SOUTH CENTRAL CONNECTICUT REGIONAL WATER AUTHORITY

ENVIRONMENTAL, HEALTH & SAFETY COMMITTEE

MARCH 23, 2023

<u>MEETING TRANSCRIPTION</u>

[ENVIRONMENTAL, HEALTH & SAFETY COMMITTEE MEETING BEGINS AT 12:44 P.M.]

Kevin:

Thank you for the approval of the minutes from the November 17th meeting. May I have a motion for that?

David:

I'll move that.

Catherine:

I'll second the motion.

Kevin:

Any discussion and corrections? Okay. All in favor of approving the minutes.

Committee:

Aye.

Kevin:

Okay. Thank you. And we have two updates today. First, a Health and Safety update and if we can proceed with that. Thank you.

Liz:

Sure. Hi everyone.

I'm just going to go over FY 2023 goals and objectives. I'm going to talk a little bit about our zero injury goal, injury and stats. Then I'm going to talk about our two objectives that we had near miss reporting and our safety ambassador program. Then we can discuss what's going to go on next, the next phase and if you guys have any questions for me, we can talk either during the presentation or at the end.

So health and safety initiatives are part of our strategic goal for FY 23. This was part of the advanced workforce safety initiatives that were put in place to drive our zero preventable injury goal. With that, they came up with the two objectives, which were the near miss reporting and the safety ambassador program. So we are focusing on these. So we'll talk a little bit about those programs but we're going to dive into the injuries first.

Next slide. There it is. So as you can see, we had a total of six injuries. Four of them were preventable, the burn, the laceration, and the strain and sprain. Then we had two that were not preventable, the strain via a motor vehicle and a respiratory condition. So I just wanted to talk about how we handle these accidents and injuries in the workplace. So when an accident and injury occurs, we as a team and

the CEO is involved in reviewing. So we look at the report, we review the accident, how it happened, what caused it. And the great part about it is that the leadership team is involved, the department heads, but the CEO is involved in this. So that's great because safety comes from the top, right?. So with that, we look at each incident and then we come up with corrective actions.

So as you can see, take for instance, the burn. So with that, we came up with a new practice and a guideline related to abandoned pipes in the ground. With the laceration, we implemented and researched new gloves. So with these new gloves, now, the employees don't need to take them off as often, right? So it prevents them from getting cut. Currently what they were doing in the job today is they're thick, they're bulky. They're taking the gloves off and then not putting them on and moving to the next task, which ended up at this injury. So now we have new gloves that could remain on. You don't need to take them off. Still just as safe, but a thinner material.

So trying to find new ways to help improve the work place. Ergonomics review of job tasks related to sprain and strains. So two of those currently. So we're looking at what they could do differently. Body mechanics is key and making sure that the employees are working safely. Then tips and techniques for avoiding on-the-job injuries. So we're incorporating awareness in the beginning of the day and providing them tools and resources on how to properly bend or whatever they're doing in their area.

Next slide. Jen, please. Thanks. So if you take a look at the injury stats from 2019 to 2023, obviously we're targeting zero and that's our drive is to get there. But decreasing our injuries is key too. So you can see we stagger a little bit from 19 to 23. FY 22, we were up a little bit, then came back down. So using our programs and driving awareness is definitely working but the ideal number is zero and we are going to continue to work towards, till we meet that number. Next slide. So I thought this one was important to show because if you can see, well you can't see at the bottom, strains, strains is our number one offender. People are moving fast, they're not being mindful of body mechanics or asking for assistance. That was our number one concern. Then sprains. You could see the cost that's tied to it too, extremely high.

So how do we fix those things? So we're a target that we're going to be looking at. So working with the safety team and our training manager, we're going to be incorporating new safety training courses that are going to be launched with the new LMS that's coming out at the end of April. These are going to be tied to their job and their position, and it's going to start from onboarding on and continue to drive awareness on the body mechanics. So in order to really drive and drop this number down and get to that zero, it's about awareness and training and being mindful of how we're moving.

Next slide, Jen. The other piece was key. As we're looking at data, as I work with the team to where are these in injuries happening? How can we target these areas? Why are they happening? So using the data from the departments and really diving into, Hey, we need to do this in this area because of the injuries and the type and the department and try to work up training, whether it's onsite, it's eLearning or whatever it is to really target and train our employees on how to work safely. So this was just more of an awareness and painting the picture of where they're happening.

I'll talk about the two objectives that we are working on. The near miss reporting program was the first one. Near miss is being defined as an unplanned event that did not result in an injury, illness, or damage. So the main objectives of this was to identify the hazards, rectify them, communicating them and key as empowering our employees to notice these things and report them. Then ideally to prevent the injury. So in place to prevent the injury, driving that zero preventable injury number. The next one.

So the best piece about this program as the new technology. So I think one of the struggles with communicating or seeing something out in the field, prior to having this app was that you might see

something out in the field by the time you get back to report it or jot it down on a piece of paper or get it to the person that needs to fix it, often we forget about doing so. With having the ability to have it on your phone and easily report something that you see in the workplace that needs to be fixed, it's instantaneously, right? So at that moment they could fill out the form, it's quick, it's fast, the information goes, and we're directly, it's realtime data and we get the information, ASAP and we're able to fix it. We had somebody report, no names, Larry.

So the rug was lifting, right? His foot got stuck but he was able to go onto that app and report it and within X amount of hours it was fixed and then it prevented an injury. So it's key. Prevention is key, which really drives home why the app is so important. The Safety ambassador program. So we've always had a safety program, we've always had a safety team. I'm calling this the task force. What we're doing is we're taking somebody from every division and the representatives of the division and of safety in their area. So they're meeting every Tuesday and we're talking about what's going on in the workplace. What are they seeing? What are practices that employees are doing? Is there things that we can fix? We're compiling this information and we're using it to drive safety changes in the workplace.

Again, it's about the communication piece, working with each of the departments and getting the information back. That this team is also communicating with everyone on their team. So we're making sure that it's not just, you leave that safety meeting that day and nobody's doing anything with it. The key is what are we doing with it? What action items are we having? Are we following up? Are we progressing? So, the safety ambassador program is driving those and I don't know if you guys can see at the bottom, it talks about- yeah, so some of the safety improvements. So once we started this in November, it rolled out and there was 21 safety improvements that were suggested.

Now these aren't anything that's emergencies but they're things that could drive safety practices. There's things, suggestions of fixes that will improve our environment. So right now they have addressed eight, we have 10 that are currently in progress and three that are not started. And just because they are started doesn't mean that they're not important. It's we're either working with a vendor or researching information because there's a lot of cost tied to it. Clearly if it's something that needs to be fixed and it's safety, we are fixing it immediately. But it's just a great task force, good for the employees to come together and give suggestions and make it a better working environment.

So I'm really excited about the next phase. So we've hired a new safety manager. I think Larry had mentioned it in the last safety meeting. His name is Ronnie. He comes with 15 plus years of safety. He has OSHA certifications. His degree is in safety. He's worked for Amazon, Honeywell. So he has a really strong background. He's funny, he's engaging. So I think he's going to be a very good addition to the teamwork. Excited to have him. He's been here, this is his second week. He's already going out to the field, having morning huddles, talking about safety, revving up our teams about working safe out in the field. Just that awareness before you head out. Hey, take the time, think about what you're doing, your actions and be mindful that incidents, accidents happen everywhere and they're quick to happen. We're going to... We're implementing regular scheduled audits. Audits have been happening. However, we are going to have the documentation to support it and they're going to be robust. We're going to engage the managers and the teams, the team leads to make sure that everyone is aware of what we're looking for, compliance, and then reevaluation. If there's something that doesn't pass in an audit, we're going back and we're following up. We're going to have that data to make sure that these things are... That all action items are completed. The morning huddles that I talked about, those are great. The teams are already loving his style and just being... He's out there at 5:30 AM, 6:00 AM so it's great to see his energy. So it's nice for the team. The injury and accident reports, those are great and like I said, having the CEO involved in this process is awesome.

A lot of organizations struggle with that, but it does come down from the top here at the RWA. So we're going to drive home like how we can make this form better, making sure that we're investigating the injury, reinventing it, working through it, and then again, corrective action identified and resolved. We're researching and identifying new safety programs. Ronnie, we will be working with Amanda and myself and trying to identify ways that we can target our zero preventable injuries and make it a safe working environment. And keep increasing that knowledge within the workforce. We're driving the safety communications again, talking about the safety ambassador program. We're connecting those two things, right? When they leave to that meeting, who are they talking to? Talking... Picking, making sure they're talking to three to five people. Having the conversations about what's the safety topic, how are we keeping it alive because that's the only way safety is successful.

And then the new safety training that I mentioned earlier, tied to our learning management system. Having new e-learning and new updated material that keeps people interested when they watch it. And really tying it to the job and the role and the responsibilities I think will really end up where we need to be by driving down that number of preventable injuries. Reduce it and get to that zero that we're striving to. The end.

Kevin:

Thank you.

Liz:

Do you have any questions?

Kevin:

Any questions?

Liz:

I know it's a lot about safety and we're excited about all the new changes mostly.

Kevin:

Any questions for Liz?

Catherine:

No. Thank you very much, Liz. I wish I had thought about this a few days ago.

Liz:

I need to get the app on your phone. Thank you.

Kevin:

Thank you very much. Appreciate it. Okay. Next up, we have Josh Tracy and Steve Vitko.

Steve:

Hey. Good afternoon, everybody. Great to see everyone again. My name is Steve Vitko, the Environmental Planning Manager at the Regional Water Authority. And we have here with us

somewhere on screen, Josh Tracy, who's the Invasive Species Technician. We're here to present to you today on the memo that we sent out regarding slash walls that we've recently created on two properties in the RWA land holdings that we have. The two properties are on the Madison property and the Seymour property. The Seymour is within the inactive Pete Swamp Watershed and the Madison property is within the active lake [inaudible 00:30:07] watershed. And what we did was after these timber harvests were conducted in early 2022 is we installed a slash wall and Josh will get into what a slash wall is and how it effectively allows the forest to regenerate properly in lieu of not having a slash wall there.

But we thought we'd take this study to another level. In order to do that, we decided to gather the help of a Yukon team who has a drone equipped with a LIDAR and multi-spectral sensors, which will allow us to gather really essential data on a slash wall to see if these will be a good opportunity for us to continue using in the future. And what they essentially do is they eliminate deer to get inside, which allows predation of the native species. So the native species are allowed to outcompete the invasive species. And as we all know, a natural native forest is the best combat that you can have for pure water quality in a watershed. So the more native species and the more natural forest that we can have within our land holdings, the better water quality that we're going to have for future generations.

So along with the Yukon team, we also have Connecticut Agricultural Experiment Station, putting boots on the ground and doing actual experiments for native species versus invasive species inside and outside the slash wall areas. And that of course is free to us because they are state funded. So with the boots on the ground, data collection, and then the drone aerial photography that we are getting and the data from the aerial drones that Yukon's providing, we're getting a massive data set to see how effective these will be in the future. And like I said, it hones into not just our real estate holdings, but it hones in on water quality. It hones in on environmental stewardship and really just creating a better forest to filter the water quality to allow pure water for our customers. So with that, I'm going to open it up to Josh. Josh has been working heavily with the Yukon team on this entire project, and that's really after the slash wall was created. So I'll be chiming in here and there, but I'll let Josh take it away at this point.

Josh:

Thanks, Steve. So my name is Josh. I'm the invasive species management technician for Regional Water Authority. I'd like to first begin by explaining what a slash wall is because it's not really something that anyone hears about. So it's basically in a timber sale, anything that's left behind in the sale is considered slash. That's the tops of the trees, all the branches, any logs that aren't merchantable anymore, that's all considered slash. And typically that's left behind, just spread out. Sometimes it's organized, sometimes it's not. All depends on where the project is. Cornell decided to try something where they piled the slash up around the harvest in order to keep deer from coming in and predating on the regeneration. The only other thing you could potentially do is install a deer fence, which is expensive, time-consuming, and something that has to be constantly monitored to make sure trees don't fall on it.

If a tree falls on a slash wall, it just helps build the slash wall up even further. So it's kind of an interesting concept. So our two sites on in Seymour and Madison are two of four slash walls that were kind of erected around the same time. There's one that was built on MDC property and one that was built up in Massachusetts on the Quabbin. So, a slash wall is a pile of slash roughly 10 feet tall, 20 feet wide that surrounds the harvest after the harvest has been complete. And again, the ultimate goal is to stop deer from getting into the harvest. Every other animal can get into this harvest. We have pictures of bobcats, turkeys, bears can climb over it if there's bears in the area. This is only to stop deer from coming in and eating the regeneration. Could you go to the next slide, please?

So these are maps of the two harvests. These are maps that I was able to produce using our department's drone, but this is about as good as I can get. This is about the only data I can collect with our drone. Our drone is roughly $2,000 once everything is said and done. The unit that Yukon uses costs about $80,000. So you'll be able to see the data that they can collect with their drone versus ours, but for many purposes, our drone is totally sufficient. So these two maps were just pictures that the drone had took and we stitched those images together to create complete maps. You can go to the next slide.

So Yukon has their drone and as Steve said, it has a multi-spectral camera. The camera is the most expensive portion of the unit. I think the camera is $40,000 or $50,000. And then you need a drone that can hold the payload. So it needs to be a fairly large drone to be able to do that. They flew at a certain height. In this case, it was 70 meters above each harvest. It took about an hour to take all the images they needed. In some cases, it took over 11 hours to process all the data for the maps that you're going to see. So that's kind of where a lot of this funding goes into for Yukon to do is the processing time. You can go to the next slide.

And as Steve said, the agricultural experiment station for Connecticut is involved. This project got off the ground predominantly through them because they were interested in trying these slash walls out. So they have plots throughout our harvests and they will go in periodically and document what species are growing and the rate of growth that they're growing. And paired with the data that we're going to get from the drones is going to give us a really holistic view of how this harvest is performing. There's a control outside the wall that allows deer to eat the regeneration. And inside the wall, deer will not be eating the regeneration. And we'll be able to have very concise measurements of what happens when you have one of these slash ball harvests erected. Next slide, please.

Steve:

Hey, Josh I'm going to chime in for one second there just to point out the difference of this slash wall project versus some slash walls that you see maybe out west, or less of an experimental slash wall. We have a larger plot, as you could see in this image right here, our actual harvest expands past the slash wall. And that allows us to gauge the forest regeneration in the space, invasive species regeneration versus native species regeneration inside and outside. We're on another slash wall in the future where we have the data and essentially if we prove that they're super effective, we would only utilize the slash wall within the actual harvested area. So you wouldn't see that external harvested area. So this is just for experimental purposes.

Josh:

Yeah, great point, Steve. So this piece that... So now we're getting into the meat and potatoes of what Yukon is able to accomplish for us. So the normalized difference vegetation index, the NDVI, this map is basically showing any green that the drone had picked up when it flew over. Green indicates vegetation, green indicates in some respects, healthy vegetation. And so over time when we compare these maps, it's going to give us a sense of where the vegetation is growing in on these harvests. On the Madison site, it's pretty obvious where the skid trails were in the middle of the harvest. It kind of makes the whole harvest look like a leaf. On the Seymour site, there was less time for regeneration to happen between when the harvest started and when it ended. So you're not going to see as much green throughout the entire harvest.

But in subsequent years, we're hoping that green fills in completely. If you go to the next slide. Another similar piece of data that gets collected is the normalized difference red edge index or the NDRE. And this is a very similar piece of data and it's picking up green, but it's actually using [inaudible 00:38:56]

infrared data to pick up a red band around each leaf that it's taking pictures of. And that's going to indicate what the plant health is. So you're going to have very similar maps, but in future years at different stages of growth, these maps may differ. You may see a green leaf, but a green leaf doesn't necessarily mean it's a healthy leaf. So this has predominantly been used in agriculture to look at crops and to see where they need to put fertilizer and where they need to reduce fertilizer. In our case, we're going to see where the deer have been munching on plants and what plants are stressed versus the [inaudible 00:39:36] in the middle of the harvest where there's not going to be any deer munching on all these plants. You can move on to the next slide.

This is the most interesting thing. This is where LIDAR comes in. LIDAR is light detection and ranging. Basically, this camera shoots lasers down at the ground and measures how long it takes for the laser to return, giving you the heights of objects, whether there's leaves or no leaves or obstructions of any kind. You can see from this photogrammetric point cloud, you can easily pick out where the slash walls are. You can pick out where trees are. You can even see individual trees within the harvest. This is again, something that we cannot get with our $2,000 drones. This is something that you need a very delicate piece of equipment to accomplish. Next slide, please.

This is just these same images. This is the Madison site where the researcher highlighted all the greens, the trees. All of the brown is where the ground is and the red is highlighting where the wall is surrounding the harvest. Next slide, please. This just shows what the Seymour site looks like. The whole goal of this LIDAR sensor is that it's going to give us a sense of how fast vegetation is growing inside the harvest. It's going to be able to document the heights of the vegetation on the inside and the outside. But what's super interesting to me is it's going to tell us how fast this wall degrades over time. It's unclear right now how long this wall will last. There's hypotheses that it will last about five years, but Cornell has only been doing this research for a few years as well. So no one really has a good sense of how fast one of these walls can degrade.

So if you go onto the next slide. The LIDAR can actually show us the heights of the walls. So if you look closely on the map on the right, there's a yellow line on the south portion of that picture, and there's a pink line in the northeast corner. And where those lines are, it's depicted on the graph on the left, what the height is across that wall. So you can see the topography coming from left to right on the graph. You can see lower topography until it hits the wall, and then it gives you a sense of the jumbled sticks within the wall. It's giving various heights. And then the topography continues up as it hits the ground again on the other side of the wall. Same as the section below it, you can see the topography is higher coming in from one side hitting the wall and then lowering down.

Basically what Yukon is going to do is give us one of these maps and you can take your cursor on your mouse and scroll over any portion of the wall and it will instantly tell you what the height is. Over time, this is going to give us a sense of how big these walls need to be, how much material needs to be in the wall. It's going to give our contractors a lot more information when they build these walls, how much effort they have to put in. Gives them a sense of how much money they have to bid on one of our timber sales to account for the work that they're going to put into these walls. So all in all, it's an incredibly helpful piece of data for us to have for when we want to potentially use this type of harvest in the future. Next slide, please.

Steve:

Yes. So this study as Josh kind of mentioned in all the slides that he presented on, it's not just for forest regeneration and invasive species versus native species regeneration. It's also to test our future management strategies for these particular slash walls going forward in the northeast. These two slash

walls are some of the largest, and I would definitely say probably the most data collected on any slash walls in the northeast. So we have some pretty groundbreaking... Hopefully we'll have some groundbreaking findings over the years. But the essential thing is that a multi-year data set is going to be needed to actually physically see how these walls deteriorate over time. How we're going to be able to manage them better over time. And the most important thing, how effective they actually are over time. How does the forest really regenerate inside versus outside? And do we want to be putting our eggs in that basket going forward, or do we want to shy away from slash walls in the future?

That's what this whole study will allow us to do. As an environmental services company, we need to manage our lands to the best degree possible and allow for the native species to outcompete the invasive species. And that's also another aspect this whole experiment is going to allow. So, I really believe with Yukon's data at hand in the sky, and then with Connecticut agricultural experiment stations data with boots on the ground and with RWA's data just doing its periodic inspections, we're going to have a massive data set and we're going to be able to really release these findings and be able to manage our force in a much better way going forward. So it's really awesome technology and it's really cool that we're able to be kind of the forefront of all this going forward. So I think we covered most of everything. Some of it is probably confusing with the multi-spectral and LIDAR gibberish, but hopefully, we made it understandable. And if you have any questions on it, please go ahead. Any questions?

Catherine:

Steve, when you say that there's a harvest area inside the slash wall, this is a harvesting the timber? Is that what that is?

Steve:

Correct. So what I was mentioning before was that we made our timber harvest larger and put the slash wall only in the interior portion of it so that we had the ability to gauge what's going on inside the slash wall and what's outside the slash wall. Whereas most other studies... I should say not studies, but most other slash wall applications, you're going to put that slash right against the abutting forest, because you don't want that area where the deer could eat the new successional forest. So the reason why it's larger and the slash wall is only in the interior is for study purposes only. So in the future, if this worked out and we anticipate this to be, let's say a really practical process going forward, we would put these slash walls... And I'm pointing to it, but obviously you can't see my finger, but we would put the slash walls on the screen right against the forest that's on the side. We wouldn't have that little barrier in between.

Catherine:

Okay. Thank you very much.

David:

Yeah. And Steve, just a question. The slash wall you are hoping or expect might last about five years, is that enough time to let the new life grow inside of it and then be exposed to the deer after that? Or do you have to rebuild a wall?

Steve:

That's a great question. I'm going to defer to Josh for that one.

Josh:

Yes. So, we will not have to build a new slash wall. So currently after a full growing season, we're seeing stump sprouts that are seven to 10 feet tall off of trees that on the same type of stumps on the outside of the wall, they're just stumps. We're seeing seedlings that are at a much higher rate than we would normally. The five years is basically just to get the trees above deer brow's height. Once they're above deer brow's height, the deer can do what they want in there. We encourage the deer to be in there. It's their land too, but we just want them to get a little bit taller than they've been letting them get and give them a chance.

David:

Okay. So that's good. Thank you.

Kevin:

I just had one or two quick questions and I apologize if you went over it at the beginning. How high is the slash wall, the one that you showed just most recently?

Josh:

It averages about 10 feet tall. Some spots are higher and some spots are lower. And it can be lower if the topography on the outside of the wall is lower than the inside of the wall. So if it's not a slant, you could have a six-foot wall. As long as the ground is four feet below the other side, the deer aren't going to jump over that. As long as they can't see on the other side, they're not going to jump over. They could crawl through though. They could crawl through any holes. And we do have to monitor if there's holes in the wall for them to crawl through.

Kevin:

Okay. And who physically constructed it and how long did that take? Was that labor-intensive or?

Josh:

It is and it's whatever outfit puts a bid on the job. So in this case, we had-

Kevin:

Okay, so that's included in that?

Josh:

It's included in that, which is one of the bigger benefits to say installing a fence. The contractor says, okay, I think it's going to cost me this much to install the wall, so I'm going to put a bid on the job with that reduction in mind. Whereas if we do a harvest, take in the money and have to buy a wall or buy a fence, then we have to pay out of pocket for that fence and we have to monitor it. And like I said, it degrades into the ground eventually. It's natural habitat for many different animals versus just the fence is basically useless aside from keeping deer out.

Kevin:

Yeah. Okay, great. Thank you very much. Any other questions? Well thanks, great job. Keep up the great work. We appreciate it.

Josh:

All right, thank you everyone. Have a good afternoon.

Kevin:

Are you going to put in a budget request for the more expensive drone, Josh?

Josh:

Well, I'll let you guys simmer over that for a little bit and then I'll ask you again soon.

Kevin:

All right. Thank you.

David:

I would say you could go all the way up to $500,000 drone. There are models out there, right? From a commercial purpose, but you also made a comment that said it's serving a purpose, so it'll give a balance.

Josh:

All right. Thank you everyone.

Kevin:

Thank you. Great. Thank you.

Steve:

Appreciate everybody. Have a great day.

David:

Thanks guys.

Kevin:

I believe Dave, we're out of this. We've reached the end of this committee.

David:

No, actually you've got one more item is the work plan.

Kevin:

Work plan, yes. Okay. I see that now. Right.

David:

If you don't mind.

Kevin:

Okay.

David:

Looks pretty straightforward to me. Do you want a motion to approve it or do we just usually present it?

Kevin:

No, it's just presented to see if it aligns with what we anticipate as the Five Member Authority for the next 12 months.

Larry:

And I just might remind you that there's a list of topics down there that could be slotted in for any one of those topics listed over the four quarters that we have listed here.

Kevin:

Right. So yeah, I don't think we need to approve it. This is just our proposed work plan.

David:

All right. Then I will move that we adjourn as the Environmental Health & Safety Committee and reconvene as the Authority.

Catherine:

I second the motion.

Kevin:

All in favor?

Committee:

Aye.

Aye. Okay, great. Thank you.

[ENVIRONMENTAL, HEALTH & SAFETY COMMITTEE ADJOURNS AT 1:22 P.M.]