BEFORE THE NEW YORK STATE
LEGISLATIVE COMMISSION ON RURAL RESOURCES

PUBLIC HEARING:

TO EXAMINE THE EFFECTIVENESS OF CURRENT FLOODING EMERGENCY AND MITIGATION EFFORTS, AND TO DISCUSS THE NEED FOR FUTURE ASSISTANCE DUE TO THE INCREASE IN EXTREME WEATHER EVENTS

Legislative Office Building
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Date: February 25, 2020
Time: 10:00 a.m.

PRESIDING:

Senator Rachel May, Co-Chair

Assemblyman Angelo Santabarbara, Co-Chair

SENATE MEMBERS PRESENT:

Senator Pamela Helming

Senator Patty Ritchie

Senator James Tedisco

ASSEMBLY MEMBERS PRESENT:

Assemblywoman Marianne Buttenschon

Assemblyman Robert Smullen

Assemblyman Mark Walczyk

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SENATOR MAY: Hello, everyone, and welcome.

Thank you for joining us.

I am Senator Rachel May from the 53rd Senate District, and I represent Madison and Oneida counties, as well as parts of Onondaga County, including the city of Syracuse.

I also chair the Legislative Commission on Rural Resources, which is a joint bipartisan commission of the State Legislature, with a mission to promote the viability of rural communities.

On behalf of the Commission, I host this hearing today on flooding, together with my co-chair, Assemblyman Santabarbara.

And the purpose of this hearing is to examine the effectiveness of current flooding emergency and mitigation efforts, and to discuss the need for future assistance due to the increase in extreme weather events.

Coastal flooding and river flooding pose a growing threat to New York's environmental, social, and economic systems.

All across New York, new flooding patterns have revealed vulnerabilities in our infrastructure, our agricultural systems, and ecosystems.

Major storms, from "Irene," "Lee" and

"Sandy," to the most recent Halloween storm, have inundated communities and inflicted billions of dollars in damage on homeowners, businesses, and communities.

The Halloween storm's flash flooding, heavy rains, and strong winds destroyed 18 homes and damaged hundreds more in and around my district.

State and local governments estimated that more than $33 million in response costs and infrastructure damage was caused by the storm.

On December 20th, the federal government approved assistance to New York, to allow governments and certain non-profits to receive federal dollars to cover debris removal, implement emergency protective measures, and repair and rebuild infrastructure, such as roads, schools, parks, and hospitals; however, FEMA notified the state that it would deny its request for assistance to individuals.

New York has seen an annual increase in precipitation every year since 1900, and extreme storms in the northeastern United States now generate approximately 27 percent more moisture than they did a century ago.

Climate change has made heavy rainfall events

more frequent and more intense, and this trend is projected only to continue.

In addition to heavy downpours, New York's coastline has seen a sea level rise of over a foot in the same time period.

It's estimated that precipitation will increase 12 percent by 2050, with sea levels on New York's coastal areas growing by 2 1/2 feet.

Continuous flooding of Lake Ontario has prompted emergency declarations to be issued for a number of adjoining counties.

It is our duty to protect our constituents, land, and waterways. We must look at strengthening current infrastructure.

This is why I've introduced legislation to require water-level monitoring systems to be installed on dams rated as "high hazard," upon the request of nearby municipalities.

New York State currently ranks eighth in the country for the most high-hazard dams.

The average age of New York's dams is 69 years old, well above the average. And I have one in my district that goes back more like 150 years.

I was excited to see the Governor's Restore

Mother Nature Bond Act proposed in this year's Executive budget, that would produce funding for the removal, alteration, and rightsizing of dams and culverts.

This proposal would also support stream and wetland restoration, land acquisition, forest and habitat preservation, and water-quality improvement work.

We must also look at maximizing funding to combat flooding damage from both federal and state government resources.

Unfortunately, the Executive budget proposed discontinuing $72 million in capital funding for the Governor's Office of Storm Recovery.

Today I'm excited to hear from a range of stakeholders, to speak on flooding issues and, what I'm hoping for, potential solutions.

We have representatives from the agricultural industry, soil and water conservation districts, local government, state government, and academia.

Before I turn it over to my co-chair, I want to welcome Senator Tedisco, and I also want to note about our process.

The Chairs will be given 10 minutes per witness for questioning.

Each other member will be given five minutes per witness, and witnesses will be limited to 10 minutes of opening testimony.

We do have copies of your written testimony, which is part of the record. So we encourage you to be concise and visit your main points in your oral testimony.

Thank you.

SENATOR HELMING: Rachel, I just wanted --

SENATOR MAY: Oh, sorry. I didn't see you. Sorry.

Senator Helming is here too.

ASSEMBLYMAN SANTABARBARA: Thank you, Senator May.

Good morning, everybody.

I'm Assemblyman Angelo Santabarbara. As Senator May indicated, I'm the Assembly Chair of the Legislative Commission on Rural Resources.

I represent the 111th Assembly District, which includes Albany, Montgomery, and Schenectady counties.

I'm joined by my colleagues on the Assembly side, Assemblymember Smullen and Assemblymember Walczyk.

Thanks for being here, both of you.

I want to thank all of you for attending the hearing, and I want to thank Senator May and my Senate colleagues as well.

As you heard, today's hearing is very crucial, especially to the rural areas of our state in Upstate New York.

Many of those communities that we represent, flooding is a serious, persistent issue, and it poses a real danger.

And we have seen over the years, with extreme weather and climate change, how it has really taken a toll on our communities in a number of way.

Year after year, floods put health and safety at risk, families at risk. We've seen the damage to homes, to properties.

And that toll adds up over time, and our communities not only face the physical challenges of rebuilding, but also the financial aspect that comes with it, following the damage, for repair, response, and recovery.

In addition to the extreme weather events that Senator May talked about, I just want to talk about, just quickly also mention, that ice jams have been a persistent problem as well.

Many communities live near -- have -- are

situated near rivers throughout Montgomery County in my district, Schenectady County. And our waterways continue to be threatened by ice jams around this time of the year when we see the freeze and thaw cycle.

In fact, last year, New York ranked number two in ice jams nationally with 20 events.

And in 2018 we led the way with 27 ice-jam events.

That's very significant.

And I've seen the effects of ice jams personally because, in my district in the Schenectady area, and the city of Schenectady, there's been a long history of ice jams along the Mohawk River. A lot of it has made the news because of the damage that it has left behind.

But the truth is, it affects generations of families, businesses; forcing people out of their homes.

And as I said, that financial component, the millions of dollars in property damage, and the threat to our -- the health and safety of our community.

After the last ice jam a few years back, I have a civil engineering background, and I -- I --

I know, over time, we have been able to solve problems like this with modern technology.

And there is ice-jam mitigation measures that can be installed, and things that we can do to mitigate the damage from flooding.

The cost to research these options and implement the effective mitigation measures can actually save a lot of money in the recovery costs, recovery efforts, cleanup costs, and infrastructure repairs.

We have to also understand that this flooding damages infrastructure that's already in place.

So I know DEC is here.

I've written letters to them, and the U.S. Army Corps of Engineers, to urge more research on ice-jam prevention measures, and other mitigation measures, to make our communities more resilient.

I'm also encouraged to see, this year, the State's proposal to invest $300 million in a redesigned Erie Canal, including $65 million for flood mitigation along the Mohawk River.

So that's -- I'm very pleased to see that.

That provides us with a pretty good starting point.

And although we've seen some progress made,

the work of this Commission will focus on what still needs to be done to protect our rural communities.

So with that, I welcome stakeholders, state officials, and community members who have come out today, to take the time to speak with us on this issue.

It is possible to get ahead of the problems.

And your testimony here today will help us plan for the future, and help create feasible, long-lasting solutions to mitigate flooding across the state.

Thank you, all, for attending.

And with that, I'll turn it back over to Senator May.

SENATOR MAY: Great. Thank you.

And let me ask my colleagues -- oh, and we've been joined by Senator Ritchie as well.

If you have any opening remarks you'd like to make? Anything?

SENATOR RITCHIE: I'm all set.

SENATOR TEDISCO: Sure.

Well, first of all, let me thank you, Senator May and Assemblyman Santabarbara and all my colleagues who represent districts that are rural, and appreciate the significance of this Commission,

and the hearing today, and the work you guys are doing.

And, Director O'Hara, I thank you for the work you're doing with your office, and for taking the time to be here with us and give us some testimony.

I represent the 49th Senatorial District. It's about 4,000 square miles. And the storm was pretty devastating in a large part of that.

Part of it did dodge a bullet, but, areas like Saratoga, especially Hamilton and Herkimer counties, got hit by the bullet, and some serious things happened there, but they've happened in the past. And they seem to happen over and over again.

Maybe this was the most serious type of flooding and activity that took place in those areas.

And I guess what we're saying here, is we want to mitigate the flooding to begin with, in every way possible and any way we can. But we also want to be especially prepared for the floods, and see what we can do after, to bring them back to wholesomeness.

And I can't thank the workers in all those counties, in the towns and villages, who worked

together to make that -- those communities whole that I represent after this devastation.

It was a fantastic thing to see.

But we can't continue to count on their efforts because it's only going to get worse if we don't make it better in many ways.

This also highlighted another concern I have, and I think many of us have in some of our rural areas, and that is the fact --

And maybe you can help us promote some of this.

-- is to have a real web infrastructure and a real broadband infrastructure into those areas.

We were promised that would be a statewide thing.

And I have parts of my district that not only don't have broadband or web infrastructure, they don't have cell phone usage.

I get into the middle, in the Adirondacks, of Hamilton County and I have no contact with anybody.

And I say this tongue in cheek sometimes, but my constituents in many areas, although it's a serious thing, I suggest that sometimes we think they need homing pigeons or smoke signals in an emergency.

And these are emergencies, and we have to know where they are and what's happening in these flooded areas, just like we have to know if a burglary takes place, or if there's a fire, or if there's an accident.

And so anything you can do to promote that into our rural districts, and make sure we're covered, we get the coverage, I think that's extremely important.

I thank you for the opportunity to be here, and I look forward to listening to your presentation.

ASSEMBLYMAN SANTABARBARA: And Assemblymember Smullen will give opening remarks.

ASSEMBLYMAN SMULLEN: Thank you, Chairman May, as well Assemblyman Santabarbara, all my colleagues here.

I'm Robert Smullen. I represent the 118th Assembly District, which is Fulton, Hamilton, the upper part of Herkimer County, nine towns in St. Lawrence, and six towns in Oneida County.

Prior to that, I was the executive director of the Hudson River-Black River Regulating District, a New York State public-benefit corporation, which

helps manage and regulate the flow of rivers and two watersheds in Upstate New York.

And being new to office, but also being not new to emergencies, I want to, first of all, commend all of the -- our state partners who responded to the emergency.

The reason I say that is, is that everyone came out.

Whether it was the Division of Homeland Security and Emergency Services, the Department of Environmental Conservation, the National Guard, they brought equipment, they brought manpower. They mobilized a lot of the civil-society organizations that the went out and really took care of the people of the district that I represent.

They were hard-hit by these two rain bombs, one that hit Hamilton County and one that hit Herkimer County, and caused a lot of flooding and a lot of damage.

Now, regarding that damage, one of the lessons that we've learned from this, and I want to address in public so everyone knows, is that we think that preventive stream restoration can be a way to mitigate the problems up front.

An ounce of prevention is worth a pound of

cure.

The old-timers tell you: We used to go out there and we used to clean these creeks and these waterways and these culverts up, and it would reduce the amount of damage that could potentially happen.

I've been dialoguing with three separate organizations at the county level: The department -- the Emergency Services Department, the soil and water conservation districts, as well as the county legislators.

And we are in a process of initiating a process of stream restoration, which I think the idea is very sound.

And we'd appreciate the support of the Commission, but also our state partners, to be able to actualize that, which is, to go in ahead of time, to be able to try to get ahead of these storms, is what we're thinking.

But I'm very much looking forward to this conversation, this hearing.

The people of the 118th Assembly District were hit very hard, and they're somewhat disappointed that FEMA is not returning federal resources to the community.

So that's something that, at the state level,

we need to make sure that we double-down on, in making sure that our State goes back to the federal government and makes sure that our citizens are taken care of.

Thank you very much, and I appreciate the opportunity to hear your testimony today.

SENATOR MAY: Thank you.

And just before we get started, I want to acknowledge the staff of the Commission on Rural Resources: Director Hal McCabe and Lucy Shepherd, who have done amazing work to make this happen, but also, in general, to -- to be the eyes and ears about issues of -- that face our rural communities all over the state.

So with that, I invite Commissioner O'Hara to begin.

DAN O'HARA: Thank you.

Good morning, Chairwoman May and distinguished members of the Commission.

I'm Dan O'Hara, director of the New York Office of Emergency Management within the Division of Homeland Security and Emergency Services.

I appreciate the opportunity to appear before you here today to discuss the tremendous work of our team, as well as how that works, specifically

relates to the number-one natural threat facing New York: Flooding.

I am sure most, if not everyone, in this room has seen and understands the widespread damage that flooding can cause.

From the destruction of property and infrastructure, to the disruption of water, sewer, and telecom services, floodwaters can devastate an entire community in only a few hours.

Complicating matters further, not only is New York vulnerable to different forms of flooding given our geography, but approximately 90 percent of the state's population lives in a waterfront community, whether that be near a lake, river, ocean, or otherwise.

While these basic realities have made it important that all levels of government work to strengthen their shorelines and infrastructure, as we are seeing under the leadership of Governor Cuomo in the REDI Commission, it is also critical that communities, first responders, and all New Yorkers are prepared and know how to recover.

That's where we come in.

Throughout the year, state and local emergency management officials are regularly in

contact, in working to plan for the next natural disaster; however, planning only goes so far when you are dealing with an unpredictable situation.

Whether it is daily update calls with officials, on-the-ground visits by state agency leaders to oversee response operations, or otherwise, New York has made a concerted effort to ensure open lines of communication with our partners before, during, and following a disaster.

Through these efforts, state and local partners can work together to identify new and existing flood-prone areas, improve the efficiency of asset delivery and deployment, and ensure a rapid response to unforeseen problems.

We must also ensure our first responders are properly trained for flood response.

Thanks to your support in previous budgets, the state's preparedness and training center is now home to a world-class swift-water rescue training facility, which provides specialized training opportunities which are difficult to find anywhere else for first responders.

Since the facility's inception, more than 1100 state and local first responders have been trained.

And training isn't just for first responders, either.

It's just as important that the public know what to do because, after all, emergencies don't wait for help to arrive.

Under the leadership of Governor Cuomo, the division partnered with the National Guard and the Red Cross to establish the Citizens Preparedness Corps in 2014.

This program trains New Yorkers in an all-hazards approach to prepare for and respond to emergency situations.

Since the program's inception, nearly 334,000 New Yorkers have received this training, with more than 56,000 in 2019 alone.

I'd like to thank you for the opportunity to appear today, and I will be happy to answer any questions that you may have.

Thank you.

SENATOR MAY: Thank you, and thank you for your brevity.

(Off-the-record discussion.)

(Back on the record.)

SENATOR MAY: Thank you for your brevity.

This is a Tuesday, it's our busiest day at

the Capitol. And I know many of us will have to get up and leave for committee meetings every now and then, and that kind of thing; so I appreciate your comments.

So I have a few questions.

You mentioned coordinating across agencies, or working together.

Can you be a little more specific how -- what kinds of lines of communication are there between different agencies when it comes to flooding?

DAN O'HARA: Well, there's a couple of approaches, Senator, that we do.

When we talk about "state agencies," we have a multiagency coordination call on a regular basis with various key state agencies that are part of the DPC (the Disaster Preparedness Commission); those key agencies that have the right resources and assets to respond to an event.

So, for example, we have a potential snowstorm that may hit some of the lake-affected areas up in the western and northern part of the state.

So we will do -- today and tomorrow, we will have coordinating calls with those key state agencies, understanding where their assets are, what

additional assets they will bring into theater to that impacted area, in the event they need some additional resources.

What we also do for the counties, is we connect with the county emergency managers; we talk with them, check in.

We have regional directors and regional coordinators out there across the 56 counties in the state of New York, in different regions. And we will talk and communicate with them, to determine what their needs may be.

And then we will put our stockpiles on notice, and we will make sure that we have the availability for the right resources should they be needed.

SENATOR MAY: Thank you.

So that may have answered my second question, because you mentioned that you do planning before, during, and after.

When you talk about "before," you mean, when there is a weather prediction of some kind where you can anticipate storm, or do you actually do some kind of gaming out of possible problems way in advance, where you think, this is an area that could get hit, we're going to try to figure out what

the --

DAN O'HARA: Well, there's four phases in the life cycle of emergency management: You have the preparedness, you have the response, you have the recovery, and the resilience.

I like to add a little extra piece to that, and that's called the "awareness end."

So our job at the Office of Emergency Management is to make sure that we're tracking -- through our watch center and our operations center, that we're tracking weather -- current weather conditions. And we track them, generally, on a week out; we look to see what may be actionable.

We'll address those with a particular plan as that storm or potential threat develops.

In regards to long range, using Lake Ontario:

We're all familiar with 2017.

We were lucky in 2018.

We had a bad 2019.

We're preparing for 2020.

We prepared; we were active 125 days.

That's, almost, 33, 34 percent of the year we were active in our emergency operations center because of Lake Ontario.

As soon as the activation was over, we began

planning for 2020, because we can't predict what the lake is going to do.

We have -- we can track, you know, various metrics.

We can't fully predict what it will do, but we have to be prepared.

We've already been in communication with the eight county emergency managers.

The REDI leadership has already been out there, talking to the impacted areas that will be receiving grant awards.

We're already making sand bags.

We're already pre-deploying at strategic locations.

Pumps out into the theater, in anticipation if we don't see a change in the lake levels.

So we do forecast things further out, and we take the right preparations in anticipation of what we may see.

It's easy to bring things back.

It's more difficult to get them out there during the event.

SENATOR MAY: Right.

Just to change gears just a little, I have a question about floodplain mapping.

Do you feel like there's adequate mapping of where the potential flood threats are?

DAN O'HARA: In our office, you know, we work well with other state agencies when we look at flood mapping.

We have a geographical information system, and we've got good, pretty solid, data of what we've seen out there.

You know, one of the things that we continuously work on is the integration, you know, of other data across the state of New York, when local municipalities may make planning and zoning changes, and what impacts that may have on some of the watersheds in those particular areas.

So it's a constant evolution of communicating, particularly with the locals, the local county emergency management offices, and making sure that they know what's going down at the lower municipalities, you know, at the villages, the hamlets, and the towns, and any changes that they make, that could have an impact, again, on those river and streams and those watersheds, that ultimately have an effect when volume and velocity.

We have, ultimately, more pervious area across the state. Water's got to go somewhere.

So it's important that we have that data.

SENATOR MAY: And then you mentioned the grants.

I know $30 million were allocated for small-business -- or, business owners, and 25 million for -- for homeowners related to the Lake Ontario flooding last year.

Are you involved in allocating those?

Because I'm getting questions about when those are going to appear.

DAN O'HARA: The Office of Emergency Management, our primary responsibility in those four cycles is, really, the preparedness and the response end.

SENATOR MAY: Okay.

DAN O'HARA: You know, we have -- within the division, we have a section that gets involved in a lot of the recovery and the resiliency end of it.

SENATOR MAY: Okay. Thank you.

That's all I have.

Do you want to take it away?

ASSEMBLYMAN SANTABARBARA: Great. Thank you.

Thank you, Commissioner; thank you for your testimony.

First of all, thanks for-- I want to thank

you for the great job on the citizens' preparedness training that's throughout our state.

I've held a lot of those events in my district, and people really learn a lot from what the -- the information that's provided, and come up with things they can do on their own while they're waiting for help.

So thank you for that.

I just wanted to -- I guess on the question, Senator May mentioned, the mapping.

So are there -- there -- there is efforts underway to rework the flood mapping, the flood zones?

Is that -- I know that was started at some point.

And back when I was in civil engineering years ago, I think that was -- that process was done off of crude mapping. And now it's more defined.

Is that process still going on?

DAN O'HARA: It's my understanding that the state agencies responsible for that, continuously looking at updating those maps. And then they filter it through -- in through the geographical information system into our office so we have those updates.

ASSEMBLYMAN SANTABARBARA: And are those flood zones being redefined, as far as where we expect flooding to occur, with the -- with regard to the storm events, the 100- to 500-year storm events?

These events are being redefined because they're happening more frequently; right?

DAN O'HARA: Right, I can't speak to that.

ASSEMBLYMAN SANTABARBARA: Okay.

DAN O'HARA: I think that you'll have to -- when -- when the other state agencies talk a little bit, with DEC and others, that have more input into that.

We're recipient of that data. That helps us in our [indiscernible cross-talking] --

ASSEMBLYMAN SANTABARBARA: And that was my question.

DAN O'HARA: -- yeah, that -- once we get data, that helps us in our preparedness posture.

ASSEMBLYMAN SANTABARBARA: Okay.

DAN O'HARA: If we anticipate there's going to be a storm coming, that 100-year inundation, the 500-year flooding, that gives us a flavor to overlay what infrastructure is in that potential impacted area.

ASSEMBLYMAN SANTABARBARA: So that

information does get to your office --

DAN O'HARA: Yes.

ASSEMBLYMAN SANTABARBARA: -- as it's updated?

DAN O'HARA: Yes.

ASSEMBLYMAN SANTABARBARA: So the use of stream gauges also, that information, that data, comes to --

DAN O'HARA: Yes.

ASSEMBLYMAN SANTABARBARA: -- okay.

So is that what triggers the response, or is it the weather forecast, and --

DAN O'HARA: That can trigger a response.

ASSEMBLYMAN SANTABARBARA: -- okay.

DAN O'HARA: You know, I believe you mentioned, and I apologize if I get it wrong, but, you know, the -- when we talk about, we have rivers that we're looking at ice jams. We've identified 64 locations.

And we're very proactive, based on a lot of history and based on a lot of experience.

You know, when we have events, we always do an after-action review, and we learn. We want to try to get better at everything that we do and the services that we deliver.

And we active -- we have a working group that we kick off early -- early fall. And we monitor, 63, 64 locations across the system, using the river gauges, using visual.

We have data, a collector wrap, that we feed the information back in, and we can track.

And we work with a lot of the locals because they have the intimate knowledge of where some of these risks are.

We have strategically located long-arm-reach excavators along some of those higher potential areas.

We've done a radius around those particular streambeds, that, if we see an ice jam start to collect, we can strategically partner with DOT, OGS, or another state agency, to move that equipment to the potentially-impacted area, so if we have to break it up before it creates a problem, we're out there doing that.

ASSEMBLYMAN SANTABARBARA: And you mentioned a coordination with agencies.

The Canal Corporation also is --

DAN O'HARA: Yes.

ASSEMBLYMAN SANTABARBARA: -- in contact?

So that is all coordinated on how

[indiscernible cross-talking] --

DAN O'HARA: Yes, they're -- they're part of our -- when we do the multiagency coordination calls, they're part of that discussion.

ASSEMBLYMAN SANTABARBARA: Stream gauges, we just mentioned.

But, are there other measures that could be an early-warning system, that maybe we haven't looked at yet, that could be installed, or be a part of our warning, our preventive measures, down the road, are there things that we're looking at?

DAN O'HARA: There may be.

We certainly can take a look at that --

ASSEMBLYMAN SANTABARBARA: Okay.

DAN O'HARA: -- to see if there's some other options.

ASSEMBLYMAN SANTABARBARA: But nothing identified now?

I know, with ice --

DAN O'HARA: Not that I'm -- not that I'm aware of in our office.

ASSEMBLYMAN SANTABARBARA: -- with ice jams, I think they're -- in Buffalo there was a -- mitigation measures installed, with piers into the river.

Is that -- are you -- have you been monitoring --

DAN O'HARA: (Shakes head.)

ASSEMBLYMAN SANTABARBARA: -- no?

DAN O'HARA: I'm not familiar with that.

ASSEMBLYMAN SANTABARBARA: Okay, because I thought that might be a solution for some of our areas in our district.

Okay.

And I think the -- I guess the last question is, as far as budget, you know, the budget is coming up, are there things we should be looking at to support your efforts?

DAN O'HARA: You know, one of the things that -- in the budget that I know has been proposed, we've identified a couple of gaps, you know, for equipment across the system.

And I would appreciate your support, you know, to fill those, where we've identified the equipment gaps, support for that.

ASSEMBLYMAN SANTABARBARA: Okay. Great [indiscernible].

That's all I have, Senator May.

Thank you, Commissioner.

DAN O'HARA: You're welcome.

SENATOR MAY: Great. Thank you.

Senator Helming has a question.

SENATOR HELMING: Thank you, Senator May.

Dan, it's great to see you again in dry conditions.

DAN O'HARA: Yes.

SENATOR HELMING: I want to thank you and your team. You have just been incredible, in terms of dealing with the flooding along the southern shore of Lake Ontario, but, also, the microburst experiences we've had in Seneca County, we've had some in Ontario County.

I think we'll hear more about those later.

I just wanted to touch a couple of things.

Real quick: The REDI Commission, that formed and focused primarily on Lake Ontario and the St. Lawrence River flooding?

DAN O'HARA: Yes.

SENATOR HELMING: Okay.

So is -- then, in terms of microburst planning, and assisting communities with resiliency planning and preventative practices, what -- can you talk about what's being done in that area?

DAN O'HARA: Well, Senator, from a preparedness standpoint, one of the things that is

very important within the Office of Emergency Management, we have a training and exercise section, and we also have a planning section.

And we have hired additional individuals, and put them out in the respective regions, planners and trainers, to assist, because, back -- back several years ago, Governor Cuomo had asked us to put together a program. It was a community assessment, CEPA (the community assessment preparedness assessment).

And what we did in the state of New York, as you're familiar, there's 62 counties.

If you break those counties -- the five boroughs of New York, you break those out, that you've got the 57.

We actually have done assessments in partnership with those counties, and recognized where their strengths are, and where there's opportunities for improvement.

And as a result of those opportunities for improvement, we recognize that, planning, continuity of operations, there's critical components and elements that counties just sometimes aren't positioned, given the structure that their emergency management office has set up.

So we've been working with them, and as part of that process, it's the preparedness end; it's identifying where their vulnerabilities are, what resources they need ahead of time, to pre-position.

And then, in partnership with us, as I -- as I mentioned earlier at the onset of my presentation, you know, when we forecast out, we now know where those gaps are.

A few years ago, the approval of the budget authorized additional plow equipment, for example, that we strategically put down on Long Island.

We recognize Long Island has a little more challenge with removing snow versus people up in Buffalo.

You look at where the equipment --

SENATOR HELMING: Dan, I only get five minutes, so I want to keep going. I appreciate it.

But -- so when -- I think the planning and the training that your office offers is absolutely fantastic.

My concern -- and I think you're very familiar with my district: The six counties, very rural. More miles of canal than any other area. Four of the Finger Lakes. Hundreds and hundreds of

Lake Ontario shoreline.

My concern, what I've seen, and I think you've probably seen it as well, is that some of our first responders, most of them are volunteer fire departments.

I don't believe that they are properly equipped to handle some of the flooding that comes up.

I think they need to have more equipment available in the community; not rely so heavily on the State to disburse or figure out where things are going to go.

In 20-- last year, over $500,000 was cut to local volunteer fire departments in my district alone, cut from the budget. They got nothing.

So, as part of your risk assessment, when you're in communities, are you assessing what tools they have or don't have, what they do need?

And are you helping them secure funding for those needs?

And, also, I'm going to take that a step further.

Senator Tedisco mentioned the need for broadband services and cellular services.

I think we both saw, for instance, in

Seneca County, what happens when you have people who are trapped.

Trapped, and you don't have cellular service available, it's a very scary situation.

And it's been two years now.

What are we doing?

How are we helping those communities, again, secure the resources that they need?

DAN O'HARA: Sure.

I can't speak to your budget, the budget cuts.

But what I can say is, one of the sections within the Division of Homeland Security and Emergency Services is the Office of Interoperable Emergency Communications.

If communications is a gap, we will work with those local communities and help assist what funding options may be, or grant opportunities that may be, available. And we've worked with them in the past.

SENATOR MAY: Okay, Assembly.

ASSEMBLYMAN SANTABARBARA: I want to just acknowledge Assemblymember Buttenschon is here.

And Assemblymember Walczyk will ask the question.

ASSEMBLYMAN WALCZYK: Thank you, Co-Chairs.

And thank you, Director O'Hara, for your time today.

You and your department has done a phenomenal job, I think, in some of the response.

I represent northern Jefferson and St. Lawrence counties; everything in America that touches the St. Lawrence River.

And I know you've seen firsthand the devastation that the high water has done.

You're probably looking at the numbers day by day, as I am and my constituents are. And we're looking at another season of flooding.

You talked quite a bit about pre-positioning of equipment, which I'm very encouraged by. And it sounds like your AARs have been successful. And there's a lot of lessons learned.

I recently learned that, with FEMA, you can request pre-position to trailers.

I'm wondering if you can tell us a little bit about what are our workability is with the federal government right now, and what the trigger points for making those requests are?

And then, also, whether there's something the Rural Resources Commission, or the Legislature at large, can do to advocate for additional

pre-positioned resources for those huge flooding events that we know are going to be a logistical nightmare?

DAN O'HARA: I think the most important thing, the best way I can address, sir, your question, is we work hand in hand with the county emergency managers.

We also will communicate with the other municipal officials.

We have, the Governor's regional reps are out there communicating.

We also have a legislative rep within the Division of Homeland Security and Emergency Services.

So the first is, really, to understand, you know, what -- what the local municipality is looking for.

We have an incident-management system called New York Responds, which is the database that we collect all the requests that come in.

Based on those requests, and we've already, to date, I believe we've got 15 requests already in from various counties along Lake Ontario, asking for pre-positioning of those resources.

So we're in preparation right now of doing

that.

We've already stood up two sandbag operation. We're making sandbags. We already have a stockpile of 56,000-some-odd filled sandbags already that we're going to start.

One of the things that we learned last year, was many of these municipalities, during the summer months, their departments of public work don't work on Fridays and Saturdays.

So we've gotten smarter in working with them, as part of our planning process, is to set up a methodical system, where we'll start dropping in resources on every Monday or every Tuesday or every Wednesday so they have the supply.

With respect to FEMA, you know, we have a partnership with them.

If the State, if we get into a catastrophic event, and that we need those additional resources, we will reach to them.

ASSEMBLYMAN WALCZYK: A quick follow-up on sandbags, because I think this is important as we talk about hardening the shoreline and the work that we're doing.

You know, the Governor has made it very clear, he doesn't want to dump good money after bad.

And I see sandbags as that temporary fix.

And we're looking at it -- on Lake Ontario, we're looking at a seasonal, perhaps longer-term issue, with high water and flooding.

Are there other resources, aside from sandbags and AquaDams, that we can invest in as a state; boulders, riprap, that sort of thing?

What's your interface with the REDI Commission and the DEC, talking about some of those things, that harden our shoreline, but that can also be pre-positioned, sort of, for emergency situations?

DAN O'HARA: When the REDI Commission, the leadership was out there, you know, a month ago, visiting with a lot of the recipients who received the grants, that was part of the discussion.

I was out on the western side of the state. I sent a representative on the eastern side.

And when I was there, part of the discussion is exactly that; is part of some of this resiliency effort, they're going to be putting in different types of riprap, different types of boulders.

There is a lot of engineering terminology that I'm just not familiar with.

But the technology is there, the rocks, the

right material is there. To prevent, further dredging will help.

You know, if you look at Lake Ontario, it's like an ocean.

And if you understand the science behind it, and depending on wind action, creating the wave, the fetch, if there's any obstructions as it travels across the lake, that's what creates some of the waves.

If you can put the dredging out off the shoreline, the waves will break under the water body to minimize the impact of wave action.

So there's -- a lot of that is being done as part of the scoping and design of these REDI projects currently.

ASSEMBLYMAN WALCZYK: Thank you.

DAN O'HARA: You're welcome.

SENATOR MAY: Thank you.

Senator Ritchie.

SENATOR RITCHIE: Good morning.

DAN O'HARA: Morning, Senator.

SENATOR RITCHIE: I'd just like to start off by adding my voice to everyone else who has thanked you for such wonderful, I think, attention that your agency has given to those of us that were dealing

with the flooding.

I represent 150 miles of shoreline, St. Lawrence River and Lake Ontario, in St. Lawrence County, Jefferson, and Oswego.

It has been very trying and very heartbreaking for the people that I represent.

In '17, I think all of us believed it was going to be a -- just a short-term event, which did not happen.

And in '19, I think we were all better prepared, but I think we still learned a few lessons.

I know that I recently have gotten a request from one of my county board of legislators, asking if we could make sure that sandbag and other -- sandbags and other resources could be made available earlier.

I know you just said that you're deploying some of that now.

And sometimes there's a little bit of a disconnect. You know, a lot of the communities that I represent are small. They don't really have maybe the resources or the people to deploy the sandbags and some of the other alternatives.

So, do you deal directly with just the

emergency management site at the county?

And would they already have a list of you know, tentative plans on what you're going to deploy?

Since they're asking me to see if I can intercede to get resources out earlier, since it looks like we're going to have another bad year.

DAN O'HARA: Senator, what I would say is, we're not going to let bureaucracy get in the way of progress.

And the normal protocol would be for the municipal jurisdictions, the lesser municipality -- the villages, the hamlets, the towns -- to work through their county emergency management.

But our objective is to make sure, from the State's perspective, that everybody is prepared.

So, through communications, we will deal with the county, we will deal with other municipal officials, to ensure they get the right resources.

The Governor's regional reps are out there communicating -- excuse me -- on a regular basis with the local electeds, to ensure our governor -- or, the legislative rep that works within the division is communicating with the Legislature, talking to your staff.

If there's anything or any concerns that you're hearing, please let us know, because it's a partnership.

I was mayor of a small municipality, Baldwinsville, New York. And we've had our challenges with flooding, and I know how devastating it can be, and it's not pretty.

So anything we can do to help people, we want to do.

The Governor has made emergency management a top priority.

And I can assure you that it's been made clear to me that that is a priority, and we need to make sure the resources are getting out there.

SENATOR RITCHIE: Well, I think for some of these small communities, they're just overwhelmed, because the damage is extreme, and they only have so many resources in such a small budget to deal with any of it.

One of the issues that we did run up against last year was the AquaDams. There were not enough available for long stretches.

So, just wondering, will there be more AquaDams available this time around?

DAN O'HARA: We're in the process of

purchasing more AquaDam, yes.

And one of the lessons that we learned, again, we always do these after-actions, is we've got to find out, and we're working through a process, to better facilitate, you know, getting, particularly, if it creates adjoining properties, where have you've got to get the buy-in, you know, what's the public interest? and working through some of those formalities.

But, at the end, yes, we are buying more AquaDam.

ASSEMBLYMAN WALCZYK: Okay. Thank you very much.

DAN O'HARA: You're welcome.

SENATOR MAY: Thanks.

The Assembly.

ASSEMBLYMAN SANTABARBARA: Assemblywoman Buttenschon.

ASSEMBLYWOMAN BUTTENSCHON: Thank you very much.

Director O'Hara, my colleagues had stated you were very helpful.

I represent the Utica-Rome area, including Frankfort and Whitestown, that was devastated at the Halloween floods of 2019.

And you and your team created many updates for us very quickly, so I sincerely appreciate that.

We are still faced with the challenges, not only from that flooding, but many of those individuals, that was their sixth time being flooded within that area.

So it is a constant issue that needs to be addressed.

In your testimony you talk about 64 areas across the state that are identified as areas of concerns or hotspots.

Would this -- the Mohawk Valley be one of those?

DAN O'HARA: Yes. There's several places along the Mohawk that we check on a regular basis.

Sauquoit Creek, there's other areas down in that -- in your jurisdiction that are on the system.

ASSEMBLYWOMAN BUTTENSCHON: Okay.

And could you tell me specifics of what type of preparedness, training, or steps are being taken within the Mohawk Valley at this time, and, currently, as so many of my colleagues stated, that this will continue?

DAN O'HARA: You know, one of the things we're -- you know, as I mentioned, at our state

preparedness training center, I talked about the swift water rescue facility that we have out there.

We're training a lot more first responders.

And we utilized that in the Halloween storm, and we pre-positioned swift water rescue teams strategically across what those potential impacted areas were, or are, to make sure that, if we needed to deploy them, we would.

And, again, some of that is, is getting the local emergency first responders to the state preparedness training center, getting them the right training that they need, and, again, working through any of the challenges that they may have.

We also identify, we strategically located, down near the Sauquoit Creek, for example, a long-reach-arm excavator.

It's -- we've got the ability, that should something accumulate along the CSX bridge area, we've got the capacity and the capability to start removing some of that debris to keep the water flowing.

So those are the types of preparedness efforts that we're making.

ASSEMBLYWOMAN BUTTENSCHON: And that long-arm is there now? Or you say it's --

DAN O'HARA: I'd have to -- it's somewhere in that general vicinity.

ASSEMBLYWOMAN BUTTENSCHON: Okay.

DAN O'HARA: Somewhere in that general vicinity.

ASSEMBLYWOMAN BUTTENSCHON: And that is a follow-up question in regards to, I know my Colleague Santabarbara talked about equipment, and your needs of equipment.

And how quickly can those be moved?

And, strategically, where they're located?

And maybe a little bit more specific of what your equipment needs are?

DAN O'HARA: As part of our plan, what we do is, we ensure -- it's great to have a piece of equipment. But if we don't have an operator, or, if you have to move it, you don't have the right truck to move it, that becomes a challenge.

So that's always part of our design.

Within an hour, we can get somebody to that particular location.

We've a great partnership with the Department of Transportation, great partnership with the Canal Corporation. They've got residencies in those jurisdictions, that we can call upon them and

they'll dispatch accordingly.

ASSEMBLYWOMAN BUTTENSCHON: And more specifically, though, to those equipment ask, because, obviously, if flooding's happening in the Mohawk Valley, it could be happening across other areas at the same time.

So your equipment needs are...?

DAN O'HARA: One of the -- one of the -- if you look at this year's budget, we put in again, we identified, I'll use 6-inch pumps --

ASSEMBLYWOMAN BUTTENSCHON: Okay.

DAN O'HARA: -- as an example.

That's a gap that we've recognized across, particularly for the Lake Ontario flooding. We had to rent quite a few 6-inch pumps to support the local communities.

To ensure their critical infrastructure, their sanitary sewer pump stations, or their water pump stations weren't getting flooding, we had to get more 6-inch pumps.

That's a -- some certain trailers, to move, and have the flexibility to move, equipment out of the stockpiles quicker.

That's a -- that was a gap that we identified.

I'm going to call it "a Bobcat," but there's a more technical term to it, when you start putting AquaDam out along the shoreline, where the terrain is a little different. You know, you may be in sand; you may be some marsh, swamp area. You've got to have the right tracks to your -- to make sure that you can strategically move the equipment that you need to put out to prevent, you know, that flood mitigation barrier, to put it out quickly.

ASSEMBLYWOMAN BUTTENSCHON: And you utilize private vendors also if you don't have enough equipment?

DAN O'HARA: We follow the State finance rules of engagement. And we'll use private if that's what we have to do, yes.

ASSEMBLYWOMAN BUTTENSCHON: And how does that work?

Do you feel that the process of getting the equipment you need is substantial?

DAN O'HARA: Yes, yes.

ASSEMBLYWOMAN BUTTENSCHON: Okay.

Thank you very much.

DAN O'HARA: You're welcome.

SENATOR MAY: Senator Helming had one more question, I think, to ask you.

SENATOR HELMING: Thank you.

Dan, when we talk about resiliency planning, mitigation measures, and we think about Lake Ontario, I mean, the best thing we could do is release more water.

We know right now that the water levels are high. Looks like we are going to flood again.

You said we're preparing, but, do you have any idea?

I think it was a month or so ago, I sent a letter to the Governor, I reached out to a number of agencies, and strongly suggested that the Governor work to delay the start of the shipping season so that we can continue to release water.

Do you have any idea where we are on that?

DAN O'HARA: I can't -- I can't speak specifically to it. What I can give you is a general understanding that I have.

I know there has been discussion with representatives that are on the IJC, that have made that pitch to delay the shipping season. And I know that dialogue is ongoing right now.

What I do know is, they've increased the outflow of Lake Ontario, and that's good.

SENATOR HELMING: I have been monitoring the

outflows, and it seems like it fluctuates.

You know, in one day they may say they increased it, and then they bring it right back down again.

So I am very concerned, as are you, I know --

DAN O'HARA: Yes.

SENATOR HELMING: -- about the potential for flooding this year.

Thank you.

SENATOR MAY: All right.

Well, thank you so much for your testimony, and for your very good work on behalf of New York State, and hope to see you back.

You're not quite in my district in Baldwinsville, but pretty close.

DAN O'HARA: Well, thank you for having me; I appreciate it.

SENATOR HELMING: Thank you.

SENATOR MAY: Thank you.

And next up we have deputy commissioner for water resources from DEC, James Tierney.

JAMES TIERNEY: Good morning.

My name is Jim Tierney. I serve as deputy commissioner of the water -- of water resources at the New York State Department of Environmental

Conservation.

And, Chairwoman May, I respectfully submit this testimony on behalf of DEC concerning flood mitigation.

And as you know, it's an increasing concern, particularly in the context of climate change which is worsening flood events and extreme weather.

In recognition of the flood risks our communities -- to our communities, and the fact that climate change has arrived, Governor Cuomo has directed an enormous and unprecedented response.

And I'll skim through a few of these things because I know you're familiar with them, and I want to be careful of your time.

First, of course, is the Restore Mother Nature Bond initiative, a $3 billion initiative that was one of the highlights of the State of the State Address.

Restore Mother Nature funds would be targeted toward proactive measures to make New York the national leader in efforts to adapt to the unavoidable impacts of climate change.

With these funds, New York would implement numerous projects that provide co-benefits with respect to flood resilience, water quality, the

recreation economy, and aquatic habitat.

Much of that work would be in rural communities.

You're also familiar with the REDI Commission work, and the $300 million effort there.

DEC was a proud partner in that initiative.

And there's some 130 projects that are actually under design and are at the engineering-report phase.

That's in addition to the money that's available for homeowners and for businesses that are being operated.

DEC is managing about one-third of the projects that were approved under the REDI Commission.

There's also, thanks to you, the Clean Water Infrastructure acts, now amounting to $5 billion goal, over time, subject to your approval. And a lot of that money also works to mitigate flooding.

We call it the "green infrastructure approach," which holds and slows water on the landscape; flood mitigation on the landscape. And tens of millions of dollars are being dedicated, both by New York State DEC and the Environmental Facilities Corporation, to those efforts.

The $300 million environmental protection fund, that was in the budget again this year, and thanks to you, was approved last year, includes significant funds that are distributed to flood abatement.

Much of that money goes to soil and water conservation districts in that regard, for example.

I saw a number of my friends from soil and water conversation districts here today.

They are the mainstay of implementation efforts on flood programs around the state.

We, of course, with the EPF (the environmental protection fund), have programs for the Mohawk River, the Hudson River, Lake Champlain, and the Great Lakes, and the like.

And one of their core missions, as we've designed these programs, is flood mitigation.

I can go on about the DEC rangers and the environmental conservation officers, our efforts to manage debris, address oil spills and chemical releases, during storms.

DEC runs the dam safety program in New York. We have expert engineers that make sure that nothing goes wrong with those dams when they're under extreme pressure.

And I'm sure, as an engineer, you're glad to hear that, Assemblyman Santabarbara.

And then we also serve as liaison to FEMA on floodplain maps.

And what we -- now, these are FEMA flood-insurance maps. That's a technical term.

And, of course, we much like to have updated maps, digitized maps, the 100-year flood, and the 500-year flood, which, as many of you know, is not a flood of biblical proportions.

If you're within a 500-year flood zone, you have a worse risk of getting a flood than you do -- a worse risk of having a flood than your house catching fire.

And I think everybody has fire insurance who owns a home.

DEC owns and operates 106 Army Corps flood projects, including 100 miles of levies, pumps, gates, and the like. And we manage all the flood control and coastal hazard projects along the coast, stemming from Staten Island, all the way out to Montauk Point.

But I want to focus in on what the problem is, and how we're trying to get our arms around it as part of your efforts, and how this affects rural

resources.

It's obvious that water is very heavy. It's 62 pounds per cubic foot.

When a wall of water is moving down a valley, or surging to the shore, it can really move things.

It moves barns, homes, boulders, businesses, and it can also, importantly, diminish our topsoil.

So it's a very important issue for our farmers.

Surfaces that shunt water, known as "impervious surfaces," dramatically increase peak flood intensity.

Now, a good rule of thumb of that that we use under the engineering protocol, is that about one acre of asphalt generally shunts -- you know, it shunts 13 times the water of an acre of natural meadow or forest.

So to give you a sense of how development affects it.

Older bridges and culverts are frequently too small to pass high flows, resulting in streams backing up, blowing out the roads, or even heading down Main Street, as we've seen in numbers of rural communities.

The National Academy of Sciences has

estimated that we've lost 60 percent of our wetlands in New York since colonial times.

Wetlands store massive amounts of storm waters on the landscape.

And then there's climate change, with the well-documented forecast that we have gotten from the -- you know, the different national academies around the world, and in New York, and from the UN -- I mean, and -- I'm sorry, in the United States, and the UN, the remarkably frequent 100-year storms, the intensifying hurricanes, and the unthinkable super-storms.

I heard somebody refer to it as a "rain bomb."

And that, in fact, is the case, in some instances, with "Hurricane Harvey" dropping just an incredible amount, in one storm, of 45 inches in much of the Greater Houston area.

So in the rural environment, one of the key concepts for flood mitigation is a catch phrase we use, "Slow it down, spread it out, and soak it in. Calm the waters."

And, frankly, sometimes you just have to get out of the way if you're in a very dangerous area.

These projects involve engineering and

landscape practices under the school of thought known as "green infrastructure."

Think of constructed wetlands, storm detention ponds, stream-side berm removals that allow the streams to flow into their floodplains.

Protecting existing wetlands from being filled, retrofitting roads and roadside ditches, so that they hold and slow the water, again, with the overall approach to diminish the peak flood and capture that on the landscape.

And just before -- you know, as a final comment, I want to get into one thing I think is very important in our rural communities.

It is the New York -- it is Governor Cuomo's Resilient New York Streams Program.

DEC is in the phase process of developing 61 state-of-the-art flood mitigation and habitat restoration studies. This includes ice-jam abatement.

Sauquoit Creek, Assemblywoman, as you mentioned, is one such stream -- or, creek.

It involves advanced modeling, hydraulic analysis, and we deploy experts to do this on a watershed basis.

It doesn't take forever.

It's more like 2 1/2 to 3 months, as opposed to 3 years, for the study to come back.

But the goal is to eliminate the flooding that would occur in the 100-year storm, taking into account the impact of climate change and global warming and increased precipitation.

And what we do is, we get very specific set of recommendations, on a very specific list of projects, at specific locations, that result in benefits that we can actually quantify for town supervisors and county officials.

They love this.

And these stream studies are already drawing, as we know in Sauquoit Creek, fairly significant amounts of implementation grants in the field.

And, if approved, the Restore Mother Nature Bond Act would allow for a lot of these stream-restoration projects to be implemented across the landscape.

Thank you very much for your time.

I'd be glad to answer any questions.

SENATOR MAY: Thank you.

Thank you for that very clear and interesting testimony.

So I have a background in environmental

sustainability, and so I'm thrilled to hear about the emphasis on looking at whole streams and whole watersheds and green infrastructure.

I think they are absolutely key as well.

So I had a couple of questions.

Oriskany Creek is one, it's in my district.

I don't know if that's one you have done this kind of study of, but it certainly could use it.

JAMES TIERNEY: Oriskany Creek rings a bell. I think that's on the list.

SENATOR MAY: Starts in Madison County, down near the town of Hamilton.

JAMES TIERNEY: We -- we -- I will get you -- I will get you that, for sure.

But I know that that's one's been a problem.

And if you had ice jams, we're addressing that as well.

I noted the question earlier: Ice jams can also be abated.

And we have some of the leading ice-jam experts in the country working on our stream studies.

SENATOR MAY: Yeah, it flows through the village of Clinton, and that's where they've had really terrible flooding issues.

But -- and this question came up a little bit earlier, but, dredging raises a lot of issues. And that's what they want to do in the village of Clinton, is more dredging. And there's a lot of debate about that.

And I'm wondering where you think dredging is useful to manage flooding, especially in creeks?

JAMES TIERNEY: Senator, dredging is a case-by-case analysis for what -- sometimes it has caused terrible problems, and sometimes it can be effective when, say, there's a lot of rock cobble that's up against a culvert or a bridge actually causing a barrier.

You also don't want to lose the rock cobble in the stream, because you can turn the stream muddy for months on end if you hit a clay lens that isn't protected by a rock cobble.

So all the anglers and trout fishers, you know, very annoyed.

There are ways of doing that.

And what the -- these stream studies, and the approaches that we use, including training, we have emergency stream response training, we have training that we're doing all across the state, on proper sizing of culverts and bridges, and the like.

It's an "it depends" type of answer. We have to come in there with the science.

We're not against it, we're not for it.

But I have seen an instance where somebody -- some community in the Catskills spent $300,000 dredging out stone cobble from a stream in the village of Phoenicia. It made flooding worse. And the next storm, it just filled right back in.

And it turned out it was two bridges that were causing the real problems for flooding.

So it is a case-by-case assessment.

SENATOR MAY: I appreciate that diplomatic answer.

There is hot debate within my own staff about this, and this will -- you know, everybody will feel better for -- because of your answer.

JAMES TIERNEY: Very good.

SENATOR MAY: You talked about some of the 100-year-flood and 500-year-flood issues.

My understanding is, FEMA doesn't do -- doesn't have flood maps for a lot of Upstate New York.

Is that true, and is that something that you're working on?

JAMES TIERNEY: Our goal, and the pressure we

put on FEMA, is what we would like, Senator, is maps that are fully digitized; that anybody can pull up on their computer and see in an emergency or another situation.

A lot of them are not there yet.

We want to have the 500-year-storm and the 100-year-storm levels, with the infrastructure that's within it, and know, for example, if there's a hospital or a nursing home or other facilities in danger.

Much of that information does exist and it's disbursed.

We also want to have on the FEMA maps the high-risk areas; the areas where there's, you know, really violent flows during storms, so that we -- our first responders are aware.

We have that in some areas, we don't have it in others.

A lot of people know where these areas are on the local and county level, and can respond already.

But it's -- you know, FEMA -- FEMA puts resources in. They tend to take a long time.

We liaison with the communities quite a bit, and it is controversial.

If you're not in the FEMA floodplain, and

then, all of a sudden you map into, you may have flood-insurance requirements.

It's a requirement if you're having a federal mortgage.

And so it is controversial.

And sometimes I get the sense that there's some -- you know, some hesitancy on the part of FEMA to take that step and put that information out there.

SENATOR MAY: Okay. Thanks.

And, finally, I just wanted to ask about the grants in -- from the REDI Commission.

The business owners and homeowners, when are they going to see that?

And did you get more applications than you have funding for?

JAMES TIERNEY: You know, I wish I had the answer.

I know the entity handling the business grants is, you know, Empire State Development Corporation.

The entity handling the homeowner grants is Homes of Community Renewal.

OFF-CAMERA SPEAKER: HCR.

SENATOR MAY: Oh, okay.

JAMES TIERNEY: And, you know, this is -- REDI was a very big deal to us.

And I just have to say, it was very heartening the way the whole state pulled together; the communities, the partnerships, and the local communities.

And what we've learned from the local communities on what to do, and what were the priorities under REDI, it was really something.

And what's great is, getting, you know, schooled every day by local officials and local citizens who, you know, after, you know, 30 years of this work -- type of work, I learn something new every day, given what they know and how they would approach it.

That was a terrific, you know, endeavor.

SENATOR MAY: Great.

All right, thank you very much.

Assemblywoman Buttenschon.

Assemblyman Santabarbara had to go to a committee meeting, but he'll be back.

ASSEMBLYWOMAN BUTTENSCHON: Yes.

Thank you for your testimony, and I appreciate your comments.

Could you elaborate a little bit more on the

Sauquoit Creek, because it -- I mean, obviously, it covers so many areas?

JAMES TIERNEY: Well, Assemblywoman, I actually went back and looked at the historic data on Sauquoit Creek. They had at least 30 floods of record, and they've been hit hard repeatedly.

Working with the town of Whites --

ASSEMBLYWOMAN BUTTENSCHON: Whitestown.

JAMES TIERNEY: -- Whitestown, and a terrific, you know, supervisor we have there, Shaun Kaleta, we did a stream study, which is the first phase, to identify what to do.

We've designed a lot of the projects. We have team -- we have a whole team working on it. And we've gun -- we've begun fairly significant implementation efforts.

My rough estimate is, we have probably -- it's probably already drawn as much as $7 million in implementation funds to that program.

And if Tom Snow was here, who's one of our lead on the Sauquoit Creek effort, we believe, that after we deal with the CSX rail bridge, the floodplain benches, and the other programs up and down the creek, that we will not have flooding on that creek at the 100-year-level storm after we

implement this program.

And we're very far along toward that.

And Sauquoit Creek would actually be a very good model across the state for coupling state resources with real initiatives by local officials and county officials to make it actually happen.

So I find it, probably, you know, one of the most promising, you know, riverine flood-restoration, flood-mitigation -- stream-restoration, flood-mitigation, efforts I've seen.

ASSEMBLYWOMAN BUTTENSCHON: And I appreciate your efforts.

As you understand, do you have a time frame on that?

Is -- I speak to my constituents that have -- are not in their homes. They're living in hotels, still.

So when it happens once, twice, and six times, they've lost faith.

JAMES TIERNEY: Right.

ASSEMBLYWOMAN BUTTENSCHON: And they're very concerned.

I understand the Commission, and the collaboration is wonderful. But the process of that

time frame that you just explained, with the benches, with other factors.

As you know, the issues we have with the bridge are probably not going to be resolved.

They made it quite clear that they have no desire to remedy that bridge.

So I'm just looking at it in a sense of what time frame do you see?

JAMES TIERNEY: Well, some of the projects are underway.

ASSEMBLYWOMAN BUTTENSCHON: Right, we have the Dunham Manor benches.

JAMES TIERNEY: And we've managed to purchase the land, thanks to the Town, for a very large floodplain bench restoration project down near the bridge where there's a lot of flooding. It's a CSX bridge.

We're punching culverts -- additional culverts under the bridge to move more water through.

And we have locations up and down -- additional locations up and down that stream where we would do additional work and we know we can get there.

There's even talk, I know it's sensitive, but

I think the local community wants to do it, on a series of homes that are through, and they would like to be bought out.

ASSEMBLYWOMAN BUTTENSCHON: Oh, absolutely.

JAMES TIERNEY: And we're looking at, with -- the Natural Resource Conservation Services has a program that might allow that.

Of course, we would be doing willing buyer-willing seller floodplain management.

But that's something that's being actively explored.

Until something like Restore Mother Nature's in place, this is sort of, you pull money from different grant programs. You know, the green infrastructure grant program, WQIP, you find a federal grant, and you cobble it together.

You know, DOT has some money into this program, for example.

ASSEMBLYWOMAN BUTTENSCHON: Yes.

JAMES TIERNEY: So we -- we -- it's -- it's -- we're pulling this together because we want -- because we know how badly the Sauquoit Creek community has been hit.

And we hope that -- again, that that serves as a model, and sort of a template, for how we move

forward with Restore Mother Nature.

ASSEMBLYWOMAN BUTTENSCHON: So would there be a time frame if you were to --

JAMES TIERNEY: Well, I know that -- well -- you know, I'll get you that.

ASSEMBLYWOMAN BUTTENSCHON: Okay.

JAMES TIERNEY: Because, I mean, there's a series of projects underway. And it does take time to -- they've been identified what to do. Then it takes time to design it, get the blueprints and specs, get them out, and then the implementation.

ASSEMBLYWOMAN BUTTENSCHON: Okay.

JAMES TIERNEY: And so we're going through -- we have a number underway. I think a few are done.

And then, you know, and another additional plan.

You know, getting our hands on the 16-acre parcel was a lot of negotiations for that big floodplain bench down near the bridge.

ASSEMBLYWOMAN BUTTENSCHON: And I appreciate your efforts with our farmlands, as I've heard from various farmers throughout the area, and the concerns that you're addressing.

I do just have one final comment.

They're very concerned, always a priority,

as, again, their homes are the concerns they have.

And -- and -- and they just look at the balance in regards to ensuring that, our wildlife, and someone's home and quality of life, an equal balance, that they continue to remind me of.

JAMES TIERNEY: Health and safety first.

ASSEMBLYWOMAN BUTTENSCHON: So thank you again.

JAMES TIERNEY: Health and safety first.

ASSEMBLYWOMAN BUTTENSCHON: Thank you.

SENATOR MAY: Thanks.

Senator Helming.

SENATOR HELMING: Thank you.

JAMES TIERNEY: Hi, Senator.

SENATOR HELMING: How are you?

JAMES TIERNEY: I'm very good. Thank you.

SENATOR HELMING: Good.

Just going back to the Environmental Bond Act of 2020, the Restore Mother Nature program, do you know how this funding is going to be broken down, or how it will be awarded?

JAMES TIERNEY: I do not.

I've seen -- I've read the budget language.

And, of course, there's some particular items, like, getting our hatcheries updated and made

state-of-the-art.

But I think the general rule of thumb that's easiest to remember, Senator, is we are going to be looking for projects at the intersection of resiliency, habitat, possibly the recreational tourism, and water quality.

SENATOR HELMING: Okay, good.

If I could just stop you there.

Probably going to be a competitive-grant program.

And as someone who represents very rural areas, small communities, I always have a concern about these small rural communities being able to compete on the same level as larger communities that have full-time staff on board who do nothing but being focus grant-writing.

So I ask you to do whatever you can to put language in there, or some sort of assistance, that is going to equalize the playing field and help our rural communities.

Do you know if there's money in the budget for the septic-system rebate program?

JAMES TIERNEY: There is money.

There's original 75 million in the Clean Water Infrastructure Act of 2017 for the

septic rebate program.

SENATOR HELMING: That was something I was very proud to push to get in there.

But -- so it is going to continue to be available?

And is it -- are there restrictions to certain locations who may apply?

Or --

JAMES TIERNEY: The restrictions originally, and we're constantly looking at that, where water bodies that were actually affected, their water quality was affected by septic effluent, under the state DEC's prior water-body list, and a certain distance from there.

SENATOR HELMING: I'm not trying to be rude. I only have five minutes.

JAMES TIERNEY: Oh, sure, no.

SENATOR HELMING: But -- so we just talked about, you mentioned, how flooding impacts infrastructure, including septic systems.

So there's -- I get it, that we're looking at water bodies that are impacted by failing septic systems. But the potential is there for that to happen, really, in any community along the lake.

So whatever we can do to get more funding for

septic-system rebate programs, to get public sewer systems around our lakes, I think is incredibly important.

JAMES TIERNEY: Oh, and Senator, there's about 55 million in REDI, it's just that: sewer systems and septic sewering.

SENATOR HELMING: Do you believe that Plan 2014 should be repealed?

JAMES TIERNEY: Uhm --

SENATOR HELMING: Yes or no?

JAMES TIERNEY: -- I'm -- it's a -- it's a -- it's a great question.

And if it was -- the question would be: If it was repealed, would anything change on the lake right now?

And, right now, during this entire flood situation, if the IJC experts were in here, and the Army Corps experts, they've been operating off-plan [indiscernible cross-talking] --

SENATOR HELMING: I've talked to them. I've held meetings with them. I've held a public hearing.

I am just curious: You, deputy commissioner of the DEC, do you think that Plan 2014 should be repealed?

JAMES TIERNEY: Uhm --

SENATOR HELMING: And I'll skip over that, so you don't have to answer that.

JAMES TIERNEY: Thank you.

SENATOR HELMING: But what I do want to talk about is, one of the reasons -- my understanding is, one of the reasons why 2014 was implemented was for the restoration of wetlands.

Now, I understand the importance of restoring wetlands.

But as the Assemblywoman said, we've got to have balance in some of these things that we do.

In the budget that's proposed right now, is there language that changes the way that wetlands -- wetland permitting is going to be done, or anything regarding wetlands?

JAMES TIERNEY: The budget does have a provision on that.

And what the budget would do, is maintain what is generally referred to as the "12.4-acre limit," and say -- and regulate wetlands based on their criteria as opposed to mapping.

Wetlands move all over the place.

And the estimate is, by -- we have an opportunity to protect wetlands by moving away from

regulatory mapping, to regulating them based on, you know: Are they there? Are the hydric soils there? Is it wet? And having moved into a particular area.

SENATOR HELMING: And after living through, how many years now, of Plan 2014, with the primary focus being restoring wetlands, I am concerned about the unintended consequences.

And I'm wondering who weighed in on the language that's in the budget?

A couple of other things.

When we talked about communities, and it's great that we get the money in the budget, I think it's a shame how we have to fight to get the money out for our communities, out of the budget.

And, also, I think something that doesn't get taken into consideration for our counties or our small villages, our cities, and our towns, is the tax cap.

So it's great that this money is being available, but it would be nice -- I guess the question is: If a community is making improvements based on preventative measures, to address flooding, or whether it's to put in updates to sewer systems or septics or water-treatment plants, are those expenditures exempt from the tax-cap calculation?

JAMES TIERNEY: You know, I'm sorry, Senator, I don't know the exact answer to that question.

What I do know is, that the WQIP grant program has been very successful in channeling money to our hard-pressed rural communities for clean-water infrastructure, both for drinking water and for, of course, wastewater.

SENATOR HELMING: So do all of our communities now have waste -- or, water-treatment plants that have adequate filtration systems on them, to address the impacts of flooding, whatever may be flushed into the lake, or even for blue-green algae?

JAMES TIERNEY: No, but we're getting there.

SENATOR HELMING: Are they -- are those communities then prioritized when we apply for grants?

JAMES TIERNEY: Yes.

SENATOR HELMING: They are?

There's like an extra point, or something, they receive?

JAMES TIERNEY: There's extra scoring, extra points, if you're -- if the waste-water treatment system is causing a problem.

And we're also looking at, we have an

asset-management program underway, so people can identify facilities at risk of flooding, to try and get ahead of those as well.

SENATOR HELMING: I'm going to try to sneak in one more real quick question.

JAMES TIERNEY: Sure.

SENATOR HELMING: Do you feel that large-scale solar, wind, and even waste projects have the potential to impact topography and, potentially, contribute to exasperated flooding conditions?

JAMES TIERNEY: I don't believe so.

If Jared Snyder was here, our deputy commissioner for air and energy, there's engineering techniques to manage those things very effectively on the landscape, I believe.

SENATOR HELMING: Okay.

I ask that because, in -- the Governor, in his 30-day budget amendment, Section JJJ, has proposed changes to Article 10, the siting process for certain energy projects, which, again, most people talk in terms of solar and wind. But it can include trash burners, waste energy, incinerator projects.

And I'm just, again, curious.

There's the creation of Article 23, which would, basically, exclude any public input, and what that would do to, sometimes it's the people on the ground. It's the farmers, it's the local homeowners, who know how certain lands work or function, whether they flood or not flood.

And when these big projects are proposed, if they don't have the ability to contribute input to it, I'm concerned it could -- this may be a stretch -- but it could -- we could be losing out on valuable information that would help us determine on whether or not an area is prone to flooding if it's stripped for, say, a waste-energy project, or some other large-scale solar or wind project.

JAMES TIERNEY: Well, thank you.

I'll have to note that as a comment because that's not an area that I'm up to speed enough to testify intelligently.

SENATOR HELMING: Thank you.

SENATOR MAY: Yeah, I'm going to interrupt, and send it back to the Assembly.

ASSEMBLYMAN SANTABARBARA: Yes, I had to step out just for a committee meeting, but I missed some of your testimony.

But I do want to circle back on the

stormwater pollution prevention.

There are new regulations in place now, and I did attend your, sort of, briefing on that in Albany.

Are those -- those measures fully implemented at this point? Or is it something that's still in progress, as far as calculating runoff and stormwater basins, and those types of things for development?

JAMES TIERNEY: Well, we have something that's called the "stormwater general permit" and "construction activity permit."

And what that does is, if there's new construction, it makes you develop a stormwater pollution-prevention plan, to, essentially, hold the water on the landscape.

And as an engineer, you know that.

From a parking lot, to a big, you know, a mall, and the like, how do you hold it so it doesn't get shunted off?

And we have an entire program on exactly how that would work.

Now, the green infrastructure program that we mentioned, that's to retrofit a lot of the landscape, between roadways, older parking lots,

older development areas, and manage that.

ASSEMBLYMAN SANTABARBARA: Is that required, though, for new construction, or just anytime you get a permit?

JAMES TIERNEY: If you -- if you have a new construction, you have to get coverage; they call it "coverage."

It's sort of an odd term --

ASSEMBLYMAN SANTABARBARA: Yeah.

JAMES TIERNEY: -- but basically saying, you have to do work within a generally-known rule book on how you manage construction activity, and then the post-construction stormwater runoff.

As you know, there -- an incredible amount of sediment can come off a construction site --

ASSEMBLYMAN SANTABARBARA: Sure.

JAMES TIERNEY: -- during a major storm.

And so what we want to is anticipate that, batten down the site. And then, afterwards, make sure that you don't lead to higher peak storm flows in the adjacent streams.

ASSEMBLYMAN SANTABARBARA: And, I guess, with regard to what we're talking about here today with flooding, do you believe that's helping mitigate localized flooding?

JAMES TIERNEY: Yes.

ASSEMBLYMAN SANTABARBARA: It is.

Okay, and is that being tracked somewhere?

Is there data behind that?

JAMES TIERNEY: Well, the data -- the data is that, our "blue book," we call it, which are the engineering practices, can demonstrate, through engineering calculations, how much water is being captured, and the peak runoff reductions.

We also were talking a little bit about stream restoration projects --

ASSEMBLYMAN SANTABARBARA: Yep.

JAMES TIERNEY: -- where we believe, through these green infrastructure practices, floodplain benches, anything and everything [indiscernible] that would hold water on the landscape, slow it down and infiltrate it, also does something that's a quantifiable level of reduction once those projects are implemented in reducing impacts.

There's even been instances where, a bridge that was too small acts like a dam during high flows. And I've seen it, you know, back up and go down Main Street Illium.

You know, that has to be fixed.

So there's all sorts of things that can cause

flooding.

But when it gets to holding water on the landscape, the school of engineering, landscape architect engineering, known as "green infrastructure," has gotten -- you know, has grown exponentially.

ASSEMBLYMAN SANTABARBARA: Yeah.

JAMES TIERNEY: And -- and -- and those tools and those techniques are now available.

And through programs like Restore Mother Nature, we're on the cusp of getting a lot of that -- you know, having the resources to bring that to scale that we need, particularly in the -- you know, with oncoming, you know, worsening weather, extreme weather, with climate change.

ASSEMBLYMAN SANTABARBARA: And -- yeah, and the regular -- I did engineering 15 years ago, so it's changed quite a bit with the new regs.

What about wetlands, that's the other factor; right?

Are we -- is there more stringent regulations on preserving wetlands?

JAMES TIERNEY: Yes, with -- with -- with wetlands, what -- they've always been regulated if they're 12.4 acres in size and mapped.

The budget takes away the "and mapped" and says, they're regulated if they're wetlands of 12.4 acres in size and they have the -- those -- they have those features.

So if it -- you -- you know, they would be, you know, hydric soils, wetland vegetation, that capture the spring runoff, we'd like to protect those.

And in the budget there's a provision that says, we're going to do that, like we do with salt-water wetlands down on Long Island, where we rate them base -- regulate them based on their features, as opposed to these regulatory maps that can be cumbersome, they can be dated, and not really tell the story of where those wetlands are and what needs to be done to protect them.

ASSEMBLYMAN SANTABARBARA: Okay.

And I think I'm just about out of time, but one more.

I'll ask you the same question I asked the commissioner.

So wetland -- or, not the wetland.

The -- the flood-zone mapping is being updated.

How far along is that? Do you know?

Because I know the original maps that I worked with years ago, they were so crude, that you didn't know where that line was.

But I know they're more accurate now.

Are we -- how far along are we?

50 percent? Or --

JAMES TIERNEY: I can get you the specific, you know, extent that we're long -- we're along.

What we're aiming for with FEMA are digitized maps, where there's a thin line that shows exactly where the 100-year storm is, exactly where the 500-year storm; you can pull it up online. You're not dealing with those old blueprints --

ASSEMBLYMAN SANTABARBARA: Yeah, yes, yes.

JAMES TIERNEY: -- that drive everybody crazy, and with the thick blue line that doesn't really tell you where it is.

And we're getting those updated.

But as we mentioned a little bit earlier, had a dialogue on this, we are the liaison to FEMA. They're [indiscernible] -- there's FEMA floodplain maps.

ASSEMBLYMAN SANTABARBARA: Sure, yeah.

JAMES TIERNEY: And we push FEMA to get to the point where we would like them to be, and

provide this information.

We also do, I think, a good job working with, like, Dan, and other state agencies, and, of course, the county emergency managers, of knowing where these particularly sensitive areas are, in the high-velocity flood zones, so that we can get there during a flood and, you know, warn people, get people out of harm's way, and take proactive measures to try and dissipate that in future storms.

ASSEMBLYMAN SANTABARBARA: Those maps are available to the public, you said, digitally?

JAMES TIERNEY: Oh, FEMA floodplain maps are available.

ASSEMBLYMAN SANTABARBARA: And where could -- well, I could follow up [indiscernible cross-talking] --

JAMES TIERNEY: They're -- they're -- they're on the website.

And, you know, FEMA has them.

They're used for all the flood insurance.

So it's, really, FEMA, it's sort of interesting, because they look at it as, oh, those are our flood-insurance maps --

ASSEMBLYMAN SANTABARBARA: That's what they call them?

JAMES TIERNEY: -- as opposed to, our -- necessarily, our hazard-response maps.

It's really -- you know, it's a gigantic, you know, flood-insurance agency in many ways.

ASSEMBLYMAN SANTABARBARA: It's on the website, you said; right?

JAMES TIERNEY: Yes.

ASSEMBLYMAN SANTABARBARA: Okay.

All right, thank you.

SENATOR MAY: Thank you.

I have a follow-up question about the Restore Mother Nature Bond Act.

We've all read the language, but it's pretty vague.

And so the question is: How do we advocate for specific things to be in there, and, both, beforehand, so that we make sure it has the support to get in the budget, but also, afterwards, to make sure that it's being used the way we think it should be?

JAMES TIERNEY: Oh, in the Restore Mother Nature Bond?

SENATOR MAY: Yeah.

JAMES TIERNEY: It's -- well -- well, as you might imagine, Senator, there's lots of ideas.

And I -- I -- I -- I have to confess ignorance on exactly how the money is going to be deployed, whether it is to specific projects, categories, or regions.

And what I can say, given my years of experience, is there's no end of work to be done.

What our job, as a technical agency, as sort of a -- you know, a -- a -- you know -- a -- and looking at this, and trying to make sure that the money is deployed to solve the most significant problems.

Wherever possible, deploy it in the way that solves co-benefits. If you can solve two, three, or even four problems with one project, that can be done through intelligent design.

And to make sure that there's -- as with REDI, that we take advantage of local know-how in how we design the project, so that the local governments and individuals who know best where the problems are can point things out, to make sure that incredibly important intelligence is taken into account in how we use those funds.

And that was the rule book that you saw under -- under -- under the Resiliency and Economic Development Initiative.

And I have every sense that that type of sensitivity to local interests and concerns will continue forward, ground up.

SENATOR MAY: But you don't have any idea of what portion of that money would be earmarked towards a -- some of these flood-related --

JAMES TIERNEY: I do not, Senator.

But, it's -- it's -- it's an important question, and I acknowledge it as important.

But I personally don't have that information.

SENATOR MAY: Okay. Thank you.

JAMES TIERNEY: Thank you.

ASSEMBLYMAN SANTABARBARA: Assemblymember Walczyk.

ASSEMBLYMAN WALCZYK: Thank you for being here.

Climate-smart communities have a 50 percent match, which can be especially challenging in areas like I represent, and a lot of the rural areas of New York State.

Do you think that that's something that can change in the future, especially, specifically, for rural or impoverished areas?

JAMES TIERNEY: Well, of course, we'll bring that back to Jared Snyder, our deputy commissioner

for air and energy, who is sort of the chain -- you know, up the chain of command on climate-smart communities.

I can say this:

Under our WQIP grant program for clean-water infrastructure at New York DEC, just for those concerns, priority issue -- priority matters for hard-pressed rural areas and hard-pressed cities, we've upped the grant, in some instances, to a 75 percent grant.

And then you can take that and you can go to the Environmental Facilities Corporation, if you're hard-pressed, and get additional grant money and a zero-interest loan.

So there are -- there is a template, where you have, you know, communities that -- for a variety of reasons, just don't have the resources to take on these problems. And we've tried to be very sensitive to just those concerns.

ASSEMBLYMAN WALCZYK: I want to shift gears and talk about flooding for a second, obviously, the topic of the day.

The area that I represent, Jefferson and St. Lawrence counties, the topography is constantly changing. You can go from the sandy, to soil, to

rock, you know, in a matter of, you know, feet, let alone miles. And I have a 120-mile border with Canada.

What is the -- what's the DEC doing to develop best practices, with homeowners especially?

You know, the Governor has had a big investment with the REDI Commission. Wants to make sure that the restorations that we're doing are going to be solid and we have a resilient shoreline for years to come.

How do you determine that when there's so many different topographies along the different zones of the REDI Commission?

JAMES TIERNEY: That's -- that's a great question.

What we -- we did under REDI, is we did have that -- we have a two-pager that, basically, listed all the data that would be available for something like a -- you know, local public-works commissioners, county experts, county engineers, town engineers, and the like.

And we have that data out there.

We're very far along on specific guidance for homeowners.

And we've committed to developing for

lakeshore -- for St. Lawrence River and Lake Ontario, a handbook, a full-blown engineering handbook, that's underway, and we have the funding to do it, on exactly what to do in different circumstances.

Now, of course, there's 132, I believe, projects that have been identified under REDI.

A lot of them address -- are set to address those issues up and down the coast, at least the worst ones that were brought forward during the REDI Commission.

I know our work's not done, and we're heading into a bad year, clearly.

And so -- you know, so we have gotten a lot of information out there.

And as part of the REDI program, we learned a lot.

With our -- the consulting engineers we brought in, the consulting engineers that are working on each of individual projects, we're trying to make sure that they're imbued with all the information so that they have, you know, intelligent decision-making.

And it can be confounding, because some parts of the lake and river can be higher and lower than

other parts. There's not one average water level.

If you're sheltered, you have a different need for protective levels than if you're right in, you know, a dynamic wave-action area.

So it does come down to, you know, we need our engineers to be really informed, and we need to make sure that they're tuned to the case-specific risks in a particular area.

ASSEMBLYMAN WALCZYK: That's encouraging.

Do you have a publish date for the -- for the handbook?

JAMES TIERNEY: The handbook, I've seen drafts of it. It's fairly far along.

I don't want to get my engineering team mad at me, but I think it -- you know, it should be ready soon.

ASSEMBLYMAN WALCZYK: Good.

Well, yeah, and I'm sure they understand the urgency.

JAMES TIERNEY: Absolutely.

ASSEMBLYMAN WALCZYK: Your discussion makes me segue into a next point.

We know that there will be a lot of permits.

The interface with Army Corps has been challenging at times, very functional at other

times.

Could you talk a little bit about what you're doing to expedite permitting processes for flooded areas?

And, also, you know, this is kind of a statewide issue, and not just for permitting here and dealing with REDI Commission issues; but, also, for permits, you know, across your department, and the many things that you handle.

Do you think the DEC has adequate staffing?

Would you ask the Legislature to provide additional staffing, you know, from SPDES permits, to the things that you're taking on here?

Your department seems to take on more and more every year, but I don't necessarily -- I mean, you're doing more with less, is the way that I see it.

If you could speak to expediting the permitting process for the flooding, and then to staffing.

JAMES TIERNEY: Great question.

What we -- what we do, in general, is we have a number of different protocols.

We've been through a lot of these rodeos. Right?

So we have emergency permits that we issue during major flood events. We've done that, where -- which allows for people to know what is just simply allowed: to stabilize a home, or act in a particular area.

And we do training. We do emerge -- in streams, in particular, you have a lot of emergency stream response training.

And those general permits can be issued in the field very quickly by our permit staff who are out there. We put people in trailers; we have people very accessible to do that.

Our engineering and administrative staff are just, basically, deployed during a high-water event.

You know, so we view ourselves as people, respond during the storm with our rangers and ECOs, and we're out there the day after, helping people put pieces back together, and giving them advice on best practices.

You know, so, for example, I've -- I -- you know, a number of years ago, one community engaged in what somebody referred to, pejoratively, as "recreational bulldozing" after a storm.

They turned a stream that was very sinewy into a straight flume.

Well, when that fills up with water, it just hammered the downstream communities.

It was a bad practice.

So we try and engage to stop that type of activity, while letting people act quickly to protect their home, stabilize things, and keep that in place.

We're well-practiced at this point. And it's gotten, obviously, more intense over the past -- over the recent years.

So I think that we're in a good position on how we handle our administrative functions, our permitting and our regulatory protocols, and deploy very quickly to do that.

I also have the Army Corps colonel for the Buffalo district on speed dial. And we have meshed the Department of State, DEC, and the Army Corps crew permitting teams for all the REDI projects, in order to make things as streamlined and rapid as possible.

And, frequently, we're able to get to the point where the Army Corps says, within this framework, we'll take your permit.

And kind of, basically -- they do still have to issue their own permit. But, basically, okay,

Steve, you know, [indiscernible] within that framework, you're good to go.

And so you can move forward with a lot more dispatch, which is needed.

ASSEMBLYMAN WALCZYK: You didn't -- staffing?

JAMES TIERNEY: Staffing?

Well, you know, the Governor's budget is my bible on such things.

And, you know, DEC did get 47 additional staff in the last budget, and I'm grateful for that -- proposed in the last budget. It hasn't arrived yet.

SENATOR HELMING: Why not?

ASSEMBLYMAN SANTABARBARA: I'm just going to circle back on one quick question.

So, as far as ice jams, there are -- there was at least one project that I know of, where you successfully installed --

JAMES TIERNEY: I'm sorry, I missed that?

ASSEMBLYMAN SANTABARBARA: -- ice-jam mitigation measures, I think there's one project that I know of, in Buffalo, with the piers that were installed.

Was that a project DEC was involved with?

JAMES TIERNEY: I -- I -- we -- we did not do

the project.

ASSEMBLYMAN SANTABARBARA: But you're familiar with it?

JAMES TIERNEY: It's -- yeah, there's piers, sometimes they put, like, big pilings --

ASSEMBLYMAN SANTABARBARA: Pilings, yes.

JAMES TIERNEY: -- out there.

There's also, of course, in Schenectady, we're very interested in what can be done with the Visher's Ferry Dam, and -- and -- you know, and as part of the canal -- we mentioned canal task force.

ASSEMBLYMAN SANTABARBARA: And that's the one I wrote the letter to you guys about when the flooding happened two years ago.

But I think we did get funding to at least look at that.

JAMES TIERNEY: Yes.

ASSEMBLYMAN SANTABARBARA: But I guess -- are there mitigation measures that are out there that are working, that you know of?

JAMES TIERNEY: There's measures out there, that engineers have told me will work. And, basically, the mechanism is to spread the ice out, as opposed to channelize it.

And, also -- and certain mechanisms have the

water flow with more force in order to clear out the ice on a regular basis.

Particularly with the Schenectady area, we have an entire stream --

This is very exciting for me. I don't know about everybody else. But for you, probably.

-- we have entire -- that stream flood restoration mitigation program, we're doing it for the entire main stem of the Mohawk.

ASSEMBLYMAN SANTABARBARA: Oh, okay.

JAMES TIERNEY: So that will take into account what conceivably can be done.

It's our largest study of the 61 that we have underway.

But we have the funding available. We've done a lot of the data and hydraulic analyses already.

We got another [indiscernible] of funding from the Mohawk River Basin program.

And that is -- you know, we've had engagements with the communities. We've tried to gather up all the local knowledge. And we're seeing what we can do, using this geomorphic stream restoration techniques, for the entire main stem of the Mohawk.

That, coupled with what Canals is doing, gives us huge amounts of information that may be very actionable to help hard-pressed Schenectady from flooding.

ASSEMBLYMAN SANTABARBARA: Sure.

Well, you know Schenectady is my home, so I'm very interested in seeing.

The Stockade area really suffers --

JAMES TIERNEY: Absolutely.

ASSEMBLYMAN SANTABARBARA: -- from flooding. And that ice, when it comes, it just blocks everything.

And it's amazing how big those chunks of ice get.

I think that's all I have, unless...?

JAMES TIERNEY: Thank you very much.

ASSEMBLYMAN SANTABARBARA: Thank you for your testimony.

Thank you.

Next, from Clarkson University, professor of civil and environmental engineering, and director of construction engineering, Professor Backus.

Yes, thanks for being here.

Welcome.

ERIK BACKUS, P.E.: Well, thank you, very

much.

Well, thank you to the Honorable Senator Rachel May, as well as, of course, yourself, Honorable Assemblymember Angelo Santabarbara, and members of both chambers, and the Commission for Rural Resources, for calling this hearing, accepting both written and oral testimony that we'll be giving today in examining the effectiveness of current flooding and mitigation efforts, and discuss the need for future assistance due to the increase in extreme weather events.

On a personal note, I want to extend appreciation to Assemblymember Walczyk who was my company commander in my Army Reserve combat engineer battalion not too long ago.

As I'm sure you recall in 2019 budget, New York State designated Clarkson University and SUNY College of Environmental Science and Forestry (ESF) to co-lead a new Center of Excellence in Healthy Water Solutions.

This center is charged with delivering synergistic problem-solving on a wide range of water issues impacting the Empire State.

Clarkson's world-class technical and engineering expertise in water systems, and ESF's

world-class technical in watershed ecosystem management and solution development, uniquely positioned the Center of Excellence, or "CoE," to create and leverage partnerships across public and private partnerships.

New York State's water assets are a source of international identity; points of pride for the state and the country, and of strategic importance to the state's global economic position, now, and into the future.

New York is rich in uniquely diverse rivers and streams, lakes and ponds, estuaries, the Erie Canal waterways, and major coastlines along the Great Lakes and the Atlantic Ocean, making it the internationally well-known tourist destination that New York State is.

Imminent and serious threats of these assets from multiple sources, including, and especially, flooding, call for an integrating and coordinated effort to preserve and improve the quality and quantity of clean and healthy water resources, as well as innovations, to ensure the protection.

Flooding, one of the most common natural disasters, can occur at any time of the year, and occurs due to interactions of precipitation, snow

and ice melt, soils, and land cover or land use.

In New York, many population centers and their associated infrastructure are concentrated along rivers and their valleys, reflecting the value of water as a resource and the importance of strategies to mitigate risk due to floods.

Further, many roadways in New York are located within the FEMA's 100-year floodplain.

Climate change or climate variation pose significant challenges in forecasting floods, and have been linked to an increase in occurrence of historically low-frequency, but very-large-magnitude events.

While this has been typical to focus on precipitation intensity, and how that may increase in the future, it's also critical to understand how precipitation may change in conjunction with other factors.

Across New York, these causative flood mechanisms can vary even across very short distances.

The economic impact of floods is ultimately linked to the presence of humans and infrastructure.

As population and related infrastructure continues to expand along waterways, the economic

impact of floods expected to increase in the future.

For instance, the average annual loss of the flood damage in the United States for the 20-year period, from 1981 to 2000, was $4.3 billion according to the U.S. Army Corps of Engineers.

Further, EPA has made it clear that failing to protect our waters from pollution has resulted in the loss of over $1 billion in tourism annually, has caused widespread fish-kills from the result of harmful algal blooms, or "HABs," and has depressed home values, while simultaneously increasing the cost of maintaining clean drinking water for our fellow citizens.

As concluded in a 2018 study by the National Institute for Building Sciences, mitigation saves.

By "saves" we mean, across the spectrum of mitigation efforts in savings.

For instance, the execution of River Rhine flood-mitigation efforts have an up to 8-to-1 benefit-to-cost ratio, meaning, for every dollar spent on mitigation, eight dollars are avoided in future costs.

Similarly, for [indiscernible] hurricane surges, the ratio is 7-to-1.

Making critical investments the right way in

the present, therefore, can yield significant public and private financial benefits in the not too distant future.

Beyond the economics, we also know that, through mitigation efforts, hundreds of lives have been saved, thousands of cases of storm-related PTSD have been averted, and millions of injuries have been prevented in the past. This will certainly be true in the future.

The faculty affiliated with the Clarkson SUNY ESF Center for Excellence in Healthy Water Solutions are currently actively engaged in filling the knowledge gaps that will enable us to develop improved tools to determine the flooding impact on New York State infrastructure, the environment, and the economy.

This work is critical to New York State, as it enables us to make the right choices sooner, to know better what resources we need to protect, and what resources will need attention in the future.

The following are some of the areas that the faculty and CoE are focusing on:

Risk analysis and forecasting;

Integration of user-inspired research and development communities -- in communities;

Limiting mobilization of contaminants;

And my own work in the area of resilience planning.

Let me take a few moments to highlight two of these areas that my colleagues are engaged in.

First, the National Water Model is a recently developed modeling framework that complements existing National Weather Service flood-forecast models, while also providing potential flood-forecast information at other locations that do not have traditional model forecasts.

In New York, about 100 locations on large rivers and waterways have the said traditional flood forecasts.

The vast majority of streams and rivers in more remote locations, including rural zones, however, have no flood forecasts.

Dr. Charles Kroll, a CoE faculty at SUNY ESF, is currently comparing the National Water Model to observations of low stream flows through droughts as part of a National Oceanic and Atmospheric Administration-funded project.

However, future work could include the assessment of the National Water Model against high stream flows, to assess the potential for making

flood predictions for numerous inland water bodies across the state, not just large rivers.

Secondly, Dr. Ian Knack at Clarkson has worked with a number of industrial partners and government agencies to conduct a series of studies, using numerical models, to understand and evaluate flood risk, potential flood levels under extreme events, and development of operational and forecast tools to assist city planners and emergency-response personnel.

For instance, in the North Country, on the St. Regis Mohawk Reservation located at the downstream end of the St. Regis River, Clarkson Drs. Hung Tao Shen and Fengbin Huang, with support of the Mohawks, analyze historic data, and conducted numerical models to evaluate the ice-transport and jamming-process impact, and consequences, of the Hogansburg Dam removal, as well as what possible flooding mitigation approaches could be considered for the situation.

The Center of Excellence in Healthy Water Solutions received initial funding allocation of $125,000 in last year's budget.

The first 10 months, the CoE has made significant outreach to public and private

[indiscernible] in healthy water solutions across the state.

Based on early input and resources, the center has ignited new provisional patents addressing HABs, and field tested new innovation -- innovative technologies to treat emerging contaminants of PFAs and PFOs.

Responses and requests for support to better manage land resources, to reduce loading of stressors to and from water bodies, including flood prediction, ice-jamming, structural scour, and [indiscernible] mitigation, are also all in progress.

Full funding for the Center of Excellence in Healthy Water Solutions, along with all the other CoEs, to a million dollars per year, would significantly increase the center's contributions towards preparing New York State to an ever-changing environment in protecting public health from flooding and land-management issues.

Thank you again to the Honorable Senator Rachel May and Honorable Assemblymember Angelo Santabarbara, other Commission members, and the staff, for the opportunity to present testimony at this hearing.

As researchers who collaborate with public- and private-sector leaders, and especially as educators of the next generation of technology leaders, we take seriously the public trust from the investments we receive.

As emerging problems and projects are identified, we welcome full funding in FY 20-21 budget of the Center of Excellence in Healthy Water Solutions, to provide additional support and expertise to align with the State's and the people's needs.

We believe, together, we must show the nation, and the world, that New Yorkers can do this important work to protect and preserve healthy waters.

It is a work they are depending upon New Yorkers to lead.

I look forward to responding to your questions and/or take questions back to my colleagues for an individual follow-up.

Thank you.

ASSEMBLYMAN SANTABARBARA: Thank you for your testimony.

As I was reading through your written testimony, I see the statewide ice-jam challenge

that we talked about is discussed in here.

And I hope to see that launched, and to get some students engaged in actually trying to identify some -- some -- some newer solutions.

But, with regard to a couple things I wanted to mention:

You talked about many of the roadways in New York being in the 100-year floodplain.

That seems -- I guess, what percentage -- based on your analysis, what percentage of the major roadways are actually in that floodplain?

Because that seems like something that needs to be looked at.

ERIK BACKUS, P.E.: It's a significant number. I don't have the exact number. We can get certainly get that for you, Assemblyman.

In regards to the quantity, it's definitely majority.

You know, most of our roadways were constructed, if you look at traditional roadway construction in New York State --

Again, I was born and raised here.

-- they were built along logging trails, especially in places like the Adirondacks and the Catskills. They're often built along -- going to

and from towns that along our riverways and streamways, mainly because that's where our industry was.

And so the consequence, either they're directly in the floodplain themselves; i.e., the roadbed is in the floodplain, or, it has supporting infrastructure; for instance, bridges, culverts, and so forth, that are in danger of failure, as well as being in the floodplain in a flood event.

Again, I can't give you a precise number, but it's certainly, definitely, more than 50 percent.

ASSEMBLYMAN SANTABARBARA: That's a good piece of information to know, though.

I'm going to be looking into that.

And, yeah, with bridges, you know, once the water rises above the bridge, that's it.

It's not simply a matter of just raising the roadway either. It may be -- that may not be possible. It may be that you have to relocate or redesign these roads.

ERIK BACKUS, P.E.: Yeah, one of the things that we did as a project, I worked with Chase Winston in the town of Sherburne. He's a Town highway superintendent. And we looked at his culverts. We did a whole inventory of every culvert

in the town for him as part of a project with him, to then identify all the watersheds that went into it.

We actually found that, again, there was a comment made earlier, that there was inadequate culverts in those locations.

That kind of project identified quickly that, in addition to thinking about, just, "as I have a culvert problem, to fix it," I need to rethink about what size that is, and adjust things.

And a lot of times it's also looking at adjusting infrastructure, like, nearby bioswales that would lead into those culverts, and things of that nature, that you need to look at.

So some of the green infrastructure that was mentioned by DEC would be very applicable in those cases.

So, again, it's a very contextual-based approach that must be taken in these situations.

ASSEMBLYMAN SANTABARBARA: I guess in -- you talk about the storm events, and, certainly, the storm events have changed, with climate change, and -- but what our previous speaker talked about, the localized measures, the stormwater control, the erosion control, preserving wetlands, how much of an

impact do you think that has on these major events, or does it -- are these major events going to happen anyways?

ERIK BACKUS, P.E.: They -- they -- events are [indiscernible] -- obviously increasing.

We can look at the climate models. We understand --

ASSEMBLYMAN SANTABARBARA: The stormwater ponds can only hold so much; right?

ERIK BACKUS, P.E.: Right, but -- exactly, somewhat.

-- but, at the same time, by developing more aggressive stormwater infrastructure that abates the amount of high-volume, high-velocity flows, you have less chance of downstream events occurring as catastrophically.

And that's just the -- that's the science and the engineering behind it.

So it's a both/and, it's not an either/or.

We have to look at both the stormwater measures that are going to abate, and do the best we can to control it, understanding that we're going to have higher-velocity flows and higher-volume flows that are going to occur, Assemblyman.

ASSEMBLYMAN SANTABARBARA: And I want to

circle back to the challenges, and forecasting these events has been more challenging in recent times.

And you mentioned low-frequency, large-magnitude events.

Can you just walk me through that?

ERIK BACKUS, P.E.: So when we look at risk analysis --

And I actually just did a vulnerability assessment for a small municipality in the North Country.

-- we look at two factors, primarily.

One is:

What is the frequency of an event that would occur?

What are we seeing?

How is that changing?

And, we're looking at the magnitude, or the catastrophic nature, of what that is?

How bad will it be, if you will, in layman's terms?

What we're seeing is, you look at things like the ice storm in '98, and we've seen increasing ice storms because, as temperatures warm, there's actually more moisture in the air. It also means there's heavier ice. So some places in this area,

if you're in the Mohawk Valley, as elsewhere, are seeing these storms that are having greater -- greater impact when they occur because, instead of snow, which is relatively dry relative to the ice, there is more weight you have to contend with.

So those types of things are going to -- so we're seeing more and more of that. And those are just, basically, what's happened.

The impacts of that, from the design perspective, you know, National Grid is contending with this in terms of their lines.

We're looking at across all of our infrastructure, and what now we have to really evaluate ice weight, not just snow weight, when we start looking at those things.

And that's having a huge impact in how we start designing things as engineers.

ASSEMBLYMAN SANTABARBARA: Sure.

Okay.

And I think my time -- I want to ask one more question.

So the other thing I wanted to just circle back to: So the flood forecasts don't exist everywhere?

ERIK BACKUS, P.E.: In many places they do

not.

ASSEMBLYMAN SANTABARBARA: So they -- how do we -- what's the best way to catch up on that?

I mean, we should have forecasts everywhere.

ERIK BACKUS, P.E.: Right, ideally.

And that's what I was mentioning to my colleague down at ESF, is working on trying to use the National Water Model, which is a new emerging technique and framework that tries to understand water flows better, to enable us to do better flood -- you know, flood analysis so we can get to those lower-flow places.

You know, the Mohawk River's getting -- has a model.

But you'll get to someplace, like in the upper to the Chub River, they don't have a model.

And that's a huge issue, especially for places like Lake Placid, where I'm working right now. And Whiteface is not getting enough water out of the Ausable River to make up for the snow that's not falling anymore.

And so it's a huge cost we have to start thinking about from our tourism perspective.

And obviously you know, the Olympic region is a huge part of that tourism drive for the state.

ASSEMBLYMAN SANTABARBARA: Is that -- that's something that -- is that something that's underway? Or is it something that is -- I know --

ERIK BACKUS, P.E.: It's not --

ASSEMBLYMAN SANTABARBARA: -- when I did projects, like, if we looked our a section of the river, we would just turn that over to FEMA, or whoever, to update the maps.

But is that how this is progressing, or is there a larger initiative that's underway somewhere?

ERIK BACKUS, P.E.: -- so, NOAA (National Oceanic and Atmospheric Administration) does have some grants out. And that's where Dr. McCall [ph.] is working from.

It needs more funding. We just don't have adequate funding to support that at this time.

ASSEMBLYMAN SANTABARBARA: Does that come from the State, though? Or is that --

ERIK BACKUS, P.E.: Right now it's federal funding --

ASSEMBLYMAN SANTABARBARA: Federal.

ERIK BACKUS, P.E.: -- that's supporting his work.

But the Center of Excellence funding would support additional initiatives along those lines.

And so being able, again, to get to the one-million-dollar level for the Center of Excellence would be very helpful and to start looking at that.

And as you think about the priorities that are put forward to the center, or requests to the center, are probably more appropriate, we can get that into the right mix.

And, again, with some of the ice-jamming issues go right along with those as well.

ASSEMBLYMAN SANTABARBARA: Got you.

Okay, I'm going to turn it over to my colleague because I'm out of time here.

ASSEMBLYMAN WALCZYK: Thank you, Chairman.

And thank you, sir.

We've come a long way from a green tent on Fort Drum --

ERIK BACKUS, P.E.: That's right.

ASSEMBLYMAN WALCZYK: -- wearing camo, where your battalion's motto, and it was awesome to have you as a battalion commander, was "Fight to Build."

And sometimes we fight to build here in Albany, and a big part of that is today.

So thank you for your service in uniform. You were an awesome leader there.

It's awesome to see you serving out of uniform, and continue to push New York State in the right direction.

So, thank you for your written and oral testimony, first and foremost.

I recently got named to the Birkholz Institute Nutrition Task Force for St. Lawrence River and the whole Great Lakes system.

So, some of your written testimony, I'm probably going to be sharing on a conference call sometime soon, because I think, while we can criticize New York, we're far ahead of many of the midwestern states that eventually are sending us water.

And your "contaminant" section is especially pertinent there.

Are you familiar with Rates, and the group that's worked on the Rio Grande?

ERIK BACKUS, P.E.: Absolutely. Absolutely, very familiar.

Well, I knew Jim Bonner very well, who ran that company. And, of course, you know, some of the folks in the program right now.

Yes, sir.

ASSEMBLYMAN WALCZYK: Can you talk a little

bit about monitoring equipment, whether it's contaminants or for flooding, and what we need as far as resources and direct resources, finances from the State, and infrastructure, to put those devices out there?

ERIK BACKUS, P.E.: I can speak to some of that, in terms of the general approach and needs that I think makes some sense, from my perspective. And we may need to get back some answers specific to the technology because I'm not the wiz-guy on that.

In regards to the needs, we need better understanding of what is in our waters.

As you mentioned, Dr. Twist is working in the St. Lawrence, and looking at latents -- latent chemicals that were in there, mercury content, and things like that.

Those are going to emerge in the Hudson River, they're going to emerge in the Mohawk River, they're going to emerge out in, you know, the Niagara River; and we need to look at what's going on with that.

And so to have the technologies that can look at what's happening in our waterways.

Now, Rates has got a suite of different sensing capabilities that have been deployed, for

instance, in Rio Grande Valley down in Texas.

We've done some of that work in the Hudson River, specifically out of our Beacon Campus.

And we are looking to expand that some more.

In terms of specifics on what we would need for resources, I think we'll have to get back to you on the specifics on it.

ASSEMBLYMAN WALCZYK: Okay, great.

And then I wanted to conclude by talking about a thing that is, you know, most important to me, especially as we head into another flooding season on Lake Ontario and St. Lawrence River.

And, you know, three years ago people were asking: Is this the new normal?

And I think that question is out the window now.

Everyone's watching what's going on in the Upper Great Lakes, and that water is all headed this way. And we know what kind of winter we've had, and everyone else has had.

So -- and looking at the levels today, what can -- and it's similar to the question that I had for our representative from the Department of Environmental Conservation: What do you think are some best-design practices when we're talking about

residents who have built right on the water?

And you've seen, you live there, you know all of the various situations that we've got.

How do you -- how do you -- from the strategic level, not even the tactical level, how do we tackle this?

ERIK BACKUS, P.E.: I think it's going to be a com -- you know, there's no one silver bullet for any of these things.

This is a really -- it's a complicated, both, an engineering task, in terms of the immediate triage, if you will, of what's going on with, you know, individual residences, municipal buildings.

Infrastructure we've built along our waterways, we built it there for lots of reasons, because that's been an economic-driver. It's been a resource to allows us to get transport to and from our sites. It's really important for the state.

So we have to look at the engineering challenges, and some of those best practices are, is some of it is hardening?

You had mentioned things like riprap, and things like that, earlier, from the earlier testimony.

Those are still only some techniques.

We think we need to look at staging, stepping.

We have to look at different approaches to, you know, whether it be [indiscernible], or different platforms, that are put out into the waterways to control flows. Some of it can be weather -- for specific ice-jamming, that Assemblyman Santabarbara has -- may have some interest in here, in the Mohawk area.

So we have to look at whether the kind of structure is jetties and things like that, that may need to be done.

I've been encouraged by a lot of the Corps of Engineer work. We actually had a presentation recently from them, on talking about some different ways they're looking at how they do near-shore construction, to allow for some of these things to be done.

So there's that.

There's also going to have to be some discussions about, you know:

What are the zoning laws?

What are some of the guidance you can have about how we think about the riverine areas, and how those are managed more effectively?

And it really needs to come from the bottom up, from the local legislation -- local level, whether it be municipalities or at the town and county level, up to the State, and reinforcing, enabling them to really rethink how they have established that layering of guidance and law, to allow them to do that, because that directly affects the -- what people will do and what they won't do.

And then, of course, I mean, the challenges and the economy are part of that.

And, again, I'm not an expert in any of those areas, so I will hesitate to speak to that. But I think that's definitely another part of it that's part of the play.

And I think, if we look at several different aspects of that together, I think it may require additional study. Again, we have expertise, both at ESF and at Clarkson. We can certainly look at these things, to come up with some different things, from the economic, through the engineering, through some of the more social- and policy-related issues.

I think that would be very good for the State to understand, and be a model for the nation, frankly, given that we really are a state blessed with everything you've got, from the ocean, to the

inner lakes, and everything else.

So...

ASSEMBLYMAN WALCZYK: Thank you.

I just -- I just want to conclude, and I know my time's expired, but, thank you and Clarkson and SUNY ESF for the great work that you've done.

I know there's a financial ask here.

And, you know, the Governor's made it clear that he doesn't want to throw good money after bad.

We know that, in any project, if you cheap out on engineering, you're going to see it in change orders in the end.

And when you're talking about New York State's environment and our future, this isn't the time to cheap out.

You're the experts. We need to continue to do your R&D that's going to make our water cleaner and our shoreline more resilient.

So thank you very much.

ERIK BACKUS, P.E.: You're welcome, sir.

SENATOR MAY: Yeah, just very quickly:

Sorry I was -- I had to be out during most of your testimony. But I want you to know I'm fighting to make sure that we get -- we keep the Center of Excellence going, and -- and get more funding for it

next year, because I think the work you're already doing is pretty amazing.

And Assemblyman Santabarbara has assured me your testimony was really interesting, so I'm looking forward to reading it.

ERIK BACKUS, P.E.: Thank you, Senator.

SENATOR MAY: I don't know if this question was asked before, but I am really interested in this 3 million -- $3 billion bond act, and if there are specific things we should be asking for, we should be pushing for, to be included as part of that funding?

ERIK BACKUS, P.E.: I can't speak to it; I'm not knowledgeable in the bond act itself, Senator.

I apologize, I've not read up on that.

I will say that, one of the things to really think about is ways we can use communities as testing beds for different new ideas as we come out of -- what we're coming out of the Center of Excellence.

Whether it be our HABs research; whether it be our PFOs, PFAs; whether it be some of these flood mitigations; an opportunity for those communities to try some things that are not in standard practice yet, but we are testing, we have good evidence, and

we have good, you know, research being done in those areas.

Giving them the opportunity to do that, that would be very helpful.

Ah, one last thing, yeah, Kelly's reminding me, we have a Bass Master Tournament coming up. So if you could help with that, that would be great.

SENATOR MAY: That would be good to know.

OFF-CAMERA SPEAKER: Bass fishing is [inaudible].

ERIK BACKUS, P.E.: Yeah, yeah, world-class fishing is an important part of the state too.

SENATOR MAY: I'm wondering if, to what extent your -- when you're doing research, and -- collaborative research, the kind of collaborative research you do, is governance part of the question that you're looking at?

Or is it mostly just, you know, the technical side of things?

Because that feels like, in watershed management, for example, something where we really need models and best practices.

ERIK BACKUS, P.E.: Certainly, both for our colleagues at SUNY ESF and at Clarkson, we are absolutely looking at that, because one of our

questions is: Is the regulatory structure, or is the guidance that's available, the best guidance, and the right guidance, for the situation?

As we were -- Assemblyman Santabarbara was bringing up, asking about, kind of, what are the best things to think about?

How do we look at, you know, dealing with roadways and adjustments?

They're very contextual-based, so there's not always a cookie-cutter answer for these.

We need to be able to really adapt to the situation that's there.

And, so, as we look at that, we have to look at not just the technical solution, but there's other parts of that that may be limiting us, that enable us to do that.

So we are looking at those questions.

Sometimes they're not as well-resourced in terms of looking at some of those questions, or there's some things that could be done, not necessarily from the State, but other places, that can enable us to do it.

But other than that, they're definitely being looked at, Senator.

SENATOR MAY: Great. Thank you.

Senator Helming, did you have anything?

SENATOR HELMING: Yes, please.

I want to thank you for being here, for your testimony.

And I'm sorry I had to step out, I had another meeting. But I will read the presentation that you left for us.

I too wanted to echo what Senator May said regarding the Centers of Excellence.

I think you have a proven model. You're producing excellent information.

And I will be a strong supporter and advocate for maintaining those Centers of Excellence.

I was curious, on the topic of, you know, working with other agencies, or other organizations, if you will, and thinking about roadways, culverts, and so many of the areas where our -- say, our town highway superintendents or our county highway superintendents are involved, do you partner with the Cornell roads programs?

ERIK BACKUS, P.E.: Absolutely.

So we actually presented at their annual highway conference two years ago, talking about some of our capabilities.

Chase Winston, who is a town supervisor in

Oneida County, town of Sherburne, was our co-presenter. And we worked with them to help deal with some of their culvert issues.

And so, absolutely, Cornell Local Roads is part of the family of folks we work with.

Personally, that's one of my partners. And we've worked through how we can think about roadways, and other infrastructure tied to roadways that can be improved, whether it be for water issues or other issues that they have.

SENATOR HELMING: Thank you.

ERIK BACKUS, P.E.: No problem.

Thank you, Senator.

SENATOR MAY: Great.

Thank you for your testimony, thank you for being here, and for the good work that you're doing.

ERIK BACKUS, P.E.: Thank you.

SENATOR MAY: Next up we have the director of planning for Ontario County, Tom Harvey.

TOM HARVEY: Thank you.

And taking direction from the Chair, I will summarize my comments.

And I'm not here today to talk about shoreline mitigation and/or repair and reaction.

I'm here to talk about the causal effects.

And, you know, you don't solve flooding problems at the shoreline. You solve them up in the watershed.

And we need to take a look at what we do in our watersheds, and how our regulations and our programs affect our reactions.

The state of our current stormwater regulations, implementation of our stormwater facilities, and those regulations through local planning boards, outdated data on which stormwater-runoff calculations are made by the engineering community, and a scarcity of funding for stormwater remediation projects, all contribute to the problem in our rural areas.

So let's talk about the DEC Stormwater Phase II regs.

If you're building a new residential subdivision, your standard is a 15-year-design storm.

Senate Helming mentioned earlier, microbursts.

And I'm telling you right now, those overwhelm a 15-year-design facility.

There is no guidance in the regulations from the engineering community to think about, when those

facilities are overburdened, how does the water run through that residential subdivision?

And I'll tell you what happens now.

It runs -- finds the lowest point. It runs into -- down somebody's driveway, into their garage, and in their front door.

Happens every year in Ontario County.

The regs don't have a clear responsibility or guidance to accommodate existing stormwater flows, and, especially, detention, where there's not a good understanding by the engineering community of that responsibility.

We worked on a project in our office with our Office of Economic Development, a redevelopment project straddling the village of Shortsville and the town of Manchester line. It involved a 300,000-square-foot new facility. And the first site plans that were submitted completely ignored all the upland stormwater flows.

Every spring, there was natural detention that happened on this property.

The property was -- you know, the engineering plans were all grated to completely eliminate that stormwater detention.

If it wasn't for the fact that county

planning was involved in that project, the end of the -- design of the facilities would have been a third of the size that they needed to be, and property -- industrial property neighboring a densely-populated residential area.

I think another deficiency in the stormwater regs, is there's no requirement to take a look and model the upland flows.

And, again, we talked about that example. And I've got several others, happens every day.

There's a lack of understanding and implementation of the DEC in the existing regs by many municipal boards.

Once an engineer in front of a local board says, "Hey, the design meets DEC Phase II stormwater requirements," click, off the review goes.

And we don't look at the watershed. We don't look at what's happening downstream.

We just address what happened in our stormwater mitigation for a 15-year-design storm on our property.

Many local boards also errantly assume --

And I've got to tell you, it happened to me in a planning board meeting last night.

-- that, when each lot in a subdivision is

less than an acre, oh, we don't even need to register for the statewide general permit for stormwater discharges during construction.

Blatantly not true, but local boards don't understand that.

There are very few zoning laws and subdivision regulations that have language in them that talk about no net increase in stormwater flows.

And when they do, they still rely on a 10-year- or 15-year-design storm.

They concentrate mostly on positive drainage; get the water off of your property.

Rainfall intensity, those engineering calcs, or standards, that are used for calculating runoff amounts, they need updating.

You know, I'm glad to hear there's work being done on that, but that's part of the problem.

We've taken advantage in Ontario County, many times, and many of our partner agencies as well, of water-quality-improvement program funding. And we've done several very successful projects over the years.

Unfortunately, last year, some changes in that program seemed to make some of our projects ineligible, such as the Kashong Creek detention

project called for in the Seneca Lake Watershed Management Plan. It was rejected as a strictly stormwater-management project, and not eligible for funding, just at the time when, again, the problems in the watershed, fix it in the watershed.

And it's making it harder for to us get funding.

And, again, the long history of being involved in agricultural operations personally, and a big fan of agriculture, very important for our rural character, a good healthy environment, but, some of our practices that are accepted, tiling, ditching, there is no requirement to replace that stormwater detention that happens naturally on our agricultural land.

And those pieces of the project, even when a farmer wants to do it, they're not eligible for funding.

You know, we want to get -- be very efficient in our agricultural operations, and in our doling out of scarce financial resources.

But some of those little niceties that really impact downstream need to be funded, and taken a look at.

And I'm not saying that happens -- has to

happen on every individual farm. But, again, the watershed, or that local stream's watershed, or -- needs to be reviewed, and detention built into that.

So I'm just going to summarize:

You know, expanded funding is needed for stormwater mitigation projects up in the watershed where it's the most effective.

State regulations do need to be updated, and to ensure that new development is having no net impact on stormwater discharge rates and quality, to eliminate the need for future after-the-fact mitigation.

More education and guidance is needed for local planning boards and design professionals, to clearly understand the state regulations and properly implement those stormwater regulations at the local level.

And, again, we need to stop approving designs for new facilities that don't adequately incorporate stormwater-mitigation projects throughout our watershed.

The problem just isn't at the shoreline.

Thank you.

SENATOR MAY: All right, thank you.

It's great to hear from a fellow stumpy.

I read your recommendations as, basically, we need more SUNY ESF graduates in local government and zoning.

Is that -- would it be summarized to that?

TOM HARVEY: Thank you. Good to hear.

SENATOR MAY: Yeah.

So do you have a recommendation?

So you have a lot of complaints about using the 15-year design.

What design, what would you replace it with?

TOM HARVEY: Oh, that's a great.

And, again, I will defer to my engineering colleagues.

But it's certainly something that needs to be looked at in the guidelines.

I know it's 15 years a foot of, you know, free board, et cetera, et cetera.

But, you know, we're seeing, again and again, we work very closely with our emergency management office.

It's our department that wrote the County's emergency management plan.

And, again, every year we see the results of these little microbursts, even in a small watershed, bigger watershed. And it impacts people that have

those 30-year mortgages. They're getting flooded two or three times during that period. And it's because those stormwater infrastructure in their neighborhood is overburdened. And no thought was, how does that excess water move through a subdivision?

SENATOR MAY: Yeah.

TOM HARVEY: And -- yep.

SENATOR MAY: Well, thank you for calling attention to that.

And I do know, you know, a lot of our local governance in New York makes it hard to do sustainability planning at a regional level, or to address issues upstream, or, you know, up in the watershed, before they get to the shore.

But I appreciate your work on doing that.

And I'm trying to do it here in the Legislature too, so I know I'm not alone.

So, are there any other questions?

SENATOR HELMING: Yes.

Go ahead.

ASSEMBLYMAN SANTABARBARA: I just wanted to -- well, I want to thank you for your testimony, and, yeah, I'm going to look into that 15-year.

I wonder how they came up with that

[indiscernible cross-talking] --

TOM HARVEY: Well, it's kind of a compromise, you know.

And -- and -- you know, in New York State, we have a long history of wanting to encourage development. And, in many cases, you know, we don't have a lot of impact fees, and other things. And the people are very afraid of the fact that, if new development had to carry its actual cost of its impact, we would discourage development.

But, you know, we need to think about that.

You know, my brother, many years ago, moved to Michigan. And, visiting one time, and he said, Well, you know, how much is a lot?

And I said, Well, you know, an acre, you can buy that, you know, put a house on it. You know, buy in a rural area for, you know, ten, fifteen thousand dollars.

And he looks at me and he goes, In Michigan, you'd pay $80,000 for that lot, because you'd have a school impact fee and a drainage impact fee.

And, you know, he couldn't believe how inexpensive it was to develop.

And this is from, you know, a state that, you know, has a lot of gray-belt issues, and not a lot

of new development. But, still, they understand that new development carries impacts, and it's cumulative.

ASSEMBLYMAN SANTABARBARA: Sure.

And rainfall intensity, I think you're right, because when I was doing engineering, I don't think those numbers -- those number -- the calculations have been the same for a very long time as far as calculating rainfall.

TOM HARVEY: Yes, they have.

ASSEMBLYMAN SANTABARBARA: I don't think it's ever changed, even before my time.

And I guess they're the same calculations now.

So that's a good thing to point out, that it should be looked at at this point, because we are seeing changes, climate change, and [indiscernible cross-talking] --

TOM HARVEY: Yeah, you scratch your head.

And, again, I'm a chair of a local planning board. And, you know, I look at a subdivision that we approved, and was constructed 15 years ago, or, a stormwater facility that we designed on the FL -- Finger Lakes Community College campus. And design exceed those standards.

But, you know, in 15 years, the 50-year, the 100-year, storm has been exceeded, you know, six, or four, times.

And, obviously, in the small watershed of, you know, a couple hundred acres, or 20 acres, those numbers just, you know, don't add up to reality.

ASSEMBLYMAN SANTABARBARA: Yeah, and that's a good question for DEC and the engineers, if that's something --

TOM HARVEY: Community.

ASSEMBLYMAN SANTABARBARA: -- we have more data now too. So, I mean, there's more history, as far as how rainfall behave -- you know, rainfall behavior, and what these patterns are.

So I think that's something I will look into, and ask them if they have plans do that at some point, just update those numbers.

And, we'll look into the grants -- water-quality grants being more accessible.

And I think the -- the agriculture, you talked about, yeah, that's interesting to me.

So that they're kind of exempt from a lot of these regulations?

Is that --

TOM HARVEY: Yeah, I mean, you know, you get

funding, or you do a project to tile your field. And, you know, it takes away that water-retention capacity of the soils because, you know, you're trying to get on the good farmland, and you get a short window of opportunity there -- right? -- and appreciate the motivation of the agricultural operators.

But at the same time, there are downstream impacts that go along with that. Right?

And, you know, again, those are -- there is no requirement to think about that, or plan it at a watershed basis. So that throws back to the local municipality.

And larger-project grant funding, to say, gee, you know, water quality in the Canandaigua Lake watershed is an issue. We need to -- you know, we're getting too much erosion from this particular stream. We've got to go looking for a site and do a stormwater and water-quality improvement mitigation project somewhere.

And those cost -- you know, those additive little decisions that get made create the need for these big projects.

ASSEMBLYMAN SANTABARBARA: And I know there's been some funding, at least in my district, for

erosion control and water quality, that farms have applied for and received on a project-by-project basis.

But the Farm Bureaus I think are up next, so maybe that's a question we can ask them.

But, thank you for your testimony.

That's all I have.

TOM HARVEY: Thank you, sir.

SENATOR HELMING: Thank you for being here today, Tom. I really appreciate you making the trip.

You had talked about local land-use boards, planning boards, zoning boards, et cetera.

In your opinion, it sounds like you believe that they play a role in helping to prevent flooding.

What can the State do to help?

I think you mentioned, like, possibly educating local planning board members? local town board members?

TOM HARVEY: Yeah, I think, you know, certainly, and, you know, we do have -- we host every year training from the state -- department of state, local government services.

But, there's not a lot of targeted training,

even from that group, that talks about stormwater issues and stormwater mitigation.

A lot of the code enforcement officers get training through -- sponsored by the soil and water conservation districts, and other programs, even Cornell Cooperative Extension. But it often doesn't translate to what's available for planning boards.

And -- and I think -- you know, I'll just say it:

Oftentimes these rural boards don't have a lot of resources. They try to keep costs down.

They may not have a town engineer looking at, or engineer hired by the town looking at, these plans and bringing up these issues, because they're, again, trying not to discourage development.

And, you just don't see a depth of review of the -- of stormwater mitigation in these projects, and they all add up.

SENATOR HELMING: Tom, I just want to have you clarify for me: Is there any reason why that the local land-use boards couldn't add review criteria for looking at the entire watershed?

TOM HARVEY: Well, again, it's an entire watershed for the stream, the ditch, the upland area.

But, you know, you have to carefully word it so you're not asking somebody to look at the whole Canandaigua Lake watershed. Right?

But, you know, there is nothing preventing that.

I think the fear is, that they're adding engineering costs and burden on individual applicants.

And I see a very -- a reluctance to do that.

SENATOR HELMING: Yep.

And just if you would, if you're comfortable with it, just talking for a moment on watershed organizations; watershed councils, watershed boards, and the role that they play in flood prevention, mitigation, et cetera.

TOM HARVEY: One of our very significant partners are the local watershed agencies, such as Canandaigua Watershed Council, and they do projects independently.

We team with them.

We're doing one now on the FLCC campus to address Fallbrook and their stormwater projects.

They're very important.

We work with Honeoye, we work with the Seneca Lake Intermunicipal Organization as well, that

watershed management group, and SLAP 5 partners in the past.

So, you know, very, very important work that volunteers do, in many cases, to elevate the public's understanding of the issues, and the importance, whether it's, you know, home lawn fertilization, or these bigger stormwater projects.

So, great partners, and very important.

SENATOR HELMING: I just wanted to mention too, I agree with you that, the watershed councils, the watershed boards, around the Finger Lakes play an incredible role in protecting water quality, flood mitigation, et cetera.

And it's incredibly important that the funding be restored, or maintained, in the budget for the employees of those watersheds.

You have to have someone who's a full-time employee, who's really rounding up all of the municipal agencies and organization.

In Ontario County, around Canandaigua Lake, how many municipalities do you work with?

It's got to be, 14? 17?

TOM HARVEY: You know, I think there are seven in the watershed.

There are 26 municipalities just in

Ontario County.

The Seneca Lake Intermunicipal Organization, you know --

SENATOR HELMING: So there are a number?

TOM HARVEY: -- that one is, like, 52. I mean, it's a staggering number.

SENATOR HELMING: And I believe they got funding one year, and it wasn't [indiscernible] --

TOM HARVEY: Yes, and we're working with that. We're administering the grant on behalf of that organization.

SENATOR HELMING: And then, just real quick, how has past flooding impacted the county's infrastructure?

TOM HARVEY: And that certainly is always a challenge. And we're always looking for matching funding, and -- to -- because of all these -- these programs are -- require the matching funding.

And it hurts the counties, and I'll be perfectly honest, it probably hurts the soil and water conservation districts the worst, not so much the tax cap, but the fact that so many of these programs are reimbursement grants. And the districts have limited resources on which to pull and front those costs.

SENATOR HELMING: Thank you.

SENATOR MAY: Thank you.

Thank you for your testimony.

TOM HARVEY: Thank you very much as well.

SENATOR MAY: Next up we have Elizabeth Wolters from the New York Farm Bureau.

Welcome.

ELIZABETH WOLTERS: Thank you for having me.

I'll be brief, as the day is getting long.

My name is Elizabeth Wolters. I'm the deputy director of public policy for New York Farm Bureau.

Our farmers are on the forefront every day of these adverse -- increased adverse weather events across the state.

And I wanted to draw attention to not only the national-headline storms, like "Irene," "Sandy," and "Lee," the instance that we're seeing on Lake Ontario, but our daily farming activities have been impacted by these, particularly up by the lake.

I talked to one farmer who said: You know, yeah, the lake level rising is a concern for infrastructure and the obvious effects.

But one of the big effects that it's having on agriculture is the saturation of the soils by the lake. It is increasing the time it takes for the

lake soils to drain, so it's delaying the planting season even further.

Couple on that, additional rainfall, and those types of activities, we're seeing that getting out on field is a much more difficult process in the spring.

It happens on Lake Ontario. It happens on many of the creeks, rivers and streams that our farmland is adjacent to.

So I wanted to make just that point as an aside, and I want to be brief and not read my comments.

I do want to draw attention to the fact that crop losses are needed in order to receive federal assistance.

So, emergency declarations are very important, timely ones are very important.

But there needs to be an understanding that these losses aren't necessarily covered by any of our federal programs because of the difficulty.

And accounting for the losses, the range, depending on the crop-insurance program at the federal level, can range anywhere from a 15 percent loss up to a 50 percent loss, depending on the program.

So that is a challenge.

There is a challenge with making sure that, if it's in an area where crop production is for feed, ensuring that there is feed available for animals.

We are very lucky to have the eat-in network, which is run through Cornell Cooperative Extension here in New York.

That does have a communications-forum platform as part of the program. It helps connect farmers with feed from other areas in the state, so that they can supplement, and find those resources, in order to ensure the welfare of their animals.

I'll just close by saying that, you know, we've been really fortunate with the coordination of all the agencies in these events, even down to Department of Agriculture [indiscernible].

I won't diminish their work at all, because these are really -- really critical services that they help provide, in communication to our farmers, in communicating the needs of farmers, impacted by these adverse weather events and flooding.

So I will open up to questions.

Really appreciate you having us here today, and you have my testimony, so...

SENATOR MAY: Oh, thank you so much.

Thanks for being here, thanks for your testimony.

I know farmers are the victims of a lot flooding damage.

Farmers also can play a real role in preventing flooding by their land management, and that kind of thing.

I don't know if that's something the Farm Bureau is involved in, sort of helping farmers understand how managing their own land has an impact downstream on flooding, and making sure, you know, whether it's no till or cover crops or -- or having buffers along -- along waterways.

How involved is the Farm Bureau in that kind of education for farmers?

ELIZABETH WOLTERS: So, our farmers are really -- the education component of all those practices really comes out of our land grant university, our Cornell Cooperative Extension; those people are the boots on the ground.

What Farm Bureau does is try to help connect those folks advocate here in Albany in terms of programs that are needed in order to adopt those good practices.

We were happy to participate a couple of weeks ago at the soil-health roundtable, to talk about, you know, soil health, because that has such a large component on how much water the soil can hold.

We know more organic material, the better it acts as a sponge.

There are a lot of practices, whether they're cover crops to prevent, you know, that quick runoff, riparian buffers around streams and other environmentally-sensitive areas.

So we don't necessarily do the education of the farmers. We leave that to Cornell.

But we advocate for all the programs and the research that those folks need in order to provide those services to the farmers.

SENATOR MAY: All right. Thank you.

ELIZABETH WOLTERS: Yep.

ASSEMBLYMAN SANTABARBARA: Thank you for your testimony, thank you for being here.

Just -- I guess, just a couple of questions.

The -- I know there's -- in my district, and particularly in Montgomery County, there have been recipients of a lot of the water-quality grants, erosion-control grants.

Have those been helpful?

Have you heard feedback, is that -- are those grants working?

Are those projects actually helping manage the -- manage the land?

Because [indiscernible] -- you know, a lot this comes down to funding, whether or not you can do these practices -- these best practices.

ELIZABETH WOLTERS: Yeah, and depending on what practices they're doing, most of them are cost-share. So, in the farm economy right now that can be a challenge.

But, yes, they are very helpful.

We advocate for that funding.

We have been supportive of the bond act that's going through now because it could provide for more resources.

There is a mention in the brief language there about, you know, on farm practices.

And we want to make sure that there is enough resources for farmers who want to participate in water-quality projects.

ASSEMBLYMAN SANTABARBARA: Yeah, and, unfortunately, they're competitive grants, so not everybody is able to secure them, depending on

certain conditions.

I -- I guess I would ask you, in the budget, would it be helpful to fund more of these projects, these competitive grants, or have another source of -- source of accessing this type of funding?

ELIZABETH WOLTERS: Yes, more money is always great.

We're happy with where the EPF is right now. The Governor put in full funding for a majority of -- I think all of the programs that we look at for these types of water-quality projects.

I guess we're careful of asking for too much because there's -- they can only get the money out so quickly.

So making sure that we have a consistent year-to-year funding source I think is important over just big large sums in one or two given years.

ASSEMBLYMAN SANTABARBARA: And you mentioned declaring a state of emergency.

Is that something the State has not done?

Is that -- I guess -- you know, the county can do it, and then the state can do it.

Is there -- you mentioned there have been some -- maybe some issues as far as timeliness of that.

Could you just talk about that a little more?

ELIZABETH WOLTERS: Yeah, so I think the State -- the counties and the states have responded.

I think we just, I believe it was last week, got the final declaration from the federal government on a couple of the areas around Ontario, and then also in the Fulton-Montgomery area, for the Halloween storm.

So it does take time because a lot of it is just based on the regulations, and what losses, and kind of the proof process.

ASSEMBLYMAN SANTABARBARA: Sure.

ELIZABETH WOLTERS: So we encourage farmers, if you do have losses, even if you don't think that you're going to qualify for programs, that you report those losses, because it does help impact those decisions at the federal level.

ASSEMBLYMAN SANTABARBARA: Okay. That's all I have.

Thank you.

ELIZABETH WOLTERS: Uh-huh.

SENATOR MAY: Senator Helming?

SENATOR HELMING: Elizabeth, I just want to thank you for being here, and for your testimony.

I feel that all too often, when we talk about

flooding or we talk about runoff, the finger's pointed at the farmer, and that's not always the case.

What I found from traveling around the state in my work on several water boards, is that the farmers are great partners. They have been so receptive to new best-management practices.

And to the Assemblyman's point, you're right, it's very helpful when the farmland/the FPIG programs are available, or the manure-storage program funding is available.

And the more opportunities that we can embrace to help the farmers, I think it's going to help with flooding and water-quality mitigation.

So I just want to thank you again.

I know you're always available should any questions arise.

ELIZABETH WOLTERS: Uh-huh.

SENATOR HELMING: I also want to compliment, although Farm Bureau maybe wasn't a presenter, they have been -- they've had a presence at a number of local events, where farmers get together with people from watershed groups, and they talk about best-management practices and how to implement those.

And I think the more we promote that, all of us getting together and talking about that, the more success we're going have.

ELIZABETH WOLTERS: And we work in close concert with Soil and Water Conservation, NRCS, DEC, all of these folks, to make sure there is a conversation throughout the different levels.

We're very lucky here in New York State to have such a robust soil and water, and active soil and water, conservation districts.

ASSEMBLYMAN SANTABARBARA: Assemblyman Walczyk, please.

ASSEMBLYMAN WALCZYK: Thank you so much for sticking up for New York's -- (turns on microphone).

Oh, I got it now. Plenty loud.

Thank you so much for sticking up for New York's farmers.

I think we've been working in a place where it has been exceedingly difficult, on the policy end, to make sure that their voice is heard loud and clear here.

And while -- Senator Pam Helming and I, we sit on the Birkholz Institute Nutrient Task Force for the Great Lakes-St. Lawrence watershed. And, you know, everyone, statewide, agriculture industry

included, is concerned about having clean water.

Unfortunately, not all the votes in Albany are concerned with the success of the agriculture industry.

It's, certainly, us in the Rural Resources Commission are.

So, first, I guess, my question is kind of open-ended, because I think there are times where agriculture and the goal of clean water can come into conflict. And I'm hoping you can just kind speak to that.

How can -- how can we push agriculture forward -- well, push clean water forward without harming our agriculture industry?

ELIZABETH WOLTERS: Well, I think, you know, I'll bring up the "tile drainage" comment that was made previously, that, you know, there isn't a large conversation when a tilage [ph.] project is completed on a farm.

There are numerous agencies in the state, from, you know, local soil and water, NRCS, DEC, that all are involved with that type of project.

I think, as any landowner, something that you do on your land is going to impact, potentially, something downstream.

And our farmers do try to be good stewards, and they do tile drainage or other water-quality projects because they know that.

And tile drainage is also done -- is often done to prevent large runoff events which have a larger impact than would happen from having drainage available.

You know, there are nutrient runoff that still comes from tilage [ph.] drainage, but it does help mitigate a lot of the sediment. You don't lose, you know, the years of work that you've done in growing the biological material in your soils that help further hold water.

So I think the first-and-foremost thing is just to talk to farmers, talk about the practices that they're doing, because I think there's a lack of understanding.

You know, I think oftentimes we read about farming, and it's not about New York farming; it's not the practices that we're doing here in New York.

It -- we have a breadth and depth of different practices, different types of agriculture, in New York. We have so many unique soil conditions, that we have been doing research for decades on this, and trying to be good stewards of

the land, including water quality.

We're fortunate to have the Miner Institute up in northern New York doing probably one of only two research projects in the nation on tile drainage.

So it's constantly evolving science, and learning more on how to better manage our farms.

But I think that the biggest request is to talk to different farmers; talk about their practices, and don't make assumptions that, you know, they're just trying to throw fertilizer down, throw nutrients down, without a plan, because they have plans. And they work with a lot of professionals for guidance and advice on those plans.

And, yeah, talk to us.

Don't talk to me; talk to them.

ASSEMBLYMAN WALCZYK: Very well said.

And I think the more we on the Legislative Commission on Rural Resources can amplify that message to our colleagues is going to be critically important for New York's farmers, moving forward.

And I thank you again for your testimony, and for sticking up for New York's farmers.

ELIZABETH WOLTERS: Appreciate it.

SENATOR MAY: Yeah, thank you very much.

Next we have Rob Carpenter from the Long Island Farm Bureau.

And after that, just one more, Blanche Hurlbutt.

Is she here?

Hi.

ROB CARPENTER: Yeah, I guess it is afternoon.

So, good afternoon.

I wanted to take this opportunity, first, to recognize the great staff of the Rural Resources Commission.

They've been doing a great job on a number of different issues. And I know they don't always get all the credit.

But I also wanted to thank you for holding this hearing.

This is a very important matter that affects farmers and residents of New York State.

My name is Rob Carpenter, and I'm the director of Long Island Farm Bureau.

As a county farm bureau, we represent the remaining 550 farm operations on Long Island, primarily in eastern Suffolk County where over

30,000 acres of farmland are still in production.

Despite the general perception of Long Island, we consider eastern Suffolk to still be rural.

So we're very glad that you're having us here to speak for the Long Island area.

In my visits and conversations with farmers, we routinely discuss their growing production season, and how farmers have changed planting times in the spring, and harvesting later in the fall, first frost coming later into November, and the increased amount of heavy rain events of two or more inches over a 24-hour period.

Additionally, our Suffolk County Legislature has begun a task force to look at how new infrastructure, or reconstruction of our road and infrastructure of transportation, now take into account these heavy rainstorms that are coming into play.

Over the last decades, farmers have been very fortunate that more crops have not been lost to these heavy-rain events, impacting farm operations with catastrophic loss.

However, we recognize these heavy-rain events are becoming more frequent, and have the potential

to create excessive crop damage in the future.

Currently, as Elizabeth mentioned, there are few, if any, effective programs to help farmers recover from flood damage should a disaster be declared by the Governor due to a heavy rainstorm.

The first and main program in place is a federal program through the USDA Farm Service Agency.

If the Governor does declare a county a disaster area, FSA programs are open to farmers who must thoroughly document damage.

And, if accepted by FSA, basically, all they are offered is low-interest loans, which the farmers on Long Island generally don't use, because all it does is add to their existing debt burdens, if any.

Farmers on Long Island do participate in the crop-insurance program to some extent.

But even that program is not effective as it could be, because nothing compares to actually growing a crop and bringing it to market, and allowing the market to run things, versus a crop-insurance program that may pay, for example, the state average in yield or a lower price as compared to free-market.

So I did make a couple of recommendations in

my testimony, just for your guidance.

The first recommendation that I would like to make is, to encourage the Legislature to ask the Commissioner of New York Ag and Markets to develop a New York State crop-insurance or crop-loss program to help our farmers, knowing that these future rain events are going to happen, and find an appropriate source of funding.

That local community helping local farmers would go a tremendous way, versus some of the FSA programs or federal programs that are out there.

We also believe the best way to handle flooding issues is to prevent them before they happen.

The soil and water districts in each county across New York and the United States have already been working towards that goal.

Our soil and water districts, to my knowledge, are the only entity in New York that is established to work with both private landowners and public landowners at the same time.

And that's a very valuable resource.

Districts are currently implementing programs, including, but not limited to, floodplain restoration, stream bank and river restoration,

drainage and irrigation systems. They work with the county on MS4 programs, as well as emergency flood planning and preparedness.

And I understand that executive director of NYACD, Blanche Hurlbutt, is due to speak. And she's going to talk more about all of the programs that the districts do.

But, with that in mind, one of the recommendations that we would like to bring forth from Long Island, is to work to help the soil and water districts by increasing their funding.

And we're just suggesting an amount of three to five million dollars annually, so that the districts can continue to do the work of mitigating the flood damage before it happens by utilizing existing staffing and program.

And I know it's a tight budget year, and it's just a recommendation, but any help to the districts that you can provide would be tremendous for the great work that they do.

Also, the New York State Legislature passed last year the Climate Leadership and Community Protection Act, a very historic piece of legislation with ambitious goals for the next number of years.

One of the ways that our farm community will

potentially be engaged in this legislation is through carbon sequestration, a/k/a maintaining or sequestering the carbon right in the soils, along with some of the other components that go with farming.

Composting has been shown to be an effective tool in adding organic matter to soils, as well as reducing compaction, all while allowing nitrogen and carbon to be sequestered so it can be utilized by the crop that's being planted on that land.

Less compaction in the soils will also allow more water to be absorbed and retained, thus, preventing runoff, as well as allowing recharge to watersheds, and in particular on Long Island, our sole-source aquifer.

And this is one of the programs that our farmers on Long Island have embraced greatly because they do realize that the agricultural lands are a major source of recharge into our sole-source aquifer.

Many farmers are voluntarily embracing soil-health practices, as it's good for the environment, as well as economically beneficial for the farm operations.

SENATOR MAY: Mr. Carpenter --

ROB CARPENTER: However, investment in new machinery, such as no-till drills, compost spreaders, machinery to actually work the compost, as well as siting issues, need to be made more effective to add these practices to farm operations.

SENATOR MAY: Mr. Carpenter, let me just interrupt because you just have two minutes left.

So can you jump ahead just to your recommendations?

ROB CARPENTER: Yep.

SENATOR MAY: I think that would be helpful.

ROB CARPENTER: I'm just about finished.

SENATOR MAY: Thanks.

ROB CARPENTER: So one of the things that we would like to ask for is additional funding for our compost research; additional help with farmers for nutrient management plan and soil-health plans, and capital investment for farmers to be able to do these issues.

And, finally, in wrapping up, one of the other things that we've noticed is, in asking the question about being prepared and dealing with things before, could be, some of the regulations that are in place might actually hurt more than is helping, as far as permitting processes or being

able to deal with situations.

And one recommendation that we have would be, to have the state soil and water committee work with DEC to make recommendations to you as the Legislature, to say, hey, some of these permits or some of these regulations might be better off if we were able to tweak them in certain ways.

So thank you very much for the opportunity, and I welcome any questions you might have.

SENATOR MAY: Thank you very much.

I don't have any questions.

Does anyone have questions?

ASSEMBLYMAN SANTABARBARA: Assemblymember Smullen?

ASSEMBLYMAN SMULLEN: Mr. Carpenter, thanks so much for coming up and telling us the view from Long Island.

One of the things that we learned in the Halloween flooding is that an ounce of prevention is worth a pound of cure.

And you mentioned specifically the soil and water conservation districts.

Could you elaborate a bit further on some of the stream restoration, I guess you could say, authorities that the soil and water conservation

districts have in regards to both public and private entities, to be able to coordinate, and to try to get ahead of these issues so we can actually save public resources by not having to do so much after the fact?

ROB CARPENTER: Sure.

I am not a technical technical expert as much as some of the district managers are.

But I do know the districts work very closely with many highway departments and town boards to work on these dream recommendations.

And I think that Blanche is going to talk a little bit about maybe one or two of the issues that the we're having with regards to that.

And Blanche, I think, can also better fill you in on some of the technical aspects of what the districts do.

On Long Island, we don't necessarily have as many streams going around farms more than we do lakes and ponds.

So it's not something I'm absolutely familiar with as I probably should be.

ASSEMBLYMAN SMULLEN: Thank you.

SENATOR MAY: Thank you very much for your testimony; appreciate it.

ROB CARPENTER: Great. Thank you.

SENATOR MAY: And last, but not least, Blanche Hurlbutt of the New York Association of Conservation Districts.

BLANCHE HURLBUT: Hi.

SENATOR MAY: Thank you for being here.

BLANCHE HURLBUT: Save the best for the last. Right?

I'd like to thank you so much for allowing me to be here today to discuss these -- the current flooding emergency and mitigation efforts that need to -- for the future assistance, due to the increase in the extreme weather.

I would like to share with you the best-kept secret within New York State, and that is the soil and water conservation districts.

There are 62 soil and water conservation districts within New York, counting the five New York City boroughs.

These districts work alongside farmers, landowners, counties, towns, and state highway departments to continue to protect New York's soil and water.

And I would like to share with you a small portion of the programs and projects in place that

soil and water districts provide as a service in New York State.

Delaware County is one of them that has created a flood emergency plan which is countywide. And this plan is now being used as a model for other soil and water district counties and town and highway departments.

With this flood emergency plan in place, they are being proactive and prepared for the next flood.

Other things that Delaware County, right now, has 30 declared flooding events they are working on.

Water quality is a great concern due to the erosion issues and the stream -- along the streams and riverbanks.

And Delaware County has a -- soil and water district has a pilot project in place, where they're analyzing the water for loads of phosphorous, nutrients, et cetera, due to the erosion, which is another real concern, and will be in the future.

Tioga County, just in one year, completed 25 -- 24 projects; stream-bank stabilization and rehabilitation over 4,780 feet.

They worked with culverts and post-flood emergency intervention training.

They worked with New York DEC stream

distribution and received six permits.

They received 13 DEC emergency authorization permits.

They worked with the Army Corps and received 24 stream permits.

And they received 45 -- 44 advice technical assistance to landowners and municipalities.

And they've overseen construction for NRCS EQUIP streams stabilization projects.

And there's others that I've listed, that I won't mention.

And as well as all these projects that soil and water provide, they also provide:

Monitoring and mapping of stream issues;

Education and outreach;

Technical assistance and advice;

They help with permit -- farm and landowners and counties with permitting assistance;

They help them with grant writing;

They design and work in engineering;

They construct oversight;

They work on hazard mitigation plannings;

Culvert inventory, analysis, and designs;

And flood response.

As you can see, soil and water conservation

districts are working hard to protect, care, and preserve the soil and water of New York.

With the climate changes and the state legislation passed, and the increase of flooding concerns with 5, 6, 7 inches of rainfall in a 24-hour period, and how we are having a lot more 100-year storms, it is vitally important to solve these issues and problems before the flooding happens.

U.S. legislators can utilize soil and water conservation districts, because this is what they have been, and are doing, by proactive, not reactive, to a very serious flooding issue and concern.

For SWCDs to have the ability to help farmers, landowners, counties, towns, and state, is to beef-up their ability to do their job by increasing funding, to provide additional staff to handle the workload and increase their flooding programs.

The soil and water conservation districts are only -- are the only entity that can work with public and private landowners.

Thank you, sincerely, for having me here today, and to be heard on behalf of the New York's

best-kept secret.

SENATOR MAY: Thank you.

I love that framing.

So do you agree that three to five million dollars is the appropriate amount to be asking for additional funding?

BLANCHE HURLBUT: Yes.

SENATOR MAY: I do agree that soil and water conservation districts do amazing work.

And I appreciate you calling our attention to it, and making sure that we know the whole range of it.

Anyone else have questions?

SENATOR HELMING: I have a quick one.

SENATOR MAY: Hold on.

ASSEMBLYMAN SANTABARBARA: Assemblymember Smullen.

ASSEMBLYMAN SMULLEN: Blanche, thank you so much for coming today.

I wanted to go back to the question that we asked our friend from the Long Island Farm Bureau. He sort of deferred to you on it, regarding stream restoration, but doing it ahead of time so we would limit the damage sort of thing.

One of the things that we've been talking

about in regards to the Halloween storm in Hamilton, Fulton, and Herkimer counties, is trying to get ahead of the issue by having the soil and water conservation districts, with the emergency managers, with the towns and municipalities, to go ahead and try to do what they used to do in the old times, so to speak, is to get ahead of these things, and make sure that the streams were ready for the -- you know, the larger events that we've been -- that we've had, and that we will certainly have in the future.

Can you see that the soil and water conservation districts are equipped to be able to share the service across counties?

That seems to be the theme that I'm hearing, and how we might make a plan to get some resources, to be able to address this from a regional perspective.

BLANCHE HURLBUT: And they're working hard -- soil and water districts all throughout the state work very hard to work with everyone.

With not having enough resources, sometimes it limits them to be able to work with their counties and towns to do a major project.

Helping them with the general permitting that

they sometimes get from DEC cuts that time down so that they can step out quicker, and be more of a resource to the towns, the counties, the landowners, that are having any of these issues.

ASSEMBLYMAN SMULLEN: And I do really appreciate the soil and water conservation districts' ability to work with other agencies, including DEC for permitting.

That always -- that seems to be a major fear of landowners, is that they can't do work on private property because of a concern about having a DEC permit.

Now, as far as equipment goes, are the soil and water conservation districts today, are they equipped to be able to do this, or would they need additional plant or equipment to be able to do so?

BLANCHE HURLBUT: They definitely would need additional equipment.

In certain projects, certain areas that they work with, they sometimes do need equipment.

They're a good buddy system.

If another sewer and water district has a piece of equipment, and is willing to share, sometimes they share it, sometimes they rent it.

But having their own, or the access or

ability to get that piece of equipment quickly, would certainly help them.

ASSEMBLYMAN SMULLEN: Thank you so much for coming.

BLANCHE HURLBUT: You're welcome.

Thank you.

SENATOR HELMING: Blanche, I think we're just about out of time, but I want to take an opportunity to publicly thank you for being here, and to thank all of the members at conservation districts for always being available.

You are the leaders in natural-resource management, whether we're talking about flooding or anything else.

I -- in the interest of time, I would love to set up a meeting with you and to go through some of my questions.

BLANCHE HURLBUT: Okay.

SENATOR HELMING: All right?

Thank you.

BLANCHE HURLBUT: That would be great.

Thank you.

SENATOR MAY: Let me just follow up with one final question, thinking about this "best-kept secret" idea.

Do you think that that's intentional by the soil and water, sort of flying under the radar makes it -- you're able to work more nimbly, or would you like to be better known?

And if so, should we be doing more public information [indiscernible cross-talking] --

BLANCHE HURLBUT: I would like to see us better known, because I think we can do a lot more, and people are not aware of what we can do.

You know, a lot of people are not aware that soil and water districts can work with landowners and municipalities, and go onto property where municipalities can't.

SENATOR MAY: So is public information -- so some budgetary ask for that kind of thing appropriate, do you think?

BLANCHE HURLBUT: That would be appropriate.

SENATOR MAY: Okay.

Well, thank you very much for being here, and for the important work that you and all the soil and water conservation districts do.

BLANCHE HURLBUT: Thank you.

SENATOR MAY: Thanks.

Anyone have closing statements?

ASSEMBLYMAN WALCZYK: I just want to thank

both Chairs and the staff for putting this together.

I thought it was very productive, as we continue to be concerned about flooding and clean water. We hit a lot of great topics today, and I think it was really productive.

So thank you, Madam Chair.

And NYPA's also has been a great partner.

Just wanted to get that out there.

Thank you.

SENATOR MAY: Well, you know, thank you to all my colleagues:

To Senator Helming who did chair the Rural Resources for a long time, and did great work there to;

And to the staff, again, for being here, and being an inspiration for this, and making it happen and making it happen so efficiently.

And to all of you who have been here, and those who are watching, thank you again.

That concludes the hearing on flooding.

Thank you.

(Whereupon, the public hearing held before the Legislative Commission on Rural Resources concluded, and adjourned.)

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