STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Petition 1347A

GRE GACRUX LLC Petition for a Declaratory Ruling, pursuant to Connecticut General Statutes Section 4-176 and 16-50k, for the proposed construction, maintenance and operation of a 16.78 megawatt AC solar photovoltaic electric generating facility located at 117 Oil Mill Road and associated electrical interconnection to Eversource Energy's existing substation at 325 Waterford Parkway North in Waterford, Connecticut.

Reopening of this petition based on changed conditions pursuant to Connecticut General Statutes Section 4-181a(b).

VIA ZOOM AND TELECONFERENCE

Continued Public Hearing held on Tuesday, August 25, 2020, beginning at 2 p.m. via remote access.

H e l d B e f o r e:

ROBERT SILVESTRI, Presiding Officer

Reporter: Lisa Warner, CSR #061

A p p e a r a n c e s:

Council Members:

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Designee for Commissioner Katie Dykes
Department of Energy and Environmental Protection
LINDA GULIUZZA
Designee for Chairman Marissa Paslick Gillett
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BY: ROBERT A. AVENA, ESQ.

For Save the River-Save the Hills, Inc.:
EAG LAW LLC
21 Oak Street, Suite 601
Hartford, Connecticut 06106
BY: EMILY A. GIANQUINTO, ESQ.

Also present: Abby Piersall, Town of Waterford

MR. SILVESTRI: Ladies and gentlemen, good afternoon. This continued remote evidentiary hearing is called to order this Tuesday, August 25, 2020, at 2 p.m. My name is Robert Silvestri, member and presiding officer of the Connecticut Siting Council.

As all are keenly aware, there is currently a statewide effort to prevent the spread of the Coronavirus. This is why the Council is holding this remote hearing, and we ask for your patience. If you haven't done so already, I ask that everyone please mute their computer audio and/or telephone now. A copy of the prepared agenda is available on the Council's Petition No. 1347A web page, along with the record of this matter, the public hearing notice, instructions for public access to this remote public hearing, and the Council's Citizens Guide to Siting Council Procedures.

I'll ask the other members of the Council to acknowledge that they are present when introduced for the benefit of those who are only on audio. Starting with Mr. Morissette.

MR. MORISSETTE: Present. Thank you.

MR. SILVESTRI: Thank you. Mr. Harder.

MR. HARDER: Present.

MR. SILVESTRI: Thank you. Mr. Hannon.

MR. HANNON: I am here.

MR. SILVESTRI: Thank you. Ms. Guliuzza.

MS. GULIUZZA: Present.

MR. SILVESTRI: Thank you. Mr. Lynch.

(No response.)

MR. SILVESTRI: We'll come back to Mr. Lynch. Executive Director Melanie Bachman.

MS. BACHMAN: Present. Thank you.

MR. SILVESTRI: Thank you. Staff Analyst Robert Mercier. Mr. Mercier?

MR. MERCIER: Present.

MR. SILVESTRI: Thank you. And Fiscal Administrative Officer Lisa Fontaine.

MS. FONTAINE: Present.

MR. SILVESTRI: Thank you also. This evidentiary session is a continuation of the remote public hearing that was held on August 4, 2020. It is held pursuant to the provisions of Title 16 of the Connecticut General Statutes and of the Uniform Administrative Procedure Act upon a motion to reopen a petition from GRE GACRUX LLC for a declaratory ruling for the proposed

construction, maintenance and operation of a 16.78 megawatt AC solar photovoltaic electric facility located at 117 Oil Mill Road in Waterford, Connecticut. On February 27, 2020, the Council, pursuant to a request filed by GRE and the provisions of the Connecticut General Statutes, Section 4-181a(b), reopened the October 26, 2018 and the December 24, 2018 final decisions that were rendered in this matter.

A verbatim transcript will be made of this hearing and deposited with the Waterford Town Clerk's office for the convenience of the public.

We will proceed in accordance with the prepared agenda, a copy of which is available on the Council's Petition 1347A web page, along with the record of this matter, the public hearing notice, instructions for public access to this remote public hearing, and the Council's Citizens Guide to Siting Council Procedures.

And depending on where we are in this proceeding, we'll also look at taking a short break sometime maybe around 3:30 p.m.

We left off last time preparing for the appearance by Save the River-Save the Hills. And will the party and CEPA intervenor present its

witness panel for the purpose of taking the oath, Attorney Gianquinto. And Attorney Bachman will administer the oath.

MS. GIANQUINTO: Thank you, Mr. Silvestri. The witness panel that Save the River-Save the Hills has today is Steven Trinkaus of Trinkaus Engineering, Donald Danila and Deborah Moshier-Dunn, vice president of Save the River-Save the Hills.

Attorney Bachman, do I need to do anything with the respect to the administrative notice items that we have?

MS. BACHMAN: Thank you for mentioning that, Attorney Gianquinto. During the last hearing, I believe you had asked the town if they had certain documents that you wished to administratively notice. I don't know if anyone has the citations or titles to those particular documents, but that would be helpful. If you don't, your administrative notice items, as they appear on the hearing program, can be administratively noticed.

MS. GIANQUINTO: Okay. I have not received those documents from the town, and it's my fault for not following up on that. I know

that one was the fire code provisions that were cited by the fire marshal in the interrogatory responses, and I think the other one was a town road weight limit provision. So I don't know if there's an objection to just noticing those as items number 42 and 43 and having them Late-Filed. I'm not sure what the best way to handle that is. And I apologize again for not following up on that.

MR. SILVESTRI: Attorney Hoffman, your comments.

MR. HOFFMAN: I don't have an objection, per se, but without being able to see them, I can't blanket so that I won't have an objection. I don't imagine that I will, but I want to reserve my rights.

MR. SILVESTRI: Yeah, I kind of agree with you on that also. Let me just ask Attorney Avena as well.

MR. AVENA: Good afternoon. And with apologies, I am at Town Hall, and we are presently -- I think we are -- is that right, Abby, I think we have both of those documents available?

MS. PIERSALL: Yes. One is an email

response from the director of public works, and one is several pages of code citations from the fire marshal.

MR. AVENA: So we will presently be sending these to counsel of record and asking whether they are satisfactory to be submitted.

MR. SILVESTRI: Attorney Bachman, any further comment?

MS. BACHMAN: At this time I don't think we need to have any further comments, Mr. Silvestri. However, when Attorney Hoffman has an opportunity to review the email and the citations to the code, if he does have an objection, certainly we should give him the opportunity to object, but for now I think we should just continue with the verification of Save the River's exhibits.

MR. SILVESTRI: I think that's fair enough and the way to go. Thank you. Go ahead.

MS. GIANQUINTO: I was going to say, Mr. Silvestri, just so I'm clear, does that mean we're just waiting on the admin notice overall for right now until we know on those two?

MR. SILVESTRI: Yeah, I'd hate to accept something that personally I haven't had a

chance to look at at all, and I agree with Attorney Hoffman on that as well.

MS. GIANQUINTO: Okay.

MR. SILVESTRI: So if there's a means that it could possibly come in through the course of maybe today's proceeding and we could look at it and figure out what we want to do with it, but right now I can't accept it sight unseen.

MS. GIANQUINTO: Understood. I still have items number 1 through 41, though, which had been submitted weeks -- might be months ago at this point since this has been delayed -- so I wasn't sure if we wanted to deal with 1 through 41 first and just leave the other two until later or do all of them at once.

MR. SILVESTRI: I would deal with 1 through 41, and then maybe come back to the other two, depending on the timing of everything.

MS. GIANQUINTO: Okay. So Items No. 1 through 41 are listed. And I'm not aware of any objections unless Attorney Hoffman has something to put on the record.

MR. SILVESTRI: Attorney Hoffman.

MR. HOFFMAN: I'm sorry.

MR. SILVESTRI: I was just going to ask

you if you had any objections to the items 1 through 41 that were on the administrative notice list.

MR. HOFFMAN: For the record, we do not.

MR. SILVESTRI: Thank you. And Attorney Avena?

MR. AVENA: No objections.

MR. SILVESTRI: Thank you also.

(Save the River-Save the Hills Administrative Notice Items 1-41 accepted into the record.)

MR. SILVESTRI: Attorney Bachman, I believe we could swear in the three witnesses.

MS. BACHMAN: Thank you, Mr. Silvestri. Would the witnesses please raise their right hand?

D O N A L D J. D A N I L A,

D E B O R A H M O S H I E R - D U N N,

S T E V E N D. T R I N K A U S,

called as witnesses, being first duly sworn (remotely) by Ms. Bachman, were examined and testified on their oaths as follows:

MR. SILVESTRI: Thank you. And Attorney Gianquinto, could you begin by verifying all the exhibits by the appropriate sworn

witnesses?

MS. GIANQUINTO: Yes, Mr. Silvestri. Thank you.

DIRECT EXAMINATION

MS. GIANQUINTO: Ms. Moshier-Dunn, I'm going to start with you. So if you refer to the hearing program, there are documents there listed as items numbered Roman numeral IV, subsection B. Are you familiar with the exhibits listed there which include the Save the River-Save the Hills' comments on the reopening of the petition, interrogatory responses from Save the River-Save the Hills, and your prefile testimony and declaration?

THE WITNESS (Moshier-Dunn): Yes, I am.

MS. GIANQUINTO: And did you prepare those documents or cause them to be prepared on your behalf?

THE WITNESS (Moshier-Dunn): Yes, I did.

MS. GIANQUINTO: Do you have any changes to those documents?

THE WITNESS (Moshier-Dunn): Not at this time.

MS. GIANQUINTO: Are they true and

correct to the best of your belief?

THE WITNESS (Moshier-Dunn): Yes.

MS. GIANQUINTO: And do you adopt them as your sworn testimony here today?

THE WITNESS (Moshier-Dunn): Yes, I will.

MS. GIANQUINTO: Thank you.

Mr. Danila, moving on to you, same questions with respect to the items listed in Roman numeral IV, subsection B, of the hearing program. Are you familiar with those exhibits that are listed, including Save the River-Save the Hills' comments on the reopening of the petition, interrogatory responses, your own prefile testimony, and your own supplemental prefile testimony?

THE WITNESS (Danila): Yes, I am.

MS. GIANQUINTO: And did you prepare them or cause them to be prepared on your behalf?

THE WITNESS (Danila): Yes, I did.

MS. GIANQUINTO: And do you have any changes to those documents?

THE WITNESS (Danila): Yes, I do.

MS. GIANQUINTO: What are those changes?

THE WITNESS (Danila): I'd like to note

two corrections to my prefile testimony, dated June 24, 2020, due to typographical errors. They occur on the bottom line of page 14 and in the third bullet on page 20 where it states that panels are to be placed within 100 feet of wetlands; whereas, the correct distance is 200 feet.

MS. GIANQUINTO: Okay. And that's the same correction in both locations?

THE WITNESS (Danila): Yes.

MS. GIANQUINTO: All right. And with those two corrections, are all of the exhibits true and correct to the best of your belief?

THE WITNESS (Danila): They are.

MS. GIANQUINTO: And do you adopt them as your sworn testimony here today?

THE WITNESS (Danila): I do.

MS. GIANQUINTO: And Mr. Trinkaus, referring again to the same exhibits listed in Roman numeral IV, subsection B of the hearing program, which include Save the River-Save the Hills' comments on the reopening of the petition, Save the River-Save the Hills' interrogatory responses, your prefile testimony and your supplemental prefile testimony, are you familiar

with those documents?

THE WITNESS (Trinkaus): Yes, I am.

MS. GIANQUINTO: Did you prepare those documents or cause them to be prepared on your behalf?

THE WITNESS (Trinkaus): Yes, I did.

MS. GIANQUINTO: Do you have any changes to those documents?

THE WITNESS (Trinkaus): No, I do not.

MS. GIANQUINTO: Are they true and accurate to the best of your belief?

THE WITNESS (Trinkaus): Yes.

MS. GIANQUINTO: And do you adopt them as your sworn testimony here today?

THE WITNESS (Trinkaus): Yes.

MS. GIANQUINTO: So with that, Mr. Silvestri, I would request that each of the items listed in Roman numeral IV, subsection B of the hearing program, be accepted as full exhibits today.

MR. SILVESTRI: Thank you, Attorney Gianquinto. Does any party or intervenor object to the admission of Save the River-Save the Hills' exhibits? Attorney Hoffman.

MR. HOFFMAN: We do not, Mr. Silvestri.

MR. SILVESTRI: Thank you, Attorney Hoffman. Attorney Avena?

MR. AVENA: No objection.

MR. SILVESTRI: Thank you also, Attorney Avena. The exhibits are admitted. Thank you.

(Save the River-Save the Hills Exhibits IV-B-1 through IV-B-13: Received in evidence - described in index.)

MR. SILVESTRI: I'd like to begin cross-examination now of Save the River-Save the Hills by the Council, starting with Mr. Mercier.

CROSS-EXAMINATION

MR. MERCIER: Thank you. I have just a couple questions. The first question pertains to the LIDAR map that was submitted on August 3rd. For reference, that's the last exhibit on the Council's web page under Save the River-Save the Hills area of the web page. And I guess my question is who prepared the map? The map shows like an overlay of the solar field with the detention basins and the property lines.

MS. GIANQUINTO: I think, Ms. Moshier-Dunn, this is a question that's best for you.

THE WITNESS (Moshier-Dunn): Okay, thanks. We have a behind-the-scenes worker who works with us who is retired from UConn who specializes in GIS, so he prepared that for us for Save the River. He's amazing. We hand him something -- even GRE had to admit when we first handed them something way back when in 2018 that he had done, they were amazed at how quickly he could put something together. But he asked not to be on, you know, as a witness, so we're submitting that as Save the River's.

MR. MERCIER: Okay. I just have a couple of general questions on the map. Do you know if this recent version that was submitted on August 3rd, does that include the recent site modifications where GRE removed the panels within 200 feet of the on-site wetlands?

THE WITNESS (Moshier-Dunn): I believe it is.

MR. MERCIER: Okay. Now, I was looking at the legend, and those features are defined, but I did not see where the blue lines on the map were defined. Do you know what the blue lines represent?

THE WITNESS (Moshier-Dunn): I'll look

at it. I'm asking him. Hold on. (Pause.) Is there -- I don't have it in front of me. Let me see if I can pull it up. Is there two sets of blue lines? One is watercourses and --

MR. MERCIER: Okay. That pertains to my question really.

THE WITNESS (Moshier-Dunn): Okay. All right. One was watercourse. I know that there was one version though -- I don't have the version that you're talking about in front of me -- but one was watercourses and one was the edge of the whole boundary that you could plainly see. I don't know if that's a light blue or --

MR. MERCIER: It's showing black on mine, but anyway --

THE WITNESS (Moshier-Dunn): Okay.

MR. MERCIER: -- so you're saying that the blue lines, which you're calling watercourses, which, you know, drains from the features around the site, do you know how those were delineated for this map? Is this something he drew in, or is this something that was on a preexisting map?

THE WITNESS (Moshier-Dunn): If it's from -- I'm getting a text from him saying that it's from a town layer. So he layered maps. He

said the outline is in black, and the blue is all watercourses. So he layered different maps on top of each other.

MR. HOFFMAN: Mr. Silvestri, I'm going to object to that response. It's hearsay. She's relaying what someone else is telling her, and I don't have an opportunity to cross-examine that individual.

MR. SILVESTRI: I agree with you, Attorney Hoffman. I'd have to limit whatever responses are to Ms. Dunn's actual knowledge of it rather than the texting back and forth. So I'd like to continue along those lines. Thank you, Attorney Hoffman.

THE WITNESS (Moshier-Dunn): Okay.

MR. MERCIER: Okay. I guess, just to follow up on the watercourses, I mean, are you aware that there was a wetland survey and watercourse survey conducted on this property in 2018?

THE WITNESS (Moshier-Dunn): Yes.

MR. MERCIER: And looking at that map, it did not identify any watercourses to the south on their property; however, it does show on this map.

THE WITNESS (Moshier-Dunn): Yeah, because they are just during the spring, so they're watercourses that flow during the time, you know, when the vernal pools are active and things like that.

MR. MERCIER: Well, part of the survey that was done in 2018 has to do with intermittent watercourses and also, according to the survey, none were found. So really my question was, how accurate were these blue lines, and were any surveys actually done on the property from other parties besides the petitioner? I suppose you probably don't know that.

THE WITNESS (Moshier-Dunn): Well, no, I know it was taken from maps from like town maps and overlays of maps.

MR. MERCIER: Okay. Thank you.

MS. GIANQUINTO: Mr. Mercier, I just want to point out, if you look at the legend for that exhibit, you can see the documents that it says that it's pulled from, the drainage map and the town, so it's overlaid onto the LIDAR. And if you wanted more specific references to which maps, we can do that as a Late-File just for your reference.

THE WITNESS (Moshier-Dunn): Yeah, it includes the information.

MS. GIANQUINTO: Hold on, Deb. It's from all public documents that the town has.

MR. MERCIER: Right, I understand that. All I'm saying is there was a survey done, and you're not sure if that survey is reflected on this map, correct?

MS. GIANQUINTO: This map overlaid the site plan, and so it would have the wetlands that GRE's survey on the site indicated, so that's in the blue area. Anything else --

MR. MERCIER: Understood. All I'm saying is the south watercourse is not shown as a watercourse on the GRE wetland survey so that --

MS. GIANQUINTO: Right, but it is in the town maps.

MR. MERCIER: Right. Well, we don't know how they did the survey, correct?

MS. GIANQUINTO: Just so the record is clear, Save the River-Save the Hills did not do any surveys, so this is all relying on public documents with the town, and so, no, we don't have the town survey, but it's all on public records.

MR. MERCIER: So the survey could be

inaccurate that the town has, correct?

MS. GIANQUINTO: I suppose so, but they're public documents.

MR. MERCIER: Okay. Thank you.

MR. SILVESTRI: I'd like to just interject. Ms. Dunn, if I'm hearing correctly, that on the bottom right of that drawing or LIDAR, if you will, it has "Digitized layout, features from revised plans, dated 7/28/2020, with grading and drainage plan overlay, sheet C-4.0. Base image, LIDAR elevation - CTEco." Am I reading that correctly, Ms. Dunn?

THE WITNESS (Moshier-Dunn): Yes.

MR. SILVESTRI: Very good. Thank you. And Late-Files I don't believe we are going to accept at this point. I don't know who mentioned the Late-File part.

MS. GIANQUINTO: I did, sir, just in case there was a question about which specific town map was used.

MR. SILVESTRI: And I think we have that from the bottom. Very good. Mr. Mercier, please continue.

MR. MERCIER: Thank you. I just have a quick question for Mr. Danila. I was reading

through your prefile testimony, and on the bottom of page 10 it basically states that you don't believe that the fisheries division really gets involved in any type of review process for an application such as this; is that correct?

THE WITNESS (Danila): Was this question directed to me?

MR. MERCIER: Yes.

THE WITNESS (Danila): Yeah, the reason that was put in there is because the NDDB determination was made by a DEEP wildlife biologist, I wanted to point out the fact that the department also has a very large fisheries division that are maybe more in tune with aquatic resources. I think we used an example in some of our submissions that, for example, the Route 11 expansion project, some of that work was also reviewed, besides the DEEP wildlife division, it was also reviewed by DEEP fisheries. And I think having the expertise of someone that may have more of a knowledge of aquatic and fisheries issues might be of value in these kinds of projects.

MR. MERCIER: Okay. So that's really just your opinion, you don't really have any factual information on that besides those two

examples you just gave?

THE WITNESS (Danila): That is correct, but --

MR. MERCIER: Okay. I just had another question. Have you reviewed the Petition 1398 Winchester project, which is part of the administrative notice for Save the River-Save the Hills, and specifically the --

THE WITNESS (Danila): I have not.

MR. MERCIER: Okay. Mr. Trinkaus, I have a question on that project, the administrative notice item, the pending Petition 1398 project in Winchester. Have you reviewed the DEEP Natural Diversity Data Base letter, dated February 28th for your project?

THE WITNESS (Trinkaus): (No response.)

MR. SILVESTRI: Is Mr. Trinkaus still on?

THE WITNESS (Trinkaus): Yes, I am. I was having -- can you hear me now?

MR. SILVESTRI: I can, yes. Please, yes.

THE WITNESS (Trinkaus): I'm sorry, for some reason I was having audio issues. Yes, I actually filed the application with the Natural

Diversity Data Base at the start of the project when we got the information back from DEEP. I then had our consultant, Matthew Popp of Environmental Land Solutions, you know, look at the Natural Diversity Data Base information from DEEP and address their concerns.

MR. MERCIER: I guess my question is, weren't aquatic species listed on that Natural Diversity Data Base letter?

THE WITNESS (Trinkaus): There was one, I believe some type of shiner, yes.

MR. MERCIER: Wasn't there a mussel also?

THE WITNESS (Trinkaus): I think so, yes.

MR. MERCIER: Okay. Thank you. Have you reviewed the second page of that letter?

THE WITNESS (Trinkaus): When I originally got it, I reviewed it. I have not looked at it in quite a while, sir.

MR. MERCIER: Okay. I just wasn't sure if you're aware that on the second page of the Natural Diversity Data Base that DEEP Wildlife Division basically stated, written, that DEEP fisheries' biologists are routinely involved in

pre-application consultation with regulatory staff and applicants in order to identify potential fisheries issues and to work with applicants to mitigate negative effects, including those to listed species. I wasn't sure if you were aware of that or --

THE WITNESS (Trinkaus): This was actually -- the Winchester application was the first time that we ever had an aquatic species be a listed species. Prior to that, it had only been reviewed by the wildlife division or the plant --

MR. MERCIER: Hold on for a second. So you're saying in your experience that was the first time you had an aquatic species?

THE WITNESS (Trinkaus): Correct.

MR. MERCIER: Okay. So you're not aware of other solar projects that may have aquatic species listed in their letters?

THE WITNESS (Trinkaus): No, I am not.

MR. MERCIER: Okay. Thank you. I have no other questions.

MR. SILVESTRI: Thank you, Mr. Mercier. I'd like to continue cross-examination of Save the River-Save the Hills with Mr. Morissette.

MR. MORISSETTE: Thank you, Mr.

Silvestri. Did anybody else get cut off, or was it just me?

MR. SILVESTRI: I think it was just you.

MR. MORISSETTE: Okay. Well, I'm back just in time. Okay. So it's my time for questions, I take it?

MR. SILVESTRI: That is correct.

MR. MORISSETTE: Thank you. I'd like to go back to the LIDAR exhibit that Mr. Mercier discussed, and my questions are for Ms. Moshier-Dunn. Relating to that exhibit, are there any observations or takeaways that we should be observing from this exhibit?

THE WITNESS (Moshier-Dunn): Yes, which is why we put it in there. The intermittent piece that comes down from in the south boundary there doesn't show on any of the petitioner's maps that we've seen. And it is a course that does run, and again, it might only run in the spring, but it does run. And so as part of Save the River working with the Niantic River Watershed Committee, we're looking at putting water quality monitors in there as well to the east where Stony Brook starts on that corner on the east so that we

can monitor and see if there's going to be more runoff sediment, temperature changes, things like that. And we can place them in there, so that water is in there. We have permission from those landowners to walk on that land, and we've seen that water.

MR. SILVESTRI: Could I ask what you're referring to on that map because nothing is really labeled?

THE WITNESS (Moshier-Dunn): The southern half of the property there is a blue line coming out by a basin that the petitioner has put in. So they're aware of the water that comes over there because the basin is at the southern, you know, the southern is -- I could show it to you. I have it here.

MR. SILVESTRI: Is this the blue line that has the little circles that are in it on the very bottom?

THE WITNESS (Moshier-Dunn): Yeah, I'm looking at the line that comes off of the property, the site, and it's on the southwest corner of the site onto the next property owner's property there.

MR. SILVESTRI: I think we're talking

about the same thing. Okay, thank you.

THE WITNESS (Moshier-Dunn): Okay. I don't see circles on mine. Sorry.

MR. MORISSETTE: It's coming out of basin 8; is that correct?

THE WITNESS (Moshier-Dunn): Yes, there you go. Thank you.

MR. SILVESTRI: Thank you.

MR. MORISSETTE: Okay. Is there anything else that you'd like to point out?

THE WITNESS (Moshier-Dunn): Just the the area on the east that goes into Stony Brook is a fragile area, and it's all ledge. They have moved a little bit away from it. They do have basins around it. But I have to say at the end of some of the testimony before last time we were, during the hurricane, they were talking about remediation and getting buckets and going down. If that happens when they're clearing it or when they're -- if there's a rainstorm, we're losing Stony Brook. It is right next to it, and it's ledge. And that is going to, if they take all those trees out all together, that area is going to be decimated. And we saw it happen in East Lyme. And the way it's set up now with the

engineering based on what Steve has told us, it could very well happen here again. And once a trout stream is gone, it's gone. That's our biggest worry here is once that sediment hits, it doesn't matter how many men with buckets go down there, or women and men with buckets go down there and bail it out, it's going to ruin those streams.

And so our point from Save the River has been this is a very fragile area. It's the head waters of the Stony Brook that goes right into the Niantic River. It's only 4,000 feet away. So anything that happens here is going to affect not only the river, which is already slightly impaired, but these crystal clear trout streams that run on the side of it.

MR. MORISSETTE: Very good. Thank you. Now I'd like to turn my attention to Mr. Danila. Mr. Danila, you mention in your, I believe it was in your supplemental testimony, you had some recommendations, and one of the recommendations was for a monitoring program over five years. And you indicate that if the monitoring program resulted in an impact that engineering solutions would need to be implemented to make for corrective actions.

So my question is, what degree of increase in the water and/or what type of sediment measures would be necessary to trigger a remediation or engineering solution for corrective action?

THE WITNESS (Danila): I think that's a good question, and I'm not sure I can quantify that at this moment. I would hope that the parties together could form what would be the basis for unacceptable impact. Certainly, trout streams such as these are very close to -- we're getting very close to losing them just due to warming, and even a several degree Fahrenheit increase in water temperature may cause the extirpation of brook trout and other cold water species from these streams. Certainly brook trout and other trouts that live in these streams require clean gravel sediments for spawning. So one would almost have to figure out where the spawning is taking place to see whether or not any additional sedimentation on spawning gravels would cause issues there.

MR. MORISSETTE: Just a follow-up. You mentioned in your -- I think it was in response to a question that the -- I think it's East Lyme

Cranberry Meadow Brook.

THE WITNESS (Danila): Yes.

MR. MORISSETTE: The water temperature increased by a degree as a potential result from runoff. Is a degree, is that a significant increase? I would think that would be, especially with climate change, that a degree wouldn't, you know, you would see a degree change from year to year. Is a degree significant?

THE WITNESS (Danila): Well, in this case, the degree change wasn't due to climate change or just natural variation. It was due to the discharge of water from the solar site, the Antares solar site, whether it be from stormwater discharge or through warmer rainwater entering groundwater then being picked up by the surface flow of the perennial stream that drains that site.

The fact of the matter is, before the Antares site was cleared, that little stream provided water that was a degree cooler than mainstem Cranberry Meadow Brook. And it doesn't sound like much, but when you have thousands of -- native temperature data, that's highly significant. After the site was developed into

the solar project, that water temperature became about a degree warmer, so that's really almost like a 2 degree change. And again, if you are close to a tipping point in streams, and brook trout and brown trout and cold water fishes have very specific temperature requirements, we are at a point now where the streams are getting close to the tipping point, that additional temperature can be a big impact.

MR. MORISSETTE: So in this monitoring program you envision that we would be able to, whoever performs it, would be able to determine or differentiate between climate change degrees versus temperature increases from runoff?

THE WITNESS (Danila): I think you can if it's properly designed. You can have a control site, which is what we did in our study up in Cranberry Meadow Brook, where you have an unimpacted control site. And even though you're going to see variation every week, every day of the year from year to year, you make a comparison of that with the potentially impacted site, and you can statistically show whether or not there is a difference in the temperature.

MR. MORISSETTE: Okay. Thank you.

Now, in general terms, are you concerned about Stony Brook or Oil Mill Brook, or both?

THE WITNESS (Danila): Well, I'm concerned about both, so yeah, I'm concerned with both. I understand that there's been changes to the project such that water discharge may not directly enter Oil Mill Brook itself, but it will go into a stream that I believe is perennial, because I've observed it even in the summertime, an unnamed stream that passes not to the west of Oil Mill Road but to the east of it, and also to the east of the Eversource substation. And one would assume, and I'd have to assume, that is going to have an impact to that stream discharge, and that stream also discharges into the Niantic River, which is one of the other ultimate concerns that we have that both of these streams are tributaries to the Niantic River, and anything that -- whether it's increased temperature, sediment or nutrients that are going to be discharged, will go into the Niantic River and may have detrimental impacts there.

MR. MORISSETTE: Very good. Thank you.

Now I have some questions for Mr. Trinkaus. Mr. Trinkaus, in your supplemental

testimony you reviewed GRE's revised plan. Is that the July 28th plan that was submitted?

THE WITNESS (Trinkaus): Yes, that was the one where they had added pretreatment, four bays, above their permanent stormwater basins.

MR. MORISSETTE: In your prefile testimony you indicated that you still see the plan as being deficient.

THE WITNESS (Trinkaus): Yes.

MR. MORISSETTE: But you don't mention anything about the impervious discussion. Is that still relevant in your analysis?

THE WITNESS (Trinkaus): Oh, absolutely, yes, it is.

MR. MORISSETTE: Okay. And I just want to confirm. With the new plan that was filed on July 28th, is it fair to say that your estimate that peak runoffs would still be 40 percent higher with that new design or would it be something less?

THE WITNESS (Trinkaus): No. The addition of the four bays do nothing to reduce runoff rates or volumes. They are designed to pretreat the water. And based on the analysis I did on the East Lyme site using the applicant's

own data but simply making the panels impervious versus pervious, it was a 40 percent increase both in peak rate and runoff volume, and that would not change. Here the numbers obviously would be higher because it's a larger site.

MR. MORISSETTE: Okay. So the 40 percent is still a valid estimate in your opinion?

THE WITNESS (Trinkaus): Yes, it is.

MR. MORISSETTE: Mr. Silvestri, that's all the questions I have.

MR. SILVESTRI: Thank you, Mr. Morissette. I'd like to continue cross-examination with Mr. Harder.

MR. HARDER: I have no questions. Thank you.

MR. SILVESTRI: Thank you, Mr. Harder. I'd like to continue with Mr. Hannon.

MR. HANNON: Thank you, Mr. Silvestri. I do have a number of questions. Some of them are just more for purposes of clarification because there are some statements that have been made, but I'm just not sure what it really means.

I know there was a statement saying it's environmentally irresponsible to clear cut 75 acres of deciduous forest for the installation of

a solar panel farm. I know what this stems from, but I guess part of my question on this is, it's my understanding that the property owners, although people think it may be associated with the solar project, the property owners came in and actually applied for a license from the town to cut timber. Is that everybody's expectation on this site? I mean, that's what we were told, and I'm just trying to find out if that is in fact what everyone believes.

THE WITNESS (Moshier-Dunn): I'm going to put this over to Steve because Steve has a degree in forestry as an undergrad. Steve, can you talk about a harvest versus what happened on this site?

THE WITNESS (Trinkaus): Yes, I can. You know, a selective timber harvest is a process where a landowner would hire a licensed forester, and there's several in the state, to come in and they evaluate your forestland. And a healthy forest is not one that has all little trees, it's not one that has all big trees, but it has what we term in the forestry field a mixed age of trees. So you have young, middle, old trees. And the forester will determine by a selective harvest of

taking some large trees, taking some medium size. And large would be over 24 inch diameter at breast height. That's where we measure trees in the forestry field. It would also constitute the middle age, which is in the 10 to 15 inch range, and even smaller range is about 8 inches. They would typically not cut anything less than that.

And the idea is to improve the overall health of the forest. Because when a forest grows up from a meadow, which is the natural succession, you generally get a very uniform crown, so that's why you have no understory on the ground surface because no sunlight gets through the thick crown. A selective harvest will basically, you know, not show up anything different on the landscape. You will not see bare areas of soil, which is what you can easily see here using a GIS or the Google Map, you can see broad areas of bare skidded soil. That is one step closer to being a clearcut than the selective harvest. So what the owners asked for and what they got could have been very different things. But a selective harvest, the entire site would be wooded, you would see a lesser density of trees, but the entire site would still be wooded. There would not be raw bare soil

as is currently visible on the site.

I did make that comment about cutting down forests. From an environmental standpoint, if you are concerned about carbon, forests can sequester tremendous amounts of carbon in the woody vegetation, in the trees, in the shrubs, in the herbaceous layer, and also the forest litter layer under everything to the point where roughly an acre of forestland in New England over an 80 year life cycle of a forest, which is the typical time frame that a forester uses, approximately 144,000 pounds of carbon can be sequestered. So if you take a site where we're now clearing roughly 70 acres or 75 acres of trees, some for the solar view and some for the actual array, you know, you can do the math, it's 75 times 144,000 pounds. That is the environmental benefit you're losing.

In addition, forests both with leaves on and without leaves on provide a benefit to stormwater runoff in that the leaves and branches intercept rainfall, slow it down, deflect it, so when it does hit the ground surface it has a fraction of the velocity of a raindrop falling straight down unencumbered. That's why in a

forest even on steep slopes you do not see concentrated runoff because the rainfall velocity has basically been reduced to zero, and therefore it simply infiltrates into the ground.

MR. HANNON: Thank you. You also made a comment, I think, that the soft forest litter layer will be removed, and the underlying soils will be compacted to varying degrees. Is there anything that can be done to that soil to minimize or eliminate that compaction?

THE WITNESS (Trinkaus): Actually, to refer you back to the Winchester application, which I designed, we specifically specified that after the stumps are removed within the actual area of the solar panels, the ground surface is scarified with an excavator or a york rake to remove any compacted soil conditions before it's seeded. Once the racking system is installed, the york rake would be used to go in the grassed areas in between, because obviously you have a vehicle setting the panels, to again scarify, loosen up that ground surface before it's being hydroseeded to eliminate the compaction. So yes, there are methodologies that can be used.

MR. HANNON: If this project were to go

forward, is that something that you think should be required?

THE WITNESS (Trinkaus): It would help, but it doesn't help with the runoff because, again, the panels are not considered to be impervious.

MR. HANNON: Okay. You also mentioned something that I have not heard the term, so can you please enlighten me as to what a "tree filter" is?

THE WITNESS (Trinkaus): Well, a tree filter itself is a low-impact development technique that's actually used in urban environments. What it is, is a large diameter piece of concrete pipe 36 or 48 inch diameter that is set off the sidewalk or off the edge of the road. A special media, mostly existing of compost and sand and topsoil is placed in it, and a tree is planted in it. The bottom of the concrete pipe is left open so that stormwater is directed into the top of the tree filter. It filters through the media and then infiltrates, so it provides a water quality benefit and then also groundwater recharge, but it is a stormwater technique that is at home in an urban environment, not in a wooded

environment such as this.

MR. HANNON: That's kind of why I think I might have been a little confused because that terminology was being used as associated with a solar project, so that's kind of where I lost the tie-in.

THE WITNESS (Trinkaus): Was it mentioned in a particular project?

MR. HANNON: No, you mentioned it on page 7 of your --

THE WITNESS (Trinkaus): Okay, let me --

MR. HANNON: -- prefile testimony.

THE WITNESS (Trinkaus): Well, page 7 of my prefile has two photos on it.

MR. HANNON: I take it back. Then maybe it wasn't the prefile. Actually, I may have mixed that up. That may have actually -- no, I thought that -- I'm sorry, it's Save the River, their testimony, April 27, 2020. That's why I was just curious. I hadn't heard the term before, so I was just trying to figure out how that's associated with a solar project. That's all.

An issue that you brought up, and I'm just trying to figure out where you're coming from

on this, it looks as though there has been a fair amount of soil testing on the site by a Connecticut company that was out there hired to do a job. They had geotechnical engineering. And I'm curious when you state that although GRE has conducted some soil testing in connection with the reopening of the original petition, that testing was inadequate to capture the soil properties of the site. Can you be a little more specific as to why you make that broad statement?

THE WITNESS (Trinkaus): Yeah, you're referencing the soils report by, I believe, Terracon, which is a geotechnical firm in the State of Connecticut. Terracon did soil borings primarily in the location of, I believe, the many stormwater basins that are proposed by GRE. In some of the borings they did an infiltration test, but how they conduct the test is not an accurate methodology. They basically have now drilled a hole through the soil, and they put a 2 inch pipe in that they seal, and then they fill it up with water. Well, you have a 20 foot head of water. Water weighs 62 and a half pounds per cubic feet. So you have a 2 inch tube with about 20 feet of water sitting in it pressing down into the soil at

the bottom. The weight of that water will push water into the ground, but that is not how an infiltration test is done.

Proper infiltration testing are done with what's called a double-ring infiltrometer. They are two concentric metal rings. They can be 2 inch to 4 inch. They can be 6 to 12 inch. They can be 12 and 24. The rings are approximately 6 inches high. They are pushed into the soil surface or using a rubber mallet. And what you do is you fill the outer ring with water and you keep it full and allow it to continue to infiltrate. Once it stops infiltrating, you fill up the outer ring again, but now you fill the inside ring. And what you've basically done is create a seal around the inner ring, and when the water can only infiltrate through the center ring, that is your vertical infiltration rate, and that is the proper methodology for determining an infiltration rate for the design of stormwater basins. Having a pipe full of water pushing down at the soil or bedrock, and actually on another project in Branford that Terracon was the geotechnical, it was a commercial development, they claim they were infiltrating into fractured bedrock with the same

methodology. It is simply not an appropriate methodology, and it does not give you accurate results.

MR. HANNON: Okay. Thank you. One of the other comments that you made is that GRE has provided for a single step down, loss in soil class. I think this is more your opinion. I believe your professional engineering opinion is that it should be two. My understanding is that the DEEP general permit only calls for one; is that correct?

THE WITNESS (Trinkaus): Well, the discussions DEEP at this current time is proposing a one step down, yes. And the reason I recommended the two step down was based on what occurred in East Lyme. East Lyme had cuts and fills up to 5 foot, so from a 5 foot cut to a 5 foot fill across the site, and they basically took a meandering side slope and made it a uniform side slope. When you dig up soils and you put them back or you fill them, natural soils have a certain natural ability to infiltrate water because of the pore space. But when you start moving soils around and you drive over them, you basically compact the pore space, and therefore

you greatly reduce the infiltrative capacity of the soil.

And again, going back to what I said earlier, by scarification and sometimes deeper scarification, you can restore the infiltrative capacity, but simply regrading the site or portions of the site, those areas should be a two step drop down, and where you're simply stumping it should be a one step drop down. When I did Winchester, even though we're absolutely grading nothing within the array itself, I used a one step drop down for that site.

MR. HANNON: Okay. Another statement that you made, and that your most significant finding is that GRE's engineer did not consider the solar panels to be impervious in designing the site. Now, I know your opinion. I also know that with the DEEP stormwater general permit, I guess it's Section I or Appendix I, which deals with the solar project, according to that document, which is currently being reviewed, I think there's a list of like five components that if you comply with all five of those then DEEP was saying that you do not need to consider the panels to be impervious.

So I guess where I'm going with this is DEEP would have to review any stormwater general permit application. If they determined that based on those five criteria, if they said the application met those criteria and the panels didn't have to be impervious, would you still be opposed to that position and fall back on yours saying that the panels need to be treated as pervious?

THE WITNESS (Trinkaus): Well, first off, in the DEEP draft, Appendix I, that language is taken from the State of Maryland which is similar to the State of Minnesota. In one conversation I had with Chris Stone about three months ago, he reached out to me, he actually spoke with the stormwater engineer from the State of Minnesota that had worked on the stormwater regulations out there. In both Minnesota and Maryland the solar arrays are placed on basically flat, flat farmland, so the water cannot drain off anywhere. There is no slope for it to drain off to.

The Minnesota engineer told Chris that what they developed in Minnesota was clearly not applicable to Connecticut because of our rolling

terrain, and that's what we have. We do not have flat ground here. So the standards in Appendix I, and I have made my position very strongly to DEEP that the panels need to be considered impervious as the fallback position, but in a certain situation where the slope is less than 5 percent where you are in an existing hay or a meadow field that's not used for grazing where you're simply driving the posts in, hanging your panels, you're not disturbing the soil, and that the runoff will run from the upper panel perpendicular to the panel rows to the bottom, then the panels could be considered impervious.

On a recent trip, I drove out to Wyoming to see our son at a college. In Iowa I saw some arrays, small arrays, one or two acres, in farm fields. And they could be considered pervious because the water cannot run anywhere, it can only fall on the ground surface and infiltrate. On the sites that we have here, whether it's Waterford, East Lyme, Pomfret, Old Lyme, even Winchester, you know, we're on sloping terrain. We are on slopes between 1 percent and up to 15 percent. So the water is going to run, it is not going to infiltrate on those steeper

slopes. And basically those standards in Appendix I are from another state, and in my professional opinion with 40 years of stormwater experience simply are not applicable here in Connecticut.

MR. HANNON: Just going back to, I think, a comment that you made earlier, I just want to make sure I have this correct, is that by treating the panels as pervious and not impervious, there is up to maybe like a 40 percent increase in runoff?

THE WITNESS (Trinkaus): That correct.

MR. HANNON: Am I understanding that correctly?

THE WITNESS (Trinkaus): I did an analysis of East Lyme using the applicant's own data. The only thing I changed was the panels being impervious instead of pervious. And for all storm events from the water quality, storm with one inch of rain all the way up to the 100 year event, it was, you know, between 40 and maybe 46 percent higher runoff rates and runoff volumes when the panels are impervious.

MR. HANNON: Thank you. Also in your prefile testimony, Question 11 on page 5, your answer, like number 2 says large portions of the

site will be regraded. What's your definition of "large portions"?

THE WITNESS (Trinkaus): Really anything over a couple hundred square feet.

MR. HANNON: Okay. I think it was the last meeting we had there was talk about the basins where you've got the level spreaders, now there will be a concrete base rather than the gravel. Does that address part of your concern where I think originally you were talking about water tends to gravitate to the lowest point, so by putting in a concrete sort of reinforced structure, does that alleviate some of your concerns about the level spreaders?

THE WITNESS (Trinkaus): Just on the level spreaders, you need a hardened edge so that when water leaves it flows uniformly over the entire edge, so a concrete lip is preferable to an open stone lip, yes.

MR. HANNON: Okay. One of your comments is on page 13, Question 16, your answer, "GRE claimed that neither the panels nor the concrete pads will produce any pollutants." You state that's a false statement. "Atmospheric deposition of pollutants on impervious surfaces is

a substantial component of the discharge of non-point source pollutants." Is that true in all cases?

THE WITNESS (Trinkaus): Yes, it is. Atmospheric deposition, no matter you can be in California, Iowa or Connecticut, up to 27 to 40 percent of our nutrient loads, nitrogen and phosphorus, come via atmospheric deposition on a day like today that's nice and sunny or like yesterday when it rained, and those pollutants land on impervious surfaces and then are washed off. There's plenty of literature out there.

There was a large study done by Bill Hunt from North Carolina State University in regard to low-impact development, and they actually found in their area, I believe, Raleigh, North Carolina, they were getting 40 percent of their nutrient loads from atmospheric deposition, and that's pretty significant. So you don't have to be putting fertilizer on the grass to have high nutrient pollutants.

MR. HANNON: And how would you propose to deal with a situation like that with a solar project in general?

THE WITNESS (Trinkaus): You design

your stormwater treatment systems in accordance with the DEEP manual. There's several different practices, mostly wet bottom basins, such as a constructed wetland or an extended detention shallow wetland system, where you have lots of contact time between the vegetation, the soil and the stormwater, and the nutrients are attenuated because of the long flow path that it takes to go from the inlet to the outlet and then your nutrient loads are reduced.

MR. HANNON: Thank you. And the last question I have, in one of your comments, and I don't think it's necessarily here, I lost track of where I found this one, but you make a statement, Fair condition was used to be conservative. It takes two full years for the vegetation to become fully established. So I think, I guess you're saying that it would take approximately two years, or you believe it would take approximately two years to establish vegetation on the ground under the panels before you really see a quality vegetated cover and you're minimizing erosion at that point?

THE WITNESS (Trinkaus): Yes. And if the soils are compacted, like currently exists at

East Lyme, you will see many bare spots. And I believe on page 7 of my prefile testimony there are pictures, and you can see that it is not a very strong, healthy grass cover. And these pictures were taken in 2018 when the array was installed in 2014. So that's four years later. So if the soils are compacted, it will take way longer.

The purpose of using a lawn in fair condition is to account for the fact that it's not well established right off the bat, and therefore, again, when you put fair condition in, in your hydrologic model, you're getting more runoff which is a conservative approach. You know, when you plant any type of vegetation, it is not automatically in a good condition the day you put it in. Mother Nature takes time to let the vegetation fill in, let them get deep root systems, and it doesn't happen, you know, overnight. And that's why the fair condition is more representative of these newly seeded sites.

MR. HANNON: Thank you for your responses. I have no additional questions.

MR. SILVESTRI: Thank you, Mr. Hannon.

THE WITNESS (Moshier-Dunn): Sorry, Mr.

Silvestri. This is Deb Moshier-Dunn.

MR. SILVESTRI: Oh, sorry.

THE WITNESS (Moshier-Dunn): I wanted to answer. I found where Mr. Hannon was referring to where we talked about tree filters, and it was in response to CSC Question Number 5 to Save the River-Save the Hills. 5b, Explain how the environmental benefit of the site would be maintained if the site were developed in accordance with its zoning designation, as opposed to the solar facility.

And we went in to talking about certainly housing with lesser impervious surfaces would not result in 75 acres of clear cutting or other damages that would result in the solar array and stormwater runoff. A housing developer would be urged to require through town regulations to maximum open space. Wetlands and stream corridors would be protected to the maximum extent possible. And stormwater would be handled using up to date and environmentally sound designs, such as tree filters and other engineering practices to maximize infiltration and remove pollutants.

MR. HANNON: I thank you for that. I was just at a loss as to how it related to a solar

project so --

THE WITNESS (Moshier-Dunn): We found it.

MR. HANNON: I know that people are using some trees that are cut down and they're chipping them up to use some of the wood for a berm around the outer perimeter. That I understand, but I just didn't understand this one. So thank you.

THE WITNESS (Moshier-Dunn): You're welcome.

MR. SILVESTRI: Yes, thank you for getting back to Mr. Hannon on that. Ms. Guliuzza.

MS. GULIUZZA: No questions. Thank you, Mr. Silvestri.

MR. SILVESTRI: Thank you. I'm not sure if Mr. Lynch had joined us because I still have a number of people that are undisclosed on my screen. So I'll ask if Mr. Lynch is on, and if Mr. Lynch has any questions.

(No response.)

MR. SILVESTRI: Okay. Hearing none, a lot of my questions have been answered to a large degree, but I did want to double back on a couple things that Mr. Hannon brought up. And I believe,

Mr. Trinkaus, these are going to be directed more toward you.

THE WITNESS (Trinkaus): Okay.

MR. SILVESTRI: A few minutes ago you had mentioned you looked at the pervious/impervious part at East Lyme and came up with your 40 percent number. Did you do the same analysis pervious/impervious for this particular project?

THE WITNESS (Trinkaus): I did not do the calculations for this project.

MR. SILVESTRI: Okay. Thank you. Also, getting back to what Mr. Hannon referred to on your prefile testimony, dated June 18, 2020, I believe this is pages 13 and 14 that talk about the atmospheric deposition. Again so that I'm clear, nitrogen and particulate bound trace metals are found in non-point source runoff from atmospheric deposition, I believe that's correct, agreed?

THE WITNESS (Trinkaus): Yes, there's many pollutants that are, you know, years ago before midwest coal plants really cleaned up their act, you would get a lot of pollutants from them that got carried with the rain to here, so yes.

MR. SILVESTRI: And part of that would have been acid rain too with sulphur, so yeah, I'm familiar with that part. The related question I have, though, if the project wasn't constructed, that was not constructed, nitrogen and particulate bound trace metals would still be found in the atmosphere deposition and resulted non-point source runoff. So would that also be correct?

THE WITNESS (Trinkaus): They would be found, they would fall on a wooded site. However, a wooded site with an undisturbed litter layer does not generate runoff. The rainfall would infiltrate. The nutrients would be taken up by the trees for growth, and trace metals and that would get trapped just under the litter layer, at the topsoil layer, as they are particulate, so they would basically sit in the soil at the top. And ultimately they do break down, but it takes years. But you're not -- again, the concentrations are also very low of metals because there's got to be a source.

MR. SILVESTRI: Okay. Let me continue on that thought then. In your opinion, do stormwater basins trap sediment?

THE WITNESS (Trinkaus): Properly

designed ones, yes.

MR. SILVESTRI: So continuing on that, would particulate bound trace metals be considered sediment?

THE WITNESS (Trinkaus): Metals and hydrocarbons have a high affinity to the finer sediment particle silts and clays. So if you were trapping the silt and clays, then yes, you will trap metals and hydrocarbons.

MR. SILVESTRI: Okay. Thank you. Then going back to the atmospheric nitrogen part of it, do you know, when the nitrogen comes down in precipitation, are there specific nitrogen compounds that form?

THE WITNESS (Trinkaus): I would have to go back and look at the literature. I believe it's in the literature. I have not looked at it in a few years. But they did a lot of research looking at the various types of nitrogen because you have Kelgin nitrogen, you have nitrite, nitrate, but just offhand I don't have the document in front of me.

MR. SILVESTRI: Okay. I'm not sure if I could continue, but I'll ask this anyhow. From your experience with that, do you know if these

compounds that are formed with the nitrogen, do you know if they're soluble?

THE WITNESS (Trinkaus): Some are and some are particulate. They come in both forms. Nutrients come both as soluble and particulate.

MR. SILVESTRI: Okay. Then related to that, again, not knowing specific nitrogen compounds, but again, you mentioned TKN, nitrate, nitrite, probably ammonia nitrogen also. Do you know if those compounds transform if they're contained within a stormwater basin?

THE WITNESS (Trinkaus): Nitrogen can go through, depending on the form of nitrogen, goes through nitrification or in an anaerobic environment denitrification. So yes, in wet or dry environments nitrogen will transform into less problematic compounds. Through denitrification you get N2 gas and oxygen.

MR. SILVESTRI: So if you were having a little chemistry lab set up, going the N2 route would free up any type of water based nitrogen compound then, it would become a gas; would that be correct?

THE WITNESS (Trinkaus): Yeah, it goes through denitrification in an anaerobic

environment, yes.

MR. SILVESTRI: Got you. Okay. Thank you. Again, based on what other Council members had asked, that's really all the other questions that I had. Before moving on, however, I just want to double check with our Council members to make sure that they didn't have any follow-up questions based on what they just heard. And let me just start again with Mr. Mercier if you had any follow-ups.

MR. MERCIER: Just a quick question for Mr. Trinkaus. I understand that you had a conversation, I think you said, with Mr. Chris Stone regarding the Minnesota manual or Wisconsin manual for the draft general permit Appendix I revision. But there are provisions in the draft revision that account for slopes. I think that was produced by Maryland's solar project siting authority. So although Wisconsin and Minnesota might be flat, but there are provisions that take care of slopes in Connecticut's draft permit, correct?

THE WITNESS (Trinkaus): There are, however, to locate on slopes between 5 and 10 percent, the standards, the requirements are

either berms, terraces or level spreaders on the downhill side of the array panels to collect the runoff from them, and none of those are proposed on this current application in Waterford.

MR. MERCIER: Right, but that would be for DEEP to tell them to do that, correct? I mean, they would review the permit and they would have to comply.

THE WITNESS (Trinkaus): It would be up -- in my professional opinion, it is the engineer's design responsibility to properly design it. So if he is on a slope between 5 and 10 percent and the Appendix I says you need berms, level spreaders or terraces, you need to incorporate them into the design prior to the submittal of plans to the Siting Council.

MR. MERCIER: All right. Well, that's your opinion. Thank you.

MR. SILVESTRI: Thank you, Mr. Mercier. Mr. Morissette, any other follow-up questions?

MR. MORISSETTE: I'm all set. Thank you, Mr. Silvestri.

MR. SILVESTRI: Thank you again. Mr. Harder, don't know if you had any questions that you'd like to pose.

MR. HARDER: No further questions. Thank you.

MR. SILVESTRI: Thank you. Mr. Hannon.

MR. HANNON: I have nothing further.

MR. SILVESTRI: Thank you also. Ms. Guliuzza.

MS. GULIUZZA: No, thank you.

MR. SILVESTRI: Very good. I think we're set with cross-examination by Council members. I'm going to divert slightly from our hearing program only to get back to an email that I received concerning the Waterford exhibits.

And Attorney Hoffman, did you also receive those Waterford exhibits, and Attorney Avena as well?

MR. AVENA: Yes, I did. Attorney Avena.

MR. SILVESTRI: You're, I guess, the one that sent them. So thank you. Mr. Hoffman -- Attorney Hoffman.

MR. HOFFMAN: I received the two-page document from Ms. Piersall that purports to be the fire code. I don't know that that is exhibits. I think it might be one exhibit.

MR. SILVESTRI: That I received. To

clarify, the top of the page has 1-76 on the left side, and it also has Chapter 12, Features of Fire Protection. That's the same one you have, correct?

MR. HOFFMAN: Two pages.

MR. SILVESTRI: Yes. And an email that I have, I also have two paragraphs that I don't know if this becomes another exhibit, but I'll read it. It says, "In 2017, the deteriorated metal culvert was replaced (opposite 121 Oil Mill Road) with a concrete box culvert. The culvert was designed to support an Hs-20 live load for the applicable AASHTO Load Combination Group. Hydrologic analysis was performed during TR-55. Backwater and floodplain analysis, HEC-RAS, was used and compared with FEMA mapping comparison."

And then the second paragraph is, "The condition or the design standard for any of the existing catch basin, drainage pipes or cross drains is unknown from Boston Post Road to the property at 117 Oil Mill Road."

I don't know if you have that, Attorney Hoffman.

MR. HOFFMAN: I do, sir.

MR. SILVESTRI: Okay. So I'll ask

Attorney Gianquinto, does that happen to be the second exhibit?

MS. GIANQUINTO: So it depends on how we want to get these admitted. We've been talking about doing this admin notice, and so I think, yes, I guess I would propose that admin notice number 42 would be the fire code provisions, that two-page PDF, and admin notice number 43 for Save the River-Save the Hills would be that August 7th email from the town about the structures on Oil Mill Road.

MR. SILVESTRI: I was going to say for clarification, they're not exhibits. They're administratively noticed items.

MS. GIANQUINTO: That's what we had been discussing.

MR. SILVESTRI: Right, okay. And Attorney Hoffman, I'll go back to you, if you have any objections to those.

MR. HOFFMAN: No objection.

MR. SILVESTRI: And Attorney Avena, do you have any objections to those?

MR. AVENA: No objection.

MR. SILVESTRI: Very good. In that case, those two would also be admitted as

exhibits -- I'm sorry, as administrative notice item, not exhibits, to the record. Thank you.

(Save the River-Save the Hills Administrative Notice Items 42 and 43 received in evidence.)

MR. SILVESTRI: Attorney Hoffman, you would be up next for cross-examination. Before you do so, however, I'd love to take a -- I have 3:17 -- say a 13 minute break, come back at 3:30, and then we could start with you.

MR. HOFFMAN: That would be fine. I have an administrative item before we take the break though.

MR. SILVESTRI: I'll listen to you.

MR. HOFFMAN: Okay. I have a couple of things that I will want to show, particularly Mr. Trinkaus, drawings and such. Is it possible to enable my share screen feature?

MR. SILVESTRI: To my knowledge, that is not feasible to do with the way we have things set up at this point. I'll double check with Attorney Bachman, but that's my understanding. Attorney Bachman.

MS. BACHMAN: Thank you, Mr. Silvestri. We aren't set up for the screen share, but,

Attorney Hoffman, may I ask, are the documents that you want to show already part of the record?

MR. HOFFMAN: For the most part. It would have been helpful if I could have pointed to certain items. But since I won't be able to do that, I will do my best by giving very specific instructions, I suppose.

MS. BACHMAN: If you could do that, that would be appreciated. Thank you.

MR. SILVESTRI: Very good.

MR. HOFFMAN: Okay. Thank you.

MS. GIANQUINTO: May I just ask one question just to make sure Mr. Trinkaus is prepared? Lee, are they exhibits, or are you expecting Mr. Trinkaus to have access to all the administratively noticed items?

MR. HOFFMAN: There will be no administratively noticed items asked.

MS. GIANQUINTO: Okay. Thank you.

MR. SILVESTRI: Okay. Very good. Again, I have 3:19 at this point. Let's reconvene back here, let's make it 3:35, just so everybody can stretch their legs and do what they have to do, and we'll come back very, very shortly. Thank you.

(Whereupon, a recess was taken from 3:19 p.m. until 3:35 p.m.)

MR. SILVESTRI: Okay. I have 3:35. I just want to make sure everybody is back that needs to get back at this point. Let me start with our court reporter, is she back?

THE COURT REPORTER: (Indicating.)

MR. SILVESTRI: Super. Thank you. I see Attorney Gianquinto. I see Attorney Hoffman.

Attorney Avena, are you back?

MR. AVENA: Yes, I am.

MR. SILVESTRI: And I see Mr. Danila. Mr. Trinkaus, are you back?

THE WITNESS (Trinkaus): Yes, I am.

MR. SILVESTRI: Great. And Ms. Dunn, are you back?

THE WITNESS (Moshier-Dunn): Yes, I am.

MR. SILVESTRI: Super. I think we're set and ready to go. So I'd like to continue the cross-examination of Save the River-Save the Hills by the petitioner, and Attorney Hoffman.

MR. HOFFMAN: Thank you, Mr. Silvestri. Ms. Moshier-Dunn, can we start with you?

THE WITNESS (Moshier-Dunn): Sure.

MR. HOFFMAN: Great. Where do you

work?

THE WITNESS (Moshier-Dunn): I'm volunteer extraordinaire. Right now I'm home schooling two children and volunteering on multiple boards.

MR. HOFFMAN: Okay, very good. I want to turn to your answer to Question 17, so that's on page 15 of your prefiled testimony.

THE WITNESS (Moshier-Dunn): I'm looking it up. Okay.

MR. HOFFMAN: So can you tell me where Mr. Robert Hannon is gainfully employed?

THE WITNESS (Moshier-Dunn): At DEEP?

MR. HOFFMAN: Yes. And can you tell me where Mr. Harder was gainfully employed before he retired?

THE WITNESS (Moshier-Dunn): I believe at DEEP as well.

MR. HOFFMAN: Thank you. And I want to talk to you a little bit about Save the River-Save the Hills advocacy activities. Are you familiar with the Town of East Lyme considering a 500 foot upland review area for all wetlands in the Town of East Lyme?

THE WITNESS (Moshier-Dunn): Yes, I am.

MR. HOFFMAN: And has Save the River-Save the Hills taken a position on that?

THE WITNESS (Moshier-Dunn): We have not. We have not because our board could not come to consensus on it.

MR. HOFFMAN: Wouldn't an increase in the upland wetlands review area have a positive impact on the Niantic River watershed?

THE WITNESS (Moshier-Dunn): It depends upon how it's done by the town. And I'm trying to understand what the significance of that question is.

MR. HOFFMAN: I'm just trying to figure out where else Save the River-Save the Hills gets involved on projects.

THE WITNESS (Moshier-Dunn): We're very much involved in trying to save the Oswegatchie Hills. We have a pump-out boat that's on the water that pumps out on weekends all the marinas that -- or all the boats that are on the river. We have a water quality testing which I think the Council saw and heard from Dr. Jamie Vaudrey who is testing the waters of the Niantic River watershed mostly on the river. We have an education program where we work with the Niantic

River Watershed Committee to educate in the schools. So we are a full-service type of organization trying to get people to understand the significance of watersheds and how what they do every day in their backyards affects the watershed.

MR. HOFFMAN: But you don't have an opinion on what the Town of Lyme is doing with respect to its watershed?

THE WITNESS (Moshier-Dunn): I have an opinion, but our board could not come to consensus, so therefore we did not state outwardly an opinion.

MR. HOFFMAN: Thank you. And now going to the LIDAR map.

THE WITNESS (Moshier-Dunn): Yes.

MR. HOFFMAN: The watercourses on the LIDAR map that you referenced in the south.

THE WITNESS (Moshier-Dunn): Yes.

MR. HOFFMAN: Are those regulatory watercourses subject to any state or local jurisdiction?

THE WITNESS (Moshier-Dunn): Not that I'm aware of. They're on private property.

MR. HOFFMAN: And did you do any

surveys on the subject site?

THE WITNESS (Moshier-Dunn): No.

MR. HOFFMAN: So how do you know that those watercourses are intermittent?

THE WITNESS (Moshier-Dunn): Because, well, I personally didn't walk the land, but other people that I know have walked it, and we had permission from those landowners, there's seven different landowners of that property, to put water quality monitors on it, which we have not done yet.

MR. HOFFMAN: You haven't done that yet?

THE WITNESS (Moshier-Dunn): No, we have not.

MR. HOFFMAN: Great. Thank you very much. Mr. Danila, I'm pronouncing that correctly, yes?

THE WITNESS (Danila): Yes. Thank you.

MR. HOFFMAN: Great. You worked at Millstone, correct, both in one capacity for both Northeast Utilities and (audio interruption) --

THE WITNESS (Danila): Yes.

MR. HOFFMAN: And you retired from there, right?

THE WITNESS (Danila): Yes.

MR. HOFFMAN: Did Millstone release thermal pollution to Long Island Sound back when you worked there?

THE WITNESS (Danila): Thermal pollution, that's an interesting -- I might need a definition of that. Millstone did produce a thermal effluent in accordance with its National Pollutant Discharge Elimination System Permit as administered by Connecticut DEEP.

MR. HOFFMAN: Thermal effluent, it's a much more exact term. We'll use your term. How far into Long Island Sound did that thermal effluent discharge until it had fully mixed with the Sound water?

MS. GIANQUINTO: Mr. Silvestri, I'm going to object on these questions. I don't see the relevance to the project that we're talking about. I mean, I understand it's related to Niantic River, but, I mean, we're not talking about the impact of Millstone on the Niantic River. We're talking about the impact of this project.

MR. SILVESTRI: No, I understand where you're coming from, Attorney Gianquinto. What I'm

taking out of this, and I could be wrong, but what I'm taking out of it is Mr. Danila had mentioned the thermal potential impacts of the particular project, the 200 feet which was corrected from the 100 feet before. And I could be wrong, but I think Attorney Hoffman is trying to get to some basis of a relation between the two. I'll agree that we probably want to take Millstone off the table. Perhaps Attorney Hoffman could tailor the questions a little bit more to be, say, specific to the project. I wouldn't sustain your objection completely, but I'd like to try to clean this up and move forward on it, however.

MR. HOFFMAN: Well, you're exactly correct, Mr. Silvestri, that is where I'm headed.

So let me ask Mr. Danila, did you read the June 17, 2020 comments filed in this petition by the Connecticut Department of Energy and Environmental Protection?

THE WITNESS (Danila): June 17, 2020, yes, I did.

MR. HOFFMAN: Did DEEP mention any concerns with thermal effluent or thermal loading in that letter?

THE WITNESS (Danila): Within that June

17th letter?

MR. HOFFMAN: Yes.

THE WITNESS (Danila): Other than the sentence that says, Regardless of how the project is submitted, DEEP and the Siting Council may consider impacts to forestland, wildlife and wetlands as well as air and water quality.

MR. HOFFMAN: Right. So where is the word "thermal" there?

THE WITNESS (Danila): Well, I don't think you need to have thermal there. I mean, it should be considered as part of a water quality issue.

MR. HOFFMAN: I completely and totally agree with you. In fact, isn't thermal a water quality standard that DEEP looks at?

THE WITNESS (Danila): Yes.

MR. HOFFMAN: And can you presume that DEEP looked at it here?

THE WITNESS (Danila): You're asking me to make a presumption on the actions of others that I have no knowledge of. I don't know.

MR. HOFFMAN: But DEEP didn't write that they were concerned about thermal impact on this project, did they?

THE WITNESS (Danila): I'm not so sure that's correct. I'd have to go back to the August 20, 2018 letter on the first petition.

MR. HOFFMAN: No, sir, that petition is not before us today. I'm asking about that letter in this petition. It's a different record. Did DEEP evidence any concern over thermal effluent for this project?

THE WITNESS (Danila): Not to my knowledge.

MR. HOFFMAN: And I guess I would ask, and this is where I was trying to head -- maybe Mr. Silvestri will allow it or maybe he won't -- what would be the comparison of the thermal impact associated with this project as compared to Millstone?

MS. GIANQUINTO: I'm going to object on relevance.

MR. SILVESTRI: Yeah, that one I won't allow, Attorney Hoffman.

MR. HOFFMAN: Fair enough.

MR. SILVESTRI: Thank you.

MR. HOFFMAN: What would be the increase to the surrounding receiving water streams from this project?

THE WITNESS (Danila): Sir, I could not hear the entire question. Could you repeat?

MR. HOFFMAN: Absolutely. What will be the increase in temperature as a result of this project being developed to the receiving water bodies?

THE WITNESS (Danila): I can't answer that at this time.

MR. HOFFMAN: Okay. And when you rendered your testimony, you relied, at least in part, on Mr. Trinkaus's critiques of the stormwater management plan, correct?

THE WITNESS (Danila): Yes.

MR. HOFFMAN: Okay. You mentioned in Answer 11 that Oil Mill and Stony Brook are classified as Class A waters, correct?

THE WITNESS (Danila): Yes.

MR. HOFFMAN: Is that classification from Connecticut DEEP?

THE WITNESS (Danila): Yes, I believe it is.

MR. HOFFMAN: Earlier today you testified about the Cranberry Brook.

THE WITNESS (Danila): Cranberry Meadow Brook, yes, East Lyme.

MR. HOFFMAN: Apologies, Cranberry Meadow Brook.

THE WITNESS (Danila): Yes.

MR. HOFFMAN: Where is that data in this record?

THE WITNESS (Danila): I don't believe for this particular petition it's in the record. My belief, I referred to it in the previous petition on a letter that I sent in to the Council once I learned about this project.

MR. HOFFMAN: Thank you. I have nothing further.

MR. HOFFMAN: Mr. Trinkaus, you have a degree in forestry, correct?

THE WITNESS (Trinkaus): Yes, I do.

MR. HOFFMAN: Do you have a degree in engineering?

THE WITNESS (Trinkaus): No, I do not.

MR. HOFFMAN: Do you have a degree in chemistry?

THE WITNESS (Trinkaus): No, I do not.

MR. HOFFMAN: Okay. We talked a little bit about Petition 1398 in Winchester.

THE WITNESS (Trinkaus): Yes, briefly.

MR. HOFFMAN: Yes. Is that site

currently forested?

THE WITNESS (Trinkaus): It is, the site was forested. We did a subdivision on the site in 2003, and we got approvals in the end of 2005. In the spring of 2006, we did a selective harvest within the area of many of the lots on the central ridge, part of which is being used for the solar array. About 700 trees were taken out at that time. And today when you walk the site it is all growing up, it is still a forest.

MR. HOFFMAN: Okay. Thank you. And you mentioned the trees slow the raindrop velocity, correct?

THE WITNESS (Trinkaus): Yes.

MR. HOFFMAN: Wouldn't solar panels slow raindrop velocity?

THE WITNESS (Trinkaus): No, they don't because it's a hard smooth surface. A tree branch, particularly with leaves on it, is not a smooth surface. Many of the leaves intercept light rain and simply absorb it to use in photosynthesis. And branches themselves will deflect a raindrop, but it doesn't bounce off. A solar panel is no different than a roof where it's a hard smooth surface.

MR. HOFFMAN: And where is your data supporting that, sir?

THE WITNESS (Trinkaus): 40 years of engineering experience designing stormwater management systems.

MR. HOFFMAN: So you don't have any data to show me that shows that a raindrop with velocity of X is the same if it hits an impervious surface versus a tree?

THE WITNESS (Trinkaus): There's probably data on the forestry side you could research. But clearly a raindrop hitting any impervious surface is going to run off down the slope of that surface, be it a solar panel, be it a building roof, be it a paved parking lot.

MR. HOFFMAN: You mentioned the Antares project.

THE WITNESS (Trinkaus): Yes.

MR. HOFFMAN: Was Mr. Jean-Paul LaMarche involved in the Antares project?

THE WITNESS (Trinkaus): I wasn't involved until 2018, so I can't say if he was involved during the permitting and/or construction of that which occurred four years before.

MR. HOFFMAN: Fair enough. Was VHB

involved in Antares?

THE WITNESS (Trinkaus): I do not believe so. I believe the engineer of record was BL Companies.

MR. HOFFMAN: Who is the engineer of record for this project?

THE WITNESS (Trinkaus): VHB.

MR. HOFFMAN: Do you hold BL Companies in high regard?

THE WITNESS (Trinkaus): I think I answered this question previously during the deposition on the east thing. I have differences of opinion with their design process.

MR. HOFFMAN: Do you hold them in high regard?

THE WITNESS (Trinkaus): Professionally, no.

MR. HOFFMAN: The bulk of your work is for low-impact development, right?

THE WITNESS (Trinkaus): In recent years, yes.

MR. HOFFMAN: So is low-impact development most effective in residential and small commercial projects?

THE WITNESS (Trinkaus): It can be

effective on any type of land development project.

MR. HOFFMAN: Is it effective in solar projects?

THE WITNESS (Trinkaus): It could be if it was a requirement.

MR. HOFFMAN: Okay. So let's look at Winchester. When Ms. Gianquinto was doing her cross-examination the other day, she mentioned grass pavers for roads. That's an element of low-impact development, right?

THE WITNESS (Trinkaus): Grass pavers could be, yes. Assuming that the soils underneath the pavers are a Class A or B soil that it will infiltrate, that's the purpose of using a permeable surface is to infiltrate water. If you're on a class C soil, which most of Winchester is, then pavers would not be an appropriate technique.

MR. HOFFMAN: So you're not using those in Petition 1398?

THE WITNESS (Trinkaus): No, we are not.

MR. HOFFMAN: What about other low-impact design elements, are you using rain gardens in Petition 1398?

THE WITNESS (Trinkaus): No, I am not.

MR. HOFFMAN: What about sand filters?

THE WITNESS (Trinkaus): Sand filters, they're not typically a low-impact development strategy because they're very high maintenance.

MR. HOFFMAN: So on July 19th you sent a letter to Chris Stone at Connecticut DEEP related to Appendix I, right?

THE WITNESS (Trinkaus): I believe so, yes.

MR. HOFFMAN: And in that letter did you say to Mr. Stone -- Mr. Stone is a Connecticut DEEP employee, right?

THE WITNESS (Trinkaus): Yes.

MR. HOFFMAN: And he works in stormwater management, correct?

THE WITNESS (Trinkaus): Yes, he does.

MR. HOFFMAN: And in that letter you said that the appropriate undisturbed buffer for a solar project should be at least 50 feet from a wetlands that is -- and I'm quoting from your letter here -- down gradient of such construction activity, end quote, where the cover consists of, quote, existing dense herbaceous vegetative ground level cover. Do you remember writing that?

MS. GIANQUINTO: Mr. Silvestri, I'm going to object. This document is apparently in connection with a DEEP proceeding that as far as I know is not part of this record and is still ongoing, and this document is not in evidence that Mr. Hoffman is reading into the record.

MR. SILVESTRI: Partly correct, Attorney Gianquinto. I want to go back to when Mr. Trinkaus was answering a couple other questions, and he did mention discussions that he had with Mr. Stone. He kind of opened the door on the discussion part. And while I'll say let's not refer to the email, I will allow Attorney Hoffman, if he has additional questions related to the discussion, because Mr. Trinkaus did bring that up before.

MR. HOFFMAN: So my question is, does this project have existing dense herbaceous vegetative ground level cover?

THE WITNESS (Trinkaus): Waterford?

MR. HOFFMAN: Yes.

THE WITNESS (Trinkaus): Based on the photo log submitted, I believe, by VHB of the site, now you can see herbaceous cover in many areas. I cannot state that it's throughout the

site, but there are areas clearly visible in your photo log.

MR. HOFFMAN: Fantastic. So it has dense herbaceous cover?

THE WITNESS (Trinkaus): In areas that have been previously cleared, that's where it's present.

MR. HOFFMAN: Great. You mentioned you have 40 years of professional experience in stormwater design. How many years of experience do you have designing stormwater systems for solar projects at the commercial scale?

THE WITNESS (Trinkaus): Just the Winchester one, so I guess you could say one year, but I believe I've previously stated that there is no difference from a design standpoint of a ground-mounted solar array versus a residential subdivision versus a Walmart or Home Depot. You're dealing with changes to terrain, you're dealing with impervious and pervious areas, and you're addressing water quality, peak rate and runoff volumes.

MR. HOFFMAN: That's not what the court said in the Antares case, is it?

MS. GIANQUINTO: Mr. Silvestri, I was

going to object to that question.

MR. SILVESTRI: Understood, Attorney Gianquinto. Attorney Hoffman, I thought your question was related to how many years did he have working with solar as opposed to stormwater.

MR. HOFFMAN: That was my question, but then Mr. Trinkaus started talking about how the experience is the same regardless of what you're doing, and I'm suggesting that a superior court judge found something different in a case in which Mr. Trinkaus tried to testify as an expert.

MR. SILVESTRI: I believe that's outside the scope of what we're looking at at this point, Attorney Hoffman. Thank you.

MR. HOFFMAN: So have you ever visited the Waterford site?

THE WITNESS (Trinkaus): I have no permission, so the answer is no.

MR. HOFFMAN: Then I want to turn your attention to Answer Number 7 of your prefile testimony.

THE WITNESS (Trinkaus): On page 3, Attorney Hoffman?

MR. HOFFMAN: Yes, the last sentence. You say that GRE has misrepresented the site

conditions.

THE WITNESS (Trinkaus): Yes, because it is clearly visible on a Google Map the extent of bare soil on the site where the supposed selective harvest was conducted.

MR. HOFFMAN: And then moving to the answer to A8, you state that -- also still on page 3, but shifting over to page 4 -- you state that there will be increased runoff?

THE WITNESS (Trinkaus): Yes.

MR. HOFFMAN: How much?

THE WITNESS (Trinkaus): Similar to what I calculated in East Lyme, you would see expected 40 percent higher values than reported in the stormwater report by VHB.

MR. HOFFMAN: Where are your calculations for that in this record?

THE WITNESS (Trinkaus): There are none.

MR. HOFFMAN: And where are your calculations in that record for what you did for Antares?

THE WITNESS (Trinkaus): They were submitted to Mr. Bialowans's counsel after my deposition at your office. I do not know if

everything --

MR. HOFFMAN: And Mr. Silvestri, this is why I wanted to open up what the court said about Mr. Trinkaus's qualifications as an expert, but I will press on.

MR. SILVESTRI: Thank you.

MR. HOFFMAN: You also state that there's increased flow path.

THE WITNESS (Trinkaus): What page, Attorney Hoffman?

MR. HOFFMAN: I believe it's in the answer to 8, yes, the answer to 8 about halfway down, the answer, "Water will hit them, run off of them in predictable ways, yet GRE has not accounted for that increased runoff volume, velocity or flow path." Do you see where I'm talking about?

THE WITNESS (Trinkaus): Yes, I will explain why -- I believe I kind of -- one of our recent DEEP calls kind of answered this question, but I'll be happy to elaborate on it. Flow path is the path a raindrop will take in a natural environment or in a developed environment of how it gets from the high point to the low point. And in natural terrain it follows the contours, a

raindrop will flow perpendicular to the contours. That's the path water will go.

On solar panels on the Waterford site that we're discussing now, while on the upper end of the solar array the water does fall off and does begin to run perpendicular to the row below it, because of how the sloping terrain is, that raindrop then begins to move either to the left or right but does not remain perpendicular to the row of panels. It is following the contours and is running out towards the down gradient, a down gradient edge of one of the panel rows because it will always follow the contour. So that is the flow path.

MR. HOFFMAN: Okay. I appreciate the level setting there. So, how much will the flow path increase by with the Waterford project?

THE WITNESS (Trinkaus): It varies throughout the site because each of the subwatersheds going to each of your 8 or 12 basins, I don't recall exactly how many there are, would have different flow paths. As the slopes get deeper generally towards the end of many of the arrays which I have reviewed, that flow path is going to get faster. As the time of

concentration which the flow path is defining becomes shorter, the peak rate of runoff occurs sooner and higher.

MR. HOFFMAN: Okay. But you still haven't answered my question. By how much will the flow path increase, where are your calculations?

THE WITNESS (Trinkaus): I have not done any. You would have to look at every one of your watersheds and spend time doing that.

MR. HOFFMAN: And we'd have to look at every one of our basins, too, I'd imagine.

THE WITNESS (Trinkaus): That's where the design points are, yes.

MR. HOFFMAN: And how many basins do we have?

THE WITNESS (Trinkaus): I believe you have roughly 12. Maybe there's a few more.

MR. HOFFMAN: I'm going to shift to the end of Question 8, flipping over to page 4. Do you think designing things your way would not be cost prohibitive. Do you see that? It's the very tail end of the answer to 8?

THE WITNESS (Trinkaus): Yes.

MR. HOFFMAN: How much would they cost?

THE WITNESS (Trinkaus): I can tell you in Winchester which has --

MR. HOFFMAN: No, how much would they cost here, sir?

THE WITNESS (Trinkaus): They would have to be -- I can't put a price on what your client has proposed, what GRE has proposed, I should say.

MR. HOFFMAN: Okay. Shifting now to Question 11 which is on page 6.

THE WITNESS (Trinkaus): Yes.

MR. HOFFMAN: You talk about your experience with the soil at the Antares site, right?

THE WITNESS (Trinkaus): Correct.

MR. HOFFMAN: How long were you at the Antares site doing your review of that site?

THE WITNESS (Trinkaus): A couple hours.

MR. HOFFMAN: Did you take any notes?

THE WITNESS (Trinkaus): I didn't need to. I had some photographs.

MR. HOFFMAN: Did you take any soil samples?

THE WITNESS (Trinkaus): There was no

need to.

MR. HOFFMAN: Are you a soil scientist?

THE WITNESS (Trinkaus): No, I am not, but I had a soil course as part of my forestry degree.

MR. HOFFMAN: You had one course?

THE WITNESS (Trinkaus): Correct.

MR. HOFFMAN: But you didn't take any samples?

THE WITNESS (Trinkaus): No, I did not.

MR. HOFFMAN: Okay.

MR. SILVESTRI: Attorney Hoffman, if I could interject while you're turning your page and potentially correct myself. Looking back on the administrative notice list that we have for the Council, Item No. 97, we have Bialowans versus GRE 314 East Lyme, LLC, et al, record and decision available, and then a hyperlink that goes along with that. If there were questions that you had relating to that case, that would be allowed.

MR. HOFFMAN: Well, that was the case that I was referring to, sir.

MR. SILVESTRI: Right, and I'm trying to correct myself because I did find that in the administrative notice list.

MR. HOFFMAN: Well, thank you. I guess I'll just say thank you.

MR. SILVESTRI: Okay.

MR. HOFFMAN: If I may, I'm just going to continue with atmospheric deposition and then maybe go back to that, if that's all right?

MR. SILVESTRI: Fine by me.

MR. HOFFMAN: Okay. You mentioned the literature and research on the atmospheric deposition of nitrogen products as well as lead, chromium, et cetera. Do you remember that conversation?

THE WITNESS (Trinkaus): Yes.

MR. HOFFMAN: Okay. So where is the literature and research to which you referred in this petition?

THE WITNESS (Trinkaus): The primary document is a paper by Dr. Bill Hunt from North Carolina State University.

MR. HOFFMAN: Is that in this docket?

THE WITNESS (Trinkaus): It is not, no.

MR. HOFFMAN: Okay. What is the amount of nitrogen flowing into the receiving bodies of water predevelopment?

THE WITNESS (Trinkaus): You would have

to sample the water at particular points before any development occurred to develop a baseline of what's exactly in the water.

MR. HOFFMAN: Have you done that?

THE WITNESS (Trinkaus): No, I have not.

MR. HOFFMAN: What would the increase in nitrogen products be if the site, rather than being developed for solar, were developed for single-family housing as it's zoned to do?

THE WITNESS (Trinkaus): Likely less because the Town of Waterford requires the application of low-impact development practices such as swales and bioretention system which are very good at attenuating nutrients.

MR. HOFFMAN: Does the Town of Waterford prohibit the use of fertilizers?

THE WITNESS (Trinkaus): I do not know that.

MR. HOFFMAN: Turning to Question 18, which starts on page 16 of your prefile testimony. Are you with me?

THE WITNESS (Trinkaus): Yes, I am.

MR. HOFFMAN: Okay. So it looks to me that you looked at the Antares site, which we've

talked a lot about, and also the Woods Hill Solar site; is that fair?

THE WITNESS (Trinkaus): Yes.

MR. HOFFMAN: Who was the engineer of record for the Woods Hill site in Pomfret?

THE WITNESS (Trinkaus): I believe VHB was the engineer who designed the corrective action plan. I think Tighe & Bond may have been the original engineer, I don't recall offhand, but I believe VHB did the corrective plan.

MR. HOFFMAN: And do you know whether or not that corrective plan was successfully implemented?

THE WITNESS (Trinkaus): I do not. I reviewed the plans in Neil Williams' offices at DEEP prior to any work being done.

MR. HOFFMAN: But you didn't look at the Tobacco Valley Solar Project, Petition 1313, did you?

THE WITNESS (Trinkaus): No, I have not.

MR. HOFFMAN: Have you looked at Greenskies' project in North Haven?

THE WITNESS (Trinkaus): No, I have not.

MR. HOFFMAN: Have you looked at their project in Stonington on Taugwonk Road?

THE WITNESS (Trinkaus): Just briefly on the Council web site.

MR. HOFFMAN: You mentioned -- shifting to -- I'm sorry, I'm going a little bit backwards, and I apologize for that -- but your answer to 17. At the bottom of page 14 --

THE WITNESS (Trinkaus): Yes, I have it.

MR. HOFFMAN: -- you mentioned the DOT manual being used --

THE COURT REPORTER: Excuse me, this is the stenographer. I didn't hear that last question. There's some kind of interference, or somebody's not on mute.

MR. HOFFMAN: My apologies. I would never say that Mr. Silvestri is not on mute.

MR. SILVESTRI: Could you repeat the question, Mr. Hoffman?

MR. HOFFMAN: Absolutely. Going back to your answer on 17.

THE WITNESS (Trinkaus): Yes.

MR. HOFFMAN: At the bottom of page 14, Mr. Trinkaus, you talk about the Connecticut DOT

manual. Do you see where I'm looking?

THE WITNESS (Trinkaus): Yes, I do.

MR. HOFFMAN: Okay. And that relates to the construction of sediment traps, right?

THE WITNESS (Trinkaus): That comment, yes. The report by VHB discussed sizing the sediment traps using DOT's standards.

MR. HOFFMAN: Right. A temporary diversion under the 2002 Connecticut guidelines for soil erosion and sediment control, you're familiar with that document, right?

THE WITNESS (Trinkaus): Yes.

MR. HOFFMAN: Great. Under those guidelines, a temporary diversion are those that last for less than a year, right?

THE WITNESS (Trinkaus): Typically, although it depends on the construction. They can be kept longer. But if you're going to keep a diversion longer than a year, there is a permanent diversion standard versus a temporary.

MR. HOFFMAN: And if the diversion is going to last for more than a year, then it's considered a permanent diversion, right?

THE WITNESS (Trinkaus): I believe so, under the manual, yes.

MR. HOFFMAN: Where would I find information about design criteria for permanent diversions in the 2002 Connecticut guidelines?

THE WITNESS (Trinkaus): I would have to sit down and look at it. I don't have it at the tip of my fingers.

MR. HOFFMAN: Well, it is one of the emails that I sent you. Specifically it's page 5-7-12.

THE WITNESS (Trinkaus): Okay.

MR. HOFFMAN: Do you have that email that I sent you, sir?

THE WITNESS (Trinkaus): Yes, I opened the PDF, yes.

MR. HOFFMAN: Perfect. Can you look down at the bottom of the left column where it says design criteria?

THE WITNESS (Trinkaus): Yes, I do.

MR. HOFFMAN: What are the examples of criteria for permanent diversion according to accepted engineering standards?

THE WITNESS (Trinkaus): NRCS National Engineering Handbook, Part 650. NRCS Field Office Technical Guide, Section 4. DOT Drainage Manual, but it does not specify a state.

MR. HOFFMAN: Thank you. We talked about your year of experience doing stormwater permitting for solar projects. You've never obtained a general permit for discharges associated with construction activities from Connecticut DEEP for a solar project, correct?

THE WITNESS (Trinkaus): We have not received approval. We have filed the application for Winchester.

MR. HOFFMAN: And similarly, the Winchester petition is still pending, it's not approved, correct?

THE WITNESS (Trinkaus): That is correct, to my knowledge today, yes.

MR. HOFFMAN: I believe that those are all the questions I have, Mr. Silvestri.

MR. SILVESTRI: Thank you, Attorney Hoffman. I'd like to continue cross-examination of Save the River-Save the Hills by the Town of Waterford and Attorney Avena.

MR. AVENA: Thank you. The town has no questions at this time.

MR. SILVESTRI: Very good. Thank you, Attorney Avena.

At this point, ladies and gentlemen, we

hit the closing mark. And before closing the evidentiary record of this matter, the Connecticut Siting Council announces that briefs and proposed findings of fact may be filed with the Council by any party or intervenor no later than September 24, 2020. The submission of briefs or proposed findings of fact are not required by this Council, rather, we leave it to the choice of the parties and the intervenors.

Anyone who has not become a party or intervenor, but who desires to make his or her views known to the Council, may file written statements with the Council within 30 days of the date hereof.

The Council will issue draft findings of fact, and thereafter parties and intervenors may identify errors or inconsistencies between the Council's draft findings of fact and the record; however, no new information, no new evidence, no argument and no reply briefs without our permission will be considered by the Council.

Copies of the transcript of this hearing will be filed with the Waterford Town Clerk's office. I hereby declare this hearing adjourned. I thank you all for your

participation. And be careful because we do have a severe thunderstorm warning across the state I think until about 10 o'clock. We don't want to have a repeat of what we had the last time we got together. Thank you all very much.

(Whereupon, the witnesses were excused and the hearing concluded at 4:14 p.m.)

CERTIFICATE OF REMOTE HEARING

I hereby certify that the foregoing 100 pages are a complete and accurate computer-aided transcription of my original stenotype notes taken of the HEARING HELD BY REMOTE ACCESS IN RE: PETITION NO. 1347A, GRE GACRUX LLC FOR A DECLARATORY RULING FOR THE PROPOSED CONSTRUCTION, MAINTENANCE AND OPERATION OF A 16.78 MEGAWATT AC SOLAR PHOTOVOLTAIC ELECTRIC GENERATING FACILITY LOCATED AT 117 OIL MILL ROAD IN WATERFORD, CONNECTICUT, which was held before ROBERT SILVESTRI, PRESIDING OFFICER, on August 25, 2020.

Lisa L. Warner, CSR 061
Court Reporter
BCT REPORTING SERVICE
55 WHITING STREET, SUITE 1A
PLAINVILLE, CONNECTICUT 06062

I N D E X

WITNESSES DONALD J. DANILA SWORN ON PAGE 11
DEBORAH MOSHIER-DUNN
STEVEN D. TRINKAUS

EXAMINERS:	PAGE
Ms. Gianquinto (Direct)	12
Mr. Mercier (Start of Cross)	16,60
Mr. Morissette	27
Mr. Hannon	36
Mr. Silvestri	55
Mr. Hoffman	67

SAVE THE RIVER-SAVE THE HILLS EXHIBITS

EXHIBIT	DESCRIPTION	PAGE
IV-B-1	STR-STH response to request to reopen, dated February 12, 2020.	16
IV-B-2	STR-STH response to request to reopen, Attachment #3, dated February 12, 2020.	16
IV-B-3	STR-STH responses to GRE GACRUX LLC interrogatories, dated April 27, 2020.	16
IV-B-4	STR-STH additional request for party and CEPA intervenor status, dated June 10, 2020.	16
IV-B-5	STR-STH responses to Council interrogatories, dated June 18, 2020.	16
IV-B-6	Prefiled testimony of Donald Danila, dated June 18, 2020.	16
IV-B-7	Prefiled testimony of Deborah Moshier-Dunn, dated June 18, 2020.	16
IV-B-8	Prefiled testimony of Steven Trinkaus, dated June 18, 2020.	16

I n d e x: (Cont'd.)

EXHIBIT	DESCRIPTION	PAGE
IV-B-9	Declaration of Deborah Moshier-Dunn, dated June 24, 2020.	16
IV-B-10	STR-STH amended response to Council Interrogatory #4, dated June 24, 2020.	16
IV-B-11	Supplemental prefiled testimony of Donald Danila, dated June 24, 2020.	16
IV-B-12	Supplemental prefiled testimony of Steven Trinkaus, dated August 3, 2020.	16
IV-B-13	LIDAR map with GRE grading and drainage overlay, submitted August 3, 2020.	16

**All exhibits were retained by the Council.