

**South Central Connecticut Regional Water Authority
Environmental, Health & Safety Committee**

**August 19, 2021
Meeting Transcription**

[ENVIRONMENTAL, HEALTH & SAFETY COMMITTEE STARTS AT 12:51 P.M.]

Kevin:

Yes, thank you. There is the minutes of May 20th, may I have a motion to approve or accept?

David:

So moved.

Kevin:

There a second?

Tony:

Second.

Kevin:

Thanks. Any discussion on those minutes?

David:

Fine to me.

Kevin:

All in favor.

Participants:

Aye.

Kevin:

Okay, pass, thank you. We have three main items today. First would be, let me just get out of my. First, we'll hear from, well, we'll talk about the charter. We have some red line revisions to the charter from previous comments. We'll take a look at that for your discussion and approval.

David:

I think they were clarifying, and I think they were helpful, so I will move their approval if that's all right with you, sir.

Catherine:

I second the motion.

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Kevin:

Any further discussion or comments? All in favor of accepting the charter as revised.

Participants:

Aye.

Kevin:

Okay, thank you. Thank you, Ted, and everyone else who worked on that. Next up, in addition to the charter, we have three additional made items. We have the business continuity work plan, and that will be Amanda Schenkel and Kate Novick. Thank you.

Jennifer:

Kevin, I'm trying to contact Amanda, but I can't seem to reach her.

Kevin:

Okay. Is Kate present and available to speak to this or should we pass it to-

Jeanine:

I'm going to go right across the hall, she told me she was getting on today.

Kate:

I am present.

Jennifer:

No, Amanda. Amanda.

Jeanine:

Amanda.

Kevin:

Yeah, Kate, are you able to speak to this presentation, or should we pass it to... ?

Kate:

I can speak to the presentation, yes. I'll start sharing my screen. Just give me a minute to optimize it so you can see it well. All right, I know Amanda wanted to say a few words.

Jeanine:

She's in another meeting in the Welsh room, I think she probably didn't realize that this would come up this quick, but they went to go get her.

Kevin:

That's okay, we can proceed.

Jeanine:

Okay.

Kate:

Okay, good. I'm just going to present the fiscal year 2022 business continuity work plan. Just to start us off, some factors we considered in putting this plan together was, number one, America's Water Infrastructure Act, which required water utilities to perform a risk and resilience assessment and update our emergency response plans. To incorporate the findings of that risk assessment, both of those things were completed per the regulation on schedule, and certification that we did that was submitted to EPA. That risk assessment informs our work, and it identifies what the top risks are for the water system itself and improvement actions that we should in a prioritized order. We take that as marching orders for our plan. Also, the COVID-19 pandemic obviously, definitely informs our work plan, certainly there's been a lot learned. Never waste a crisis to try to do something good.

Kate:

We're incorporating those lessons into our plan. Next, and Amanda informed me that one of the strategic goals for this year is to support climate and water quality resiliency. In our work plan, we make sure that we are doing that as appropriate, and certainly we can do that as we update our response plans. Certainly as we perform emergency exercises, we can do that. Then lastly, news events informing cybersecurity, there just doesn't seem to be a shortage of these. Certainly the top key ones have been considered, and the May 2021 colonial pipelines ransomware attack. In fact, I'll share with you pretty soon that we did a ransomware tabletop exercise recently. Then the February 2021 cyber attack on a Florida water treatment plant on their SCADA system. All of these events that we learn about become part of our plan and inform our plan. I just wanted to-

Kevin:

I don't mean to interrupt. I'm sorry to interrupt. I do have one quick question. I remember a few years ago we utilized the Department of Homeland Security, I believe, or some agency or arm of that for an assessment. Am I correct in stating that, that we had an assessment?

Prem:

I'll take that one, right, Kevin you're absolutely correct. That was a DHS self-assessment in 2018 that we did, and there were a list of recommendations that we came about with that. We kind of already started working through a plan, but more recently to Kate's point, we have done a couple more assessments. One of the ones that she mentioned, which is a critical asset protection, it's called RAMCAP assessment, it's part of the AWWA. Where we did some of the certification, and then more recently for the upcoming next meeting, which we'll talk about on CLA, our [inaudible 00:53:34] have done other assessments on SCADA. A couple of assessments happened after that self-assessment, but you're absolutely correct, and I think you kind of walked through that plan. That's right.

Kevin:

So yeah, and thank you, Prem. That was my recollection that we had, that's correct, thank you for the reminder, was a self-assessment. We utilized some of their tools, or documents, or tables, I think.

Prem:

That's right.

Kevin:

This most recent assessment was done by an outside source, or was it also a self assessment? Then one last question, was it substantially similar to the previous assessment, or was it different because it was answering the America's Water Infrastructure Act? Thank you.

Prem:

Yeah, so to answer your questions, the RAMCAP assessment, that's where Kate comes in, so she actually was running that whole assessment for us, hand-in-hand. That was done in conjunction with [inaudible 00:54:32] and later, Kate comes into play, along with our RWA team. The more recent one that we did was the CLA assessment that came directly from the outside party, bringing in an outside expert on the table. We have all the results out of that, and to Kate's point about the objectives this year and of 5/22 was to really make sure that we close any critical gaps. We are already into the plan to kind of take care of that. We have a collaboration of external and internal teams working through this assessment, it's not just a self-assessment. [inaudible 00:55:05] to make sure that the DHS guidelines, or even the CISA that's part of DHS security agency. We may closely work with them to kind of put that to a plan and executing the plan. That's what you're doing.

Kate:

Excellent Prem, thank you.

Kevin:

Thank you, Kate. Amanda, did you have anything that you would like to add or say at this point?

Amanda:

Yeah, the only other item I wanted to add in there, and we'll get into it in more detail in the presentation, is in relation to these events that keep happening, we are consistently adding to our exercise planning. We'll talk more about the recent tabletop that we did in regards to our breach response plan and our ransomware breach that we recently did.

Kevin:

Great, thank you.

Kate:

Okay, good. Good. I just wanted to share an overview of how we build an emergency preparedness or business continuity program, just so you understand why we're doing what we're doing, also beyond what I've said so far. One is that at the first step would be to do a risk assessment, and that identifies your gaps and risk mitigation recommendations. Like Prem said, you try to close those gaps, and you do that through a lot of different ways.

Kate:

One is through emergency response planning, which we're doing. Another way is through comparing what equipment and organizational and systems we need to respond effectively and quickly, so that's the next piece. Then the third piece here in this cycle is to train and to exercise. To train staff and then

to exercise our emergency response plans to see how well they work and also to exercise our equipment if we're doing a full-scale exercise. We don't always have to do a full-scale exercise to learn information about how well our emergency plans work, we can do what's called discussion-based exercises. Those are lower cost, easier to do, and we can still get a lot of information about how well our plans will work if it was a real event. That's that piece, and then the final piece is one of continual improvement.

Kate:

It's like the Deming cycle, that plan-do-check-act. How do we continue to do better next time? That's the cycle, that's standard practice. In that fourth piece of the cycle, there are a lot of opportunities that arise to identify continual improvement actions, so that we're continually improving our readiness to anything that could happen, whether it's a cyber, a weather event, whatever it is. Some of those places where we get that continual improvement information is risk assessments, like I said, plan reviews, exercises, like I said. Then the last one is really most important, one is real events. Like I said, with this pandemic, you never waste a crisis to try to learn from it. That is part of our management system and the business continuity program.

Kate:

Next I'd like to share with you just a brief on two recent tabletop exercises that we've done, they're here side by side. Like we mentioned, we had a ransomware exercise, May 21st, we had 23 staff over Zoom. We tested, specifically, regional waters incident management plan and the information security incident response plan, which is a disaster specific plan, whereas the incident management plan is more of an overarching all hazards plan. Then lastly, we also tested our business continuity plan, which is also an all hazards plan. The key actions that came out of that, that we learned we should consider and work on, are one, to revisit loss of SAP during the next business continuity planning update. This next planning update is part of our work plan for this fiscal year. Next, to analyze the IBM contract we have with respect to emergency events.

Kate:

Various emergency events, what are the parameters of the contract in this event versus this event, ransomware versus some other information loss or type of event.

Amanda:

Kate, can I speak to that piece just really quickly? One of the items that I want to point out here is that RWA has a response in place as to how we will respond and for ourselves. IBM will also have actions that they're going to be taking on our behalf based on the contract, which is where the driver is, is that we want to make sure that we're not working against the actions of IBM and that we also have a seat at the table with IBM to be driving how they are responding on our behalf.

Kate:

Yeah. Good. Good. Then lastly, we know there's certain staff training and exercises that we need to put on the schedule for the future. Moving along to the next exercise we did, June 7th, we tested our incident management plan again. But this time we tested also a critical component failure plan, specifically Spring Street pump station, and as well as testing our water restriction procedure.

Kate:

The key improvement actions that came out of that were, one, like I said, there were 30 staff that participated in this exercise. One absent voice in that conversation was Connecticut DPH, and we realized we need to talk to DPH about these specific questions we have for them in terms of coordinating with them during an emergency that would affect water quality. Other actions that came out of that were to update our emergency response plans in specific ways that the exercise revealed, as well as to develop a procedure for providing alternate water per a new Connecticut state regulation that requires if there's a water outage for a certain period of time, I believe it's 12 hours. Amanda will correct me if I'm wrong.

Amanda:

12 is correct.

Kate:

That water utilities are now required to provide alternate water to their customers, one way, shape, or form. We have a new procedure to do that.

PART 2 OF 6 ENDS [01:02:04]

Kate:

Way, shape, or form. So we have a new procedure to do that. We have a lot of thoughts about what the procedure needs to look like, so we just needed to formalize it. And then lastly, specific training and exercises, ideas came out of that exercise too.

Amanda:

And to just coordinate this information about DPH, we will be holding a stewardship meeting, Tom Barger, and I will be leading that meeting with DPH, and we plan to do that prior to our next exercise, which is planned on September 15th. So that, will be coming up very shortly.

Kate:

All right, good. So now I'll get into the work plan itself, specifically what we'll be doing. So we have a couple, let me just back up the whole, we a process with the risk assessment and emergency response plan update dates on gave us a lot of feedback, a lot of ideas, a lot of shining light on some gaps, more clearly. So there's been a lot of activity to prince point filling, filling those gaps. And then we just have a couple things that are still ongoing, that we've been working on. And one is to have a response and a business continuity slash disaster recovery plan specifically for the SCADA system. We had parts of that before, but we didn't have a dedicated, robust plan, which we're developing now. And then second follow up activity is water quality emergency response plans.

Kate:

So this is a hazard specific plan. If there's a water quality event in the past, we've relied on the incident management plan and it has certain procedures and policies in that response plan that have served us well. But we wanted to expand that again, make it more robust and consider different water, quality scenarios, particularly ones that aren't likely, but they could happen and could be very severe. So we're creating a plan just to be ready for that and consider what might be needed.

Kate:

So the next part of our work plan is to update the business continuity plans. Regional water authority has a very mature incident management plan, a very mature business continuity plan. And these plans are updated periodically with the business continuity plan updates, we really need to include all departments. We need to know how different emergency situations could impact their operations, from finance to water quality, to distribution, everything. So it's really a big effort because we have all of the departments involved. So we do this every other year and we're starting the process again this fall. So just letting me know, there's one overarching plan for this, the business continuity plan, and then each department has its own department specific plan. So if they're interrupted or disrupted in some way, what is their backup strategy? So they all have that, and it's both, it's a mature plan at this point.

Amanda:

And just to catch it on the end of this part of our goal in this process for this year is to capture the efficiencies we develop due to the COVID-19 pandemic. A lot of our abilities to do our work processes remotely will be added into the business impact analysis, which could potentially reduce how many resources we need to be able to provide in case of an emergency where we had many different resources assigned to our remote locations to keep the business going. There's a potential that those won't be as needed due to what we've learned.

Kate:

That's right. Yeah. So I recovery site, we have certain recovery sites where if 90 Sergeant drive wasn't available, people could recover elsewhere. And now exactly what Amanda said. All right, next section would be the training and emergency exercises. So one is, we need to do more training around our response plans, particularly as they're updated. So when the incident management plan is updated, we need to roll out that update and train. So, and plus with some new staff members, we know that we need to focus on that for this year and provide that training. Ben for the extra on the extras, that's the training side of it. There's a couple of things that aren't listed here. And one is, I do want to mention is just that there's basic incident management training that FEMA provides online. There were also making sure new staff have and staff who haven't had it in a while making sure that they, they do it too.

Kate:

So, like I said, we had those Spring Street Pump Station that already occurred in June. We have two upcoming exercises. One is North Cheshire Wellfield Tabletop Exercise where we're going to explore potential contamination event. So this isn't a high likelihood event, but it's a high severity high impact event. And certainly one that was identified in our risk assessment. We haven't done an exercise like this in a long time. So it was just time to tax resize this, and we chose what treasure, because we haven't exercised that area in a while. Then the next exercise is a functional exercise, which just means we're not just sitting around a table, we're walking around and looking at things. And it's just a little more advanced would be the Lake Gaillard Water Treatment Plant Functional Exercise. Where, with this scenario, it would be something a major emergency that impacts the ability to produce water in that area and what are, exercising our response plan for that.

Kate:

So we'll be doing that either this winter or later this fall or this winter it's, those plans are not solidified yet, but we're working on it. And then the last section of our work plan is for program management and there are number of ways we manage the program to keep it going, to keep it active, to keep maintain a

culture of preparedness that regional water authority. One is through the business continuity program, planning that we're starting this fall, but advising that planning process is the business continuity committee. And that committee meets about two times a year where we share this continuity activities and get their input. So that committee is about 2025 members of various people throughout regional water staff members. And then the next part of our program management is a smaller core team that we have, which we call the Training and Exercise Team. And that team informs helps us decide on what training and exercises to prioritize each year based on our real events and based on things that are happening out in the world as well as based on our risk assessments.

Kate:

Next, managing preparedness activities, including the continual improvement actions that in one of my earlier slides, I show you all the ways that we identify continual improvement actions. So we have a system where we have someone responsible for each of those actions, target deadline, and Amanda and I just, as in our role, we check up on the status periodically to see how things are moving forward and evolving. So, I think that is it in a nutshell for our work plan. I can get into some specifics about our training objectives. If you would like to hear.

Kevin:

That's up to the committee [inaudible 01:10:55] by member authority. Does anybody have any questions or anything specific they would like to hear more about?

Catherine:

I would be interested in your own assessment of how the incident management plan happened in real life with the roof and fire.

Kate:

So I'm sorry, I didn't hear the last part of your question.

Catherine:

We recently had a fire incident, want to say like Whitney. How did the incident management plan come into play with respect to that incident?

Kate:

I wasn't involved in the incident investigation on that, but Amanda, is there something you would like to say about that.

Amanda:

We're still in the process of formalizing the lessons learned on that one, which is where I'll get a breakdown of how the incident management plan was enacted. The other side to that within the incident management plan is an overarching for all types of incidents. We also have very specific, critical response plans. So Lake Whitney actually has its own critical response plan that gets put into place when incidents like that happen. And each and every time we have an incident like that, we pull that plan and we take a look at it just to make sure that our response still matches what we have in writing. And as like Kate has mentioned that continual improvement plan. So that actually happened while I was on vacation. I have some follow-up lists for myself to go over on that. So, but yeah, Jim Hill and I, we'll run

that as well as with Jim [lastname 01:12:42] to make sure that a lessons learned is done and that we review that plan.

Catherine:

Thank you [crosstalk 01:12:49]. But I have another question. I think it's interesting that you're looking at, how we can streamline resources to respond or for recovery purposes. But I have a question this may be even for Prem, if we're looking at how we're using remote access for recovery, as a way to maybe streamline some of those resources, does that increase our vulnerability?

Prem:

That's a great question, Catherine, [inaudible 01:13:32]. There is definitely a risk profile because of the remote access and there's a high level of sensory now. And the good news from our perspective is that we had built in tools and things like VPN, for example, right? So, put things in place there. The access is [inaudible 01:13:50] control monitor [inaudible 01:13:52]. And we run scans literally like every hour, there's a skyline in behind the scenes. So, who's accessing our system, how do we enable resources, etcetera. So there's definitely a vehicle funding there, but from a prospective audit would be, I think be a generally video out of college, right? We also have as a few hundred me in the past, I've mentioned about specifically on the distribution network side, things like we don't have a functioning internet DNS.

Prem:

That what that means is that only our people can access and then they have access to the application. So that VPN tunnel, right? So like kind of risk fix the whole thing. So that can already use the vulnerability there. Those are some great best practices we have put in place that, there are certain things that do the CLA assessment that I'm looking into right now. Things like backup and recovery coefficient, how do you do the recovery, etcetera. There are some improvements that we can put a place, that's what we're looking at now to strengthen even more than what we have. So, this year, the first six months of this year will be to really address those three critical things that give more than gaps. So it will be addressing that, but if you want to compare ourselves to what's happening with other companies, etcetera. I'll tell you, I think we are not only, we are trying to protect ourselves, but you're also educating our community like other municipalities who come to us for direction and lead. Right?

Prem:

So, those are some good things and I would say [inaudible 01:15:25] control. So I think in really [inaudible 01:15:30] good shape right now.

Catherine:

Thank you.

Kevin:

Thank you, Catherine. Any other questions Catherine, or anyone else on the committee? I have two just general questions and I'm not sure whether this would be for Larry... I don't need an answer right now, but is there anything that for business continuity planning going forward, you need support or further support from the five member authority? Is my first question. And the second question is, is it difficult or what's the, I guess what's the time involved with the 23 members of staff or the 30 members of staff involved in these exercises at both for the planning and for the exercise itself and for maybe an after

exercise review. And is it difficult to find that time and keep up with their other responsibilities? I guess it's a general question for the members of the management here. Thank you.

Larry:

Kevin, I'll take a shot at answering your questions and then maybe Amanda can jump in on it. But I think support from the five member authority would be helpful that we have these periodic reviews with you. I think it's good to get your perspective on some of the exercises that we've held and our thinking. So that continued support with regular updates would be, I think helpful obviously too, from a budget standpoint, when we come to the authority for our annual budget review, whether it's operating or capital to help us work through that and get those budgets approved so that we have the resources from that standpoint to conduct the tests in terms of staff time taken the exercises itself has any, there are anywhere between a couple of hours, two and a half hours. There's quite a bit of planning beforehand working with Kate, Amanda, and the departments that might be involved in that.

Larry:

So I would say that it probably takes maybe at least a day, day and a half spread out over time to conduct one of these tests and then probably another half a day or more to actually do the follow-up. So you're probably looking at a couple of days to do that. That can be difficult when we're in our busy season, like during the summer, when we have a lot going on in terms of projects and just general activity within the utility. So we try schedule those outside of the summer months, but I'll let Prem and Amanda maybe expand on that a little bit further.

Amanda:

[inaudible 01:18:22] I will mention too, is that when we're doing our planning phase, the full amount of the players, as you will, in the exercise, not included in that we have a very small subset. We work with the leadership team member that it would be involved in that area to make sure that we're not pulling critical staff away from things that are more important not to say that the exercises are not important, but that we want to make sure that our core business is taken care of before we start exercising our plans.

Amanda:

We really heavily rely on Kate and her expertise in helping to design these. And she does take up a large portion of the work off of RWA shoulders and helps us draft these exercises in a really well done way. And I do think that, we spend quite a bit of time on the after-action and that is where we tend to see some of the participation drop-off we get a lot of great participation in the event itself. So that would be an area where we probably could see some additional help there. And as always anybody on this committee is welcome to join us for our exercises to get an idea how they're run and it, once we get the Lake Gaillard functional exercise off, that may be a really great opportunity for you to come out and see one done at full steam.

Prem:

Yeah. I think those are main points. And just a very few couple of points I want to add on top of it, right?. So, regarding the pre-planning as Amanda, I think Kate mentioned about some training ICS training beyond mandated by AWB to house a number of training hours and the scales within our realm of our people. So it does take a little bit of planning and training hours there as well in terms of preparation, right? So that's one thing on the function exercise, as you all know, we talked about what if

really happens, right? So these table topics, these exercises are great, but when you think about functional exercise, things like the question about, hey what happens if the chemical levels have been altered, for example, based on the history and expedience we have with Florida Water Treatment Plan. Jim Hill, for example, went ahead and made those changes to put some of those variations and some of the exemptions to make sure that it doesn't go at a certain level versus we asked about what if you [inaudible 01:20:47] man somebody, right?

Prem:

If you had to do things manually. So the functional exercise that Amanda mentioned is going to be something of that sod to say, what happened to go to speech from that, automated and more to a manual, more so. These are important, right? Because these questions started coming up to us. We have to make sure that we exercise. These will be already well-planned. So I just want to add a little bit more cut out there to make sure that it does take time, but it's critical that we actually exercise these because you never know when you're going to get hit. Right? So, just being more prepared at all.

Kevin:

Okay. Thank you very much. I think, I've gone to one of the actual exercises [inaudible 01:21:29]. I believe it was at Lake Gaillard was years ago with Jim Flynn at the time it was a functional exercise and there was a mobilization and there was a remote work site. And it was very interesting, but I think the important key is, and I appreciate the efforts and encourage Larry and management, Amanda and Prem, and Kate to continue with these efforts because it's very difficult to operate and learn at the same time. And I think that this is indicative of, I think, a high level organization where you value this type of planning and you allow the staff and you dedicate the time and the resources to it to learn and plan while continuing to operate. So I do think it's very important. It's not the most exciting thing that the RWA does, but I think it is one of the most important activities. Thanks. Does anybody else have any other comments?

Catherine:

Kevin? I had one more thing and I actually echo everything that you said. I think that should, this is well, I'm kind of a nerd. So I think it is kind of interesting. I admit it, but I do think it's important to have actually thought about it, the possibility of something before it happens. And then at least you're not kind of inventing on the fly. And this is maybe not a good question, because this is obviously a plan for fiscal year 2020. But I'm just curious and maybe want to put on the table the importance of making sure that we're also thinking about the long-term effects of climate change on the business of the water authority and maybe, I'm new, so I don't know everything that's going on. There may actually be some thought process going into that as well. The probably already is. So I just want to put that on the table.

Amanda:

So, our upcoming exercise at North Cheshire Well field is actually taking a look at, from a climate change perspective. What would we do on the off chance that we were to lose a source of water? So obviously Cheshire has very limited water there. We're looking at inviting Meriden. Obviously we have the connection with Maritain looking to see if that is a potential that we would need if we lost a Well field and really taking a look at what happens at one of our major sources was to be unavailable to us. And it may not look at climate change specifically, but it still does address that lack, that loss of source water. So it, and again, I think that's to the upcoming climate, not only is it, when you're start looking at the

contamination events, that's also something really critical to look into, especially with P-phos and other regulations out there that are still looming.

Kate:

Yeah. And I would just add to that. Some emergencies that we're planning for are, impacted by climate change, like severe rainfalls and severe storms. And we are aware that climate change could be exacerbating those events. So to make sure that we are including that, including those kinds of exercises and planning is certainly important.

Kate:

If I just may have a moment to respond to one of Kevin's questions about what the board might be able to do to help support. There's been one action item that we've had for at least a decade that we haven't been able to address. And it's because, regional water doesn't operate within a vacuum. We need our partners. We need to collaborate with our partners, particularly during severe or extreme emergencies, as much as anything. And the state of Connecticut used to have, they have these emergency support function committees at the state level. One's for fire one's for police one's for public health. They're different numbers, emergency support function. Eight is for public health and medical there used to be one [inaudible 01:25:45] 12 that included public utilities and it hasn't been active. And if it were active and if regional water could be a part of that, it would benefit the whole state and all of the water utilities, not just regional water. I don't know if there's anything you can do on that, but I just wanted to let you know.

Kevin:

Okay. Thank you. That's for bringing that to my attention. I vaguely remember you might've mentioned that a few years ago. I don't know. Does any member on the committee, I guess we can, we can think about that and, and talk about it later, but I really appreciate you bringing that up.

Kevin:

Any other questions or comments? Okay. Thank you, Kate. Thank you very much, Amanda. Thank you, Prem. Thank you, as always. We're going to hear from Mr. Tracy, and one of our RPB members, favorite topics, invasive species control. Mr. Tracy, when you're ready. Thanks.

Josh Tracy:

Sorry. I was muted. Can everyone see my presentation? Okay. So for those of you who don't know, I see some new faces here on the invasive species management technician. And I'm going to give you guys just a little update on what's been happening over the course of the last fiscal year. So this is the current state of my invasive species map. Anything highlighted in yellow are invasive species populations that I documented in fiscal year 19 and 20. Anything highlighted in orange was discovered in fiscal year 21. And the small amount of light blue is what's been discovered so far in fiscal year 2022.

Kevin:

Excuse me, Josh. Yes. I'm not sure if it's in your intention, but I'm seeing your next slide. And in addition to the current slide, I don't know if there's a way to expand it to show.

Prem:

If you click on display settings. Yeah, I think right there [crosstalk 01:28:01].

Josh Tracy:

Thank you. Thank you for bringing that to my attention. So again, and this is the map that I use just to document where I'm finding invasive species and other members of my team, maybe locating these species. I'm going to go into numbers in a few slides to let you know, how many acres and that sort of thing is on this map. So this slide represents how many species have been found. So anything in yellow are the same invasive species I showed you in the previous map, but anything in purple are areas either I've done some sort of treatment on or another member has done treatment on, or I've hired a contractor to perform some sort of treatment.

Josh Tracy:

So this chart kind of sums up how much work has been done since fiscal year 19. So in, in fiscal year 19, I documented 1,175 acres and treated 110 in fiscal year 2020. I was able to document 1,006 while treating 78. And this most recent fiscal year that went by 385 acres were documented and 192 were treated. So you can kind of see last year, my focus was mainly on treating populations that I'd already discovered. That's why more acres are treated in the previous years, but it's also kind of indicative of the fact that the longer that I am out there trying to identify where these species are, presumably the less area I'll be able to find them in because I'll be, I'll have covered more ground and they'll hopefully be less invasive species to find. So as the years go on that number should hopefully decrease as I'm covering more ground this year. So far, hasn't been that long. I've only found 38 acres of invasives and treated three, but that's guaranteed to increase over the next fiscal year.

Josh Tracy:

So one of the big things that happened this year was I partnered up with URI and Yukon and we were able to have a release of a biological control Lake Gaillard for a plant called swallow-wort. We have two species pale swallow-wort and black wallow-wort. And this is a plant that came over from Russia and China. It's in the milkweed family, and it's incredibly difficult to kill. Even herbicides are not really effective on it. The problem with it is that it displaces our native milkweeds, which hurts the Monarch caterpillar populations. So this moth that was discovered in the Ukraine is one that they've tested for the last 10 years and have found that it does not eat any of our native species, but will only eat the swallow-wort. So the idea is that we put up this small mesh cage with 40 moths, 20 males and 20 females, and they mate, and produce eggs inside this cage.

Josh Tracy:

And then once the cage is removed, that population will hopefully start thriving in that area and slowly move across the property to take on the full infestation so that you can see, this is what one of the Caterpillar's looked like roughly three weeks after the moths were let out into the cage. And the image on the right is how the plant looks after it's been almost completely defoliated by the caterpillar. So we're hoping that within the next decade or so, we could have this population managed just by this caterpillar. And it's no effort on our part to have this caterpillar doing the work for us. So that's been super exciting. There's not many biological controls that have been approved for release in the United States. And this is one of them, there's some on the horizon for other species, but they're still working through that process of putting them up against our native species.

Josh Tracy:

I've also been partnering with the Connecticut agricultural experiment station. They wanted some areas to trap for potentially invasive insects. The first one is a Velvet Longhorned beetle, and this is an insect that could affect our maple trees and our Birch trees. If it were to enter Connecticut, the second is an Ambrosia beetle, which by its name affects Oaks. And the same with the Oak processionary moth. The Oak processionary moth would have a similar effect to Gypsy moths and that they were defaultly Oak trees and caused a lot of issues for us. None of these insects have been discovered in Connecticut yet. So this is just a preliminary thing to try to see if we could possibly catch them on our property. So all these traps are located at Lake [inaudible 01:33:03] due to its proximity to.

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Josh Tracy:

Traps are located at Lake Saltonstall due to its proximity to I-95, and the train, and the potential for those two avenues to introduce these invasive species.

Josh Tracy:

I've also been working with the sustainability committee here at the RWA to work on a spot in Hamden. This is Davis Street, which is on Lake Whitney. There's a problem with Japanese knotweed growing there. You can see from the first image, all the knotweed that's growing into the fence. You can't really even tell that there's a fence there until you look at the second image after it's been cleared. Because of that fence and that guardrail it's nearly impossible for any of our machinery to mow that area. The closest they could get is putting a boom mower over that area, but it's kind of unsafe with the power lines above and the height of the fence. So typically that area hasn't been attended to for a long time, and because that Japanese Knotweed grows through the fence, it produces a hazard for any bystander walking by because they tend to walk in the street and not on the sidewalk.

Josh Tracy:

So it's been a big effort for us to go out. This year I think we've been out there two or three times. We've been trying to remove the rhizomes as well as cutting down the herbaceous tops and letting it decompose onsite. For those of you who don't know, Japanese Knotweed is invasive incredibly because it can grow from its stock. It's rhizomous, but also any piece of the plant that's left on soil could produce roots and grow a new plant. So it's not encouraged to move knotweed to any place that you wouldn't want knotweed to grow again. So we're keeping all knotweed we cut onsite.

Josh Tracy:

Another thing I've been working on this past winter was cutting Bittersweet Vines around Lake Chamberlain, because one of our goals for fiscal year 21 was to introduce two new recreation opportunities. One of them was to create fishing trails at Lake Chamberlain. So removing all of this Bittersweet not only goes towards completing that goal, which was completed, but it also reduces the chance of that Bittersweet spreading to other portions of the property. Bittersweet is a berry producing plant, in which birds can spread the berries. So anytime you can get rid of mature Bittersweet populations, you remove the opportunity for birds to move those seeds from location to location. And around Lake Chamberlain was heavily infested with the Bittersweet. So I was able to clear roughly 60 acres of that, trudging through the deep snow all winter long.

Josh Tracy:

Another project that we've been working on is the third year of our Japanese Stiltgrass plots. This is located up in Prospect. We've been trying roughly 10 or 12 different treatment methods ranging from mechanical, to herbicide, to... And this picture is a before and after of a plot that I burned using a propane torch. We're trying to see what the effect is. Not only in the year of the treatment, but in coming back and performing these treatments over and over at the same exact plot, we can get an idea of how many native species return in the place of the Stiltgrass. Or even if we have a few control plots where if left untreated, can our native species out-compete the Stiltgrass? And we realistically don't have to worry about it. Stiltgrass hasn't been around in this area for that long so it's difficult to tell what the longterm problem may pose. So these plots are going to be really helpful for that.

Josh Tracy:

So this year we performed the second harvest of Water Chestnut at Furnace Pond. For those of you who are new to this project, Furnace Pond is located just south of Lake Saltonstall between I-95 and Route 1. This Water Chestnut infestation is roughly nine acres on Furnace Pond. And it poses a huge threat to Lake Saltonstall if this infestation were to move dramatically into Lake Saltonstall. These plants could clog up our intake pretty bad. And it's very difficult to get rid of on such a large scale, if we were to leave Furnace Pond.

Josh Tracy:

This year, we were fortunate enough that the company we hired brought a larger boat than last year. This boat was able to harvest two and a half times the amount of material as the boat they gave us last year. Significantly larger than that. It almost didn't fit in our boat launch. So we might have to expand our boat launch a little bit for next season. But they were able to eventually get it into the water.

Josh Tracy:

I do not have a map for you of the completed harvest for this year. However, this is more important of a comparison because it shows you what the infestation looked like prior to the harvest last year and what the infestation looked like prior to the harvest this year. And these were drone flights that were performed prior to each harvest. And you can see on the image on the right that there's not significantly less Water Chestnut, but you can see open water where there is not open water in the first image.

Josh Tracy:

And that's ultimately what we're looking for. Is the slow regression of this plant being able to grow. Every year that we remove these plants, we remove a seed source, not only from the plants that initially grew, and we're about to drop seed in July, but the next batch of plants to start growing as we speak will not have enough time to create viable seed and we'll have removed two seasons worth of seed from the pond. So I'm hoping over the next couple of years, we'll be able to show you maps that have dramatically less Water Chestnut prior to the harvest beginning. And with that, I will take any questions.

Ted:

Josh, before we take questions, could you just go back to the previous slide? On the slide on the right, you guys had a successful harvest this year is my understanding because the high water. Of all that material there, how much do you think it got this year?

Josh Tracy:

Yeah, that's a good question. So based on speaking to the operator this year and the amount of spoils that was collected, it looks like more Water Chestnut this year was collected than last year. The operator said that if we had collected four acres last year, he's estimating that we were able to collect almost six acres of the infestation of the total eight to nine. It's difficult to tell from this image, but as you get closer to the north and to the east, it gets more shallow, which is one reason why this plant can take hold in this pond.

Josh Tracy:

So not only do you need a boat that's capable of harvesting as much Chestnut as possible, but it needs to have a low enough draft to be able to enter those areas that are shallow. So there will become a stage where their mechanical boat will not be of any use to us because the only Water Chestnut growing will be in the shallow areas. And at that point, we'll have to investigate ways to hand pull the Water Chestnut. But hopefully by then there won't be as much. And it won't be as big of a job.

Ted:

Nice.

Josh Tracy:

Yep.

Jim:

Josh, this is Jim Courchaine. How did the invasive species move around?

Josh Tracy:

Specifically water Chestnut?

Jim:

No. The other ones you were talking about. The other plants.

Josh Tracy:

So it varies dramatically from species to species. So like I had mentioned about the Bittersweet, that's generally just moved around by birds, whereas Japanese Knotweed you'll find being moved around and in construction fill, which is where I think this infestation on Davis Street came from. This area had, I won't say recently been worked on, but if you figure within the last decade, there has been some fill put in that area. A lot of fill nowadays could potentially have Japanese Knotweed in it. And even if it's just cut up pieces of the rhizome, once that disturbed area has the knotweed in it, it'll prolifically grow and establish itself. Knotweed can have a rhizome, almost nine meters into the ground. So it's nearly impossible to dig it out completely. The process we're trying to use is just burning it out where we're letting the plant grow and we cut back and let it grow and cut it back just to try to reduce any of the nutrients it has and the carbohydrates it has in its root system.

Josh Tracy:

And studies have shown that mowing it for five years straight, three times a year, will substantially reduce the population and potentially burn it out completely. But other means for spreading, we have Ailanthus, which is a Tree-of-Heaven on our property. That's wind dispersed. And I'm starting to come

up with a plan now to put different species into different categories based on how easily they spread and the methods they spread, which will give me a better idea of what species I should be going after first over other species.

Josh Tracy:

Another thing to look into is the seed viability over time. Some plants only have a seed viability of two years, where if you can manage the infestation for two years, you won't have any plants growing back after that. But we have plants like Multiflora Rose that have a seed bank that last 25 years. So realistically you'd have to mow an area for 25 years straight before you could get rid of all of that seed source. So those are the kinds of things I have to think about when I'm deciding what infestations to treat and when to treat them.

Jim:

Another question though. With all the ATVs that are on our property, in there, in and out of grassy areas and planted areas, can they move invasive species around as well?

Josh Tracy:

Yeah. Absolutely. But I would say that they have the same amount of opportunity to move them as our own RWA employees do. Typically, the species that I would think of when I think of vehicles transporting invasive species is Japanese Stiltgrass. The seeds are incredibly small and they could be transferred on the bottom of your boots, in the treads of your tires. And so an ATV driving through areas with Stiltgrass could move populations of Stiltgrass further into a pristine forest. For sure. Considering our RWA vehicles can only use RWA roads. That tends to be the extent of the populations. But we do find Stiltgrass in areas where no vehicles that are able to access. And that could potentially be ATV use.

Jim:

Thanks Josh.

Josh Tracy:

Sure.

Kevin:

Any other questions?

Anthony:

Kevin?

Kevin:

Yes?

Anthony:

Sorry.

David:

Tony, you go first. Sorry.

Anthony:

I just wanted to say that ever since Mark Levine first brought this whole issue of invasive species to our attention, four or five years ago, the program that Josh has sort of instituted and put into place is absolutely wonderful. To see us making this kind of headway on something apparently as unimportant as invasive species. I think it's just stunning. Thank you Josh. I appreciate the work.

Josh Tracy:

Thanks Tony. I appreciate it.

Mark:

I just wanted to say here, here. [inaudible 01:44:39] Josh, you're making great progress.

Josh Tracy:

Thank you.

Kevin:

Dave.

David:

Yeah, I agree. This has been great progress over the years of being on the RPB or the authority. I certainly see this rise to the forefront of importance and that's great. Mark, we have to thank for that. Josh, obviously you and your team have done a great job. I have a couple of global questions with regards to this. We have talked years ago, or I thought I heard some discussion about maybe renting out or allowing farmers to use some of our land because that'll cause it to be mowed and therefore less chance to be invasive species. How are we progressing on that plan to allow some of our land to be really taken by others, to take care of?

Josh Tracy:

Yeah. So far it's been going good. John Triana kind of spearheads that sort of thing. He advertises for farmers to come out and use our property. We don't have that many fields on the property. However, that being said, they do need to be mowed by our crews every year. So having people renting these fields not only saves the company a little bit of money and time. But so currently, I think last year I spoke to a couple that was leasing our land for Christmas Trees. And they have Christmas Trees planted and they're maintaining the field for us. As long as that field is maintained, theoretically, the species from that field couldn't be spread. And we also have a guy who's going to be hanging fields for us all throughout Bethany. And he's just begun the mowing process for that. So realistically, if you think about the product he's trying to get out of it, he wants just grass.

David:

Mm-hmm (affirmative).

Josh Tracy:

Which means no woody invasives, no anything that could be spread. Which is within our wheelhouse of.

David:

Yeah.

Josh Tracy:

That's what we want.

David:

Yeah.

Josh Tracy:

So in that regard, it seems like the program is working pretty well. We have lots of fields that are maintained by these farmers, and we're not seeing any invasives growing in those fields because of it.

David:

Good. And my second question is sort of a concern because I don't know, is it possible that we know our 28,000 acres well enough that there isn't a big area of Japanese knotweed or a large area of Water Chestnuts that we don't know about? Do we know our land well enough to know that we know what's there?

Josh Tracy:

Yeah. That's a great question. In terms of aquatic invasives, we have Will Hanley, that's out on our reservoirs multiple times a month. So we have it pretty well-documented what kind of aquatic invasives we have. In terms of the property, we have enough staff that visits enough places that know how to recognize a lot of these invasives. Whether it be Alex Hammond Dolard, as a forester, or John Triana being out. We regularly mark boundaries. So we have a good idea of what's growing on the outskirts of our properties pretty well currently. So I would say that there really hasn't been many areas that haven't been looked at, at some point, by me or previous foresters.

Josh Tracy:

So in terms of new species, there's always a potential for something to pop up. Some kind of vines, some sort of a new on the horizon species in areas that we don't visit very often. And there's also parcels that we have that are two acre parcels. Four acre parcels that are not ones that we would visit, unless we were marking the boundary. Those could potentially have some invasive on it that we're not privy to at the moment. But in the current plan, we will be marketing those boundaries for those properties over the course of the next decade. And so one person from our staff will visit those properties at some point. So if we don't know now, we should know soon what we have.

David:

That's a very comforting answer. Thank you.

Josh Tracy:

You're welcome.

Larry:

David, I would like to compliment Josh. Not only on the work that he has been doing as he displayed here today. But also he has put together, at our request, a five-year plan to increase the budget for the work to remove invasive species, so that it increases every other year, beginning next year. So that we can use more outside contractors to work on the land, in addition to the work that he's doing. But also to add a couple of more staff members to it. Also Jim Courchaine and I have had some discussions about whether or not field ops can spare a utility tech that can work with Josh and the crew as well. So he and I had some conversations about that and he's going through an evaluation and we'll continue to discuss that as well. So good job Josh. And thank you for your presentation.

Josh Tracy:

Thank you. That's great news, Larry.

Mark:

All I've got to say is here, here Larry. About time.

Larry:

Mark. We appreciate your support.

Kevin:

Great job, Josh. Larry, thank you for comments. And that would answer one of my questions, which was what could we do to support? And I think that that budget item answers that. Josh, one more thing. I really liked the systematic approach. I liked seeing what you've mapped and identified and what you've treated. And I also liked the idea of your further gathering analysis of what types of plants are where, and how they're spread. So I look forward to any more information you can bring us in the future. Thanks.

Josh Tracy:

All right. Thank you, Kevin. Thank you everyone.

Kevin:

Okay, thanks.

David:

Thank you.

Kevin:

And last, and definitely not least. We have Tom Barger, update on the Lead and Copper Rule, Tom.

Tom:

Yeah. Thank you Kevin very much. I'm going to my screen. Hopefully this goes smoothly.

David:

Feedback there.

Tom:

Everybody see that okay?

Mark:

Yep. Great.

David:

Yes.

Tom:

All right. Terrific. I want to thank the committee and the leadership team for giving me the opportunity to provide this update on the lead and copper rule. For those that don't know me, my name is Tom Barger. I'm the manager of water quality. So as we move through this particular talk a couple of things I just want to kind of present right from the very beginning. For those of you that been around for a while, you'll recognize the Lead and Copper Rule is something that's been around with us. It was first promulgated in 1991. And I'm very happy to report that the authority has been in full compliance with all aspects of the Lead and Copper Rule, since the very beginning. So we're on 30 years of full compliance. Not an easy thing to do necessarily in today's kind of regulatory environment, but we were successful here for sure.

Tom:

Lead and Copper Rule is undergoing a re visional process. Really initiated just before flint in 2013. The revisions were pulled back in light of that particular discovery. A lot of additional information as you can appreciate, has been made available. And now the federal government is coming out with some revisions first put forward by the outgoing Trump administration in December of 2020. Not unusual for an incoming administration, especially one from another party, to kind of put a hold or moratorium on a lot of these regulatory initiatives. This was no exception. So the Biden administration's EPA is currently reviewing the Lead and Copper Rule. And we do anticipate that further revisions will result.

Tom:

So in kind of getting forward and moving forward a little bit more on this, some of those revisions that we've seen, and you may recall back in 2019, when we last visited this particular topic. A lead service line was a line made out of lead. It was pretty straightforward. What we have seen in the interim, is an expansion of the definition. And we'll go over that a little bit further. What we're doing to position ourselves appropriately for continued compliance is we've signed into a contract with CDM Smith, a professional engineering consulting firm with a fair amount of experience in this particular role of the Lead and Copper Rule. Lead service line replacements in particular. Still working with the cities of Trenton and Newark in New Jersey. Very successfully, I may add. Newark right now, is the poster child, if you will, for how to do this correctly. So we're certainly taking a lot of leads there and we're very, very happy to have CDM Smith guiding us.

Tom:

We do have this contract. It is basically task based. We do have three tasks itemized currently. You can see them here. The first is a service line inventory. While we have initiated that process, we're starting to get some information in on that. We do anticipate this is going to take some time to further develop.

A lot of information going back a good 120, 125 years worth of service line history. From that inventory, we hope to then develop a service line replacement plan. That plan is going to be very important because it's going to guide us in the replacement of service lines dependent upon how they're identified and where they're identified. There's still a lot of outstanding decisions to be made at both the federal and state levels to how that is to be done. And some of the elements of that. So a lot remains to be seen and decided, but we have to kind of get busy and get that initiated.

Tom:

And the third task in this current contract, would be specific to corrosion control treatment. The existing corrosion control that we've been practicing since 1978 is kind of on the table for further discussion. It has served us well. Unfortunately it may be retracted. So we have to look at other technologies and other options that we may have made available to us as a result of these revisions. But more to come on that. Certainly a lot of changes. If I can describe the revisions to the Lead and Copper Rule in a word, that word would be reset. These revisions make the Lead and Copper Rule almost unrecognizable to those of us that are familiar with it. In every way, shape, or form, from a variety of different perspectives, there's going to be significant changes to sampling. Where you sample, when you sample, highest sample. All are going to change.

Tom:

For the first time, we're going to have the requirement to the distribution of filters specific for the removal of particulate lead. We've never distributed filters for anything before. So this is going to be something very new. It's going to have a very broad brush type of application. There's very little that we can do in our water distribution system going forward, that's not going to require filters to be distributed to those who have lead components. Six months is the range of implementation for filters that are installed, with periodic change out of those filter elements. And of course, some additional sampling to support all of that. All aspects of the Lead and Copper Rule do have a lot of requirements in keeping our regulators advised. So that's something that, while we currently do, this particular set of revisions is kind of like an octopus. It just keeps coming at you with another arm. So there's going to be a lot to keep track of.

Tom:

While some of the information that our regulator at DPH is requesting, and we've completed some of this thus far is a materials inventory. So essentially what we have to do is provide them with an inventory. And the inventory is just not made to curb elements of the service line that the water authority owns or has responsibilities for. But it's also the piece that connects the curved valve to the house, which is under private ownership. Which we have really never had responsibilities for before. So part of the inventory is going to be completely new to us. So we have the responsibility to provide all that information to DPH. We provided them with an initial offering. And in November of 2019, really the majority of that information was utility side ownership. Mained curb information, which is, as you can appreciate, fairly complete. We know what we're doing. We know what we're putting in the ground. We keep relatively good notes. Going forward under the revisions. This is going to be an annual update requirement.

Tom:

What we're looking at so far. And again, I want to underscore that this is very preliminary information that's coming out of CDM as they're building this inventory, is around the issue of unknowns, right? So

we may not know every piece of service line that we have on the utility side. And certainly we don't have a lot of private side information, as you can appreciate, it's private property. We don't have a lot of information as to what folks put under the ground. When, say the turn of the 20th century, the homeowner of the house made an arrangement with a plumber of his choice. They ran a service line into the house and we don't necessarily know what the composition of that service line was. So a lot of information to gather.

Tom:

You'll see some figures there, regarding unknowns. We did meet two hours yesterday with CDM. And this particular set of numbers was discussed. CDM was able to provide us with a little more clarification. So when you're looking at a 12,500 utility side unknowns and approximately 30,000 private side unknowns. CDM did make a clarification that there's a lot of overlap in these numbers. So the total number of system unknowns is in the 30,500 range. So what you'll see here as many of the utility side unknowns continue as unknowns on the private side. Different segments of the same pipe, in other words. So thankfully that's not 42,500 unknowns, right? So that's the good news there. Still a lot of unknowns. Still a lot of work to do. And you have to the amount of time that it's going to take us to get into 30,000 private homes to try to figure out what their service lines are comprised of. But that's another conversation for another day.

Tom:

As I had mentioned earlier, the definition of a lead service line is evolving. It's continuing to evolve. Again two years ago when we talked, the lead line was a lead line. Fairly straightforward. Since then, the definition has been expanded to include galvanized iron. Galvanized iron was a common plumbing conveyance around the turn of the 20th century and into the 1920s and '30s. The italicized language here is really of note. So a galvanized line is only going to be considered a lead service line if it's downstream of an existing lead service line.

Tom:

Currently, or at any time in the past, you'll recall through past conversations, the water authority at the time. Then you have a water company in the 1970s. Made a concerted effort to remove main to curb lead lines, right? Very proactive. Way out in front of this issue. Thought we were doing a good thing. And we did do a good thing by getting all that lead out of the ground. But as it turns out, the galvanized iron, if that was left behind, after the lead services were removed. That now by definition, would be considered a lead line by virtue of the fact there had been lead in front of it or upstream of it at some point in the past. So we have to be able to account for a lot of that to work a work. Too early to tell how many of those there are at this point in time. The inventory is still too immature.

Tom:

One of the things that we're kind of keeping [inaudible 02:01:33]. That we're significantly keeping an eye on, is in the realm of what are referred to as gooseneck connectors. Those were those relatively short two to three foot length of points of connection between water mains and the balance of service lines that were installed in our utility from the late 1890s through 1965. Primary purpose of which as you recall, was really to control leak off of service link points of connection to the mains. And why we're watching this is it's on the table for consideration. So what we're looking at is goose necks perhaps may be considered landlines in and of themselves moving forward. If the federal government decides that's the way they want to go.

Tom:

Some sub-questions to that are, will this include all goosenecks? So we'll include goosenecks only associated with galvanized lines. Maybe those are the only goosenecks that are going to count as we move forward. Or the decision may be made that goosenecks will be counted regardless of what they're connected to. And that makes a big deal. If you're looking at just goosenecks plus galvanized, the approximate number, according to the inventory thus far is about 4,500. Not a tremendously high number. It's a workable number. If you want to look at it that way. If you're going to look at goosenecks plus everything else, and everything else is brass lines and copper lines, you got to add another 43,000 to that number. So that gets us up into some real numbers as they say, right?

Tom:

So something that we'd have to keep a very close eye on. With respect to what the federal government decides to do. And as a reminder, the state of Connecticut currently considers goosenecks lead lines. So we have to watch to see if Connecticut is going to adjust its definition, moving forward. Certainly of considerable interest to us. We anticipate an EPA ruling by the end of September. This is both according to AWWA contacts that I have and a CDM Smith, as recently as yesterday's conversation. So more to come.

Tom:

Some anticipated regulatory changes. Again, a lot of things still out on the table. A lot of decisions yet to be made. I made...

PART 4 OF 6 ENDS [02:04:04]

Tom:

The thing's still out on the table. A lot of decisions yet to be made. I mentioned earlier, some potential changes to the current corrosion control and treatment. We're hopeful that those corrosion control changes won't be overly significant and won't cost a lot of money with respect to infrastructure changes. We'll be able to use the equipment we currently have and just change product, go from A to B; shouldn't be all that difficult. A little bit more in the way of change is a return to a monitoring schedule twice a year. We're currently monitoring once every third year, in accordance with the rule. The rule, as I said earlier, is a reset. It'll push us back to monitoring every six months. We do anticipate with that monitoring schedule change, sampling pools will change again, frequency of sampling, and how we collect samples is all going to change; completely new protocols.

Tom:

One of the things that the revisions also include is a responsibility for lead testing in all primary and secondary schools and daycares. We'd be able to break down that total number and do 20% per year or over five years. After that five-year mark, the offer to continue testing remains on the table and that invitation has to be extended. So we're going to have a lot of lead testing. I think that's a good thing overall. Obviously, we're all about public health. I think it's important that we know what's going on with the young people. Those most at risk from lead, but again, it's going to be an added responsibility to RWA staff. What's going to be brand new when these revisions, as you referred to as a "trigger level," essentially, it's the early warning flag. It's the red flag that's going to go up. If we're starting to approach concentrations, that'll trip over the action level, which is the line in the sand over which you can cross type, I think. So the trigger level is new. We're familiar with it.

Tom:

Basically, we'll see how that goes. With everything else changing, it's very difficult to determine whether we're going to be on the right side of the trigger level or the other side. Currently the RWA is taking some proactive steps to position us ourselves appropriately. I think a lot of this is going to have to do with the importance of the RWA in partnership with others. We're a very strong utility. We're very forward-leaning as a utility and those are all good things. This particular lead and copper rule with its multiple components, parts initiatives. Our success is really going to be highly dependent upon the association that we can make with others and the assistance that others will lend us. So we're going to have to really lean heavily on our municipal partners for assistance.

Tom:

That could be financial assistance. It could be access to private property assistance. It's going to be,, certainly the health agencies that we have good relationships with. We may have to reach out to some environmental folks. I know very active partner in Trenton and Newark was Clean Water Action. I think we have to recognize that not everybody is going to take the water authority at its word. Maybe we have credibility problems with certain folks that don't like governmental agencies. As an example, what Newark needed to do was basically repackage their message and have someone else distribute that message for them, for it to reach the consumers and the consumer ears to be open and listening.

Tom:

Other communities have utilized very successfully faith-based organizations, especially in the inner cities that has served them well. Also as Jim crocheting is a big fan. The league of women voters is a very strong organization in getting things done; very active and proactive in, especially, green causes. So we have the expectation that we're going to be developing additional partners as we move forward, again, to improve our success in this particular initiative. I know Rochelle has been busy and identifying and applying for funding assistance that will continue. You can't turn on the news these days without talking about or hearing about the infrastructure bills and the monies that are being made available. One of the big questions with that is that's fantastic that a lot of these big numbers are being discussed, but how is that funding going to make it to New Haven?

Tom:

How is that money going to get into the hands of the Regional Water Authority? A lot of these funding mechanisms may work through the SRF program, rank the state revolving funds. One question that comes to mind for me, immediately, is the state revolving fund historically have been loans. That's a loan program. We certainly hope that the money's made available through the federal government or in the form of grants. So the SRF mechanism going to be able to accommodate grant money. Of course, once it gets in the hands of the state government, the state is going to have a lot of say as to how that money is then distributed. So a lot of that has yet to be decided. I know DPH in conversations we've had with them. They're setting a fairly high bar. If you're a utility, that's looking for money, they're setting a fairly high bar as to what you have to do to get there.

Tom:

So that remains further conversations remained to be had. We have to give consideration to our pipe safe protection program, given the fact, that lead service line definitions are changing. How does that impact potentially existing contracts? How does that potentially impact future contracts? Again, that's going to have a direct impact as to monies non-core revenues that pipe safe does bring into the

organization to offset the rating crisis. Of course, there's going to be in front of all of this type of field type of activity. We have to do a very good job of cost customer messaging and the provision of public information, public education. We can't just spring all of these changes on folks. We have to have a lot of conversations and make sure people are educated as to why this is getting done; how it's getting done.

Tom:

We want to do it the right way. We're going to need input from others as to how to best do that. There's going to be folks out there that have more experience in this than we do. We should be utilizing their experience and partnership. Some actions that we're taking a side-by-side with CDM. Again, once we have some of this inventory data developed, it's all well and good to have all of the information down there, all of the lines of data filled out, but then we're going to need to validate the accuracy of that data. A lot of this information is 80, 90 or a 100, or a 100 plus years old. We got to validate the accuracy of that data. That's going to be a big step going forward. That's going to be a lot of field activities, potholing, etc.

Tom:

It's going to be getting into a certain number of private homes to be able to do some review to get a better idea. Gee is the data that we have, is it accurate? Will the state allow us to do a certain percentage of homes and then utilize that data to fill out the balance going forward? Again, questions that need to be answered. We're going to be certainly focusing on those known service types. One thing I want to mention, when we're doing this inventory, turn this over to the state of Connecticut; anything that's deemed as alone in the eyes of the state is going to be a lead service line, until we can prove otherwise. So that's going to be certainly a number we're going to want to reduce. We're not going to want 30,000 unknowns to appear in our inventory.

Tom:

We need to determine what those unknowns are? That's going to take a considerable amount of effort. We're going to be, as far as aforementioned, development of a service line replacement plan. The initial plan is due in 2025 at the compliance point, but again, the plan is going to be highly dependent upon what the inventory looks like. This inventory is probably, it's the first item of importance in this particular revision. It's the one that's going to carry the weight because there's a lot of other aspects of these revisions that hang off of the accuracy, of that particular document. So we're going to want to do a pretty good job of getting that correct. One thing our purchasing department is looking at already is going out and getting some of the components that we anticipate will be in short order, such as service lines fittings and those lead filters. Every water utility in the nation is going to have to abide by this regulation.

Tom:

So we anticipate there's going to be a Russia on the store for certain elements and components. So we want to be able to position ourselves appropriately. We want to be at the front of that line, not the back of that line. It's going to be very embarrassing to go to your regulator and say, "I can't comply because I didn't think ahead and buy what I need." Near future steps, again, partnering with agencies, I can't underscore that strongly enough. To simply put, we're not going to succeed without the help of others. It's why we're a very good organization. We're going to need help on a variety of things here, because

there's going to be other folks that are going to be in a position to help us. We're going to need to prioritize where our work is. We have a lot of considerations around this.

Tom:

Do we do work where the kids live? Do we do work where the schools in the daycares are? We have environmental justice areas that we have to make sure that are being taken into consideration. There's a variety of different criteria, and there's a couple of right ways to do this. There's probably a lot of wrong ways in doing this. We want to make sure that we're selecting appropriately. We're going to begin implementation of regulatory requirements now.

Tom:

Although the compliance states aren't until 2025, these few years that lie in between are an opportunity for us to play in the sandbox, if you will. We can get used to what a lot of these initiatives are going to require robots. We don't want to wait to the compliance date and make that, "We're going to take a shot at that point and hope for the best." That's not going to work out well. So if we can take these two or three, four years to smooth out some of the wrinkles and get ourselves in a position where come compliance, this becomes second nature for us, then we'll be much better ahead. We'll be looking better, not only to ourselves, but to our consumers, as well as a utility that's got its act together. So, that's already beginning.

Kevin:

Thanks Tom.

Tom:

You're very welcome. I'll entertain any questions. I imagine there may be a couple.

Kevin:

Well, I have one for either you or maybe Larry. I don't know if we can answer it right now, but what's the worst case scenario as far as estimated costs, is the first? Secondly, when you say "Service components," does that include inside people's houses or is it just up to the outside of the house?

Tom:

As far as the discussion, in the way they've taken it so far, Kevin, the service line components are main to curb, which is under the responsibility of the utility and then curb the house. The house is usually defined the end point. There is usually defined as the meter. So they have not talked about internal plumbing up to this point in time.

Larry:

Kevin, in terms of worst case, we really don't have the data yet to really make an accurate assessment of that. It could be anywhere between 50 to 75, a 100, a 100 million dollars, because each one of these services could cost us \$5,000, three to \$5,000 to change out, depending on how many of them turn out to be lead. It could be a very large number. So we still need to do a lot more work to refine that worst case dollar about, but we've looked at that internally and said, "Gee, it could be that much, but we still have a lot more work to do." One of the things that we're going to have to look at DuMor had a very successful lead service line change out program, but they had dedicated construction crews of their own

staff, that worked on that all day long. They'd change out multiple service lines in a day. So we'll need to look at perhaps expanding our construction staff, as well as using more contractors, depending on the size of the problem and how soon the regulatory requirements dictate that we make that change.

Larry:

That'll also put additional strain on our water quality testing laboratory between the work that they're doing for our commercial business and servicing the RWA requirements, they're working at full capacity. So we'll have to evaluate what their ability to absorb this additional testing may be. We may have to make some accommodations there as well.

Kevin:

Thank you.

Jim:

Hey Tom, it's Jim. When you talk about the galvanized service downstream than the lead services is going to be included, can you describe what that means, the downstream from lead service?

Tom:

Sure, Jim. When we're talking about service lines, basically, there's two components to a service line. There's the main to curb piece that then connects into a curve valve. There's the piece that runs from the curb valve say to the foundation of the house, where the meter would be located. So what they're saying here about galvanized lines is, so let's say for instance, the year is 1920 and your service line was just put in. You would have, let's say in my example, you have a piece of lead line that would be installed between the water main and that curb valve. The private plumber would come in and it connects a piece of galvanized from the curve valve to the house. In that scenario, the galvanized line is downstream of a lead service line. So, therefore, that would under today's definition, the galvanized piece that a house piece would be considered to be a lead line.

Tom:

The reason for that is the lead and the galvanized, there's a chemistry that happens between them, where there's actually a transference of lead from the lead section of the line to the galvanized section of the line, forming a scale. So you can have almost as much lead in the galvanized lining as you ever had in the lead that preceded it, or is that upstream at it. So I think that's why galvanized has taken has been included in the definition of a lead line simply because of the chemistry. That's been discovered in Flint and Pittsburgh, Philadelphia, and other cities that have gone through this. Jim, does that answer your question where you know why that is?

Jim:

It does. Thanks Tom.

Kevin:

Any other questions from the authority?

David:

Kevin, I've got more of a conflict. I think we all recognize the gravity of the situation. The fact that this is going to be significantly important to us in terms of public health, but also, in terms of, our financial picture here. So, we certainly have to hope that there continues to be some positive movement towards some reimbursements, possibly, with the state and the federal government towards some of this. We really have to keep this in the back of our minds that it's an overarching issue that is very important and that we are going to have to keep on top of.

Tom:

Yeah, no, I agree with Don. Thank you for those comments, David. We're going to be put in a position as a utility that we're going to have some decisions to make. I think some of those decisions are going to be hard ones, but it's something that we're going to have to face this. We're going to have a different variety of perspectives that we're going to have to look at this from. Some different lenses that we're going to have to apply. So, collectively, we'll be able to do it. We just have to go at this programmatically. We have to go at this with our eyes and ears wide open.

Catherine:

I just want to say, I appreciate the proactive approach that you are taking to this. I know that there's still a lot of unknowns, but you're looking at the various possibilities and really taking a very proactive approach and I appreciate that.

Tom:

You're welcome.

Jeanine:

Tom, this is Jeanine. Can I just say from a non-operations engineering person over the last three years, having heard lead and copper rule a million times, I really appreciate the robust explanation that all came together for me after that. I appreciate it, thank you.

Tom:

You're welcome, Jeanine. This is a complicated topic and I'm not necessarily always good at explaining it, but thank you.

Jeanine:

You did a great job.

Kevin:

I think we have the right person there for the job, Tom, to address these. I echo the other comments from Catherine and Jeanine and everyone else really appreciate it. Larry, do you think this is appropriate or Dave, do you think this is appropriate to start educating the RPB a little bit more detail with this coming in the future? What's the plan for that?

Mark:

Excuse me, exactly what I was going to say. I think it should be given in your report today. Bring up something and maybe we should get a fuller report out of [inaudible 02:23:13].

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Kevin:

Yeah, I agree. Larry, I didn't mean to cut you off.

Larry:

That's okay. Kevin asked the right question and I responded the way, certainly, Mark did. I think you probably were too, that we need to get this probably first to the Finance Committee as an initial briefing and then move to the Consumer Affairs Committee. Maybe have a Joint Meeting of finance and consumer affairs so that they can start to get a feel for this particular issue. I think this presentation, Tom, did such a great job explaining the issue in clear terms and the ramifications of it. I think taking this presentation and perhaps having a Joint Committee Meeting would be worthwhile.

Mark:

Sounds good to me. I'm only a bystander here, but I've heard presentations on this before, but this presentation was the best thing for her and it really brings it out forward. Thank you very much for giving it.

Tom:

You're welcome.

Kevin:

Thank you. Thank you again, Tom and Mark. Thanks for your comments and thank you, Larry. Anything else? With that, Mr. Chairman, would you like motion to come out with this committee?

David:

Move to adjourn your committee and then we'll take a 12, 11 minute recess and then we'll reconvene and go right to the consent calendar [inaudible 02:24:47]. Okay?

Mark:

Thank you very much. I have to split. I'm sorry, but I've heard so far, it's great report and that you guys are doing a good job.

Kevin:

Thank you, Mark.

Kevin:

So is there a motion to come out of committee and recess and reconvene as the authority?

David:

So moved.

Kevin:

Is there a second?

Catherine:

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Second.

Kevin:

Thank you all in favor. I will see you at 2:40.

David:

Yes, that sounds good.

[ENVIRONMENTAL, HEALTH & SAFETY COMMITTEE ADJOURNS AT 2:30 P.M.]