STATE OF LOUISIANA

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF CONSERVATION

WATER RESOURCE COMMISSION

2ND REGULAR MEETING

THURSDAY, DECEMBER 5, 2019

11:00 A.M.

LASALLE BUILDING

1ST FLOOR - LABELLE ROOM

617 NORTH 3RD STREET

BATON ROUGE, LOUISIANA 70802

REPORTED BY:

LISA M. NEALY, CCR, RPR

BATON ROUGE COURT REPORTERS, LLC

COMMISSION MEMBERS IN ATTENDANCE:

KYLE F. BALKUM
Louisiana Department of Wildlife and Fisheries
SENATOR NORBY CHABERT
Louisiana State Senate
DAVID D. CULPEPPER
Geoscientists with Expertise in Groundwater Resource Management
MARK S. DAVIS
Tulane Institute of Water Resources Policy and Law
ANTHONY J. DUPLECHIN
Capital Area Groundwater Conservation District
JOHAN FORSMAN
Louisiana Department of Health and Hospitals, Office of Public Health
LINDSEY K. GOUEDY
Sparta Groundwater Conservation District
CHAIRMAN THOMAS HARRIS
Louisiana Office of the Governor
CHRISTOPHER P. KNOTTS, P.E., FASCE
Louisiana Department of Transportation and Development

COMMISSION MEMBERS IN ATTENDANCE, CONT.:

BENJAMIN J. MALBROUGH
Executive Director Bayou Lafourche Fresh Water District

BRADLEY E. SPICER
Louisiana Department of Agriculture and Forestry

JOHN PAUL STOSHAK
House Natural Resources and Environment

CHARLES SUTCLIFFE
Chief Resilience Officer at Governor's Office Coastal Activities

ELLEN J. TORGRIMSON
League of Women Voters, Louisiana Wildlife Federation and the Coalition to Restore Coastal Louisiana

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CALL TO ORDER

CHAIRMAN HARRIS:

Good afternoon, everyone. Thank you for coming. I'd like to call this meeting of the Water Resource Commission to order.

Matt, would you call the roll, please.

MR. REONAS:

Yes, sir.

Mr. Balkum?

MR. BALKUM:

Here.

MR. REONAS:

Representative Bishop?

(No response.)

MR. REONAS:

Captain Bopp?

(No response.)

MR. REONAS:

Senator Chabert?

SENATOR CHABERT:

Here.

MR. REONAS:

Guy Cormier?

(No response.)

MR. REONAS:

Mr. Culpepper?

MR. CULPEPPER:

Here.

MR. REONAS:

Mr. Davis?

MR. DAVIS:

Here.

MR. REONAS:

Mr. Duplechin?

MR. DUPLECHIN:

Present.

MR. REONAS:

Mr. Forsman?

MR. FORSMAN:

Here.

MR. REONAS:

Mr. Founds?

(No response.)

MR. REONAS:

Mr. Frey?

(No response.)

MR. REONAS:

Ms. Gouedy?

MS. GOUEDY:
Here.
MR. REONAS:
Mr. Gray?
(No response.)
MR. REONAS:
Chairman Harris?
CHAIRMAN HARRIS:
Here.
MR. REONAS:
Commissioner Ieyoub?
(No response.)
MR. REONAS:
Mr. Knotts?
MR. KNOTTS:
Here.
MR. REONAS:
Mr. Malbrough?
MR. MALBROUGH:
Here.
MR. REONAS:
Mr. Rabalais?
(No response.)
MR. REONAS:
Mr. Spicer?

MR. SPICER:
Here.
MR. REONAS:
Mr. Stoshak?
MR. STOSHAK:
Here.
MR. REONAS:
Mr. Sutcliffe?
MR. SUTCLIFFE:
Here.
MR. REONAS:
Ms. Torgrimson?
MS. TORGRIMSON:
Here.
MR. REONAS:
Mr. Witty?
(No response.)
MR. REONAS:
Okay. We do have a quorum, so we're good for any business that we need to take care of.
CHAIRMAN HARRIS:
Outstanding. Thank you, Matt.
The first order of business, we do need a motion to adopt the meeting

summary minutes from our last meeting.
MR. STOSHAK:
I move we so accept the minutes.
CHAIRMAN HARRIS:
We have a motion. Do I hear a second?
MR. SPICER:
Second.
CHAIRMAN HARRIS:
Mr. Spicer seconds. All in favor, aye.
COMMISSION MEMBERS:
Aye.
CHAIRMAN HARRIS:
All opposed?
(No response.)
CHAIRMAN HARRIS:
The motion carries.
MR. REONAS:
Mr. Chairman, can I take just a second to introduce our -- are the mikes on?
CHAIRMAN HARRIS:
Uh, all the...
MR. REONAS:

I'll look at it in just a minute.

I did want to introduce, uh, in the back, for the Office of Conservation and working with the staff here for the Water Resources Commission, Tim Schroeder. So Tim is going to be -- you'll probably get emails from him starting at some point shortly, so.

Let me check the mikes.

CHAIRMAN HARRIS:

They're showing as on.

MR. REONAS:

There we go.

CHAIRMAN HARRIS:

Thank you, Matt. Please proceed.

MR. REONAS:

Okay. Our first presenter, Mary Kincaid, from New Orleans. She is the program manager for the Sustainable Infrastructure Program, City of New Orleans. So I'll turn it over to Mary.

And thank you again for coming up.

MS. KINCAID:

Thank you so much for having me.

So, what I'd really like to talk to

y'all about today and talk about the interested persons in the audience, is some of the things that we're doing in New Orleans, kind of our approach to living with water.

So, our approach to living with water -- because this is a message that I would really love to get out more into the, um, parishes and other areas of Louisiana. I am by background a civil engineer, a graduate of the University of New Orleans. And for those of you that are wondering when Rachel Kincaid cut her hair, that's my sister. And we do look a lot alike. So I saw some of y'all kind of looking at me like, "Hmm."

So, in New Orleans, we are surrounded by water, and we're limited by our pump capacity. So part of what we've done is we've looked at having a new approach to living with water so that we're not trying to shush it away as quickly as possible, but that we're trying to actually use it as a resource. So we'll be incorporating stormwater

storage into our green spaces, streets, homes, and yards. And we're using the Hazard Mitigation Program and the HUD Disaster Resilience Program federal funding to do that. Those are the projects I want to talk to you about today.

So, for those of y'all that are familiar with FEMA's Hazard Mitigation Program, typically what had happened was, once you had a disaster declared, the Feds would come in and say, The size of your disaster is "X." And then some proportion of "X" would be set aside for mitigation.

With disaster recovery, they only give you back what you already had before. If you had a moldy piece of toast, you get back a moldy piece of toast. It doesn't matter if you can't eat it. With hazard mitigation, they actually give you something that will prevent future damage.

But, what's interesting is, in the most recent reauthorization of the

Stafford Act, they went to what's called non-disaster hazard mitigation. So, if you haven't heard of this before, I encourage you to look into it. So now, you don't have to wait for your community to have a disaster to be able to apply for this type of funding. You can apply for non-disaster hazard mitigation. I believe the pool is about $400 million, but, you know, it's still worth looking into, and certainly worth thinking about in your long-term plan.

What the city has done, is stormwater management, home elevation, and wind retrofits for structure hardening. These projects require a one-to-one cost benefit ratio. And that cost benefit ratio is based on a narrow definition of benefit. Is has to do with flooding prevention to the value of a home and to areas that have a historic participation in flood insurance.

Now, what are the two problems with that? It's inherently inequitable, because it's based upon the value of

homes and it's based upon historic rates of insurance participation. So some of your lower income neighborhoods, some of your neighborhoods where your housing stock is less value, you're not going to be able to do a project like this in that neighborhood.

So it's important to know that formula going in and to be able to look at and have a team that is knowledgeable of what's called the depth-damage curves. The depth-damage curves say if you have three inches to a home and that home is valued at $200,000, then the damage to that home is going to be "X." And the one-to-one benefit ratio says, if I spend $3 million on a project, it has to prevent $3 million in insured losses over a 40-year period. So, this is the money that we have to work with. But again, it has inherent problems.

Now, part of what I want to talk with y'all about today is, you know, what do we do when we say that we're going to live with water? What does that mean?

What does it -- what are we going to do differently if I say that we're not just going to shush it away immediately, right? So, these little emblems give you some ideas of what does it mean to live with water.

So, we do underground storage in parks. We have bio-retention cells, tree cells, and bioswales. I'm going to show you what that looks like later. And we have some areas where we do have to increase our stormwater management system. So a combination of both, of gray infrastructure and what's called green infrastructure. A lot of these solutions up here are green solutions. And I'm also going to show you a little bit about green roofs and blue roofs.

In Louisiana, 77 percent of our days are cooling days. This means that we use our energy to bring the temperature in our homes and buildings down to a manageable level. Now, fortunately, 77 percent of our days are flooding days. Yeah, right? Knock on wood. So,

actually bringing down the energy use in your building, has a day-to-day benefit even beyond the flooding reduction that you're going to get with a green roof or a blue roof.

This is one of our smaller projects. And I brought this to you today to show you how this can really work on any scale. The New Orleans Redevelopment Agency owned some properties in New Orleans after Katrina. People that wanted to sell their homes or wanted to sell a vacant lot, it was purchased by the New Orleans Redevelopment Agency. This project takes five of those parcels, and we do underground storage underneath those parcels, then we put turf back on top. So now we have a stormwater facility, but we also have something that we're not taking out of public use, or out of public benefit. We're not having something that it's just open storage with a fence around it and has no use whatsoever.

So, what these underground storage

retention tanks do, is they'll hold onto the water, and then they'll release it slowly through a weir. So, you know, we're limited by our pump curve, right? But that pump can keep going. So if we hold these -- hold water back for a little while, then we're able to work within our pump capacity.

What we also did here along Perlita Street, is we added bioswales so that water, instead of going straight into a catch-basin and into the stormwater system, it's being held for a short amount of time in the bioswales, and it's getting some great biologic action. So the bacteria, the plants, are cleaning that water, removing petrochemicals, and then the plants themselves are constantly taking up water and evaporating it into the air. So we're getting both the storage that we would get just from the soil, but also some action from the plants.

And this project, though it's a small project, it avoids $420,000 in

future damages to automobiles from street flooding.

And, you know, this goes back to the one-to-one benefit. So this was the one-to-one benefit that we had to reach, but we also have these other benefits that are not counted in the model, such as additional habitat, biodiversity, more clean water, you know, as opposed to being pumped straight into Lake Pontchartrain, that we're cleaning the water.

How many people in the audience are working for or on behalf of, um, a municipality that has an MS4 permit?

(No response.)

MS. KINCAID:

Okay, then I'll move on.

So, currently in New Orleans we don't have a requirement to have a water quality standard under our MS4 permit when it's discharged to Lake Pontchartrain, but we anticipate that that will come one day. So projects like this will help us reach the water quality

that we need under that municipal storm sewer water permit.

Types of green infrastructure, again, this is something that can work at any scale. So I'm showing you some walls here. Why would we care about walls? I mean, does a wall really catch that much rain water? Well, again, this goes back to the 77 percent of our days we use energy for cooling. And so when you have a wall and you make it into a green wall, it can really help you with your municipal building or whatever structure it is that you have, in terms of reducing the energy use.

And for those of y'all that do get to New Orleans sometime -- I'd love to throw up this permeable paving lot at Ruby Slipper with bioswales, because you can get a 2-for-1 there. You can go and have the stuffed French toast -- a 3-for-1 -- and you can go and have the stuffed French toast, and also check out how they did that parking lot. It's permeable paving that is held in place

with a grid. And then you see the bioswale kind of in the foreground.

Hagan Lafitte is a project that we have that reduces what is going into Bayou St. John and reduces what is going into Drainage Pump Station 3. This project is a combination of the techniques of underground storage plus bioswales in the street. And it reduced our peak flooding by 14 inches. It's a very successful project for us. And this is currently in construction.

Why would it be important to reduce the duration of flooding? That gets into economic activity. You know, so, parents don't want their kids to be released into streets that are flooded and to have to wade into water. We also have issues with people that -- you know, we have raised houses in New Orleans. And so there are people that have diabetes, and if they need to go to the doctor and the street is flooded, they can't walk through that water. They can't wade through it. They have to then be taken

out of their home by an ambulance. So reducing the duration of flood water by three hours is also something that we look at. It's really important to us for quality of life.

St. Roch is one of our ones that is a combination of more gray infrastructure. So in this one we are increasing stormwater sewer system to retain water, but also bioswales in the street. And what's interesting about this one is, this was something that was a harder neighborhood for us to get in. The streets were narrow. They were historic. This project involves taking up historic streetcar tracks and then putting them back as part of construction. So, I feel like this is a great -- if you are part of a city that has a historic downtown, this project says that it can be done.

This is one of our bigger ones. Drainage Pump Station 1. Also called the Broadmoor Project because the area of benefit is actually at the downstream

end. So if we think about the topography of New Orleans, along the river is higher, and then everything drains toward that star. So as the drainage pump station would get overwhelmed, flooding would occur around the vicinity of the star, the Broadmoor neighborhood.

On this project, we have four stormwater parks, the stormwater lots that we mentioned before, green intersections, which are intersections that have both bioswales and permeable paving, and we have pipe upgrades.

Part of what we're doing is we're going to do stormwater storage in Saratoga and Van McMurray Park, with plantings to improve the stormwater infiltration.

So, Saratoga Park is a former site of an incinerator. Closed in 1986. So we did some soil testing to determine the extent of the contamination, the type of the contamination, and the depth of the contamination. So we know how much soil we're going to have to remove and then

take into a specific landfill. And then this is going to take something that has not been any type of benefit to the neighborhood -- it's a closed site that's fenced off, it's known to be lead-contaminated -- and we're going to remove the contaminated soil to the underground storage. And the landscaping for this park calls for a meandering path through it. This is a park that is surrounded on two sides by three cemeteries. So once this park is complete, the meandering pathway can be used for second lines, um, for people coming to the cemeteries.

Intersection upgrades, we mentioned. And then, looking at complete streets. So, complete streets might not be something that the Water Commission talks about a lot, but a complete street is one that is designed not just for cars, but also for pedestrians and bicycles. So we're going in here and using the pervious parking pavers and really delineating that bike lane, delineating.

Also using rain garden bumpouts to make pedestrians more visible at the intersections. So we're not just adding stormwater features, we're making this safer for biking, for walking, and using the resources. This is going to store 12.9 million gallons of stormwater for us.

Lakeview City Park is a project that we just recently got approved for HMGP. As you can see, what we're doing is we're diverting water from the surrounding neighborhoods into a new, created wetland. So we're not just going to dump this stormwater into the lagoons at City Park, we're dumping it into a new, created wetland that will be our filtration wetland. And then we're going to be going through and creating terraces around the existing lagoons.

So, this will be providing us with a huge amount of additional storage. And people say, How much storage is it? And it kind of depends on the rain event. So in an Isaac-type event where it just

keeps on raining, the storage goes all the way up to potentially 320 million gallons. Now, during a ten-year storm, obviously it doesn't store that much. But the great thing about this is that we're doing something for City Park too. We're going to be going in and stabilizing those lagoon edges and creating sort of a terrace, so that it'll increase the storage capacity, but also increases something that is very biologically rich: an intermittently flooded zone. A stable bank with an intermittently flooded zone. So we're increasing the area where you can find rich habitat for amphibians, small fish, and other things that then support other types life.

The remainder of our projects don't have to meet the FEMA HMGP one-to-one because they're funded by the HUD National Disaster Resilience Competition. This was a competitive grant that was only open to cities that had had a previous disaster. We're using, uh, same

types of techniques, but on a little bit larger scale, and then doing something that's really interesting, and I think has huge potential. We are actually putting in stormwater improvements on private residential property through our community adaptation program. So, low to moderate income individuals could apply to have a rain garden, to have a stormwater planter, or to have a, um, impervious driveway be converted to a pervious driveway. So we're not just working in the public space and the things that we own and control. We're taking this out into the neighborhood, and then we're asking those LMI individuals to serve as block captains and host parties for the neighborhood -- "Coffee in the driveway," we call it -- where they talk about this technique and how it's useful.

So, with HUD, (inaudible) a lot more types of outcomes than just the one-to-one that we talked about with HMGP. I'm looking at urban heat,

workforce development, public health -- huge connection between urban heat and public health -- and flood risk reduction. So we think of these projects as "water and."

This is an overview. Everything is inside the Gentilly Resilience District, to give you an idea of all the projects and how they're located together. Our biggest project is blue and green corridors, which is kind of around the spine of Elysian Fields. And then as you can see, I have some campus-level projects: Mirabeau, Dillard, and St. Bernard neighborhood campus.

Mirabeau Water Garden is one that is a, um, it's a once in a lifetime, once in a career project. The Sisters of St. Joseph donated their campus to the City of New Orleans, with the stipulation that it have something be done for the benefit of the people of New Orleans. So what we're going to do here is stormwater lagoons, and then also educational facilities.

Now, most of you in the audience may already know about the Pine Island trend. Now, we think in Louisiana of having clay soils in New Orleans. And we do. However, the reason why New Orleans exists is because there used to be a barrier island that was colonized by pine trees. And if you think of this remnant barrier island, this layer of sand, it's like a pageant sash that goes across New Orleans diagonally. It goes right across this site. So, we're planting a sort of -- a, uh, replica pine forest where this sand layer comes closest to the surface. And we'll be doing education with the public on some of the things that they can to do reduce their own flooding risk. So everything that will happen in this park will have an action that someone can walk away and take. And it's tied with history. So, for instance, the sisters were very self-sufficient. So I will have a demonstration vegetable garden on the site that will talk about how you can

grow your own food. Studies show that people that grow their own food, any amount, have a much healthier diet than people that don't grow their own food. So everything in this park will have an action for people to take away.

The Milne Campus is operated by the Milne Trust. But it has a long history of involvement with youth and teens. So for this one, the action is water plus youth. This project actually engages youth and teens in the design of what will happen on the Milne Campus. We're looking at green stormwater storage, and some recreational amenities to be added here.

Pontilly is one that we're leveraging our HMGP funds. The residents came to us in 2008 and asked for something to be done with Dwyer Canal. Dwyer Canal historically separated two segregated neighborhoods. Gentilly Woods to the south was one of the first residential neighborhoods in Gentilly, because those were the homes that Higgins

workers, they took home wood from the industrial canal where the Higgins boats were being built, and they built homes that were called Higgins Huts. So that was Gentilly Woods. And then to the north of Dwyer Canal, Pontchartrain Park was the first, um, middle-class, African-American subdivision. So two very historic neighborhoods and Dwyer Canal between them.

This is our HMGP project. In HMGP, we will be doing things in both neighborhoods, really at every level. So we have some stormwater plots, we have some bioswales, street interventions, pervious parking. We're adding a bioswale to the golf course, and doing some green alleyways. So, we're working all throughout this, and every type of intervention.

If you want to see what an intervention like this could look like in your city, call me, come take a visit, because the example will be in this project and it's currently under

construction. We'd love to show you how it looks.

So we start with this work, then we come back, and we turn the canal itself into a linear park. And we add pedestrian bridges across the Dwyer Canal. So we're taking something that used to divide us, and turning it into something that unites us and unites the two neighborhoods.

Blue and green corridors, as I said, is one of our larger projects. We're going to be taking the neutral grounds and turning them into blue corridors that store and circulate water. So there will be a wet condition and there will be a dry condition. The dry condition will be similar to the coastal prairie that did used to exist in New Orleans. It's now more of a remnant, but exists from Lafayette to Texas.

And then our green corridors are the corridors where we currently have existing box culverts, so we're going to be adding plantings there.

You know, we look at our cities and they look green to us. But they really can be a monoculture. You've got turf, and then you've got about four different types of trees: Crape myrtle, magnolia, cypress, and live oak. So it's a bit of a desert for birds and other animals.

Now, when we push out those animals, what are we left with? There's no such thing as a vacuum. There's no such thing, from the North Pole to the South Pole, as a habitat that is not adapted for animals. It's just the type of animal that it's adapted for. So we push out all these other creatures, what comes in are the animals that are adapted to live with us: Rats, mosquitoes, crows, pigeons, things that carry West Nile, transmit West Nile, and transmit other diseases.

So part of what we want to look at is, by bringing back biodiversity and by having a greater diversity, can we push out some of these other creatures that are known to be disease vectors. You

know, so can we manage sites in such a way that we remove these disease vector reservoirs?

St. Anthony Green Streets is a neighborhood-level project that takes three existing parks and unites them in a recreational loop. We're also doing stormwater storage in each of the three parks.

You may have noticed on the earlier slide that it talked about community engagement. This is a very different design process for us. As opposed to city employees scoping out the work, choosing the design firm, and then going out in public and saying this is what we're going to do, HUD asked us, required, that we go out and say, What is preventing you from using the resources in your neighborhood? Instead of me as an engineer looking at something and saying, Oh, these people would exercise more and use these facilities if there was more lighting, we went out and spoke with the public and said, What are the

things that are preventing you from using this park?

And we heard, "I don't use that park," or "I don't let my children go to that park because that intersection is dangerous." And so we need some traffic calming measures at that intersection, and then people will be more likely to use that park. I also heard, "I didn't even know that park was there. I just don't drive that way." So we talked about signage.

So we learned a lot from this process. And it's something that I wanted to come and talk to y'all about today, that instead of assuming that we know what the answers are, that we go out and we ask the residents. We actually worked with our health department to come up with these open-ended questions. "What in your neighborhood makes it hard to get to work or school on time, or easy to get to work or school on time? What in your neighborhood makes it hard to exercise, or to be out in nature?" And

so on and so on.

St. Bernard Campus was an existing recreational facility called the Willie Hall Playground. Very active in the neighborhood's cultural memory, right? And now this is a high school. So Willie Hall Playground was more around the, uh, grammar school age. So we're coming in here, we're adding underground storage under the football field, we're bringing in a running track, we're providing a softball field. But we're also going to come in, and along Bayou St. John, we're going to put back that playground and a shade structure. So, we're going to be -- again, what does HUD care about? HUD cares about housing. So by having access to Bayou St. John and encouraging people to engage with Bayou St. John, making them more aware of their risk. HUD noticed that the biggest issue for low to moderate income individuals and their housing was that they were displaced after a disaster, and it was just too hard for them to get back.

You know, we see these feel-good stories that say "Oh, this person opened a New Orleans style restaurant in Utah." I can guarantee you that guy didn't really want to be there. He ended up there and he made something out of a -- made the best out of a bad situation. But I doubt he was like, Ah, this is my business plan, I'm going to go to Utah and open a restaurant that serves etouffee.

So HUD wanted to prevent that. They wanted people to be more aware of their risk, to plan for their risk, and then also, they asked us to look at a concept called place making. Place making is where you have something in your neighborhood, whether it's a park or running track, whatever, and it allows people from different economic backgrounds and different ages, to use it and interact with each other.

So, the classic example of this is where you have a park that has a running track and it has benches, and so you have

people out there and they're jogging, you have mothers out there in their stroller using the playground, you have older people on the benches, and people get to talk and get to interact with their neighbors.

Now, why does HUD care about place making? Because they felt like you're not likely to knock on your neighbor's door and ask them if they needed help evacuating if you have never talked to them before. So place making was a part of what they asked us to look at.

Dillard Wetlands is, uh, something that we're not making any more of. It's an existing urban forest in the middle of the city, uh, from an accident of planning. So, we have these, uh -- historically, we had these rectangular parcels that were perpendicular to the river or to a bayou, right? Well, when they came in and they put in London Canal, they did it exactly north-south, straight up to the lake, and created this, uh, two triangles. The triangle to

the east is Dillard University. The triangle to the west was many things. It was proposed to be a, um, tuberculosis hospital, it was proposed to be a cemetery. It never became any of those things. It has been cut over once for timber in the '40s, but it does have some live oaks that are a hundred years in age.

So this is something that we're going to bring into public use. It's also a big mosquito reservoir for us. So what we need to do is flush water through there. Now it's storing water, but it's storing it in an uncontrolled and unplanned way, and the mosquitoes are loving it. So we're going to be pushing water through here and controlling the storage of water with a weir, so that we hopefully get that retention time down to 72 hours and we're not, um, creating such a reservoir for mosquitoes.

The other thing that we really want to do with that is bring something to the people of New Orleans that they have not

really previously had. The Japanese practice is a meditative practice called forest bathing. So, you walk around in a bamboo forest, it completely shuts off the sounds of the urban setting, and there are meditations that you do as you do this practice. So we want to work with the, um, Honorary Consul of Japan, the Japanese-American Society in New Orleans. We used to have a consul in New Orleans but we no longer do. So we want to work with them to make this a forest bathing area, bringing meditation, mindfulness, all the benefits of nature, to the residents of Gentilly. Reducing your blood pressure. Improving your heart function. Cutting the stress, reducing your cortisol. So, in addition to storing stormwater in a mindful way and taking away a public health problem with the mosquitoes, we want to turn this into a public health benefit.

Our Community Adaptation Program, as I mentioned, individuals can apply for these specific interventions. What we

did to make it less of a burden for the residents, is the city prequalified five different types of interventions, and we prequalified two contractors. And so the resident can pick the intervention and pick the contractor that they wish to work with and interview the contractor so they have control, but we don't give them a direct grant, so we don't have any concerns for the individuals about this changing their ability to qualify for benefits. We directly pay the contractor. And so we're getting quality, and they're not getting any risk. The resident's not getting the risk.

Part of what we're doing in the planning of this grant, is we're working with Deltares and with the Water Institute of the Gulf, on a groundwater model. The city has, for many years, had a hydrologic model of how water moves above the surface. We haven't looked at the groundwater model. So we have a groundwater model from Deltares and we

have a subsidence vulnerability model. The next stage will be integrating these two models together.

So, how is stormwater storage replenishing groundwater storage, or how is broken stormwater infrastructure, such as drainage pipes, artificially drawing it down? Now, remember what I said about there's no vacuum in nature. So when we artificially draw down the level of fresh groundwater through broken drainage pipes, saline water from Lake Pontchartrain comes in.

Now, we know from climate change that the level of Lake Pontchartrain will rise. Two negative things happen with that saline intrusion. One is that it stresses out the live oak trees. So if we lose those live oak trees, then the thing that slows down storms, um, becomes the roofs of our houses. So we don't want that. We don't want to lose our live oaks.

The other thing that's interesting is, in clay soil, when the saline

particles in the saline water comes in, it actually causes the clay structure to collapse. Like static electricity. If you think about two balloons being attracted to each other from static electricity, what happens in these clay layers, is once saline comes through, that saline contracts those clay layers closer together. It collapses the soil skeleton. So, negative things that we don't want to happen, we're very interested in monitoring our groundwater level and keeping that saline intrusion out.

We had the University of New Orleans do a repetitive loss area analysis for us, and we've been extremely pleased with the results of this. They integrated students into the data gathering and set up a quality control procedure. So I recommend that you also consider working with the universities that you have around you and looking at them for help with your problems in your cities.

One of the things that CHART does is

they provide assistance to homeowners on -- if you see the two examples that we have up here, for historic neighborhoods, you can go to their website and say, "I'd like to elevate my home, what should I make it look like," so that you're preserving the look of the neighborhood. So they have several different options there to show you how to provide risk management, but also to do it in such a way that you're protecting your property values.

Now, what are the next steps that we want to do? We want to look at campus management. So whether it's a large business, a hospital, a school, a church, anyone that has large parking areas or large areas that they have to maintain, we want to look at them.

For instance, St. Bernard has done, through a cooperative endeavor agreement with the Orleans Parish School Board, we can convert these impervious areas to pervious surfaces and install stormwater storage. And then on your overflow lots

that you use for, say, temporary parking, you can add underground storage, come in and reinforce the grass surface with this turf management grid, and it will reduce your landscape maintenance. Some of these projects can pay for themselves if you do a little back-of-envelope calculation on -- after your large events, where you're coming in and refilling ruts, or you're reseeding, resodding. And so adding stormwater storage and adding this grid, can actually take away those future expenses for you.

Now, nothing lasts forever. As an engineer, when we have engineer interns come in I always tell them, we don't design things to last forever. We design them to fail in a predictable manner that can be controlled. Nothing lasts forever. So any parking lot will eventually need to be resurfaced or replaced. Anything that you do with turf management is eventually going to have to have something happen to it to prevent

erosion. Or you're going to have to replace plants.

So just think about this in your overall facilities management, looking at your facilities management. But the next time you go to replace some roof, that you're thinking about the green roof or blue roof options. Put them on the table and do a cost benefit analysis and see how quickly a blue roof will pay for itself. Put a pervious paving surface as part of that and say, Oh, if I change this over from asphalt to a reinforced aggregate surface, how quickly is that going to pay for itself?

I have put this picture up here because there's something deeply unnatural about this soil.

Ryan, I'm going to put you on the spot. What is unnatural about this soil?

PERSON IN AUDIENCE:

(Inaudible).

MS. KINCAID:

It's very compacted. So, soil should never look like this. See how

it's holding that vertical, almost 90-degree angle? Soil in nature that is not man-made and compacted never looks like this. And compacted soil, compacted soil that is not high in organic content, is a soil that functions more like a parking lot.

So, part of what I have up here are recommendations for just thinking about the campuses that you manage, that you're blowing in organic material, replenishing the topsoil, and that you're writing the specifications for your projects, that you compact to 95 (indiscernible) only where you need to. The rest of it does not need to be compacted like this. What the U.S. Department of Agriculture determined was that a less compacted soil, a more organic soil, would retain more water. They were interested in keeping up the available water content so they didn't have crop failure. I'm interested in keeping up the available water content so I don't have so much runoff. But just achieving a

five percent organic content in the soils of your campuses, really reduces your runoff.

I have here some examples. Three-inch turf grass gets you three-inch roots. Think of your roots as a superhighway for getting stormwater into the ground, out of the streets and out of your homes.

So if we go back to the coastal prairie that did exist here, if we start to replicate that, even in little areas and little ways, that will have a positive benefit for us, that this three-inch turf grass that we are so infatuated with will never do for us.

That's actually all the same plant in that -- those three pictures at the bottom. That's a plant called little blue stem. So, in the spring it has that lovely light blue color, and then in the fall it has the attractive seed heads. So, getting away from the idea of mowing, dead-heading, and removing everything, leaving things in place and having these

plants that have longer roots. So you really achieve, for your organization, a cost savings, because you're going to look at your crews and how often you mow and blow, and you will be able to reduce that. So if you have a large area, consider seeding with these prairie grasses and not mowing it. You can mow a pathway around it, you can maintain a pathway so that you have a walkway. But if you have a large area, do you really need to mow all of that? Or can you turn it over into what we call a naturalistic planting? Not natural, but naturalistic.

Overseed with these longer rooting grasses, and then also nitrogen fixers. Have you ever noticed there's not a single dandelion in the middle of a clover patch? Because clover is a nitrogen fixer. It takes nitrogen up from the soil and it holds it in the plant. So instead of getting rid of this -- so if you get rid of all of that in your campus and you don't have any clover anymore and you just have turf

grass, then the next thing you know, you have all these dandelions and other things -- right? -- because there's now more nitrogen content in the soil; it's not taken up by your cover crops like clover. So, just looking at how can you work with what you have.

And the last thing I'd like to say is, eliminate your use of pesticides, because the organisms in your soil are constantly turning it over and getting it to a point where it will retain more stormwater for you.

So, what I'm talking about here is things that you can do to stormwater without digging a single hole or installing a single pipe or installing any new catch-basins at all. Just changing how we think about things.

Your roofs and walls, um, you can add this to any existing roof. So, I'm kind of showing on the top here these trays that, you can add a blue roof by adding these little storage trays to any existing roof. What that's going to do

is reduce the runoff from your roof, and then also act as a blanket so you're not getting as much energy exchange, as much heat exchange through your roof to the building. That's going to bring your cooling down and save you money over the life cycle of your roof.

Now, a green roof is one that will actually improve stormwater quality. Look at the second picture. I've got green roof plantings around a solar panel. You may not know, solar panels actually are less efficient in higher temperatures. If you have existing solar panels, and you add green media around them, it will actually improve the energy that you get from your solar panels, because the solar panels have a curve of efficiency, and in those higher temperatures, they're just not as efficient. So this can help you bring that heat spike down to your solar panels, and get more out of what you actually have.

If you're looking at having to

replace a roof in the future, we now have enough data from these green roofs that show that the roof membranes, which is actually your roof -- you know, the thing that you care about, that's keeping water out -- lasts twice as long. So you'll have lower HVAC costs inside, you won't have to replace your green roof as often, and if you are planning a hybrid of solar panels and green media trays, you can get more out of it.

This is the biggest thing that I think is the impact for Louisiana that we haven't looked at yet. Not just from the point of your stormwater management and water quality, but also reducing our urban heat. So if a roof -- in addition to transmitting energy to your building and keeping your HVAC costs up, at night it's exuding heat. What we call the urban heat island effect.

So, as I was driving here today I was listening to a story on NPR about what a nuisance crows have become in cities, that crows like cities because

they're warmer at night than non-urban areas. That's because of us and our love of concrete and our love of buildings.

I wanted to encourage y'all to think about a new definition for infrastructure progress. So, the High Line is a elevated railway track that's been turned into a garden. And there's been a huge boom, both as an engine for tourism and in improving property values. What happens when we improve property values? We create wealth for our residents, and we also create wealth for ourselves. We get to increase revenues for the city and bring new things to our residents without actually having to raise taxes.

And look at the impact from what Philadelphia did with their stormwater cap and trade credit program. They had a job creation program called the power core, and the 25-year economic impact was $1.6 billion. And the economic impact outside of just the employee compensation was $4 billion. We're talking about a real engine, a real engine to create

value, to create jobs, and to attract tourism. And other cities are really getting positive press coverage for this. Paris wants to remove, um, impervious surfaces at some of their famous landmarks and turn them into urban forests. That's two-fold for them -- well, I should say three-fold. So, having it as an urban forest, in addition to being a more pleasant environment for tourists and people using it, that urban forest is going to reduce the urban heat and it's going to reduce stormwater.

Now, what I didn't put up here is the last thing I want to leave you guys with this. Washington, D.C. looked at the impact of putting green roofs on all of their public housing, and they modeled and said, you know, as temperatures continue to go up in cities, we're going to start losing our summer tourism dollars. And if we can reverse this with green roofs and plantings and things that bring down urban heat, then the benefit, they said that their benefit over 40

years in retarding lost summer tourism dollars, was $4 billion.

And what struck me about that was, in terms of both our precipitation profile, humidity profile, and reliance on tourism, New Orleans is not dissimilar to Washington, D.C. You know? So, looking at the things like heat and humidity. So if we don't do these things now, then we'll actually start to lose the dollars that we currently have coming in. We'll lose our property value, we'll lose the tourism that is coming in, and we'll be spending more money every summer on cooling costs, in addition to the public health costs. So we can either move forward, or we can slowly slide backward.

I'm hoping that some of these ideas were interesting to you, and obviously not enough time today to go into all the strategies of how to do this, but we would love to host anyone in New Orleans and show you these projects and talk with you about how they can be applied to your

areas.

Thank you so much for having me today.

(Applause.)

CHAIRMAN HARRIS:

Ms. Kincaid, thank you so much for coming today and providing us with this information.

Do we have any questions?

SENATOR CHABERT:

Oh, there's so many things to say at this moment.

Mary, thank you for that presentation.

A couple of things. One, first and foremost, I don't know who's responsible for it, and not probably anyone on this dais, but the Wi-Fi in this room has greatly improved, uh, throughout the course of my legislative career since this building has been open. I spent a lot of time in this room, and the Wi-Fi has been absolutely atrocious.

I bring that up because I've been texting and sending pictures to

two-thirds of the NOLA city council. Councilman Brossett is a tremendous friend of mine, has been for a number of years, and it -- we've talked extensively about a lot of this. I work in downtown New Orleans. I work on the 41st floor of One Shell Square -- excuse me, Hancock Whitney Plaza. And that is the greatest vantage point in this entire state to see so much activity. There is no better view, unless you're on the 50th floor, I think. You see everything. One of the things that, um, is shocking when you're up there and you see -- you know, obviously, ten years on Natural Resources Committee as chairman, (indiscernible), yadda-yadda-yadda, I know the map and the landscape fairly well of that area.

But when you're up there every day, looking out those big windows and you're seeing truly how lacking the City of New Orleans is in green space, okay, it's shocking. When the floods were occurring, due to a number of factors, including drainage obstruction, my

concerns were elevated. And that's when I really started to have serious meetings with the council members, um, Councilman Giarrusso, Councilperson Moreno, and even had a meeting scheduled with Mayor Cantrell on the books. Unfortunately, the Hard Rock collapse canceled our meeting and we really hadn't had an opportunity to reschedule it yet.

The banter between Mr. Malbrough and I about this topic has been going on for months. And I'm so excited -- because he's smart. I don't know if you know, but he has a master's degree. I don't. And so many of the things that I've mentioned to him have been validated via your program. Small things. The rooftop issue, again, from my vantage point, you just look at it and it -- it's such a tremendous opportunity for -- I'm not going to regurgitate what you so eloquently put out.

The cistern system. You know, I grew up down the bayou. Everybody had a cistern -- cistern in a place that -- we

really needed them, but kind of didn't need them. I mean, that needs to be something that the council really looks at and -- and almost mandates that homes have it. Always going to be a challenge on how you're going to pay for it.

This is obviously a great way to do that, to incentivize -- I mean, if you're going to incentivize a rain garden in somebody's home, you need to incentivize them putting in a cistern. Now, not everyone needs a 40-gallon one like my Maw-maw Florence had, but something that just pulls the water off of the system.

Down the bayou, you know, we talk about the flood fight from storm surge. And it's all about the duration of the storm, what type of retention do you have, how long can your levee hold off it, and then it's going to recede. Rainstorm fighting is the exact same thing. It's how much water can you pull off of the system to allow the pumps and the canals to work like they are designed. And any obstruction deters

from that.

One thing I was particularly excited to hear about, and again, me and Mr. Malbrough talked about this extensively, is the stormwater parks. Tremendous opportunity there. I think that NORD needs to be really engaged a little more on this --

MS. KINCAID:

And they are engaged. We've been working with the new, uh, director, Larry Barabino, you know -- but the city does have a lot of new personnel. And, you know, the last -- the first year, you know, city employees, we'd see each other in the elevator and say, How are you liking that firehose water? It's delicious, huh?

So, you know, we're working with NORD and getting more involvement with them. And we're also looking for what are the next things. Right?

SENATOR CHABERT:

Yeah.

MS. KINCAID:

You know, so, these were, uh, money, you know, that was already in the pocket and had to be spent and had to be spent in a certain time so we didn't lose the money. But what are the next things, right?

And so, part of what we looked at this summer was, um, (indiscernible) state properties where they're probably not going to put a school back. Also looking at, as I mentioned, you know, can we do a CEA on some of the large structures in the East, and then --

SENATOR CHABERT:

Oh, the East is a tremendous opportunity for so many different things. Ecotourism alone, if developed properly, could be a major opportunity for the redevelopment of that area.

MS. KINCAID:

No one wants to be the first person to have something. Right? You know, so, we feel like once we have the City Park project underway -- we already have interest through Audubon. And so, you

know, we have Joe Brown Park in the East. And so, showing people that this can be done in a way that is respectful of the park's uses and brings added value, we think once we've done that with City Park and that's well on the way, that we'll be able to have greater conversations with Audubon.

You know, so I talked with Audubon that -- they have lagoons that are not circulating, which creates a different problem. You know, so, circulating it and enlarging them would help the city with drainage, but would also help them. You know, they have a huge bacteriological sink, uh, that then becomes a smell problem for people that are using the parks. I can make that problem go away, right? That's a win-win.

SENATOR CHABERT:

Yeah.

MS. KINCAID:

And then, you know, from your vantage point, you know, and as you talk

with other people that are downtown, if you can evangelize to building owners about how much money they would save if they would go with this technique, that would help me so much.

SENATOR CHABERT:

And GNO, Inc. obviously is a tremendous resource for you guys to get out that message.

A couple more things and I'll shut up and let Mr. Davis talk.

You know, the area that the -- the project area between Louisiana and MLK is an area I know well. I lived there twice. I was living in that area for Katrina. I think what y'all are doing there is phenomenal.

Again, the NORD opportunities for just -- existing park sinkage. Right? If you can dig them out -- right? Some of those basketball courts and whatnot would serve as excellent opportunities for stormwater parks. And all you're doing is, as opposed to having a street-level basketball court, dropping

it several feet, um, to make it a stormwater retention area. I think that, um, you have a number of opportunities around the city to do that. It's not something that's going to be free, but the ability to proliferate that around areas outside of particular project zones I think is -- is a phenomenal opportunity.

MS. KINCAID:

So, we are considering that as an option. So the dry retention, what you're talking about, where you drop something down and it's designed to only temporarily flood it, you know, that has, uh -- so as we're getting more into the, uh, things in HMGP being construction, we start to track the costs. Right? So for open detention, dry detention, it's about $4 per cubic foot of water stored. It's a great value. However, it has to be done at a safe angle. And then we have issues in New Orleans with people that are concerned about open water and danger and mosquitoes.

And so, what we have done is, looking at a lot of the stormwater parks, doing the underground storage. The guys in the plastics industry are making these underground storage units smaller and more modular all the time. You know? So now, I can actually fit those little boxes around an existing tree, I can get into any area, and it's really changing what we can do. So, you know, it's a little bit more expensive than just dropping it down and doing open detention, but when we think of gray pipe, for the equivalent storage in gray pipe, it's a hundred dollars a linear foot. So even at $17 per cubic feet of water stored, it's still an order of magnitude cheaper than regular gray pipe.

And that's the message that I really want to push out into every parish, that your gray pipe is not cheaper, and it's not giving you any of the co-benefits, like public health.

SENATOR CHABERT:

Yeah. And finally, after I've

thrown all the laurels at the city's feet, I'll kind of bang on them a little bit.

You know, one of the things I've been very disappointed with is the lack of interaction between the Parish of Orleans and CPRA. The -- look, I've been on that board for four years now. And again, I've been heavily involved for the entirety of my career. And even when we -- and we do this. We'll meet in New Orleans once a year. Okay? Never has the mayor been engaged. It's always just a representative -- this isn't you, by the way. Councilman Brossett says you're doing an awesome job.

But we'll get a representative of the mayor's office that just reads a welcoming statement, and then we proceed with our orders of business. And the lack of engagement from the city is unfortunate -- with the state, as it relates to wetland redevelopment. You know, the hizzer (phonetic) system. I mean, I talked to city leaders and they

don't even know what it is. It's shocking. So, that's something that, um, I'm going to leave to Mr. Sutcliffe and the folks that are, um, remaining to do it.

But I tell you what, this is probably the best presentation I've seen for the city in my entire time in the legislature.

So thank you for your hard work, and, uh, really excited to help in any way I can.

MS. KINCAID:

Well, the mayor loves to have faith in her technical people and to let them do what she's asked them to do. So, can I ask you, other than the mayor being logged in the CPRA meetings, what would better engagement look like to you? What would that --

SENATOR CHABERT:

I don't even know who their people are. I don't -- you know, I talked to some of the legislative delegation, and they don't know who the coastal people

are. I mean it's not -- it's not upon the state to work with the city. I think in this case, the city, it should be incumbent upon the city to work with the state. It's almost -- we joke about the Isle of Orleans, but it's almost like they forget that they are a coastal city. I know every coastal zone manager for every parish in the state except for the parish of Orleans. I mean, it's crazy, but it's true. And it's unfortunate.

But I'm out the door now, so it doesn't really matter. I think it's just more commentary on, as I see things are improving via this presentation that you did so eloquently, and -- and I think it's going to be awesome.

MS. KINCAID:

Thank you for the note. I will take it back. I just didn't see I wrote it down, so --

SENATOR CHABERT:

And again, I had to reach out to the mayor's office and offer my help in any way that I possibly could, but in many

cases it was, you know, we were trying to repair the barn door after all the cows are gone.

CHAIRMAN HARRIS:

Mr. Davis?

MR. DAVIS:

I wasn't going to say anything, but the senator made me.

Again, a terrific presentation and, you know, for those of you who don't know, you know, Tulane is a city within a city. And so we are trying as best we can to nest our stormwater planning with the city's. And so, yeah, it is -- it's a huge undertaking.

The one thing that strikes me, and this is the same comment I've had about the state coastal program, is this is terrific work, but much of it wouldn't be happening if we hadn't had a disaster. Waiting for disasters to deliver resources, is not wisdom. We have to find ways of identifying revenue sources that allow us to do things before the worst happens to us.

So, I'm glad we were able to seize the moment and take advantage of it, but I think going forward, we have to figure out, you know, who can pay, what they should pay, and what we should be expecting in return. Because I realize no one wins elective office promising taxes, but increasingly, we're going to have a promised value. And I think that's the real question, because we are going to see, um, you know, the investment climate changing dramatically if we do not invest in our future while there's still time to do it.

Thank you.

MS. KINCAID:

Yeah, that's something that I track as well. The international interest in how cities are responding to climate change, um, there are green investment bonds, more in Europe, and now we're starting to see that in Asia. And then if you look at what happened in Philadelphia, they did that as a stormwater cap and trade, which was able

to monetize green spaces for schools, campuses, churches, and cemeteries, and then they were able to trade that with commercial development that didn't have the ability to do stormwater management.

But the other thing that I really wanted to share, and I tried to hit on it a couple of times, is that this is cost effective. Yes, we did this with one-time disaster money, but what the data is showing us, is that compared to gray pipe, or compared to other types of things that are just cost effective, what we don't have yet is the methodology to capture all the benefits. Let me give you an example.

So, if your temperature in your home does not go below 84 degrees at night, you have a 40 percent higher chance of dying from a chronic health condition the following day. Chronic health condition being COPD, renal failure, diabetes, heart disease. (Inaudible) tracked, right? If you drop dead from COPD and we had a heat spike the previous day, that's

not really tracked. So all of the health benefits that we could get from reducing urban heat, are not yet well modeled. And that's where we could really be a leader, a leader, in the scholarship of what's happening in climate change, what's happening in stormwater management, urban heat.

I would also say that, as we have shown that these things are cost effective, it's not just the city. It's also the benefit for private citizens and commercial developments.

Now, the city council did recently pass a requirement that new parking lots, not parking areas, had to be pervious surfaces. And they didn't just say commercial. They said non-commercial. So it applies to the city, it applies to non-profits, it applies to churches and schools. So we're starting to see this council walking the talk. Right? And they're really saying we're also going to do these things.

But what I'm not sure that we've

really done a great job of, is sharing the data with other parishes. And my kind of canary in the coal mine is when I talk to people about the Stafford Act and the non-disaster hazard mitigation. There's always someone that had not heard of that yet. So I know that it's not getting out there to the other parishes.

And to the parishes that haven't had disasters, please, lean on your parishes and your cities that have had disasters and have done successful hazard mitigation applications. Let's work together. When we compete, I want us to be competing with Houston, Atlanta, Charlotte. Not competing inside the boundary of the state.

And I also -- I know it probably seemed like I threw a ton of information at you and I totally nerded out, but I actually deleted some slides, and one of the slides that I deleted was on the wonderful work that Tulane has done in helping us with species identification. They're the ones that determined for us

that Dillard Wetlands was actually a big mosquito reservoir, and totally changed my design approach of what I wanted to do there.

SENATOR CHABERT:

One of those recurring funding sources is going to be the GOMESA revenue that's going to be a direct allocation to Orleans Parish, you know, which is one of the closest parishes, uh, which makes it receive a lion's share of a lot of the proceeds to that. But again, working consistently with the master plan on comprehensive planning, um, in partnerships. And the reason why I keep going back to CPRA and whatnot -- and before Rachel -- she did a great job, by the way.

MS. KINCAID:

Oh, there she is.

SENATOR CHABERT:

Yeah. She came in and was taking pictures of you. It was awesome.

The opportunity for partnership is so important because of the -- I joke

with the consistency factor, right? It's consistent with the master plan, you can work on it on your own, you can partner with CPRA, they -- they want to partner with you, utilizing your resources and theirs, collectively, which, obviously, can pay for a lot of stuff.

MS. KINCAID:

Uh-huh. One of the great things about this is, you know, the city doesn't always own property where the problem is, right? But with storage, with this type of approach, there's never a bad place to put storage. There's never a wasted place to put storage. Now, there are ways where, in determining -- you know, if you look at where your storage is placed kind of inside the watershed, further away from the collection point is better, but there's no bad place.

And so as we look at, like, you know, Oh, gosh, do I really want to rip up this entire road, you know, to get to these drainage pipes and I have this huge cost of putting road back, you know,

whereas, opposed to, I have this land that I already own where I'm not planning on putting a school back, and I can turn it into a stormwater park. So storage gives us the flexibility to work with the assets that we already have in the system.

He and I can do this all day, so you guys should --

SENATOR CHABERT:

Yeah, just jump in.

CHAIRMAN HARRIS:

Go ahead.

MR. BALKUM:

Ms. Kincaid, thanks for that information. That was impressive. Just a simple request: Any chance we can get a copy of your presentation?

MR. REONAS:

Yeah. Absolutely. We'll put it up online and I'll send a notice out.

MR. BALKUM:

Thank you very much.

CHAIRMAN HARRIS:

Do we have any other questions?

MS. KINCAID:

Thank you all.

CHAIRMAN HARRIS:

Ms. Kincaid, thank you.

(Applause.)

CHAIRMAN HARRIS:

Please proceed to our next agenda.

MR. REONAS:

Certainly. We had on the agenda, No. 5 was Amanda Vincent with the Department of Environmental Quality, the Water Quality Trade Program. The final rule was just issued recently, but we have had to strike that one from the agenda today. We'll try and get her back to kind of give an update on that at one of the next meetings.

So next would be Ms. Leslie Durham on an update on the Louisiana Rural Water Infrastructure Committee. This was a committee that Governor Edwards began, I think it was last -- either last year or earlier -- I think the legislation passed earlier this year. So we're going to go from urban to rural in one meeting here.

And so, Ms. Durham?

MS. DURHAM:

Thank you. I don't know how you're going to change hats with this, but, um, one thing, um -- Mr. Davis isn't here. We're talking about all that money, trying to get everybody on the same page, wanting to do these projects now before we get into a disaster? You talk about rural, you can't do that. These people aren't going to change, unless you have a disaster. And I'm from Tensas Parish, so I can actually say that.

My name is Leslie Durham. I represent the governor with the Delta Regional Authority, as his designee on the Delta Regional Authority Board. Delta Regional Authority, if you don't know, is made up of eight states. It's a federal grant program. We have -- every -- every one of the governors is represented on that board, and one person who is represented by the President of the United States.

We have a little money that we use

to leverage for projects, infrastructure, economic development. Anytime you're going to create a job, if it has to do with rural delta, we can help. In the past four years, under Governor Edwards, Louisiana was able to secure just over $10 million. And we were able to leverage that to bring in $130 million. That's not too bad for a little-bitty program.

All right. During my time, I also represented Governor Blanco with -- in the same position. So this is not my first rodeo. So when we got started, Governor Edwards took office. He had a bottle of water from my home town sitting on his desk. You might have heard about it. From St. Joseph. My kitchen's actually been on CNN. I had lead in my water. My drinking water was the same color as your desk. Come to find out, we have -- 60 percent of the infrastructure in Louisiana is similar to St. Joseph. It's failing.

So, the governor got started

immediately working on what to do to help St. Joe. We had been in this situation for over ten years with no -- no resolve. So once he got in office, started making appointments and started bringing people together, trying to figure out how to work -- and got some resolve, or got the ball rolling.

In the meantime, my position, I was able to help with some infrastructure. And we started talking to some other communities around the state about their water systems and how they are in the situation they're in, how they got there, and how we can do something about it.

Being from a rural area, contrary to what y'all heard for the past hour, we don't have the money and resources. And so, those folks, they don't know who to ask. They know not to ask because they know they're not going to get a "yes," so they just look at each other and say, What are we going to do?

So, right before Christmas, it was almost this time, 2016, was the Tuesday

before Christmas, was going to be on Sunday. I get a call at 4:13 in the afternoon, from Natchitoches Parish, the police jury president. He said there is a community in his parish that had been without water for three weeks. And they had looked at each other and looked at each other, and no one knew what to do. And somebody said, "Call Leslie Durham and see if she can help."

So I got in touch with the governor and he said, "Get those people water by Christmas." So, I try not to say "no" to him. So, I went to our board, which is a federal board, and talked to them about, you know, emergency situations. And I looked at -- I called USDA. They were involved and didn't know what to do. No one has actually emergency money, I'm sure you know. "Emergency" is more like a year down the road, but not immediate. This community needed immediate help. They didn't need a lot, but no one knew how to help them.

So LDH was involved, so we brought

in USDA, got their information. Had Rural Water Association, brought them in, and working very quickly, we figured out what was wrong, what they needed, and who had it, and how we can get it. And we were able to secure federal funding in 28 hours. We got seven governors to sign off, and we were able to get that community what they needed. Like I said, I had the call at 4:13 on Tuesday. By Thursday afternoon, we were pumping water. So, it can work if we work together. And we all were like, Hey, this is kind of cool. We were -- had this problem for a while, had these folks on the fence, and our agencies pulled together and shared information, shared resources, made it work.

What we also did was stay with the community. The same group of agencies stayed with them, encouraged them to meet again, pretty quickly, because that was a band-aid on a bigger problem. And so a year and a half later, that same community has consolidated with another

water system and is now very sustainable and has very good water. And that problem is solved. Check that off the list.

This group started thinking, Hey, you know, I've got this problem over here, can y'all come help me over here? And this agency over here said, I've got a problem, can y'all come help? So we started helping each other. And that was the start of the Rural Water Infrastructure Committee that the governor had -- Senator Francis Thompson introduce in committee and ultimately signed into law in this last session.

And we now -- and you have -- you have all the information in your packet. Some of you are actually members of our committee. It's made up of mainly regulatory end funders. And we actually sit down together, talk about -- we have two groups. We have a smaller committee that will go out to a community that is in need, in distress, has a problem, asking for funding, and -- but -- or they

don't know what to do. And we can actually go sit down with them, and we do, and have hard conversations. Sometimes, you know, we have to do that. We've got a lot of new mayors and new councils and we've got water boards that don't have the education that they should have about their drinking water.

So we sit down with them and we have the hard conversations about their rates, about what -- you know, the numbers, how many are -- that they have on their water system and how many it needs to be to have a sustainable water system. Or about their water. We've got communities that are really just pulling bad water, and we have to figure out how to help them. And we were able to get an engineer through LDH to help our team to be a backup for the communities.

One problem we ran into in St. Joseph was, um -- our mayor was our problem. That was our problem. And he all of a sudden was getting a lot of money to work on the water system, and he

hired a separate engineer for every little piece of it. Well, those engineers weren't talking to each other. And you could see it coming. It was just getting to be a big mess. So we had to get another engineer to be over all of them and be a project manager, and that saved a lot of money and helped coordinate the whole matter.

But that's a problem. Our small communities, they -- sometimes they don't have engineers, or they don't know who to talk to, or if their one engineer that they've had for 30 years is telling them one thing, they don't know to question. And they never question.

So our engineer with the Rural Water Infrastructure Committee that's through LDH, is able to assist them, to look at it, to say, Hey, yep, that's good, sound advice right there. Or, Hey, what about have y'all looked at these other options? You know, what about consolidating with your neighbor? You've got these other issues over here, your plan is not

addressing any of these. You know, so you -- there's a backup there now. There wasn't before.

And what we did as a committee, before we even were codified, we were looking at all the water systems, all the public water systems, and kind of put them in categories: Most distressed, and to, you know, down to, you're okay, we're not worried about you at the moment. But the ones that were most distressed were the ones that we call, you know, a hiccup away from no water. Just one little thing happened and they are completely out of business. And so we're actually reaching out to those communities. And that's something that we weren't doing before. We were doing it when we had to or we had an administrative order -- my community had an administrator order, the mayor didn't even tell the council. The soil conservation group found out and publicized it. That's how we knew. They don't know what to do. And it's something that we are -- we are taking on

too, is education, is trying to get some education. And we may even look legislatively to mandate some. Right now it's not. It's not.

But, um, I don't want to keep talking. I know you've got a lot of information from me and I've -- I've given you some and I -- I want to answer questions. I know my -- my area, it doesn't cover Lafayette, and that's about it out of your group. But I do help with some programs in Lafayette that help other parishes. So I can do some things in parishes that I don't actually cover, but.

But statewide is, um -- the rural water issues, we have a lot in North Louisiana, for some reason. But, um, consolidating is something that we're really pushing hard, and education.

CHAIRMAN HARRIS:

Thank you, Ms. Durham.

Do we have any questions from the commission members?

(No response.)

CHAIRMAN HARRIS:

Thank you very much.

MS. DURHAM:

Okay. Well, I brought Allen Robinson from my office, and I appreciate him coming out, and I appreciate the opportunity to speak to y'all today.

CHAIRMAN HARRIS:

Well, and thank you for all you do.

MR. REONAS:

All right, Mr. Chairman, the last item in terms of presentations comes from the Vice Chairman up there himself, Mr. Brad Spicer. So.

MR. SPICER:

All right. Thank you. I'm going to take this opportunity to talk about some of my experiences and then some of the things that I think we've achieved over the last 30 or 40 years in addressing soil and water issues in the state. So, if you'll bear with me on discussing my experiences.

I have been very fortunate as a -- in my career. I've worked 55 years, um,

short a few months of, um, doing soil and water conservation work in the state of Louisiana, and I have seen some major accomplishments. When you look back in the 1930's, prior to the, um, Soil and Water Conservation Service being formed and the state Soil and Water Conservation District being established, uh, we -- there's many thousands of acres in the state that you couldn't farm anymore. It eroded, it, uh -- taken timber off the land and, um, you -- you could lose bulldozers trying to grade the land. That's how bad it was in North Louisiana. And, um, during the '50s, we cleared a lot of land, um, for various purposes. So we had a lot of issues that have been addressed over the years.

But, um, I worked for the Soil Conservation Service for 21 years. During that period, um, I spent about half my time working with state agencies on special assignments. Um, the first assignment was in 1975. I went to work for the governor's office, the Office of

State Planning, to help them develop their Coastal Management Program, uh, which, um, was the program that started all the work that we've done in the coastal area.

I also worked on the Clean Water Act with Dale Givens. I might mention Dale Givens and Tom Templet, both of them become secretary of DEQ, to -- so -- your predecessors, Tom.

So anyway, I've had that experience and, um, doing the work for the Clean Water Act in 1972, Clean Water Act, the state was in, um -- trying to implement that act and, we, um, formed a management team in the state, um, the team represented -- it was five members, represented, um, the, um, various agencies that the state had at that time, the Stream Control Commission, which was responsible for water quality. Um, air pollution and radiation -- radiation was a big issue back, uh -- matter of fact, NRCA, or Soil Conservation Service and most federal agencies that did field

work, had to be trained to -- with Geiger counters and other equipment to -- to -- because of the Cold War and the threat of nuclear, um, attacks on the U.S. So, um -- but that five-member team finally developed a plan that led to the formation of the Water Quality Commission, which was a forerunner to DEQ, in 1980, um -- in 1983.

So, um, I spent a lot of time with the Department of Transportation and Development as well. Chris, the state's soil and water conservation commission was in the -- the Department of Transportation and Development. And the reason for that was that, um, we, um, had a close working relationship with the Office of Public Works during our -- they were the state sponsor for our watershed program. We had an extensive watershed program back in, um, the '50s, '60s, and '70s, and with the new constitution, we had to take 360-some agencies, place them in, uh, 20 departments, including the Governor's Office, and, uh -- so the

state commission elected to go into DOTD because of the close working relationship with the Office of Public Works, which was going to DOTD, and the, um -- and in addition, we just elected a new, um, commissioner of agriculture, Gil Dozier, and they didn't want to go into the Department of Ag. at that time because of the reputation Commissioner Dozier had. So, um, that's how, um, we ended up in DOTD. So.

Um -- I had to look at my notes. I put this together last night to try to have some guidance here.

But, uh, the other assignments I had was with the Department of Natural Resources. Um, I, um, was at work with Dr. Chip Groat, the state geologist, doing the state, um, geological map and some other, uh, tasks that we worked together on. And, um, he, at that point, become director, in addition to the state geologist, director of the Division of Coastal Zone Management in DNR, and he requested my boss that I come work with

his new team, um, to give them technical guidance.

And I'll give you an example why that was so important. This was a young group, just recently graduated from college, um, marine biologists and others, and, uh, I sat in on a meeting with Shell Oil, and they had violated some guidance. And so, they decided to fine Shell Oil $60,000. And then Shell Oil said okay, we'll do that, but then they had to close it to now, do a -- they didn't have -- but that's what the -- the Coastal Zone folks decided they were going to do.

Well, they went out and dumped $60,000 worth of shale and organic soils. And so within a year, um, there wasn't much shale left there, and the -- the opening was larger because of the erosion of the shorelines on both sides of the -- without the shale. So that was a -- they needed a lot of guidance. And by the time I left, they were in outstanding shape because of -- not because of my

work, but the fact that we were able to point things out to the staff and they -- they were, um, very anxious to do what was best for our coastal area. And so, um -- um, I really enjoyed that work and, um -- and of course that's pretty nice to help put together a program and then get to help implement it and -- when you're not part of the system. So.

And also, um, when I was working for the Office of State Planning, um -- mentioned Gil Dozier -- Bob Odom needed a job. He was with the Department of Ag. and Forestry and running the pesticide program. And Charlie Roemer was the individual that I reported to, um, from, um -- in the Governor's Office. And, um, so he called and asked if I could hire Bob Odom. And of course I didn't know him, and I said, well, certainly, uh, if that's what he wanted me to do.

Anyways, later, Bob Odom become commissioner of agriculture, and there again, I was requested to leave my job as a, um, a river basin staff leader with

the Soil Conservation Service and come work on the, um -- he wanted to redo the pesticide program, um, to -- and which we did, uh, which was one of the best at that time in the country, was the education, certification, and -- and, um, surveillance and enforcement. So, um -- and it's still an excellent program. And, um, we worked closely with LSU in the pesticide program.

In 1985 I had the opportunity to -- to become executive director of the state Soil Conservation Commission, and so I, um, retired from the Soil Conservation Service and took that position. Um, and, um, after -- I guess Buddy Roemer was governor in '88 -- I don't have my, um, dates exact here -- but anyways, I was asked to serve on his transition team. And so, um, a few days after I agreed to do that, I got a call from Manny Fernandez, who was heading up the transition team, and he said, um, he just talked to the governor-elect and that, um, we were being moved out of DOTD. And

he said, Here are your options: DEQ, um, DNR, or Department of Ag. and Forestry. So the state commission elected to go with, of course, the Department of Ag. and Forestry.

And then I, um, was asked to write the legislation to move the commission to the office, um -- to the Department of Agriculture and Forestry, and I had some good help from a gentleman -- I see Su King just left, but, um, one of her, um, workers over there, Ralph Cunningham -- I don't know if it's -- not many people in here old enough to -- to know these folks, but -- anyways, um, Ralph was not very close friends with Commissioner Odom for some reason. And I asked him to take a look at the legislation and he, um, said, um, I don't think that the commissioner of agriculture ought to be identifying who is supposed to be in charge of the conservation commission. And so, um, he recommended that the commission select who is going to be assist -- oh, and also formed the Office

of Soil and Water. We didn't have one. So, um -- in the legislation. So we formed the Office of Soil and Water Conservation. And, um, the legislation called for the executive director of the Office of Soil and Water Conservation to be the, um, assistant commissioner for the Office of Soil and Water, and that the state commission would be the authority to identify who would serve in that capacity. And that's the same as the Office of Forestry, by the way. So.

But, uh, we moved on, and after getting into the, um, Department of Ag. and Forestry, I was fortunate to be able to expand our program. At the time, um, we had oversight over the soil and water conservation districts, 44 of them, and so I was able to expand the program to include, uh -- I don't know. Let me see if I have a list of them here. But, um, some of the principle, um, efforts included doing a BMP, where we were able to work with DEQ and all the ag. hazardous waste and all the other

non-hazardous waste from processing and -- and so on. We were able to manage that through a best management practice program that we, um, worked out with DEQ, saving, um, millions of tons of debris going to landfills, which is significant for water quality and other reasons. We don't have that much land that is suited to landfills in the state, and, um, to not move all that debris into, um, landfills is significant.

But we have, uh, on file right now, operating probably close to 800 BMP sites in the state. And, um, we don't regulate those. DEQ does. If we have a complaint, we go investigate it. And if we determine that they're not complying with the BMP, then we have DEQ inspectors come manage it. So, um...

And then of course we have Coastal Zone Re-vegetation Program. Since that program has been implemented, that's joint -- was with Coastal Zone Management and then, uh, it's now with the Coastal Protection and Restoration Authority.

We've planted over a thousand miles of vegetative material on shorelines, interior water bodies that, um -- um, being eroded on the shorelines, and, um -- um, so that's a significant effort. And we do that with, um -- most of the work is done by volunteers. Each -- we, um -- all our coastal districts participate in that program. And, um, their own staff plus volunteers. So we get a lot of mileage out of a few bucks from, um -- um, Coastal Protection Restoration Authority.

We have a master farmer program, which is, um, a, um, an effort with LSU, DEQ, and Farm Bureau, but it's run out of the Department of Ag. and Forestry. We also -- we, um, require that farmer to -- if he's going to earn his master farmer, he has to go through an education program with LSU and then, um, implement a comprehensive conservation plan that includes addressing all of our quality issues, air quality, wildlife, um, enhancement and -- and, um, so, it's a

great program. And, um, the idea is that, um, if you've done all these things, then DEQ, nor EPA can say, well, if you've got a master farmer's plan implemented, you know, can't, um -- you won't be charged with any violations. It doesn't happen that way. So, um -- but, um -- and then we have some educational programs that, um -- Project WET, we do that, and we have a lot of folks participating in that effort with us.

So, um, I know it's getting close to lunchtime. So, um -- it's after lunchtime, really. So, I'd like to mention a couple of, um, things that has happened over my 40, uh, 50 years, um, that I think are significant to addressing water quality, water use and management, and, um, for soil protection. And, um -- to retain the integrity of our soil resources in the state.

Back in, uh, let's see, in -- I guess it was 1985 -- well, I'll start from 1985. That was a significant farm bill. We do a farm bill every five

years, the federal government does a farm bill. And I might mention that, um, Senator Breaux and his aide, um, Johnny Broussard, I worked with them for many years, and they were outstanding, uh, trying to make sure that the farm bill contained the programs that would benefit Louisiana and the farmers across the country. And it also addressed environmental issues.

And the 1985 farm bill had three components that really changed the way we do conservation work in the nation. It contained what was called the swampbuster, the sodbuster, and cross-compliance. And so, um, a farmer that had, um, highly eroded soils, if he didn't implement a group of conservation measures to keep that soil from eroding, if he tried farming it without doing that, that's where the cross-compliance come in. He couldn't, um, gain any other federal benefits if he wasn't complying with the sodbuster rules. And the same with the wetlands, the swampbuster rules.

If a farmer was clearing land and, um, and farming it, um, that individual could not, um, be eligible for any USDA benefits as well. So, um -- now you got a huge difference in the management of our, um, soil and water resources in the state.

And then, um, in 1990, we passed the Wetland Reserve Bill, which allowed the state -- the states to go in and restore their wetlands. In Louisiana, at that time we had nearly a half a million acres that had been cleared of bottomland hardwoods, and that they were either frequently flooded or occasionally flooded. And that was in 1990 when that bill was put into effect. Last year, um, we had achieved 125,000 -- 325,000 acres restored back to bottomland hardwoods. And that effort also got the black bear off the endangered species list because of the work we've done in providing corridors for the bear to move up and down the alluvial valley and -- and so, um, that was a significant effort there.

But the other really important part of this is the water quality and flood prevention, because all at once we put 325,000 acres back into bottomland hardwoods, that cleanse water as it moves through it to -- to the streams, as well as, um, providing 325,000 acres of storage of floodwaters. So, um -- you know.

The other programs, just to give you some idea how, um, extensive this effort is, from 1997 to 2018, just, uh, EQIP program. This does not count the technical assistance cost, uh, for the cost of the federal and state employees, um, to implement, we -- we -- um, the state brought in $211,000, um -- a million dollars; excuse me.
$211 million, and we did conservation work on 3,400,000 acres. And under the conservation storage shed program from 2000 to 2018, we, um, spent nearly $180 million in, uh, two and a half million acres.

So that gives you some idea of the

kind of work that's gone on, which most folks, they see it happening on their -- their property or neighbor's property, but don't see the huge amount that is being done across the state annually. So, these are significant programs.

And I might mention all the programs that we do through the, uh -- now the NRCS; it used to be the Soil Conservation Service -- is a joint effort. We partner with DU, um, Nature Conservancy, LSU, DEQ. We have a -- we've had an agreement with DEQ ever since -- since they were formed, really, to do conservation work through the, uh -- doing water quality specifically, uh, with our conservation programs with DEQ.

We have a joint program in section 319. Many of you are probably aware of that. But, um, that is an effort we -- it's -- all that -- those dollars have to go to determine watersheds, addressing stream segments that have non-point source pollution, um -- uh, caused by agricultural activities.

So, um -- um, I see Mark is back in. And I want to make a comment. Earlier he said that, um, it's really discouraging to know that it takes a crisis to make anything happen in the state. Well, I was interested in getting this commission, um, for years, starting back in the '80s. And, um, I talked to legislators, and uh, you would think that you had someone interested, and all at once he got talking to his associates, and evidently it wouldn't happen.

Well, in 1999 and 2000, we had unbelievable droughts. And I was prepared -- and Su King left a few minutes ago, but Su King, uh -- Representative William Daniel -- I think some of you probably know William -- we got together and formed a team, uh -- Karen Gautreaux, I think she was with DEQ as assistant secretary at the time -- deputy, yes. And so, we put together, um, the legislation and we got it passed.

Now, I helped write that legislation, and it was much more

extensive. It included surface water. But you couldn't convince anyone that surface water and ground water was related at that time, and certainly not in the legislature. So -- but anyway, we got that passed.

And back in 1988, the forerunner to the Coastal Zone Program, or the Coastal Protection Restoration Authority, we passed a bill, Dr. Chip Groat and myself, and Conway LeBleu from Lake Charles, Representative Conway LeBleu, uh, he -- and we needed help from North Louisiana. And, um -- um, Representative Long filled that gap for us and we were able to pass a coastal, um, commission, um, protection program in 1988. Now we have billions of dollars that we can use. Back then we were -- we could use revenues of -- oil and gas revenues, up to $14 million. So, it wasn't -- you couldn't get much done for that.

I think I'll shut it down here. I might mention, anything that we do in conservation is in partnership with

someone, and primarily the land owner, and then other agencies and organizations.

So, um, that concludes my remarks.

CHAIRMAN HARRIS:

Mr. Spicer, I do have one question. First of all, you've compiled a remarkable record of state service. I was wondering if we could convince you to stick around for a couple more years? You would only need a short stint at Department of Revenue and Office of Public Safety, and you would have the complete set.

MR. SPICER:

Well, I will tell you, I have been through this with my boss for several years, and I don't think I can (inaudible).

CHAIRMAN HARRIS:

Well, thank you.

MR. SPICER:

But I want to say this. I've worked with the -- I've worked with the best folks in the country, especially the

farmers that, uh, I've worked with, and the land. They're outstanding. And my working relationship with the agencies here in the state, DNR, DEQ, DOTD, has been outstanding. And, um, I know that we do a -- a better partnership here in Louisiana than a lot of other states, because I visit a lot of other states, and it's obvious our working relationship among these resource agencies is outstanding. And that speaks well for all of us.

CHAIRMAN HARRIS:

Well, thank you.

MR. KNOTTS:

Chairman Harris?

CHAIRMAN HARRIS:

Mr. Knotts?

MR. KNOTTS:

Yes, sir. So, I think what's going unsaid here, Mr. Spicer, is that you're retiring. And on a personal note, I'd like to tell you that for many years, our paths have crossed quite a bit, and I always appreciated your wisdom, your

honesty, and your friendship. And I just wanted you to know that. Thank you very much.

MR. SPICER:

Well, thank you. Same back to you.

MR. KNOTTS:

Thank you.

Chairman Harris, being an engineer, we're not known for our flowery words, but I would like to propose that this Commission consider a resolution thanking Mr. Spicer for his many, many years of dedicated service to water resources in the state of Louisiana.

MR. DAVIS:

I would second that.

CHAIRMAN HARRIS:

We have a motion and a second. All in favor, signify by saying "aye."

COMMISSION MEMBERS:

Aye.

CHAIRMAN HARRIS:

All opposed?

(No response.)

CHAIRMAN HARRIS:

Motion carries.

MR. SPICER:

Thank you. That's very nice of you. And I'll say this. That means a lot to me, but, um, to give something like that to my grandchildren, uh, is going to be significant. So.

CHAIRMAN HARRIS:

Thank you for all you've done for the state and for water resources here. Thank you very much.

MR. SPICER:

You're welcome.

CHAIRMAN HARRIS:

Do any of the members have any new business?

(No response.)

CHAIRMAN HARRIS:

Do we have any public comments?

(No response.)

CHAIRMAN HARRIS:

Hearing none, I'll be glad to entertain a motion to adjourn.

MR. SPICER:

I make the motion.

CHAIRMAN HARRIS:

We have a motion --

MR. KNOTTS:

I'll second.

CHAIRMAN HARRIS:

-- from Mr. Spicer and a second from Mr. Knotts.

All in favor?

COMMISSION MEMBERS:

Aye.

CHAIRMAN HARRIS:

All opposed?

(No response.)

CHAIRMAN HARRIS:

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

(Whereupon, the meeting was adjourned.)

C E R T I F I C A T E

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