]

CHAIRPERSON GARODNICK: All right. Now are you all together as a group? Okay, so do you want to go --

JOHN ZIMMERMAN: Just go down the line.

CHAIRPERSON GARODNICK: Okay. All right. So you know the approximate amount of time here that we're dealing with. We'll aggregate them.

JOHN ZIMMERMAN: We're going to do our best. Thank you.

CHAIRPERSON GARODNICK: Whenever you are ready, go right ahead.

JOHN ZIMMERMAN: Okay, can you hear me. Do I need the mic?

CHAIRPERSON GARODNICK: Yeah, we do need the mic--

JOHN ZIMMERMAN: [interposing] Okay.

CHAIRPERSON GARODNICK: Because we're doing it both on a webcast and also for future recording.

JOHN ZIMMERMAN: My time is clicking away very fast, and I spent a lot of time getting here. So I'll go right to it. This is the map you're looking for that will show all the gas leaks. I've had the technology for a couple of years, and been using it around the country in Washington, D.C., Boston. And I did a little cursory survey in Manhattan. The red is the path of my vehicle with a Cavity Ring Down Spectrophotometer . The yellow lines are the leaks. So I have not done a complete survey of the city, but we have the technology now to find all the gas leaks and put them on Google Earth.

The equipment is very expensive. You can find the leaks with a $5,000 machine very easily. As far as the safety goes, you have a lot of pipe out there, a lot of gas leaks, but there are very few gas

leaks that are very, very dangerous. The Con Ed guys and National Grid guys addressed the third-party hits, which are about 40%, which you had about 400 in New York City last year according to the Annual Report, which I also have, but we don't have time to put that up.

Those leaks that are excavation damage are extremely dangerous. It's a very bad situation. We need the Fire Department there right away. We have a very bad gas leak. The other very dangerous leaks. There were about 275 of them in New York last year. They're called natural forces, and that's a -- mainly a cracked cast iron main, which is from frost heaves.

Now, you've heard testimony from the grid guys in Con Ed that they instituted a winter patrol survey to make sure everything was safe. And you also heard National Grid say 15 days between swings, and if you looked at the new reports for the Con Ed survey, there was on February 10th and one on February 28th. Now, they didn't use the term "winter patrol," but they used the term "survey" which would indicate an 18-day swing. When I started doing this type of work 35 years ago in Boston, we did Boston

every night. So my suggestion for safety here is that we don't have 15-day swing. We don't have a 18-day swing when we're dealing with small diameter cast iron pipes. We have a one-day swing, and every pipe is tested everyday whenever frost conditions are present. This is extremely important for everybody to be aware of. You know, these guys are talking about calling the leaks in. Why do you have 60,000 gas calls? Why? You probably have 6,000 street leaks out there that they deem non-hazardous. Okay. Are you going to cut me.

CHAIRPERSON GARODNICK: I kind of have to, but we'll let one of your colleagues pick up where you left off.

JOHN ZIMMERMAN: Well, you can ask me questions after. How's that?

CHAIRPERSON GARODNICK: Okay, well, no promises, but we'll see if I have any. Go ahead.

JOHN ZIMMERMAN: Okay, well thanks for that.

REBECCA SMITH: My name is Rebecca Smith, and I live in Manhattan, and I'm speaking about my concern for climate change. Natural gas is over 90% methane. The 2013 IPC Report has methane as 86 times

as potent a greenhouse gas as carbon dioxide. How much does our gas system leak, and what effect does it have on warming the planet? Unfortunately, we do have the accurate information we need to answer that question. Con Ed's numbers are estimates of estimates of estimates. What if you take Con Ed's own number for fugitive methane emissions and calculate how much global warming potential they produce? Con Ed states that in 2013 their lost and unaccounted for gas was 2.8% in New York City. So has Con Ed delivered 300 billion cubic feet per year in total?

And Manhattan usage represents 30% of total gas usage. Ninety billion cubic feet of gas was delivered to Manhattan. Therefore, 2013, lost emissions amounting to about 2.5 billion cubic feet per year. Using the equivalency calculator on the EPA website, these emissions are equivalent to 1,425,000 metric tons of carbon dioxide, or the annual greenhouse gas emissions from 300,000 cars. 300,000 cars. From this perspective to me there are no non-hazardous gas leaks. An independent study organized by Damascus Citizens for Sustainability commissioned Gas Safety, Inc. to make a preliminary

investigation in methane emissions in the borough of Manhattan in 2012. This study, now awaiting peer review, indicates that the amount of methane coming out of Manhattan is significantly greater than Con Ed estimates.

This is information that no one has collected before. These are actual measured data that raises issues that badly need addressing. It is essential, I respectfully suggest, that the Council carefully consider the groundbreaking information contained in this report before it makes any decisions regarding the infrastructure and emissions. Leaks have two aspects. When released to the air, they accumulate to produce global climate change impacts. Those same leaks, if contained, result in deadly explosions. Are we going to allow New York City's infrastructure to be part of global warming? Thank you.

[Pause]

[background discussion]

RUTH HARDINGER: My name -- Oh, go ahead. Do you want to ask a question? I'm Ruth Hardinger. I'm an artist and real estate broker, and I'm a Board Member of Damascus Citizens for Sustainability. I am

very concerned about a number of natural gas extraction and use damages, things that are destructive to the environment, water contamination, health impacts, air pollution, and all of this, which is all part of what happens before it gets into infrastructure. I am going to focus on a couple of things that are serious for New York City. One important change in New York gas is the New York City gas sources, which recently opened the Spectra Pipeline, which delivers gas mixes, including Marcellus gas from Pennsylvania.

It is firmly established that Marcellus formation is highly radioactive, and that solid and liquid waste from the Marcellus drilling are also highly radioactive. The few measurements of radioactivity, primarily radon, moving in gas to New York City are orders of magnitude higher than what New York City has been receiving in gas from Western and Gulf states. Radon decays through several steps to finally become lead as the molecular level. As all the products along the way including Polonium are harmful. This is carcinogen. This is lung cancer. Purchasers, sellers, owners, and tenants of real estate property in New York City are required to sign

lead paint disclosures -- disclosure forms given by agents and attorney.

Now, just imagine how similar requirements regarding radon in your kitchen would be. Is Marcellus gas use creating another source of lead in New York City housing and restaurants? I'm going to skip ahead because of this, and go right to the next really big problem is there are high depletion rates. [bell] Shale gas production decline rates reported by the International Energy Agency, and gas industry's paper and articles and Securities and Exchange Commission filing by natural gas companies all conclude that the production of shale gas is likely to decline by 2020. Okay, six more years.

CHAIRPERSON GARODNICK: [interposing] Wait, wait --

RUTH HARDINGER: To a point where reliance of shale gas.

CO-CHAIRPERSON ESPINAL: We need to go into questions.

RUTH HARDINGER: Sorry.

CO-CHAIRPERSON ESPINAL:

CHAIRPERSON GARODNICK: You need to cut it and go into questions.

RUTH HARDINGER: Okay, but it's really we're running out of gas, guys. That's the point, and we're not going to have more than maybe six, ten years of gas. It's getting depleted in the Barnett Shale. It's the Eagle Ford. This is a really serious problem. Here we are spending tons of money to do gas conversions in Manhattan to continue to make more pipeline to spend tons of money on infrastructure development of more gas. What are we doing? This is not making any sense because we are not going to have that much gas in the future.

CO-CHAIRPERSON ESPINAL: [interposing] Let's give the next gentleman a chance to speak and then we'll go onto questions.

RUTH HARDINGER: Thank you.

JEFF ZIMMERMAN: Thank you. My name is Jeff Zimmerman. I'm legal counsel for Damascus Citizens. The issue I would like to spend a minute or two on may not be quite the same as the state of your pipes, but it's the state of what's inside the pipes. The gas contains radioactive radon. The question is how much radioactive radon are we

getting. Historically, we've had very, very low levels in New York City because our gas has come from Louisiana where it starts out at a very low level, 5 Pico Curies per liter that they will have in the Gulf [sic]. And it takes seven days to get here, by which time it's decayed to about 1 Pico Curie.

EPA sets the mitigation level of 4 Pico Curies per liter as when action be taken. But that 4 Pico Curie number is often 21,000 deaths per year across the United States. Recently, the World Health Organization reduced its mitigation level to 2.7 Pico Curies per liter. The Mercellus shale contains more radiation that most shale gas deposits. It's a darker, richer shale, and naturally contains more radium than radon. In order to do something about this, how are New Yorkers affected? Most of New Yorkers that will experience radon exposure will get it from their kitchen stove. If you have a pilot light on your stove, radon is spilling into your apartment 24 hours a day, seven days a week. If you have spark ignition gas stove, the gas only flows when the stove is turned on. What should we do about this increased risk of radon-induced cancer in New York City? The first thing we should do is get more

data on the levels of radon in the gas. The second thing we should do is we should stop any activity that involves increased risk to New York City residents. In other words, we need to come up with a patchwork system to hold the line at historical levels of radon while we're gathering enough data to determine what the first future risks should be. Thank you.

CO-CHAIRPERSON EPINAL: Thank you. I want to go back to slides. Do you mind just going through very quickly what each slide is?

JOHN ZIMMERMAN: [off mic] Next slide. That's Newton, Mass.

CO-CHAIRPERSON ESPINAL: Do you mind speaking into the mic? Do you mind speaking into the mic?

JOHN ZIMMERMAN: This is an overview of Newton, Massachusetts, the main thoroughfare that's going through the street. Thank you. And the gas leaks I used a Cavity Ring Down Spectrophotometer to provide methane reads coordinated with GPS coordinates. I don't know if it shows up on here. So that's what that one is. That's just an overview of Newton, Massachusetts. This one is New Bedford,

Massachusetts, one street going down through the center of the peninsula in New Bedford. And it was a good shot showing gas leaks going down the street in a row of joint leaks in a cast iron main. This is Cambridge, Massachusetts just to get an idea of how many gas leaks are out there looking south from Boston into Cambridge.

And I came down to New York last year. This is actually a study I did with Boston University and Duke University of Washington, D.C. where we documented the entire city. It was about 6,000 gas leaks, and you can't see them all. Each one has a yellow point. The red is the path that I took. The yellow points we can zoom right in on that. I have that on Google Earth and you can zoom right in to street level, and see -- get exactly where the gas leaks are. I can do this for any location. I've done it for quite a few cities. I did this last year in Manhattan, and you can see the red is the path that I took. And it's just a screen shot.

I have this on Google Earth, and the red -- the yellow is the gas. We have a big indication right here. I call it an elevated methane level right here on Broadway very close to where we are

right here. I think we had a -- there was a job going on right outside here where they had a steel plate over the gas main that they were repairing. So the gas was venting very freely. So you get a very high methane read. So the spikes don't really indicate the severity of the leak. They just indicate that there is a leak there, and there could be somewhere between 5 to 10,000 leaks throughout the city. It's probably somewhere around 1,500 to 2,000 in Manhattan alone.

CO-CHAIRPERSON ESPINAL: Well, thank you. It's very interesting. Maybe we can go with a copy of slides.

JOHN ZIMMERMAN: They're a little more expensive. [laughter] I spent a lot of time to get down here. You cut me off at two minutes.

CO-CHAIRPERSON ESPINAL: Well, thank you. Thank you. So we're going to go on -- we're going to go onto the next panel.

JOHN ZIMMERMAN: [interposing] You know, maybe could you do something for me. I mean I spent a lot of time and effort to put this together. I'm happy to share, but, you know, there has to be some

quid pro quo here. You got water downstairs. Well, it's water up in Massachusetts, you know.

CO-CHAIRPERSON ESPINAL: All right, so we're going to call up the next panel. Thank you for your testimony. Jessica Roth, Denise Katzman, and Clare Donohue.

[Pause]

[background discussion]

CO-CHAIRPERSON ESPINAL: All right, you can begin. Just speak into the mic.

JESSICA ROTH: All right, I'm going to speak really quickly because I'm good at that, and I have a lot to say. Hi, I'm Jessica Roth. I'm a fourth generation Brooklynite, and I'm working for the past four years -- working against fossil fuel infrastructure, and fossil fuels and towards renewables. I also spent a year and a half doing relief and rebuilding work in the Rockaways after Sandy. One of the things that was really clear to me during that time was how long it was taking everything to be done in order to help the residents. And how quickly it was being done, that the Rockaway Lateral Pipeline was being built.

And I think that's a huge problem because there's a lot of reasons that this applies to the broader infrastructure issues that we're talking about. First, pipelines fail and pipelines explode, as we all know. And when that happens people are hurt, people are killed. There's tons of property damage and we have to deal with all the repercussions of that. This is pressurized radioactive toxic gas coming through these pipes that we're dealing with. And the more they come from the Marcellus Shale especially through Rockaway and the Spectra Pipeline, the more we have to deal with the issues of how they're breaking down both our communities, our people and also the infrastructure itself.

They're much more dangerous to the actual pipes, and cause needs for replacement much more rapidly. In addition, building this pipeline through a community that's resolving its -- recovering from major trauma, and in ways that's going to affect the economy out there. And that is also down the major emergency evacuation route is another massive failure of responsibility for residents of the Rockaways, as well as the other people that are being affected by the pipeline. Build-out is just as important as

maintenance. We have to be looking at that in the context of all of this as well.

We always talk about looking at fuel from cradle to grave, and we have to do that with pipelines as well. Which contradicts a lot of what National Grid was saying about resilience and prudent investments. None of that can be done properly. Also, as I say all the time, the definition of insanity is doing something time and time again and expecting a different result. Well, we keep building out this infrastructure, and it keeps causing problems. Instead, what we should be asking instead of how do we fix it, is how do we make the system better? How do we make changes? How do we shift to renewables, and build a system that's going to work better for all of us.

When I was talking with Assembly Member Goldfeder-- I'm make this quick -- about the pipeline and fracking, he didn't understand the difference between, or how fracking was affecting the pipeline. And I was explaining all the different problems with fracking, and he said, So, you're saying that natural gas is an inherently dangerous product? And for the first time, it kind of clicked back to my law school

days, and I said, Yes, that's exactly what I'm talking about. And I'm not a torts expert, but inherently dangerous products that when they are used as they are intended, they pose a threat no matter what. And then that causes a strict liability standard for the producer. This is something that we need to be re-evaluating.

Natural gas is an inherently dangerous product. There's nothing that is going to be safe about it. It's explosive. It's radioactive. It exposes us to radon. Radon is the leading cause of lung cancer in non-smokers. This is going to be a massive problem for New York City and beyond. It's also not the cleanest and greenest as Con Ed said. It is neither of those. We need to be talking about methane and not just carbon. Methane is massively destructive, and Methane is released in the process of extraction as well as the use of this fuel. Instead, what we need to be doing is talking about this gas as it is, an inherently dangerous product. And talk about how do we make a safe, resilient, clean New York City, which will be building out renewable infrastructure and moving towards the future together from all levels of government as well

as all the grassroots that is represented around here. That's all. Thank you.

CO-CHAIRPERSON ESPINAL: Thank you.

CLARE DONOHUE: [laughs] Hi, I'm Clare Donohue from Sane Energy Project. I can't speak quite as quickly as Jessica. There's a red folder with a lot of backup material that's been provided to you. My points are that gas pipelines are a hazard. Hazards cost the city money, plain and simple. They're an explosion risk, and all the other reasons that have been mentioned as well as, of course, fracking and the risk to our watershed, our air quality from that. The gas pipelines for heating is unnecessary. In 2010, the New York State Department of Energy published a chart that showed that gas usage expected demand in New York City through 2020 was flat.

The demand that is supposed to be happening because of boiler conversions is an invented demand. Mayor Bloomberg and Con Ed's Clean Heat Program essentially created a scare and panic attack among buildings to convert to gas. The law does not require you to convert to gas, and better, cheaper, cleaner options are available. The ideal

conversion would be one to biodiesel to get rid of all the sludge that they were talking about clogging up the water pipes. And combined with solar thermal to heat hot water. There is no reason to run a boiler at all in August, and the most important one is efficiency. The cheapest fuel is fuel never used. So we need to pump those efforts up.

And since this is about the economic impacts of the infrastructure, I'd like to talk about the economic impacts to residents and to rate payers, tenants, and taxpayers. There are negative financial impacts to rent regulated tenants from boiler conversions. Landlords are able to use that as an NCI. That cost is passed onto rent regulated tenants. It is particularly difficult for low income residents. In my own building, my own experience, a $300,000 conversion was charged to the tenants with rent increases of up to $100 a month. That's a deal breaker for most of the tenants in my building, which are mostly low income and Hispanic.

Just one last point is about the negative impacts financially to the City should an accident occur. Those will also be passed onto the rate payers. If you look at the San Bruno explosion,

PS&G, their costs were passed on to the rate payers. So that was billions of dollars with approximately $1 billion in damage from lawsuits, repairs. And a new safety program at the same time the CEO of the company ran a $10 million advertising campaign saying that they should do better.

CO-CHAIRPERSON ESPINAL: Thank you.

DENISE KATZMAN: Denise Katzman, Envirohancement [sp?]. We are fighting daily to protect and preserve human enviro, and economic health. Sustainable renewable energy would not have caused the East Harlem explosion and related theft of life. New York State Assembly Energy Committee recently passed the brand new Solar Nexus, the Shared Clean Energy Bill A-9931. I co-sign onto what Clare said. Resilient sustainable energy is our future, not the old school mentality of burning energy. So we have wind, and we have geothermal, and in Brooklyn there's a brand initiative at an entity called Weeksville Heritage Center for Geothermal, and Ikea's new Kansas City store has flipped a switch also to geothermal.

It is our proven safe, secure, sustainable resilient energy sources via the global

economy nexus. Energy storage is also an enhanced energy analytic. As a business manager in climate science analytic, I know the relevance of anthropogenic climate change. Natural gas is methane. It is not biodegradable along any short time line. NYC's antiquated and deteriorating gas mains are co-mingled with water mains, electric lines, and a myriad of outdated infrastructure, and this ain't a love fest. The infrastructure is perpetually exploding and imploding minus all regard for safety and loss of property value. Gross negligence is the most efficient way to label it. The former NTSB Chair Jim Hall, "All pipelines are ticking time bombs."

Former DOT Secretary, Ray LaHood, "A light switch should cause an explosion." These comments were made when the San Bruno disaster happened. Climate crisis, climate change is destroying components that stabilize the earth: Permafrost, and the Arctic ice sheet. If we stay stuck in the antiquated energy realm, we will remain the problem not the vibrant energy solution. Community Choice Aggregation is a clean energy vibrant choice solution that utilities across this

country are utilizing. Utilities in this state need to get hit for that.

Also, it's called LUG, Loss of Unaccounted for Gas. Rate payers pay for this through the utilities. Rate payers are unwittingly paying for this. They are being ripped off, and that is -- It amounts to common law fraud, and the City and the State are responsible because of the Public Service Commission.

And I'll wrap this up. On March 15th, Senator Edward Markey of Massachusetts in the Washington Examiner stated -- the article opened with the East Harlem Disaster. "Those pipelines have cost consumers billions in lost gas, and have contributed to the hundreds of explosions over the last decade." New York City has got to stop sitting on its hands, and take resilient energy action now. Thank you.

CO-CHAIRPERSON ESPINAL: Thank you. I'm going to call up the next panel. Buck Moorehead, Mauve Moorhead, and Sara Lupson.

[Pause]

CO-CHAIRPERSON ESPINAL: You may begin. Just state your name into the microphone.

SARA LUPSON: My name is Sara Lupson, and I'm her on behalf of Riverkeeper. On behalf of all of us at Riverkeeper, I want to say thank you so much for having this panel. You really touched on some issues near and dear to our hearts such as green infrastructure and CSOs. I won't go over too much why those are important, because I think we've really covered them. But I will say that I have a few comments based on the questions you guys are asking. From my measurements, as little as a quarter of an inch of rain can trigger a CSO in New York. That's not tremendous rainfall. So I want to make sure when we talk about CSOs that we are acknowledging that this is an everyday sort of problem.

And that's something that green infrastructure while it may not be able to handle the huge volume that gray infrastructure can handle, it can really help in reducing CSO events in small rain events. We need to invest in our infrastructure. We really need to adopt a robust combined sewer overflow management plan. I want to emphasize again how important green infrastructure is. And I also want to applaud the DEP for their efforts to incorporate green infrastructure. They have also adopted the

Envision Sustainable Infrastructure Rating System, which is they are using it as a guide to internally guide their infrastructure projects for sustainability. We're a big fan of this system, and we would be really happy to see other agencies use it. And we hope that we have to have the Envision rated system in the near future in New York.

MADGE MOOREHEAD: I'm Madge [sic] Moorehead. I'm with MY H20, as well as DCS. They're sister organizations. I have given my testimony, which is considerably longer than I'm going to state here that's for sure. But I'll try to summarize quickly. The ignored radon issue has not been reviewed by the full Con Edison or National Grid or certainly not publicly by the gas industry at large. Con Edison has absolved themselves of responsibility for the radon issue by asserting that they are not aware of such hazards such as radon in the transported gas. The Public Safety Commission absolves themselves of any responsibility related to the Spectra Pipeline, as long as Con Edison follows a few reviews of perfunctory construction of the Spectra Pipeline undermining any safety concerns for

which their creation was originally intended. The issues are as follows:

Gas distribution daily monitoring and operation reports must be filed with the DEP and Public Service Commission to include independently measured independently rated levels of Radon 222 in the gas, and Radium 226 and 228 in the water routed to the New York City end users. This would include Con Edison distribution lines into New York City to determine the level of radon in the gas transporter through the pipelines. I'm going to quickly summarize this. You have a full report there that I've written, but I'm going to summarize.

There is no radon reported in the DEC and the EIS because the testing was focused on water, not on gas transport, which is how Radon 222 was transported. Radon exists in the gas flow and results in transport to end users and thus inhaled. This critical computation of radon has not been determined anywhere along the gas transportation pipelines. Of all the thousands of wellhead casings, et cetera left there, nothing has ever been tested. Breathing radon becomes a stark reality to the level of radiated toxicity presented to the end user. No

attempt was ever made to dispose of levels of radon when appraising the wells tested by the DEC itself and the EIS. I have a list of a number of different wells that are extremely high.

I'll just simply ready conclusion. In conclusion, New York City -- the City of New York must state a standard for maximum allowable level of radon transported from the newest resource the Marcellus Shale to be delivered to homes and businesses. There must be a consistent independent monitoring system paid by the industry that oversees daily reports to the DEP and Con Edison. Accountability is essential, and crucial oversight is the formula to that aim. All efforts to remediate within a set short period of time after the incidents discovered and/or a full shutdown of the delivered toxic level of radon infused gas altogether to protect the vulnerable public are key to this proven critical hazard that confronts New York City at this time.

CO-CHAIRPERSON ESPINAL: Thank you.

BUCK MOOREHEAD: Hi, my name is Buck Moorehead. I'm an architect and also with MY H2O. We really appreciate this hearing that you're having.

I think it's a really critical discussion about the infrastructure of New York City. When PlaNYC was written in 2007, it promoted an extensive growth in the gas infrastructure. That was before we knew the term fracking. It was before we knew about these potential public health issues with respect to radon. This push, 75% of New York City's energy use is in building use. Most of that is provided by this gas infrastructure. The conversation we should be having is reducing the amount of energy use we can in buildings, which is a completely achievable activity now. And it changes the way that the City Council should be reviewing this infrastructure question.

We can reduce buildings' energy use by 80 to 90% for heating and cooling using Passive House Standards. These have been developed in Europe. In 1990, they built 30,000 building that do this. By coincidence, New York as a Passive House Community, there was a conference, an annual conference yesterday. Four hundred people attended this not two miles from here in Chelsea. There Are a number of buildings including Passive House in New York City now which are meeting this standard. There were people from Europe there and Brussels. Starting

within six months, they are going to require that all of their buildings are to Passive House Standards that are constructed or retrofitted in the City of Brussels.

The European Union by 2020 is mandating that all new buildings and retrofits be to near zero or net zero energy use. That's within five, and if they don't -- The residue energy that they require, they have to generate on their own site. So those buildings are not using -- They're not using any gas. This is something that's completely achievable to us today, and the conversation that we have to be having is not about strengthening our gas infrastructure, it's about how do we do away with it? Ten billion dollars for those guys to invest in this infrastructure that money can be much better spent. So there's the New York City Energy Board. I'd like -- I don't know if the New York City Council participates on this board.

It was a 2011 Update to the State -- to the PlaNYC that board was established. I want to know who is on that board. I think the City Council should be participating because there are a lot of people here who support, you know, would support

actually changing the way the paradigm of how we use and develop energy in this. We can't go on. We heard it today. It was scary. We've got like, you know, what was it calculated? It was something like 15,000 leaks that are in the hazardous category annually. I mean egads, that's not good. I mean that's not something that we can live with or should live with. So I think that we shouldn't have the energy future of New York determined by the people who are making money by providing it. That's Con Ed. That's these energy companies. We have to change that discussion, and I think it has to occur with New York City's Energy Board and your help. I mean, obviously, your help would be fantastic. Thank you.

CO-CHAIRPERSON ESPINAL: Thank you. All right, thank you for your testimony. We have the last panel which is Tianna Renn [sp?], Ken Gale, and Larry Lipman.

[Pause]

[background discussion]

KEN GALE: All right, Larry Lipman has left. Thank you for holding this hearing, and for the opportunity to speak. I'll talk about practical solutions adjusting [sic] for some of the other

speakers. My name is Ken Gale, and I am the host and producer of environmental radio show Eco-Logic on WBAI-FM here in New York City. Of course, I took notice of the gas pipeline explosion in East Harlem, and realized our addiction to fuel was partly or largely to blame. The only solace I could take was the explosion was not from one of the new high pressure gas lines that have been put into the city lately, such as the one put into West Village and the one planned for Flatbush Avenue in Brooklyn. And I can look on the bright side that the explosion wasn't a few minutes earlier or later or it would have blown out windows in the commuter train passing that building.

In spending time in East Harlem since the explosion and talking to people there, I couldn't help but notice and hear about the slow reaction of city services. I don't live in East Harlem, and am confident that the blown out windows of the surrounding buildings would have been replaced much faster in my own neighborhood. The other services the explosion interrupted would have been fixed much faster in my own neighborhood. To be sure, I'm not saying everyone should have slow service. I'm saying

everyone should have the same speedy service. There is a lot of anger in the community, but a lot of it is focused constructively. I saw a sign saying "Hire the Jobless to fix the pipes in the buildings." And I would like to add a friendly edit: Train the jobless.

Clearly, the jobs are there, and the jobless are there. The need is there on both sides that can be solved all at once. A two-for-one deal, and three-for-one actually because the community would applaud such training, and they need something to applaud. Clearly, alternatives to fossil fuel are needed, and I would like to suggest two. One is energy efficiency. Train the jobless in East Harlem to do energy audits, and construction to make our buildings use less energy. Seventy-five percent of New York's greenhouse gas emissions are due to our buildings. And, lowering our energy needs creates jobs, and adds discretionary income to anyone who is homeless and made more efficient. Such discretionary income is almost always spent locally.

So there are two more additions to the New York City economy. And it eases the load on the electricity grid lowering the risk of a blackout, and

make us just that much healthier because that stuff is burned. Energy efficiency is the most cost-effective way to lower New York City's carbon and methane footprints, and reverse climate chaos. Contact NYSERDA for that training.

Number two is solar thermal, getting heat and hot water from the sun. Solar thermal costs one-eight to one-tenth as much as solar voltaic electricity, and a rooftop solar array can supply all the heat and hot water for a five-story building. But the same size PV array can supply enough electricity for only one story. Solar thermal directly replaces methane, and with less methane being used, there is less chance of another gas explosion like what happened in East Harlem. There are only a handful of certified solar installers in the whole city. The community colleges have solar thermal training classes. We need those skills. The training for those jobs requires an investment, and that investment should go to the people of East Harlem. When the air or water is clean, thank an environmentalist. If not, become one. Enough said. Thank you.

CHAIRPERSON GARODNICK: Thank you very much, and I think that's probably the right tone for us to end the hearing today. I want to thank my Co-Chairs Donovan Richards of the Environmental Protection Committee and Rafael Espinal of the Consumer Affairs Committee. This has been a very, very informative hearing. And will not be the last on the subject of New York City's infrastructure because we certainly as a group are committed to ensuring that we are doing the right things upfront, and not simply responding. And so, we appreciate the patience of everybody who has been here today to testify, and the participation of the agencies and the utility companies that were here earlier. And with that, gentlemen, we are adjourned. [gavel]

C E R T I F I C A T E

World Wide Dictation certifies that the foregoing transcript is a true and accurate record of the proceedings. We further certify that there is no relation to any of the parties to this action by blood or marriage, and that there is interest in the outcome of this matter.

Date June 26, 2014