STATE OF NEW HAMPSHIRE

SITE EVALUATION COMMITTEE

June 23, 2017 - 9:00 a.m. **DAY 19**
49 Donovan Street **Morning Session ONLY**
Concord, New Hampshire

{Electronically filed with SEC 07-07-17}

IN RE: SEC DOCKET NO. 2015-06
NORTHERN PASS TRANSMISSION - EVERSOURCE; Joint Application of Northern Pass Transmission LLC and Public Service of New Hampshire d/b/a Eversource Energy for a Certificate of Site and Facility (Hearing on the Merits)

PRESENT FOR SUBCOMMITTEE/SITE EVALUATION COMMITTEE:

Chmn. Martin Honigberg *(Presiding Officer)*	Public Utilities Comm.
Cmsr. Kathryn M. Bailey	Public Utilities Comm.
Dir. Craig Wright, Designee	Dept. of Enrivon.Serv.
Christoper Way, *Designee*	Dept. of Resources & Economic Development
William Oldenburg, *Designee*	Dept. of Transportation
Patricia Weathersby	Public Member
Rachel Dandeneau	Alternate Public Member

ALSO PRESENT FOR THE SEC:

Michael J. Iacopino, Esq. Counsel for SEC
(Brennan, Caron, Lenehan & Iacopino)

Pamela G. Monroe, SEC Administrator

(No Appearances Taken)

COURT REPORTER: Cynthia Foster, LCR No. 14

I N D E X

E X H I B I T S

P R O C E E D I N G S

(Hearing resumed at 9:00 a.m.)

PRESIDING OFFICER HONIGBERG: Good morning everyone. I'm told this is Day 19. We're continuing with the Environmental Panel. Laura Saffo from the Grafton County Commissioners is going to continue the questioning. Ms. Saffo, you may proceed.

MS. SAFFO: Thank you.

(Exhibit 32 marked for identification)

CROSS-EXAMINATION

BY MS. SAFFO:

Q Good morning. Good morning. I guess I would direct this to Mr. Varney. So is it fair to say that part of the reason why we're here this morning is to look at New Hampshire RSA 169-8:1 which is a Declaration of Purpose. Is that something that's fair to say?

A (Varney) For the SEC are you referring to?

Q Yes.

A (Varney) Yes.

Q This is the Energy Facility Evaluation Site and Construction Operation Chapter in the New Hampshire law.

A (Varney) Oh, okay. Thank you.
Q Right in front of you I have the first part of that chapter which is a Declaration of Purpose.
A (Varney) Um-hum.
Q And I've underlined the part that talks about that full and timely consideration of environmental consequences be provided. Fair to say it says that?
A (Varney) Yes.
Q Now, one of the issues that, I'm going to use the word struggle, that we've been struggling with is the Project seems to evolve over time. Do you understand what I mean by that?
A (Varney) Do you mean changes in the Project?
Q Yes. Yes.
A (Varney) That were submitted to the SEC?
Q Yes. So it makes it kind of a moving target as far as trying to put your head around the entire Project.

But we can agree that our law requires a full and timely consideration of the environmental impacts, correct?
A (Varney) Yes.
Q Do you agree that the Project continues to hope

to work through variances and requests for modifications of this Project?

A (Varney) I believe that they are continuing to work with homeowners, communities, other interested parties.

Q You've actually submitted requests to the SEC and to permitting entities, correct?

A (Varney) I'm not familiar with those.

Q Okay. So from your perspective, the plan that's in front of you now is the plan.

A (Varney) Yes.

Q Okay. Do you agree that any modifications of that would require additional modifications of the environmental impacts as well?

A (Varney) Perhaps. It depends on the degree of change.

Q Exactly. So if, for example, instead of being to the right side of the road you moved to the left side of a road, there could be significantly different impacts, correct?

A (Varney) From the standpoint of air quality? No.

Q Well, yes. I understand you're the air quality subspecialist, but as the President of

Normandeau --
A (Varney) Okay.
Q I presume you could agree that -- I can address it to somebody else if you'd like, maybe Dennis.
A (Varney) Yes, if you'd like to discuss wetlands perhaps.
A (Carbonneau) I've been intimately involved with preparing the Permit Applications for the environmental side of things so I probably should take this.
Q Oh, that's fine. You guys can jump in, but if we're changing, for example, what side of the road we're going to be trenching on, that would change the environmental impact, wouldn't it?
A (Carbonneau) If the work is taking place in the road, in the disturbed road bed, there will be very little difference between one side of the road and the other as to what the environmental impacts are. If you're already in a disturbed road bed, the environmental impacts are really minimal.
Q But it's fair to say most of the Project is not under tar, correct?
A (Carbonneau) Most of the Project is in the

disturbed road bed which may not be under tar but could be in the shoulder. Correct.
Q And in Grafton County, at least, many of the miles, for example, on 116 are very narrow roads to begin with, correct?
A (Carbonneau) Well, I guess that's a relative term.
Q Okay. So fair to say that sometimes the pavement ends, and on one side of the road you hit a hill that goes directly up that a person couldn't easily walk up, correct?
A (Carbonneau) Beyond the shoulder of the road that could be the case.
Q And that on the other side, where, for example, they might currently have the plan, there's a little stream alongside the road. Do you remember parts like that along 116?
A (Carbonneau) Yes. Yes. Beyond the shoulder of the road and beyond the ditch, there could be a stream within the right-of-way.
Q How long, how broad do you consider the shoulder and the more narrow parts of 116?
A (Carbonneau) That depends on how it was constructed. It could vary in width.

Q In your experience working with this Project, what is the vary that you've seen, the low and the high?
A (Carbonneau) I couldn't give you an exact number.
Q Well, could you agree there are parts where the road, the shoulder before you hit water is less than two feet?
A (Carbonneau) I guess that's possible.
Q So in those areas, it's a little, the environmental impacts are more significant, correct?
A (Carbonneau) It depends on what's beyond the shoulder.
Q So if there's a small stream beyond the shoulder, would you agree that the environmental impacts are more significant?
A (Carbonneau) If there were a small stream that could be affected by the actual construction or the trenching for the Project, then that would have a potentially a temporary environmental impact.
Q And you're familiar with Route 116 between Franconia and 112, correct?

A (Carbonneau) Yes.
Q And that is a twisty narrow road, well, it's a relative term. The pavement is generally 24 feet wide, correct?
A (Carbonneau) That sounds about right, but I can't confirm the number.
Q Yeah. And in many parts of it off the pavement you might have a white line, but the paved portion past the white line is very narrow? Less than two feet?
A (Carbonneau) I think that sounds about right.
Q Okay. Thank you. Now, are all environmental impacts set forth in the Application?
A (Carbonneau) Well, the Application was submitted in October of 2015.
Q Um-hum.
A (Carbonneau) There have been some changes since then. Those have been documented and submitted to the Agencies since then so they would be sort of in addition to the Application, but they've also been provided to the SEC so those impacts are included in the Application.
Q And do you anticipate doing that more in the future? Continuing to provide additional

proposed modifications to the SEC and to the agencies?
A (Carbonneau) Only if necessary. We've been instructed as part of our permit conditions from DES to continue to try to minimize impacts to the extent possible. If that can be done through a minor modification in the design, then certainly that would take place.
Q And you're familiar that the construction team also said on top of that they're requesting variances from a number of the conditions, correct?
A (Carbonneau) I'm not familiar with that testimony.
Q Okay. Now, what about the borings, the geoborings? Is that something that was included in the Application, the environmental impacts of those?
A (Carbonneau) The geotechnical borings that have already taken place were permitted separately because they needed to be done prior to the final design of the Project. There are additional, there's additional geotechnical work that will take place once the Project approvals

and permits are finalized, but that work will be within the footprint of the permitted area already.

Q And if the geoborings are handled in a separate Application, are the environmental impacts associated with those geoborings included in what's in front of the SEC?

A (Carbonneau) We made separate applications to New Hampshire DES for wetland and shoreland permits for that work, and, yes, those were all provided to the SEC. They're part of the Project, but they fall under a different permit because it needed to be approved prior to the approval of the overall construction Application.

Q But a lot of the geoboring occurred after October 2015, correct?

A (Carbonneau) Yes. Some of it. Not all of it, but --

Q A lot of it though. A lot of geoboring occurred after October 2015.

A (Carbonneau) Yes, a lot of the borings along the underground route.

Q Yes. And when you did the borings along the

underground route after October of 2015, did you tell the landowners that you were going on that site, their land to do that?
A (Carbonneau) Well, my understanding was those borings took place within the DOT right-of-way for the underground route. And there were other borings that were conducted on the transition station properties and the converter terminal and at Deerfield and other places. So those are properties that are owned by the Project at this point. So those landowners were aware.
Q So the DOT right-of-way portions, though, like Grafton County, through, down 18 through 116, up 112, this was where DOT had a right-of-way over private property. Did you contact those private owners to let them know?
A I didn't personally do that, no. I prepared the Permit Applications for New Hampshire DES, but as far as notifications of the property owners that may have been near that work, I did not.
Q Do you know if anybody did?
A (Carbonneau) I don't know.
Q Can you explain how deep a boring is?
A (Carbonneau) No. I'm not a geotechnical expert.

I do not know how deep they went.
Q Can anybody here talk about how deep those borings went?
A (Tinus) They varied to tens of feet. I don't know the exact deepest one. But safe to say tens of feet.
Q So like, when you say tens of feet, do you mean like from 10 to 30 feet?
A (Tinus) Ten, 20, 30 to 50, right.
Q At a range of 10 to 30 feet?
A (Tinus) Right.
Q So that's a pretty deep hole for lack of a better word? Fair to say?
A (Tinus) It's not inordinary. I mean, it's a common depth.
Q And do you know how many borings have been done to date? And anybody can answer this.
A (Carbonneau) I don't recall the number of borings. That's probably something for the Construction Panel.
Q Okay. But to be clear, borings include chemical additives, correct?
A (Carbonneau) I'll let Jake.
A (Tinus) They use drilling mud which contains

bentonite which is a common mineral substance. It's actually mined in the United States in Wyoming and derived from volcanic ash so that ads a slippery factor to the drilling, if you will.

Q Yes.

A (Tinus) So that mixed with water and it's a drilling slurry that's used to allow the drill to core through the soil and the rock.

Q So did the drilling slurry have anything other than the bentonite and the water?

A (Carbonneau) It can. Depending on the application, sometimes they mix other substances in to the polymers that are approved. They're used to allow or enable the drill to proceed more slowly or more quickly depending on the conditions. So, in other words, they add to viscosity or detract from it.

Q Um-hum. So I guess what I'm trying to get at is what was used, like what kind of chemical additives were used in Grafton County when these holes were dug, these borings were made.

A (Tinus) I believe it was the bentonite, water, and, in some locations, ACCU-VIS which is a

polymer additive.
Q Okay. And fair to say that's stuff that people don't want in their water, like you wouldn't put that in your well?
A (Tinus) Fair to say it's a commonly used product in the drilling industry and widely used all over the country for this application.
Q There's a big difference between what's commonly used in the drilling business and what people want in their wells though, correct?
A (Tinus) It's used in a location. The intention is not to put it into the wells, although bentonite is used in wells to seal wells, to decommission them. So it's a very commonly used product.
Q Yeah. And the particular, when you're looking at a hole like 10 to 30 feet, you can go through water tables, correct?
A (Tinus) Correct.
Q And when you go through water tables there is a possibility that if there's a problem, you could impact a water table, correct?
A (Tinus) That's a possibility, but the drillers are, you know, they're using casing to keep the

drilling operation separate from the surrounding water. That's part of their normal operations.
Q And that's what they hope happens in every case, correct?
A (Tinus) Correct.
Q But there can be problems.
A That's the goal, to do it cleanly and in accordance with the BMPs and standard practices.
Q But there can be problems, correct?
A (Tinus) There could be.
Q Yes. Now, then we have the test pits. Can you tell us about the test pits?
A (Tinus) Test pits are going to be done at some of the locations for the facilities. Transition stations.
Q Yes.
A (Tinus) And that was a request via the permit condition from the AOT, and this is to obtain additional estimated seasonal high water table data at 7 of the 9 facilities.
Q And that includes Pittsburg?
A (Tinus) That will include Pittsburg, correct.
Q Okay.
A (Tinus) So Applications were submitted for that

work a couple of weeks ago. We're waiting for approval to do that.

Q And that also will involve environmental impacts, correct?

A (Tinus) These are temporary impacts on those sites. Small excavator will be used to dig to the appropriate depth to make observations in the file and the soil will be backfilled.

Q But, fair to stay, we should be keeping a record of temporary impacts in additional to the permanent impacts?

A (Tinus) We are. They're very minor, quite frankly. The impacts are mostly from crossing existing wetlands to get to the location where they need to dig the test pits.

Q And that's a big deal. Crossing existing wetlands.

A (Tinus) No, it's done all the time.

(Court reporter interruption)

Q So how is the data involving these temporary impacts, what you consider temporary impacts, being reflected in the Project itself?

A (Tinus) Well, it's accounted for within the Application. You're speaking of the test pit

Application?
Q Test pits, the geoborings, the stuff that you consider temporary.
A (Tinus) So in each Application, it's part of the record and it has the accounting for what the impacts are associated with that permitted activity.
Q But if these Applications are separate Applications, then we'd have to go to another Application to add them up, correct?
A (Carbonneau) If I could say --
Q Sure.
A (Carbonneau) These are locations that are within the footprint of the proposed Project. So while they may be impacted more than once, they don't extend the footprint of the overall Project. They do have to be permitted separately, and there's an Application fee associated with that, just because they need to be done earlier than the construction of the actual Project. But all of those, all of those impact numbers are part of the record because they're part of the permitting process.
Q And that would be why it's really important to

be communicating with these private landowners, correct?

A (Carbonneau) Well, the test pits are happening on land that the Project already owns.

Q I'm talking about the geoborings. The up to 30 feet borings on people's private land.

A (Carbonneau) Well, the work is taking place in the road right-of-way. A public road right-of-way.

Q But are you aware that Northern Pass has taken the position, it's a disputed position, but it's nonetheless their position that the DOT right-of-way can be 66 feet long through the Franconia/Easton area, 116? So they're basically saying Northern Pass has taken the position, I'm not saying this is accurate, but Northern Pass has taken the position that they can just go up to 20 feet on both sides of the road which in many locations would include a house.

A (Carbonneau) I'm not familiar with the details of that argument or the controversy surrounding that property rights issue. I think that's a legal issue. But we did conform to the

requirements of the Permit Applications in identifying the appropriate easement holders for the work that was being conducted.

Q The alleged easement holder, but you didn't reach out to the private landowner whose land the easement went over or the alleged easement went over?

A (Carbonneau) I did not personally.

A (Tinus) If I could add?

Q Sure.

A (Tinus) I believe there was an outreach effort to notify towns that we were going to be out in, so, in other words, the Selectboard or the Town Manager or somebody was notified by the Project, written, called, whatnot, followup, and they requested if there's any concerns that they could be addressed through the Project, the Project would be happy to meet with folks. So that effort was made by the outreach group but other than that, I don't know the specifics of it. I'm sorry about that.

Q You might not have been here when there was testimony by the Construction Panel that there was an outreach effort with private landowners,

and when private landowners reached out to Northern Pass they came and visited with them, and they told them there wouldn't be an impact on their property, that it was going to be under the roadway, and that was never corrected.

So just so you know that testimony already came in that the reachout occurred, landowners got letters, some landowners responded to those letters. They said please, come talk to me about what's happening in front of my house, and when they went and talked to them about what was in front of their house, the landowners were told don't worry, it's going to be under the pavement, and then the plan changed. And the landowners weren't updated. And in fact, the testimony was that they planned on updating the landowners after approval.

So you weren't here for that part. But just to give you an idea as to why I'm trying to see if when these geoborings occurred if there was additional outreach directly to the landowners to say, you know, on the land in between your doorstep and the pavement, there's going to be an up to 30-foot hole put in the

ground, but it looks like you left that to outreach; is that fair to say?

MR. NEEDLEMAN: I'm going to object to the characterization.

Q But is it fair to say --

PRESIDING OFFICER HONIGBERG: Is Mr. Walker joining you in that objection?

MR. NEEDLEMAN: I'm objecting because it relates to land rights and the Construction Panel.

PRESIDING OFFICER HONIGBERG: Ms. Saffo?

MS. SAFFO: I think it's perfectly reasonable to ask the Environmental Panel if they informed people that a 30-foot boring was going to be --

PRESIDING OFFICER HONIGBERG: You can ask the question you just turned to us and said. Okay?

BY MS. SAFFO:

Q So I will ask to anybody here. Are you aware whether there was any notification to the private landowners that, well, just say may or may not have an easement over their property that there was going to be a boring drilled on

their property?
A (Carbonneau) No. I think I answered that before. That I'm not aware.
Q And, obviously, if a slurry and borings are not properly cleaned up, that would be a concern of yours, correct?
A (Tinus) Well, they have to follow, the drilling crews are supposed to follow the Best Management Practices for the work they're doing.
Q And I don't rehash anything already discussed. I believe there was a discussion about a situation at Stark Falls Brook during one of the geoborings. Do you recollect that?
A (Tinus) I don't know about the exact location. We were shown some pictures. I don't know the exact location of that.
(Exhibit 34 marked for identification)
Q And I have a letter from a George Dana Bisbee to Craig Rennie who's the Inland Wetlands Supervisor of the New Hampshire Department of Environmental Services, and it's dated August 8th, 2016. So I'm going to be referencing that. And I'll put, it's page 2, I'll put it front of you.

So fair to say that we learned that there was a situation where there was some discharge from one of the geoborings, correct? Are you aware of that?

A (Tinus) As it appears in this letter, yes.

Q And in that particular location, as Mr. Bisbee explains, water was directed to a hay bale containment/filtering Best Management Practice, correct?

A (Tinus) Correct.

Q And you're familiar with using the hay bales as a Best Management Practice at these locations, correct?

A (Tinus) Yes.

Q What's the purpose of the hay bale?

A (Tinus) That's to slow and filter water.

Q And then that was the intent, the intent of the Best Management Practices was to filter, quote, "the drilling water such that the fine materials would be removed and the water would infiltrate into the ground to prevent flowage into a nearby stream," which was a tributary stream to the Wild Ammonoosuc River which is a major river in our area. However, there was a problem. It

said, "because this site was on a slope having an uneven rocky ground surface beneath the vegetative cover, the drilling discharge appeared to have flowed more quickly than could be fully filtered." Then, "As a result, some of the water containing the suspended solids reached the stream during the drilling operations."

And that happens. You don't want it to happen, but it happens, correct?

A (Tinus) It can happen. Yes.

Q Now, here is the part that I want to focus on. It said, "Nonetheless, according to the drilling crews, the amount of release was very small, less than ten gallons, and the milky discharge that traveled to the stream was minimal and quickly dissipated."

Now, as far as evaluating what happened in this situation, the investigation was basically talking to the drilling crew and then just taking their word for it, correct?

A (Tinus) No, I believe representatives from Eversource were there, DES also inspected locations as the DOT and the U.S. Forest

Service. The three agencies looked at the practices and the issues that were brought to their attention, and they determined there were no further issues.

I'd also like to add that there were no other issues that were brought to anyone's attention for all the remaining borings.

Q Yes. And that being one of the issues. It has to be brought to somebody's attention, correct?

A (Tinus) Basically, the contractors are very well trained in what they do, but as you pointed out, sometimes something can happen. They follow Best Management Practices, and I think what it says here is that "appropriate BMPs will be implemented for the remaining test boring locations to avoid any similar discharges" was, you know, that's how it played out. They actually changed their approach and started capturing the material and trucking it away.

And this is, in general, how it works in the construction field. When you have an erosion problem, you change your approach, and you beef up the BMPs and then you're correcting objections prevent it from happening again.

Q But I think it's fair to say --
A (Tinus) It's required by law.
Q How quickly did Eversource get to that location?
A (Tinus) That I do not know.
Q And so probably not within a couple hours though, correct?
A (Tinus) Hours? Perhaps the next day.
Q How quickly do you expect DES to be able to respond to a location if there's a problem in the future during the construction of this 192-mile Project?
A (Carbonneau) That will be handled a little differently. There's Environmental Monitors planned for the construction part of the Project. So there will be Environmental Monitors on site, and those monitors will have the ability to stop work immediately if a serious problem is identified, and they are also required to notify New Hampshire DES.
Q That's exactly what I'm getting at. How many Environmental Monitors for the 192-mile Project are you anticipating?
A (Carbonneau) I don't know the number of monitors. They'll be deployed where

construction is taking place. So if there are multiple crews out doing construction in different locations, there will be Environmental Monitors in those locations.

Q Are you aware that isn't what the earlier testimony was from Northern Pass?

A (Carbonneau) I'm not familiar with someone else's testimony on this.

Q Are you aware that a number of three monitors has been thrown out there during the Construction Panel? A north person, a middle person and a southern person?

A (Tinus) Can I add something? I think what they explained was that would be the person that's ultimately in charge in each of the three regions, but they would have a team working for them. My understanding is the contractor will have that sort of similar arrangement as well as Eversource. So there will be a lot of people, and I also heard the number thrown out there perhaps 10 to 20 different Monitors will be need.

Q So is it your expectation that it would be appropriate for there to be a condition in this

Project that there be a Monitor wherever there is construction?

A (Tinus) That will happen. The Monitors will be checking out all active construction zones. Remember, that while it's 192 miles long, 192 miles are not going to be worked on all at the same time. So there's different zones of construction.

PRESIDING OFFICER HONIGBERG: Mr. Tinus, that sounded like yes.

A (Tinus) Correct.

Q So are you aware that we were talking about how long the Project is going to take, and if, for example, for just the 11-mile portion on Route 116, from Franconia to 116, if you counted just the trenchless operation digging estimating 50 feet a day it was going to take to just to do the trenchless digging, the trench digging, I apologize, the trench digging, it was going to take over 1000 days, I believe was 1,112 work days. And when we said that's a really long time and doesn't include the multiple pits, I believe there was going to be 30 because it was about three a mile, the 34-foot pit, and that

doesn't include the horizontal drilling that was going to occur which included a microtunnel. If you assign one person to do all the HDD and microtunneling, and you assign one person to do all the 34-foot pits that are buried under the ground and don't even include that, you still have five crews just on that ten-mile rate to be able to get done in 271 days.

So if the Project is going to take three years, I mean, two years, for example, constant construction for two years, you're going to be looking at five different construction locations every 10, 11 miles where the ground is buried, where everything is going to be buried. Sixty miles are going to be being buried. So you're looking at 30 work crews if you want to finish in two years in just the underground portion.

So presuming that's the case, there are 30 teams for two years working around the clock with no stops for environmental in use, no stoppages for coming across environmentally sensitive animals or things like that, you would need Monitors at 30 locations to monitor what's going on.

Q (Tinus) Fair enough, but I would disagree with your characterization that there will be no one there to investigate environmental issues or animals or that thing. We have to do that by virtue of the fact that we have permit conditions that require that. You know, any sensitive areas, those are going to be known about. Any issues that come up or present potential issues to construction in terms of rare species are going to be known about by the contractors, by the Monitors, the Agencies know about them because we submitted information in that regard.

So I don't think that's a fair characterization to say that we're not going to be looking into those issues and carefully monitoring work at all times wherever it's occurring.

Q You're saying it's your position that there will be a Monitor at every work site, a trained Monitor, trained on identifying the snakes and the birds and the plants.

A (Carbonneau) There won't be wildlife issues like that at every site. So knowing where they are

is a very important part of the Project or where they're most likely to be, and those locations are going to be on the maps, there will be specific BMPs associated with them, and the specific credentials for a person to identify those rare species will be tied into where that work is taking place. But, you know, we're not going to need a hog nose snake expert up in Grafton County. They just don't occur there, and that's not what we're saying.

Q But for the plants and animals that do occur in Grafton County, it's your representation in front of this Committee that there will always be someone who has expertise in identifying that when there's construction.

A (Carbonneau) If there's potential impacts to that resource, then that person will be there.

Q And then as far as the drilling, the HDD drilling that's occurring, as far as the microtunnel, as far as the trenches that are being built along the roads and along areas where there's streams, there will be somebody there to monitor the construction team.

A (Tinus) That is going to be monitored, yes.

Q The question is how is it going to be monitored. Not that it's going to be monitored. Because the construction team's interpretation of monitoring seems to be -- actually, I won't characterize their testimony to you. That's the issue is what exactly is going to be the monitoring that occurs.
A (Tinus) That planning is occurring.
Q Because there wasn't a Monitor where the geoborings was occurring, correct?
A (Tinus) That is correct.
Q I'd like to turn to an area called Beaver Pond. Are you familiar with Beaver Pond?
A (Carbonneau) Yes.
Q And fair to say Beaver Pond is an area that has been developed for tourism, correct?
A (Carbonneau) Yes.
Q We just, the State of New Hampshire just rebuilt that whole area. The Appalachian Trail goes on one side of it, and then the other side of it is a parking facility that recently was upgraded that can accommodate, I can't remember how many cars. Twenty cars? That sounds about right?
A (Carbonneau) That sounds about right.

Q People can canoe there, they can fish there, and the State of New Hampshire just paid for a new bridge there, correct?
A (Carbonneau) I'm not aware about the bridge, but, yes, it's a popular location.
Q And what testing was done there?
A (Tinus) In what regard?
Q So as far as geoboring, was any geoboring done there?
A (Tinus) I don't know exactly.
(Exhibit 33 marked for identification)
Q So maybe one a little bit closer. This is Terracon Report of Expected Geotechnical Conditions, Northern Pass Desktop Review, A4-9, and it's on the screen, but I'll give you another one just so you have it.
And on this, it has a little green dot in the map to show where borings occurred, but you don't see any green dots here. So is it possible none were done here?
A (Carbonneau) I don't know. I don't know anything about this map. And I don't see any green dots on it.
Q Okay.

A (Carbonneau) I think it's unlikely that borings were not done somewhere in this area.
Q Fair to say there's a lot of bedrock there though? Can we agree on that?
A (Carbonneau) I've not reviewed the geotechnical borings so in the vicinity of the actual road and road bed, I don't know what the findings were, but I would agree that this is in the mountainous portion of the state. Bedrock is possible.
Q And if this map is accurate, not only is it possible, it is completely surrounding Beaver Pond in the roadway there.
MR. IACOPINO: Ms. Saffo, does the map have an exhibit number? We can only see a part of it on the screen. We can't see the key or legend or anything.
MS. SAFFO: I apologize.
Q So in looking at this particular map, it indicates that the red indicates bedrock. And if you look at pictures of this area which everybody has seen here, there's ledge, you can see. It's like pretty obvious. There's a rock climbing area across the road from Beaver Pond

that is a popular area for people to actually rock climb. So there's actual ledge there.

So this is a high impact spot for tourism, for the environment. Appalachian Trail goes right there, and one side of the road you can see Beaver Pond right here. And on the other side, you see bedrock because that's where they rock climb. You'd have to blast.

Is it fair to say that if you're going to bury any of these lines in this area and if that map is accurate as to bedrock, from an environmental perspective, you're going have to do some blasting, correct?

A (Carbonneau) I can't answer that question. That's a question for the engineers and the contractors. I don't have the geotechnical information. I'm not qualified to review it. I can't say for sure whether working in the road bed there requires blasting or not.

Q Okay. So from an environmental standpoint, if it does require blasting, is that an impact from the environmental side of things?

A (Carbonneau) It's possible, but not if it's done following all BMPs. We're not expecting

environmental impacts associated with blasting.
Q But if you weren't planning for environmental impacts associated with blasting, meaning what you're saying is that's a construction question, you haven't evaluated the environmental impacts of any potential blasting at this location, correct?
A (Carbonneau) We don't know exactly where the blasting is going to take place. We have generally looked at the potential impact of blasting on wildlife, for example. We have not identified it on a location by location basis, but environmental impacts that would be associated with, for example, water quality are part of the consideration of blasting, and there are Best Management Practices that are supposed to address that. And Jake can speak more to that.
A (Tinus) I'd like to add that John Kayser from the Construction Panel did indicate sort of the general approach to blasting. He also indicated what would be included in blasting plans, and these will be specific to every area where blasting is going to be proposed. That hasn't

been worked out, as you know, so we don't know what's going on in this particular location or for that matter where blasting is going to occur as the Construction Panel testified to.

But, as I said, the contractors are going to be required to prepare blasting plans. So that's going to cover things like well, what is here environmentally, what are the potential hazards, in addition to safety considerations, storage of materials, and just the things that go into blasting plans.

Q So you as the environmental team haven't rendered an opinion on this one way or another because you haven't gotten the information yet, correct?

A (Carbonneau) We haven't gotten the exact locations. We understand that blasting is sort of a last resort. They want to do as little blasting as possible on the Project. We don't expect the quantities to be substantial in any given location, but we don't know the exact locations. That's part of the contractors and the engineers to work out. But we do know that there are requirements, that they comply with

regulatory standards for conducting that blasting that should minimize and avoid environmental impacts. It's standard construction process.

Q Part of what the SEC has to do is determine the environmental impacts, and as we discussed, the SEC has to do a full and timely consideration of environmental consequences. That's the law in New Hampshire. Full and timely consideration of environmental consequences be provided. And is it fair to say that because everyone's telling us they don't know where they plan on burying the lines, it could be anywhere there because what it has to be is can't be on the, has to be on the road area. It can't go on the far side. That in this very sensitive area in a high tourism area the answer is we'll figure that out down the road, and the construction and engineers will do the best they can do. Is that fair to say?

A (Tinus) I think you need to acknowledge the fact that we have a letter from the DES indicating that we have met all of the requirements of state law and that the permits issued for

wetlands and shoreland and for the 401 Water Quality Cert and Alteration of Terrain Permit include conditions that are attached that will address those very issues that you're talking about.

So from the DES's perspective, they know that we're going to present additional information. We're required to do so. There's a whole bunch of plans that need to be prepared 90 days ahead of construction. That's when they're due to DES, and as we've mentioned on various occasions, the Project is continuing to work towards those requirements.

Q That's DES's job, but the SEC's job is to evaluate the environmental impacts, and the law requires that the SEC obtain a full disclosure of those impacts. Do you consider a full disclosure to be the engineers ant contractors will figure that out down the road in this sensitive, high tourism area? Is that a full disclosure?

A (Carbonneau) I don't think that's a fair characterization. We're not expecting environmental impacts in this area. We are not

expecting the blasting to have environmental impacts. There are methods that are industry standards that minimize and avoid those kind of impacts, and those will be employed.

Q But you're not expecting it, but you haven't evaluated it because you haven't been given a plan to evaluate.

A (Carbonneau) We've evaluated the Best Management Practices as they've been provided by the engineers and by the industry standards, the industry experts, and those kind of things have been evaluated by the national resource agencies. They helped produce these Best Management Practices because they know that these have worked. It's not my job to second-guess a blasting expert.

Q I'm not saying you're second-guessing a blasting expert. I'm saying if land is going to be disturbed by blasting that an environmental person needs to analyze the impact of that because the plans we've been given, that the Public's been given, does say that where they plan on digging is in between Beaver Pond and the road. And it's not a little pond. This is

kind of more like a lake with an island in the middle of it with the Appalachian Trail on one side and parking for tourists on the other side. And it is a stunning location. Blasting has got to have an impact. To say blasting has no impact and that horizontal drilling -- horizontal drilling can have impacts, correct? Are you going to say horizontal drilling doesn't have impact?

A (Carbonneau) Impacts are possible. It doesn't mean they're probable. It doesn't mean they're likely to happen.

Q We'll go into that in a second. This is Beaver Pond right here. Here is a bridge. A large bridge. A bridge that I will tell you was built on top of bedrock because the bedrock was right there. They actually poured the concrete on top of it. So we know what the -- and then that map tells us where the bedrock is. So I guess at this point, I'll leave it at that. I think it's pretty clear that you haven't been given a plan. We've been given a plan, but we're told it could change at any moment. They want approval and then to be able to change it. And --

MR. WALKER: Objection.

PRESIDING OFFICER HONIGBERG: Is there a question associated with this argument?

MS. SAFFO: No. I'll leave it there. I'm going to grab one small thing.

Q So safety risk investigation of horizontal direction drilling. What do you know about potential environmental impacts caused by horizontal directional drilling?

A (Carbonneau) I'll let Jake handle this one.

Q Yes. Sure.

A (Tinus) During the process, there could be a loss, what they call a loss of circulation. There could be an issue called frackout.

Q Um-hum.

A (Tinus) And this is during the drilling process where the drilling mud could escape.

Q Um-hum.

A (Tinus) Through interstitial spaces of the rock or underlying material.

Q Um-hum. And so if this happens, what do you do?

A (Tinus) Again, this is one of those areas where the contractor is going to have detailed plans on how to address these kind of issues. John

Kayser's testimony did present a general plan on what is done in the industry. But ahead of that, ahead of construction, they will also take a closer look at individual locations and what the issues are associated with these locations in terms of potential risk to the environment, in terms of difficulty of what they're doing. They're going to fully assess each location on a location by location basis so that they have complete knowledge of what they're getting into.

Q So if there's a frackout though, there's not a whole lot they can do, right? It's done.

A (Tinus) If there's a frackout, you need to stop what you're doing.

Q Yes.

A (Tinus) And investigate what happened and correct so that it doesn't continue to happen. It may require in the very worst of situations, and I know the Construction Panel was shown some horrendous picture of some large river that wasn't even in the northeast, but it was an area where they had some cleanup equipment and whatnot, and I also know that they indicated that that would also be present at these

locations, cleanup equipment and approach to dealing with any situation that does arise. That's not a typical occurrence, okay? I mean, this work is done all over the country. This is done for installing various utilities, you know, through the ground, underneath the ground, underneath water resources in innumerable locations.

Q Okay. I'd like to turn to the bunkers. So far as the decommissioning plan from an environmental perspective, what would you recommend for a decommissioning plan for the bunkers, the 30 foot by 8 foot by 8 foot bunkers?

A (Carbonneau) I'm not familiar with the decommissioning process or what's required. I hope to be retired by then.

Q Do you know how many tax lots are directly impacted by the 132 miles of the aboveground lines that Northern Pass proposes to build?

A (Carbonneau) I'm sorry. You're asking how many tax?

Q Yes.

A (Carbonneau) Different parcels there are in the

overhead line? I don't know that number off the top of my head, no.
Q So similarly you wouldn't know how many tax lots are impacted by the burial, the 60 miles of burial, correct?
A (Carbonneau) Correct.
Q And so then obviously you'd leave it to the outreach team as far as what outreach they've done to these landowners, correct? But you haven't done any?
A (Carbonneau) Well, if Abutter notification is required under one of the Permit Applications, then that was done. It's typically for a wetlands permit not required for work within the right-of-way, but for any work on any of the nine site developments, where transition stations or substation work or the converter terminal is, then there is an abutter notification requirement and it extends for, I believe it's like a quarter mile around the work area.
Q Were you asked to consider the environmental impacts associated with burying the line down Interstate 93?

A (Carbonneau) We were not asked to evaluate the entire I-93 right-of-way. We were asked to generally look from a high level using available GIS information, for example, the potential impacts of putting a line underground at the outer edges of the right-of-way, and we did that by looking at a few miles in two different locations along I-93. I think I've previously testified to that.

(Exhibit 35 marked for identification)

Q Okay. One last thing.

Mr. Bisbee on June 7, 2017, so quite recently, sent to Ms. Monroe two standard drilling and fill wetland applications for soil test pits and one Shoreland Permit by Notification for soil test pits recently submitted to DES. Are you familiar with those recent submittals?

A (Carbonneau) Yes.

Q And when you submit those, and I can mark a copy of it as an exhibit, there are sometimes like questions in there that you answer, correct?

A (Carbonneau) The Wetlands Application has a series of what they call their 20 questions.

Q Yes. And then do you recall talking about the Deerfield substation and the wetland impacts associated with the Deerfield substation plans?
A (Carbonneau) What's your question? I'm sorry.
Q I apologize. So if you look at the Deerfield substation plans, are you familiar with those?
A (Carbonneau) Yes.
Q It finds that most of the proposed wetland impacts are for two stormwater ponds, 9,037 square feet and another one 19,196 square feet, correct?
A (Carbonneau) This was in our original Wetlands Application for the entire Project. This is not associated with the Test Pit Applications that were submitted recently which I thought you were --
Q I apologize. This would be from the May 26th report from 2016, correct? This question?
A (Carbonneau) I'm sorry. Now I'm confused. Could you ask again?
Q I apologize. Let's just talk about the geofill substation and not worry about which document. So there is two stormwater ponds, correct?
A Yes.

Q And one is 9,000 feet and the other one is 19,000 square feet, correct?
A (Carbonneau) I don't know the exact numbers off the top of my head, but I know there are two detention basins planned.
Q And this would be naturally occurring wetlands, correct?
A (Carbonneau) I believe those wetlands are naturally occurring in those locations although they may have been modified slightly by the construction of the original substation. I couldn't say for sure.
Q And fair to say impacts to naturally occurring wetlands are normally not allowed, correct, typically?
A (Carbonneau) You mean for stormwater?
Q Yes.
A (Carbonneau) It's the strong preference of New Hampshire DES to not locate stormwater basins in wetlands. That's true.
Q Do you think the substation could be shifted further southwest to avoid the wetland areas?
A (Carbonneau) We brought this up to the engineers, and they looked at this and

determined that was not possible.
Q Okay. That you would try to avoid impacting wetlands at this site, but that you feel it's limited in size and constrained by the wetlands? Well, you tell me. Why did the engineers say it wasn't possible?
A (Carbonneau) I couldn't tell you their exact reasoning, but it has to do with how the substation expansion aligns with the existing substation because they get tied in together, and getting access from the current substation over to the expansion area requires crossing wetland. There's a wetland in between them.

As far as how they designed the drainage of the expansion area, they did the best they could. They were able to redesign it to make two detention basins instead of one and to move them partially out of the wetlands as best they could. So they did work on this for some time but you'd have to ask the engineers specifically if you wanted more information than that.
Q You need to go to the Wetlands Bureau for this, to impact wetlands like this, correct?
A (Carbonneau) You need to go to the Wetlands

Bureau for any wetlands impact.
A (Tinus) Can I interject?
Q Sure.
A (Tinus) There was an explanation of why they did what they did in one of the responses to a question from DES in the original progress report letter so I think that information is already part of the record.
Q I believe that's under question 10, for the record --
A (Tinus) That sounds familiar.
Q -- from the May 26, 2016 report. And DES made a request and Northern Pass basically said we can't. And do you think there's kind of a perception issue that it's like here's the rule, this is what we want, and Northern Pass says can't do it, we're doing our best, and that's kind of the end of the discussion?
A (Tinus) I don't think it's that. I think it's as explained in that response that there are constraints on that site. They have the need to expand the substation. There's only so many ways you can do it. It needs to be, the equipment, needs to be aligned, and there's

certain considerations from an electrical engineering perspective that drove that.

As Lee mentioned, you know, they did reduce impacts from an original design. Unfortunately, the remaining impacts are unavoidable, and that's what we sought permission to do at that location.

Q So my mom lives along the Mink Brook in Hanover, and she recently wanted to do something on her property so she had to go to the Hanover Planning Committee because she lives along the Mink Brook.

Do you think a citizen along a waterway, whether it's upstream, the Mink Brook, Beaver Pond, could say to the permitting agencies, I'm going to tell you down the road what I'm going to do, but can you approve it as long as I follow Best Management Practices? Do you think any citizen could do that?

A (Tinus) I don't understand the question, quite frankly.

Q In all your years of working with permits and private entities and citizens, do you think a citizen could ever come to a Board, be it the

Department of Environmental Services, be it the local Planning Board, and say I'd like to do this, and I'm not going to tell you exactly what, I want you to approve it without me telling you exactly what I'm going to do. But I promise I'll follow Best Management Practices and I'll do my best and I'm not going to harm anything unless I can't avoid it otherwise, and if I can't avoid it, then I'm going to harm it.

Do you think any citizen would get away with that?

A (Carbonneau) I think New Hampshire DES has certain standards. You have to meet certain standards with your Permit Application. It has to have enough detail for them to assess impacts. It has to demonstrate that you've avoided and minimized impacts to the maximum extent practicable. If there are remaining impacts that are unavoidable, and they meet a certain threshold, then you have to develop a mitigation plan.

I don't think that New Hampshire DES takes those standards lightly. They apply them to everyone equally, in my experience, and I've

worked for small homeowners, I've submitted an Application myself for my own property, and I've worked for large projects. And the standards are the standards, and they have approved our Permit Applications. They have found that we have met the burden that they require which is fairly substantial.

Q I'm not even --

A (Carbonneau) There's a lot of information here.

Q I'm not even beginning to say that DES would do that. I believe they a hundred percent follow their rules. That isn't even, that is not even? a -- if I was interpreted that way, that is not my intent of the question.

My intent is that civilians can't just say we're going to keep modifying the plan of 192 miles long. They have go in front of Planning Boards. They have to go in front of Towns. The Towns want to know what the plan is. They don't want to know that the plan is going to be developed and changed down the road. They want a design and a plan. And that's what my mom had to provide. She had to provide a very clear detailed plan. And she can't modify from that

plan. She can't say I'm giving you a rough idea of what I'm going to do, and then down the road the construction engineers are going to come down. I'm also saying that the --

MR. WALKER: Mr. Chairman, I have to object. This seems to be testimony, and to the extent that there's a question, that question has already come and been answered.

MS. SAFFO: I apologize. I guess my question --

PRESIDING OFFICER HONIGBERG: You don't have to apologize. Can you refine the question?

MS. SAFFO: Yes.

BY MS. SAFFO:

Q Do you think civilians and private projects also have to go through planning boards and local entities, and do you think Northern Pass should as well?

A (Carbonneau) I think Northern Pass needs to follow the requirements of a large energy facility and that the SEC process does not require that they get local approvals for the Project. I understand that that's different for projects that don't meet certain criteria to

bring them in front of the SEC.
Q But the SEC does have to have a full and timely consideration of environmental consequences, correct?
A (Carbonneau) Yes.
Q Thank you. No further questions.
MR. IACOPINO: Before you leave, that May 26, 2017, report you mentioned several times. Do you have an exhibit number for that?
MS. SAFFO: I don't have an exhibit number, but I have a copy that I can make, and I believe I'm at GCC 24, but I wanted to confirm that before we mark it, but it's, I have that packet right here I can submit. And I have the Craig Rennie letter so if I could just at the next break try to give it the right numbers.
MR. IACOPINO: The other thing is you have the map that you put up on the thing. That should probably be marked as well. And perhaps you can do that during the break, and we can read those into the record at some point later.
MS. SAFFO: I will do that. Thank you. I'll leave them right here.
PRESIDING OFFICER HONIGBERG: Off the

record.

(Discussion off the record)

MR. WALKER: Mr. Chairman, I just want to point out, and I should have pointed this out at the very outset. I mentioned it to Ms. Monroe, scheduling conflicts and trying to juggle the different conflicts. Mr. Magee cannot be here on Monday. So if this goes into Monday, I would suggest that if questioners have questions for Mr. Magee today or otherwise we'll accommodate and have him come back, but if that can happen today, and the same goes for Mr. Varney as well. And I understand that we may get to the Panel asking questions today, and Mr. Varney has a conflict that's going to require him to leave at 3 today. So if the Panel has questions for Mr. Varney or others, if that could be moved up, we'd appreciate it.

PRESIDING OFFICER HONIGBERG: So what we'll do is we'll continue to work through the list which really should get us, we should get through the remaining Intervenors' questioning and get to the Committee. What we'll do at the break is check with Committee members as to who

has questions for Mr. Varney and Mr. Magee, and make sure that we get to them today.

MR. WALKER: Thank you.

PRESIDING OFFICER HONIGBERG: If at all possible.

MR. WALKER: Thank you.

PRESIDING OFFICER HONIGBERG: Next up is Mr. Thompson.

CROSS-EXAMINATION

BY MR. THOMPSON:

Q Good morning. My name is Brad Thompson. I'm a resident of Stewartstown, New Hampshire, and I'm spokesman representing the Abutters and Non-Abutters of Pittsburg, Clarksville, and Stewartstown.

I have three different subjects I'd like to move on and move as quick as I can, and they all are related to the dirt roads of, in particular, Clarksville, Pittsburg, and Stewartstown. So if you could kind of focus on those roads.

Is it safe for me to assume and almost, in fact, all of my questions and comments would go to you, Ms. Barnum and Mr. Tinus. So the question is, are you familiar with the roads,

town roads of those three towns.
A (Tinus) I've driven those roads two-plus years ago now.
Q Ms. Barnum?
A (Barnum) I'm familiar with the road that the Project crosses, yes.
Q Pardon?
A (Barnum) I'm familiar with the roads in the towns which the Project crosses.
Q Okay. Thank you. Mr. Tinus, do you know what a "no road" is?
A (Tinus) No.
Q If I told you it was a road not built, does that make sense to you yet?
A (Tinus) I've heard of the term paper road. Perhaps that's similar.
Q The best, if I can, I'd like to use the definition for a no road. Typically, it's a dirt road that has never been, had preparation in it for being built as a road. It has stumps, possibly stumps and roots sticking out of the road, possible obvious ledge outcroppings sticking out of the road, possible water permeating out of the road in the middle and

sides. Typically, it probably follows some kind of natural resource like a brook, a river, a ridgeline, even a stone wall where a field was built first. What are really defined are the roads of the North Country, and in particular Pittsburg, Clarksville, and Stewartstown. Can you accept that as a fairly good definition of the roads you saw when you were up there?

A (Tinus) I don't think I drove on any of those types of roads. I do recall seeing one or two, but I don't know that that's a typical road in the North Country, if you will.

Q Typical of, in particular, Old County Road in Clarksville and Stewartstown and then North Hill and Bear Rock Roads in Stewartstown which is an area that the buried cables will be in.

A (Tinus) My recollection was they were gravel-covered roads for the most part. Dirt, gravel, loose material.

Q Yes.

A (Tinus) Whether they had stumps and other bedrock outcroppings, I didn't see any of those. I didn't see any water running across the roads when I was there.

Q Okay.
A (Tinus) I was there in the spring, too, by the way. So May/June time frame.
Q Really. Nothing special you remember about the roads then?
A (Tinus) It was perhaps a drier year.
Q Okay. Thank you.
A (Tinus) I'm aware of mud season.
Q I know we've beat this drum pretty hard, but I need to revisit the thermal, fluidized thermal backfill issue for a couple minutes.

There's been vagueness as to understanding exactly how deep the ditches are going to go, and I know the DOT has indicated that they'd like to go deeper in the State roads, but it's been unclear as to whether that's going to occur in these town dirt roads. In particular, in Stewartstown and Clarksville. The detail up here, this is from the Application. The Northern Pass Application. And it's a fairly, meant to be a fairly typical detail of what's happening, and I want you to focus just simply on the material underlying, the two things underlined. I think, yes, I did. Fluidized

thermal backfill. You can see that there's an infill around the 8-inch conduits that hold the transmission cables. Then there's a 6-inch poured concrete protective slab, and then more thermalized, FTB, up to within whatever the preparation is for the road. In this case, we expect that top layer would be 6 inches of gravel to finish off restoring the dirt road. And I know there seems to be contradiction, but does though look like what you would expect to is supposed to be happening?

A (Tinus) Yes. That's what's represented here, and I've seen these plans before.

Q Okay. My question has to do with the permeability of this fluidized backfill and what happens when this material is installed in a ditch that's dug, whether it's dug 5 feet deep, 6 feet deep, 7 feet deep it's going to be brought back up with these materials all the way to within 6 inches. We have, because it's a "no road" and lousy preparation, if none, and by the way, another trait of those no roads is there's no drainage ditches on the side. Typically, it's carved into whatever the existing

conditions might be. If it's coming off traversing a hillside, the grade will come down the road, the no road is there, then it drops off on the other side. So, you know, whatever the conditions were that presented this.

So in many cases, there's water, groundwater, moving through the soils of that, of the road underneath the road, and the concern is what happens when this material is installed to block the movement of that water and change the nature of that dirt road, of these dirt roads in Stewartstown and Clarksville. How would you expect the road to react once this ditch is installed and the FTB is there?

A (Tinus) The fluidized thermal backfill, my understanding is there's some permeability associated with that. I'm not an engineer, but I know what I know from speaking with the engineers and looking into the issue, that layer of material that you're describing as well as the subbase of the road is not expected to prevent water from flowing. It's to allow water to flow, will allow water to flow through it.

Q It will.

A (Tinus) To some degree. Yes. Right.
Q Have you ever asked for or seen testing of this backfill to satisfy the question that certainly needs to be asked of water is coming off the hill, is it going to go through that three feet or whatever it is, two-foot-9-inch wide of FTB or is it going to work its way up the side? Certainly we all recognize, I believe, if you'll agree that water will seek its avenue of least resistance; hence, the idea of a French drain. Have you seen tests, have you seen it demonstrated, do you know that it works?
A (Tinus) I have not. I think that's a question better asked of the engineers. They would be familiar with that. This product is used in a lot of places in the country so it's not something that wouldn't have been encountered before, and the engineering would account for that.
Q Agreed that it's used in a lot of places. It's become, we've heard from the construction committee that it's almost universal in terms of by Eversource of use in the coating around to dissipate the heat of cables.

Have you ever seen this particular situation in a dirt road, and can you tell me where in all your years of working with stormwater drains? Of a particular dirt road?

A (Tinus) I haven't personally, no.

Q Anyone on the board think of a Project that --

A (Carbonneau) I have not worked on an underground cable project in a gravel road before.

Q Do you feel like we may be guinea pigs in this process? I mean, are we traveling unexplored territory? Are we going to end up with a road that's not going to be the way it was before?

PRESIDING OFFICER HONIGBERG: You want answers to each of these three questions?

MR. THOMPSON: Sure.

A (Tinus) Do I feel you're going to be guinea pigs? No. I think DOT has asked for some testing of this product. I don't know the status of that. They asked for proof that it would work. I don't know the status of that. But my understanding is that all signs are pointing that it will be used in the trenches, and, again, it's been used in a lot of applications.

I'm not sure what your second question was.
Q I forgot. I know it was important though.
A (Tinus) I'm sure it was.
COURT REPORTER: Question: Do you feel like we may be guinea pigs in this process? I mean, are we traveling unexplored territory? Are we going to end up with a road that's not going to be the way it was before?
PRESIDING OFFICER HONIGBERG: Mr. Tinus, I think, is going to take on the second two questions.
A (Tinus) Right. So no, we're not in explored testimony, as I've mentioned. This is used all over the country. This flowable fill. Goes by different names. Fluidized thermal backfill, flowable fill, low strength concrete material. There's a number of different formulations and varieties. But again, it's used everywhere around the country.
Q I totally understand that. But you didn't answer the question.
A (Tinus) You said uncharted territory. It's not uncharted. It's clearly been charted because it's used everywhere.

Q I asked Mr. Ken Bowes of the Construction at an earlier deliberations, and I also asked expert for the Public, Rusty Bascom, and neither of them were able to come up with 320 kV buried in a dirt road. Town dirt road. Plenty of them with asphalt on top and the asphalt, can we think that maybe that's hiding what may be occurring underneath is my thought, but I really just have to wonder if -- many of the people have made the statement they'll return our town roads to as good or better condition as before they started construction. Are we sure?

A (Tinus) That's a firm commitment by the Project to do so, yes. You heard that from Ken Bowes, you heard that from Construction Panel. If there's any damage, it's going to be corrected. Clearly that's not, we don't want to damage anything during the course of this Project.

Q My concern, and your thoughts on it are, is it possible to correct this problem once it's created?

A (Tinus) I feel the engineers are going to have enough information in designing this that they're going to prevent that. That's what I

feel.
Q Okay. I appreciate that, and I certainly hope so. Thank you.
Okay. Again, Mr. Tinus. Are you aware, are you familiar with the location of Transition Station No. 4?
A (Tinus) I am.
Q It's basically at the juncture of Bear Rock Road and Heath Roads where we go from underground to overhead, right?
A (Tinus) Um-hum.
Q Are you aware that as we come up Bear Rock Road, my property in Stewartstown borders one side of Bear Rock Road for 12, 1300 feet. Take it that it does. If you'd accept that, I'd appreciate it.
A (Tinus) Yes.
Q And also on the property, I have three glacial spring water wells, and when I bought this property in 2007 inherited these glacial spring waters, and now inactive but back a couple decades ago active supplier of glacial spring water. Are you aware of that at all? Has anybody happened to --

A (Tinus) I believe you've expressed that previously either to the Construction Panel -- I can't remember where I read that.
Q Just to give you a little detail, are you aware of the fact that the three wells are presently dumping 42,000 gallons of what is considered to be very pristine glacial spring water on the ground every 24 hours? And it quickly makes its way into the west branch of the Mohawk River?
A (Tinus) I did not know that.
Q Are you aware of the fact that the centerline of the three wells is 412 feet from the centerline of the Bear Rock Road at the closest point where the cables are being buried?
A (Tinus) That figure sounds familiar. I believe an engineer had mentioned that to me.
Q And a second distance is the centerline which I picked out of Transition Station 4 to the centerline of the three wells is roughly 1120 feet by GPS.
A (Tinus) Okay.
Q Good. Glacial spring water well is like a spring. Can you describe what a spring is versus, for instance, an artesian well in terms

of how it -- how does that 42,000 gallons get to those wells every day?

A (Tinus) Without looking specifically at that, I don't really know, but a spring is an expression of ground water at the surface. That I can tell you. An artesian well is under pressure. It's a layer that's restricted so it has significant pressure.

Q Right. It goes straight down into the veins for artesian well.

A (Tinus) Right.

Q Information that I've read, the veins of glacial spring water working their way through to whatever the well location is are veins of water either near the top of the surface or in the subsurface, whether it's two feet down or whatever, and coming from some place, typically a higher elevation. That is something, can you generally agree with that?

A (Tinus) That sounds correct.

Q Good. Monday you made a statement to somebody questioning you that the amount of blasting that's going to occur is not significant on this Project. Do you remember that?

A (Tinus) Correct.
Q And Ms. Carbonneau, you mentioned this morning that there's minimal amount of blasting and try to work around it and any way you can stay away from it would probably be a good idea. Is that generally what you said?
A (Carbonneau) Yes. The Project's goal is to minimize the amount of blasting required.
Q There are many, a handful of different things that can occur when blasting is being used of different things that can occur that would affect water. Groundwater, stormwater, drainage, whatever. We've talked about nitrates, faulty blasting that doesn't all ignite. The coating that appears on different rock formation as it's blasted out. Are these all potential or problems that do or can occur?
A (Tinus) That's what the literature says, correct, yeah.
Q So this leads up to the real concern here. Are you aware that Transition Station 4, the Applicant has indicated by question and their answer that there's going to be 30,000 cubic yards of blasting to occur in order to prepare

site Transition Station 4?
A (Tinus) I didn't know the specific amount.
Q Neither did I. And that's why I asked the question and got the answer. I knew from trying to estimate that there was a sizable amount, but I didn't realize how much. We've got -- have you seen the plans for the site Transition Station No. 4?
A (Tinus) Yes.
Q The final product?
A (Tinus) Yes.
Q Have you noticed the cut into the hillside? Do you remember any of those details?
A (Tinus) Yes.
Q Or the possible cut between existing condition and final conditions as far as the site?
Do you feel that proper concern was taken in selecting this site location of Transition Station 4? Not that you have control over where it goes but maybe input in terms of the blasting situation and the effect on water?
A (Tinus) I think the selection of the site based on a number of considerations which others have testified to in terms of managing the blasting

though, you know, I've mentioned as well as others that there's going to be proper procedures in place, best Management Practices that are going to prevent any problems from occurring in that location. And again, as Lee mentioned and I mentioned earlier, it may be they're saying that this rock needs to be removed, but maybe not all of it needs to be blasted. They may be able to hoe ram it. I don't know specifically, but there's other methods that they can use for removing rock.

Q I asked about blasting. I didn't ask about ramming. Beating it up. This was blasting. 30,000.

A (Tinus) Just says removed in the -- doesn't say blasting. It says provided total cubic feet allegedly removed in order to prepare the site. So doesn't specifically mention blasting.

Q Okay. I think that's -- are there any other ways of removing solid ledge than either blasting or using a ram that you know of?

A (Tinus) I think there's something called chiseling. There's other words for it. Where they sort of flake it off somehow. Drilling

smaller holes and then using equipment to remove it.

Q Yes. Chiseling.

A (Tinus) There's other terms for it.

Q Okay. Thank you. Ms. Barnum. Third topic. Could you define what a deer yard is?

A (Barnum) It's, I believe I've discussed this topic before. It's an area where deer will spend the winter or part of the winter when conditions meet a certain standard, generally speaking deer yards have coniferous cover. Coniferous cover has benefit holding snow off the ground so snow depths are lower within a deer yard. They also provide other thermal benefits in terms of breaking the wind so the conditions are less harsh. Temperatures be a little warmer due to the cover.

Most deer yards also have a component where there's browse. Deer like to browse on some of the softwood species that provide the overhead cover, but there might also be some hardwood species there that they're browsing on.

Q So probably two of the most critical criteria are a shelter and bedding area and a source of

food?
A (Barnum) That's correct.
Q Deer paths where they'll move from one area to another for their feed to where they're bedding?
A (Barnum) If the snow is relatively deep and there's enough deer in the yard, trails often do develop, and that also provides benefits to the deer because it's easier to walk on the compacted trails rather than through the snow. But that's not a feature that's there until the deer get there and create that network of trails.
Q If you were to step into a deer yard, what would be 2 or 3 of the first things you'd recognize?
A (Barnum) When I am looking for the characteristics that define a deer yard, I look at the overhead cover, I consider the slope and exposure, and then I also look for sign of historic browse. The browsing that the deer do over the wintertime tends to leave permanent deformation to the vegetation that's easily identifiable in any season.
Q So the lower limbs are as high up as on whatever vegetation it is that they can reach depending

on the snow depth?
A (Barnum) Yes. Looking at the bark on the trunk of the trees is definitely the best way to do it, though.
Q Deer poop?
A (Barnum) Yes.
Q Lot of it.
A (Barnum) The pellet groups that accumulate are, again, as I've covered before in the wintertime, because they're browsing on woody vegetation, the pellet groups created in winter or produced in winter are distinctive, and they do persist from winter. So even when you enter a deer yard during the summertime, you can identify those pellet groups on the ground.
Q In your Prefiled Testimony, you stated on page 2, the October 16th Prefiled Testimony, that you have walked or traveled the majority of the 192 miles of the Northern Pass Transmission line?
A (Barnum) That is correct.
Q And one of things you were probably focusing at least a little on were deer yards?
A (Barnum) Yes.
Q Page 10 of 12 in your testimony, you mentioned

that the transmission line intersects 17 different deer yards.
A (Barnum) That's correct. I also submitted a correction to my testimony that it actually intersects 18.
Q And that you spent time with New Hampshire Fish & Game people on defining these deer yards and where they were?
A (Barnum) I reviewed the New Hampshire Fish & Game's mapping of deer yards, and I spoke to the Deer Project Manager.
Q Who was that? Will?
A No. Will is not the Deer Project Manager. The person who I spoke to is retired now. I'm not going to recall his name.
Q I'd like focus in on one deer yard. The one between entry into Canada, from Canada, Halls Stream, and over the ridge to Old County Road and down to Transition Station 4. Are you familiar with that?
A (Barnum) Transition Station 4?
Q I'm sorry. 1?
A (Barnum) Yes. I am.
Q Thank you. Did you hike over that ridgeline of

where that deer yard --
A (Barnum) Yes.
Q Did you find that whole area to be deer yard?
A (Barnum) Yes. The line, the right-of-way passes through an area. It's sort of the southern end of that parcel. And that's definitely deer yard. And then if you continue on, there's a steep, almost cliff-like area sort of running up the eastern side of that parcel which is all deer yard, and then up on top of the hill as well. It's very, relatively extensive. I would also characterize that as a Moose Concentration Area. There's abundant sign of both moose and deer use during the wintertime throughout that parcel.
Q Yes. So it's an obvious, well-used winter yarding area.
A (Barnum) That's correct.
Q Okay. I think most everybody understands where this is, but it just going to put up the plan to just to describe that. Just to orientate everybody, here we are in Canada.
PRESIDING OFFICER HONIGBERG: Point to the map. Not to the screen.

MR. THOMPSON: I'm sorry. Thanks. Thank you, sir.

BY MR. THOMPSON:

Q Canada, Halls Stream, Halls Stream Road comes across, this by the way right here is Vermont. So we've got, we're right in that famous corner between Canada, Vermont and New Hampshire. And this is two and a half miles of the power line, cross to Transition Station 4, Connecticut River, Old Canaan Road. Transition Station 1. I'm sorry. And then the HDD under Route 3. And that is considered and called roughly two and a half miles. Two and a half miles of power line from Halls Stream to number 1 Transition Station.

Deer are habitual to the point that they return to the same deer yard every winter, generally speaking?

A (Barnum) Generally speaking, that's what you see in the literature.

Q And they'll travel up for many miles, and I've read as much as 20 miles --

A (Barnum) That sounds reasonable.

Q -- to go back to their same deer yard.

The area where the power line is going to be put by definition is roughly give or take 130-foot wide clearcut for two and a half miles. Would you say it's kind of, for lack of a better word, cutting through this deer yard?

A (Barnum) I would characterize the location of the right-of-way relative to the deer yard which does run northwards quite extensively as at the edge of the deer yard. The right-of-way will be about, will be 120 feet wide. So there will be a clearcut at the edge of that deer yard. This deer yard is on a parcel which is going to be part of the mitigation plan the parcel is over 100 acres in size. I'd say the deer yard takes up at least two thirds of it. This yard currently is subject to logging. Unrestrained logging, unrestricted logging. If you walk through the area it's obviously been logged recently. It's regenerating.

Once this parcel is placed into mitigation, the management that will be applied to it will be applied specifically to maintain the characteristics and benefits that the deer yard provides. So while there will be some loss of

deer yard here to the right-of-way, the fairly extensive remaining area will be managed such as to provide benefits and compensation for what's going to be lost here.

Q Is there a winter Ski-Doo trail that cuts up over the ridge on this property? Are you familiar with that?

A (Carbonneau) Yes. There is an existing trail.

Q And that certainly would allow someone like myself who's probably not going to put snowshoes on and hike up through there in the winter to get a pretty good view of what is going on up on the ridgeline, in particular, if there are deer up there and if they're feeding or whatever?

A (Barnum) I can't speak to what you might see from the back of the snowmobile while you're out riding.

Q But you hiked it and you saw signs of deer yard in the summer season.

A (Barnum) I did not hike in the location where the Ski-Doo trail was. I knew there was one up there somewhere. But when I hiked last June, there was distinct sign of deer and moose use.

Q How disruptive is cutting 130 feet clearcut to

put in towers to a deer yard, whether as you call it going around the edge of it or as what may be the case where if it's between where deer are sheltering and where they're feeding, and that possibly clearcut bisects that, how detrimental to that deer yard and how will it affect the deer?

A (Barnum) The existing right-of-way passes through numerous deer wintering areas. In my work for the Project, I walked many of these areas repeatedly in the wintertime. I observed deer within the right-of-way. I observed numerous deer trails crossing the right-of-way, and you could see that there was browsing going on on both sides of the right-of-way. There is no doubt some disruption from adding this feature to a deer yard. However, my observations in the existing deer yards with the existing right-of-way indicate that the deer are continuing to use those areas and presumably finding benefit since they're continuing to use them.

Q The added feature of the clearcut of an area like that with the winter conditions in the,

particularly in the North Country, where typically snowstorms are more light snow because of colder weather, does that lead to drifting that can affect the traveling of the deer where it would not occur if the clearcut was not there?

A (Barnum) The observations I made were within the North Country, and the deer were, like I said, traversing the right-of-way. There were trails back and forth. So whatever the conditions were, they were not preventing the deer from moving across the right-of-way.

Q Okay. That's it. Thank you.

PRESIDING OFFICER HONIGBERG: All right. I'm now decidedly less optimistic that we're going to get to the Committee this afternoon. We're going to take our break and we'll be back in 10 minutes. Off the record.

(Discussion off the record

(Recess taken 10:42 - 10:52 a.m.)

PRESIDING OFFICER HONIGBERG: Deerfield Abutters with Ms. Menard and company.

CROSS-EXAMINATION

BY MS. MENARD:

Q Good morning. Jeanne Menard from Deerfield with fellow Abutters, and our first topic this morning concerns impacts to wildlife.

I'd like to start with Table 14 which is a Summary of Impact Risks.

On the next page, actually, the risks are defined so I just want to take a peek at "low." What does it mean to have a low impact? And you can see from the bottom there, that low reads the effect is limited to individuals and that there's no population level effects. Is that correct?

A (Barnum) Yes. That's correct.

Q Okay. So back to the first page where your testimony that construction of Northern Pass Transmission will have a low risk of direct mortality on the Blandings, spotted and wood turtles, correct?

A (Barnum) Correct.

Q And similarly, in the next column, your testimony is that the operations and maintenance of NPT will also be considered a low risk of creating any population level effects.

A (Barnum) That's correct.

Q Okay. What is the basis of your low impact risk rating on these species of concern?
A (Barnum) For construction, the basis is that the avoidance and minimization measures that will be implemented will include searching for and removing these species from the right-of-way prior to construction activities.

For the operations and maintenance, that conclusion is based on the fact that the line is currently in operation and operations maintenance activities are routinely conducted within the existing right-of-way, and there are populations of all three of those turtles currently in and around the existing right-of-way.
Q Thank you. Can we take a look at Table 1 which is from the Applicant's Application, Appendix 36? Turtles were given a high potential or likelihood for being present in the Project area.
A (Barnum) That's correct.
Q And what information did you have to determine that the turtles were likely to be in the right-of-way?

A (Barnum) The right-of-way currently provides important resources to these species. Specifically, the right-of-way because it's cleared provides thermal benefits, good place to bask, and because it provides thermal benefits there's also potential for nesting to take place in the right-of-way. Turtles nests need a certain amount of insulation, sunshine to warm them up and get the eggs to grow. It's not the right word. Develop. Thank you.

Q Okay. So it was because of the suitable habitat and their known distribution that you decided to search, do a survey between Allenstown and Deerfield; is that correct?

A (Barnum) The assessment for turtles was looking primarily -- because we assumed then to be present within the right-of-way based on their known distribution and habitat needs, the assessment that was done in the right-of-way was focused on nesting habitat, and we spoke with Fish & Game about our approach, and they agreed that this was a good way about going about looking at the resources that might be important to turtles.

So we did a modeling exercize. We looked at soils and distance to potentially appropriate water bodies for these species. We identified all the locations within the right-of-way from the Canterbury/Northfield line south which might have potential nesting habitat and then we did a spot assessment of those areas so it included more than Allenstown and Deerfield.

Q Correct. Can we take a look at Deerfield Abutter Exhibit 44? Are you familiar with the status assessment for Blanding's turtle in the northeast, this document?

A (Barnum) I've reviewed it. Not in great detail, but I'm familiar with the document.

Q Okay. I'll represent to you that we'll refer to this as the Compton report. Let's look at Table 8 on the next page, and this was in our Deerfield Abutter Prefiled Testimony as part of the report.

This is a population model, and I'd like for everyone to take a look at Figure 8 at the bottom. I'll give you a minute to just kind of take a look at it.

Do you agree that, according to this model,

it would take only 4.6 generations with an annual 2 percent adult mortality rate to reduce the population of Blanding's by 90 percent?

A (Barnum) That is what this table indicates, yes.

Q Okay. From the New Hampshire Wildlife Action Plan which is the next one, Jo Anne.

You are familiar with the New Hampshire Wildlife Action Plan?

A (Barnum) Yes, I am.

Q Okay. It reads that small increases in annual adult mortality, as little as 2 to 3 percent, especially among females, can have a catastrophic effect on populations.

Do you have any reason to disagree with these findings?

A (Barnum) I haven't reviewed the methodology or the assumptions of these models, but I'll agree with them.

Q Okay. And Deerfield Abutter Exhibit 104 which is the magazine, the New Hampshire Wildlife Journal, this journal was published in May/June of 2014, and there is an article which, Jo Anne, can you turn to?

And we'll read from the section, actually

would somebody, Dr. Barnum, would you mind reading the underlined two sentences from the section called Every Turtle Matters?

A (Barnum) It reads, for these reasons, scientific models have predicted that the yearly loss of just a couple of Blanding's turtles will eventually lead to that population disappearing all together. This rate of loss is likely occurring or has been exceeded in much of the developed landscape of southeastern New Hampshire.

Q Thank you. And similarly, there is a local newspaper article from The Hippo, and that's Deerfield Abutter Exhibit 103, and I'll represent to you that a New Hampshire Fish & Game wildlife biologist raises the same concern about the loss of individual wood turtles and its effect on the larger turtle population. As we discussed earlier, you acknowledge, Dr. Barnum, that there is a risk of direct mortality to turtles during construction. Is that correct?

A (Barnum) That is correct.

Q Jo Anne, can you pull up the Appendix 36? The

Exhibit, thank you.

So there are impacts to this species, both, you've identified four different types of impacts, and construction, as we've just stated, that the individuals of mobile species and direct mortality to individuals of smaller lower mobility species. So turtles are in that category, is that correct?

A (Barnum) Where are you quoting from?

Q Right here. Did I see that in the third?

A (Barnum) Yes. I do.

Q Okay. And then, similarly, you'll see in the maintenance section, the underlined section, that these types of impacts concurrently occur in the existing right-of-way as you've just stated. You mentioned that. And that there are around, and these right-of-ways are around the state and they have been developed. I'm thinking there's a missing possible, maybe BMPs have been developed or can you fill in, something has been developed to be in compliance with all the applicable regulations to minimize impacts to natural resources in general.

A (Barnum) Yes, it would appear that BMPs, yes.

Q Well, my question is, specifically, what measures are being practiced in the right-of-way today to avoid direct mortality to endangered turtle species?
A (Barnum) Within the right-of-way today, I'm not sure that there are any specific measures being taken. One of the avoidance and minimization mitigation measures that will be adopted as part of this Project is to implement vegetation management that is designed to reduce mortality to turtles based on seasonality of mowing, pattern of mowing, the kind of equipment used, height of mowing, et cetera.
Q Would you agree that direct mortality to any species is not -- it wouldn't be appropriate to classify that as a temporary impact?
A (Barnum) To that individual, it is obviously permanent, but to the population as a whole, if there's no population level effect, then you can't quantify it as a permitted impact to that population.
Q Okay. Do you agree with the following statement? And this statement was, can you put up Exhibit 6? The Compton report summary.

Can you read the summary statement, and this statement was as a result of collaboration of more than 20 northeast Blanding's turtle experts. Could you read the underlined section of that report, please?

A (Barnum) It says because Blanding's turtles have a generation time of nearly 40 years and population increases take place slowly, recoveries from declines may take many decades or centuries. Therefore, to be effective, conservation efforts must take place well in advance of severe declines.

Q Thank you. I'd like to move to another topic and will need Deerfield Abutter Exhibit 54.

Is anyone on the Panel familiar with the concept of spacial ecology and core-area protection?

A (Barnum) I have certainly heard about these concepts, yes.

Q There's a definition on the top of the exhibit that would put everyone to sleep. So I was wondering if you could just give a definition that a layperson could understand, just generally.

A (Barnum) I haven't reviewed these concepts in some time. I wouldn't want to do that.
Q Okay. I think, I just have a few questions about this topic, and I think it's going to become obvious to folks so I'll just proceed.

In Michigan where the author, J.D. Congdon, is still doing his 50 years of research, he's representing that, and I'll read from the underlined section. "Terrestrial protection zones of 300, 1000 and 2000 meters around resident wetlands only are required to protect 14 percent, 87 percent, and 100 percent of adults respectively."

Do you agree that he's representing that a 300-meter terrestrial protection zone around Blanding's turtles' resident wetland will only protect 14 percent of the adult population?
A (Barnum) That is what the author is representing.
Q Okay. Do you agree with the concept that core area around resident wetlands must be large enough to support all the life cycle activities?
A (Barnum) That sounds reasonable.
Q Do you also agree with the last sentence of just

under what I just read, "A protection zone that encompasses the activity of most or all of Blanding's turtles has a high probability of including the core areas of most other semi-aquatic organisms."

A (Barnum) That sounds very reasonable.

Q So the Blanding's are often referred to as like an umbrella species. If you protect the Blanding's, you're also getting the benefit of protecting others; is that true?

A (Barnum) That is correct.

Q Okay. Ms. Carbonneau, I'd like for you to read a sentence from your Prefiled Testimony, Applicant Exhibit 22. And if you could just read lines 14 and 15?

A (Carbonneau) It reads, "The largest component of the Project's mitigation plan is preservation of upland buffers around good quality wetlands, one of the DES's preferred mitigation methods, and one which will also provide in-kind mitigation for wildlife habitat impacts."

Q Do you agree that this statement acknowledges the importance of core-area protection?

A (Carbonneau) It acknowledges the importance of

preserving an upland buffer around a wetland for wetland dependent species, yes.

Q Thank you. Did your analysis calculate, your wetland impact analysis overall, did it calculate in any way the impact to core areas of existing, well-established, high quality conservation lands like the Menard Forest?

A (Carbonneau) We did not quantify impacts differently on conservation lands as we did elsewhere along the Project route. They were, high quality wetlands were calculated the same, regardless of whose property they were on.

Q I'd like to take the question just one step further in that your calculations of impacts were solely restricted to impacts to the wetland areas or upland areas right within the 200 foot or 100 foot or whatever the width of the corridor, correct?

A (Carbonneau) Yes. We confined our impact assessment to the habitats that were going to be directly or secondarily impacted by the Project.

Q Okay. So the impact of what happens within the right-of-way, it wasn't considered how that piece of the puzzle is part of the core area of

any given region? That wasn't the scope of your wetland analysis?

A (Carbonneau) For quantification purposes for permitting, no.

Q Correct. Thank you. I'd like to switch topics to searching for turtles and snakes. And can we put up Applicant Exhibit 124? It's the next one. Thank you.

With regards to the snake survey, Ms. Barnum, you said that, and I believe I put a number 1 next to this comment. You said that, and this was communication with you and, I believe, Fish & Game as things were being determined for survey work.

With regards to the snakes, you don't have the resources to search the whole right-of-way intensively. What resources were you lacking?

A (Barnum) So this is in regards to our surveys to look at presence/absence distribution within the Project area. So for the reporting that I was doing for the preconstruction surveys, well, not the preconstruction surveys but for the surveys that I was using to support my analysis of the potential impacts, I was saying that we didn't

have the resources to search the entire right-of-way for racers at that point.

Q You didn't have the financial resources, the personnel resource? What were you lacking that you didn't have the ability to do a full snake survey?

A (Barnum) Didn't have the personnel.

Q Okay. Did you ask to increase the budget or were you, you know, was there any attempt to consider this a priority or you just didn't have the personnel and so it was decided that you didn't do it?

A (Barnum) So what we decided in consultation with Fish & Game is that we were going to assume presence. We will assume that there are northern black racers throughout the existing right-of-way from the Canterbury/Northfield line south, and that approach was acceptable to Fish & Gamement.

Q Number 2 on that same exhibit. You consulted with Fish & Game to get trained on the best searching techniques, correct?

A (Barnum) That's correct.

Q And your summary results of the survey led you

to the following conclusion. After you completed the habitat study from Allenstown to Deerfield, the overall, the survey area of the existing right-of-way, and I believe you might have that, Jo Anne, to put up.

The surveyed areas of the existing right-of-way appeared to offer low quality habitat for nesting turtles and no depreciated turtle nests of any species were observed during the survey, is that correct?

A (Barnum) So you are sort of taking two different surveys' efforts right now and combining both how they were decided upon and then the results. So for the snakes, we're talking about --

Q I apologize. I realized after I started reading this I should have mentioned that. I'm talking about turtles. Thank you.

A (Barnum) All right. So for the turtle survey, like I discussed earlier and there is also in consultation with Fish & Game, we decided that the resource that was of most interest was the potential nesting habitat and through a modeling exercise which combined soil suitability and distance to suitable water bodies, we determined

where the extent of potential nesting habitat could be, and then we went out and spot-checked those areas.

After reviewing aerial photographs within the potential turtle nesting areas we identified locations where there might be bare ground or exposed soils and then went and checked those areas to assess their suitability as turtle nesting habitat. Again, this wasn't just in Allenstown. The Allenstown/Deerfield survey was for black racers specifically. I mentioned before as far as racers go, we had assumed they were present throughout the right-of-way from Canterbury south. However, because Fish & Game hadn't done very intensive survey in the town of Allenstown and Deerfield yet, they requested that even though we were assuming presence, we go out and do some survey and see if we were going to see any snakes in those areas. So that was the snake survey. Allenstown/Deerfield. The turtle nesting habitat survey was the entire area from Canterbury south or including Canterbury southwards.

Q Can you reconcile for me the way that on one

hand, the first exhibit that we looked at, there was a high likelihood of them being there, and yet, after you've completed your survey work, there was, and Bridgewater may not even be in this region, but basically you concluded that there was wasn't any high quality nesting sites.

A (Barnum) Sorry. I didn't mean to jump in. So there's a high probability that turtles will use these areas. They're close enough to suitable water bodies. They have resources that turtles would use. We were not searching for turtles when we went out and did these surveys. These surveys were specifically looking at habitat resources, specifically nesting habitat, and we were trying to assess the habitat resource.

In our estimation, although there is potential nesting habitat, very little of it is of high quality because there is some bare ground, but in most cases there's an awful lot of vegetation. Turtles can dig and they do dig through some vegetation, but a lot of this was thicker and denser than turtles would want to dig through, and a lot of the bare ground is associated with recreational vehicle use. It's

there and it's bare because people are in there with dirt bikes and four-wheelers digging up the area, and that's not compatible with turtle nesting. So even though those sorts of resources are present in some places because of the use they receive, they don't present a high quality nesting opportunity.

Q So I'm pleased to hear you say that turtles do use the area.

A (Barnum) Absolutely.

Q Okay. Can we take a look at Deerfield Abutter Exhibit 45.

This is right-of-way off of Mountain Road in Deerfield looking east towards the substation. Do you remember and this isn't terribly important, but do you remember what year you did your survey?

A (Barnum) I believe it was 2013.

Q Okay. Did you take into account the fact that vegetation cover changes depending on the maintenance projects?

A (Barnum) Yes.

Q Would you agree that disturbed areas are created by these projects? Just like the dirt bikes, I

mean, the use of the right-of-way for access and getting equipment in and out creates disturbed areas?

A (Barnum) In my experience, the vegetation management changes the height of vegetation and the type of vegetation, but I don't recall seeing areas that were turned into bare ground by vegetation management.

Q Well, I'll represent to you, if you take a look at that bottom picture, when you did your survey work, this right-of-way did not look like this. All this switchbacking was a result of a construction repair that was done early this year.

So let's take a look at the next, Exhibit 106. This is the same right-of-way looking west. There's a snapping turtle that's returning to the Lamprey River coming, it had crossed the road from the east side going, heading west, and on the picture below, there's, again, I didn't want to walk right up, and I didn't touch the nesting area, but there was a nesting area that had been created in this right-of-way access road for the construction.

So do you agree that turtles will, and they spend anywhere from 15 to 17 days on their nesting foray, that they'll explore and use marginal nest sites?

A (Barnum) Yes. And it would appear that the construction road actually created somewhat better conditions than might have been there previously.

Q Do you agree that snapping turtles are a proxy for other turtle species?

A (Barnum) I do not agree. I'm not saying they're not, but I don't, their habitat use and needs and their life history is different enough from other turtles, particularly Blanding's turtles, that they don't necessarily provide an ideal proxy.

Q When you were doing your egg collection in terms of your turtle survey, didn't Mr. Marchand recommend that the snapping turtles, the nest sites, if you could find the snapping turtle eggs, then they were indicative of other species being present in the area?

A (Barnum) I don't recall that.

Q Okay. The only reason I know that is I saw that

in the correspondence back and forth in that same email chain.

A (Barnum) Okay.

Q Which I don't have that particular page with me, I don't believe.

A (Barnum) Okay.

Q So one last question on the survey. Can you go back to the page 61 that did have the correspondence? I'm sorry, Jo Anne. I should have flagged that. That had the three questions.

I was just curious how you did on your time estimates for searching. This, again, I appreciate the fact that you were just getting set up to do this work, and you're getting advice and wanting to get it right, and you had estimated that it would take 8 person hours per mile of survey and you had three visits.

Do you remember were you, was that a good estimate? Or were you off on your estimate? Did you need more time or less time, do you remember?

A (Barnum) So these questions are all in regards to the snake survey, not the turtle habitat

evaluation.
Q Well, I was thinking that that was more general, but I'll yield to you if you felt that that question was specific to the snakes. So your snake survey, let's stick to snake survey. If you're looking for snakes, was this estimate of time correct?
A (Barnum) I was asking Mike if he thought that was suitable and his response was that one visit was going to be sufficient, and so we in the end for all the areas that we searched for snakes we made one visit, not three.
Q Okay. So one visit, and did it take you about 8 person hours per mile?
A (Barnum) I don't recall.
Q Okay. Thank you. A minimization method to offset turtle or egg crushing by equipment is to remove, you search for and you move the turtles from the active construction zone, correct? Exhibit 17. Does that sound correct, Dr. Barnum?
A (Barnum) Could you repeat the question, please?
Q Sure. A minimization method to offset the turtle or egg crushing by equipment is to search

for and remove the turtles from the active construction zone.

A (Barnum) Yes, to minimize the potential for turtles to be crushed, search the area prior to beginning the construction activities and remove the turtles to a safe suitable location.

Q Okay. And then the avoidance is the restriction, the time restriction, to during late October to April, no construction activity.

On the bottom section, Jo Anne.

We'll be summarizing this, but basically I want to make sure that I understand what you're calling avoidance and what you're calling minimization and so that's the reference to that clarification.

A (Barnum) Okay. The avoidance and minimization measures that we are proposing for turtles are part of the ongoing discussion with Fish & Game. What we have currently agreed to may not be exactly reflected in this document, but yes, there are measures to both search the construction area and remove turtles and then also to avoid construction during sensitive times.

Q Okay. Thank you. I have just a few questions on Monitors. Have you produced any documentation of Monitor required qualifications?
A (Barnum) All Monitors will have to be qualified to hold a handling permit issued by Fish & Game and so the requirements for that handling permit will need to be met, and Fish & Game can modify those requirements, if they see fit. So there is definitely that level of qualification required.
Q Is that documented anywhere in the Application?
A (Barnum) It will be part of the avoidance and minimization measures that we're currently negotiating with Fish & Game. That language has been added and is part of the existing document.
Q Whose job is it to assign a Monitor to a specific area?
A (Barnum) That will be part of the construction, what's the word I'm looking for. It's part of the whole construction planning process so that will take place at that time.
Q Whose job is it?
A (Barnum) I don't know. Lee?

A (Carbonneau) Ultimately, it's the responsibility of the Applicant so to make sure that all of the conditions of the permit, which include the avoidance and minimization measures, are done appropriately. So the ultimate responsibility is the Applicant, and I don't know who that person would be or if they will assign that specific job to someone on the Project team. That's yet to be determined, I believe.

Q Who would know whose job this is?

A (Carbonneau) I don't know if that's known yet. I'm sure the Project Director will know at some point, but I don't know if that's known yet.

Q On other projects that you've overseen, you've made representations that this type of process has been employed. I'm not looking for a specific name of a person. I'm looking for the chain of command here in terms of who has the knowledge and the appreciation of the scope of this task of who is going to put the Monitor where and knows why, for what resource.

A (Barnum) I don't know what the chain of command is, but I do know a little bit about the process. So the areas which require a turtle

search or a snake search are marked on the construction plans. And so when the manager of the construction project is looking at the plans and all the different issues that need to be considered at each location, that is clearly marked, and it's part of the planning process, and they understand that everything that's contained within those construction plans is part of their responsibility to carry out. So it's well documented that this needs to happen and where it needs to happen. So the person who's in charge of getting things to happen at a certain location has that, it's recorded for them. It's very obvious to them that that's a task that needs to take place.

A (Carbonneau) In my experience on previous Eversource Projects, as construction of the Project begins, there's a weekly construction management meeting. The Eversource Project Manager is there, the Environmental Monitor is there.

Q Excuse me. I don't mean to cut you off, but the point is not planning on the fly, and it sounds like the preplanning, even to the point of not

knowing who is going to be doing that planning, hasn't yet occurred. So I'd like to just move on to the next question.

Do you know how large an area that a Monitor will be able to continue in one day when they're searching for an endangered species?

A (Barnum) I don't know how large the area is, but it's going to vary based on the habitat type. Denser habitats are going to require slower, more intensive searching. I'm envisioning that this will be happening with a team of people, not just one person. And the effort that's required will be adjusted to be appropriate to the type of habitat that's being searched.

Q But the person who is in charge of asigning Monitors to certain areas, they'll know how large an area that Monitor could do in a day.

A (Barnum) That's correct. Like I said, everything's mapped and so the absolute area is known. The amount of effort required based on the habitat type, that's what's going to have to be adjusted for in the field.

Q Have you considered the concept of probability of detection in your selection of searching as a

minimization method?
A (Barnum) Yes.
Q What is the expected probability of detection that Monitors will not miss what it is that they're trying to protect or find?
A (Barnum) That will vary with the type of habitat. I don't have a number for that.
Q So you do not know the percentage of what the expected outcomes are going to be in any given area?
A (Barnum) I don't.
Q I'll represent to you that the Deerfield Abutters had a conference call with Justin Congdon. He's the researcher that I'm sure you're well aware of. And we asked him about probability of detection in construction zones. His answer was 10 percent.

Do you have any reason to disagree? Do you have any evidence or any research or experience that would cause you to disagree with his opinion?
A (Barnum) I don't know anything about his search methodology, the level of intensity of search, the type of habitat he was searching. So I

can't comment on his numbers. My experience, the search methodology used in a construction zone is intensive, and I would expect to find far more than 10 percent of the individuals present.

Q So your basis for the POD on your experience is based on personal experience or did you read about other states or other Projects that actually have results that show these types of income percentages, outcomes, that you're referring to?

A (Barnum) It's based in part on some personal experience. Also experience within the company and the methodologies used and approved by Natural Heritage & Endangered Species Program in Massachusetts.

Q In the recent rebuild in Deerfield in 2013, the G146 line, I believe, Ms. Carbonneau, you did the wetland mapping and were involved in that Project; is that correct?

A (Carbonneau) That's correct.

Q Were there BMPs in place to remove turtles from the active construction zone?

A (Carbonneau) Yes. That was part of the,

searching for turtles was part of that Project. As I understand it, that involved a fairly limited amount of actual on-the-ground construction. They ended up doing a lot of that work in the winter and then finished up with a helicopter. I think the D118 line had a lot more on-the-ground construction activity. That was a rebuild project, and those two lines do share the right-of-way in some portions of the Project.

Q Do you recall in Technical Sessions when we were talking about BMPs for turtles, and I specifically asked you about the development of the BMPs, and you represented that you were working on it, you were working on it, and that you did not have anything to produce with regards to existing BMPs for turtles? Do you recall that? That it was more, you were representing that it was more, this is something that you're working on, that you haven't had available but that you were working on it, and, in fact, they would be available very soon.

A (Carbonneau) We had some general, what we call Best Management Practices. We've since changed

the name to avoidance and minimization measures because these aren't necessarily industry-wide Best Management Practices like you would have for erosion and sedimentation control. They're Project specific. They're location specific. We actually are still working on them with New Hampshire Fish & Game, but we did submit draft versions of this in our Application materials that went into New Hampshire DES and SEC in January, I believe. It might have been December. I've forgotten exactly which submittal it was, but they had more information in them, and we continue to refine them specifically.

Q After a project like the rebuild in 2013, have you ever gone back to verifying and document that the impacts to species did not occur or that if they did, to what degree?

A (Carbonneau) Well, we had no records of actually impacting directly any turtles during the Project that I'm aware of, but we have not gone back to do a population study or a habitat study.

Q Okay. So in summary of this topic, Jo Anne, can

you find that Appendix B, page 66? Thank you.

I'd just like to walk through the top line to make sure that I'm clear about the strategies to avoid and minimize impacts to turtles. So avoidance is the preferred method, correct? I mean, everyone wants to avoid impacts anywhere.

A (Carbonneau) Sure.

Q Okay. And construction is going to be restricted in the sandy nesting areas, and that there will not be any time-of-year restrictions if avoidance is followed. Is that correct? Again, I'm looking for clarification. This is my interpretation of this table, and I want to make sure that I am understanding this correctly so --

A (Carbonneau) I would tell you that this is an old table. This was from our submittal in October of 2015, I believe. The current avoidance and minimization measures that we're working on with Fish & Game supersede this so I wouldn't rely on this document any longer. There's been a lot of additional detail and work provided and Sarah can probably give a little bit more information about where we stand on

these specific things.
Q Okay. I'll just see if you can split out one clarification that is important to me, and that is in your avoidance/minimization, second to last column, the searching, are you listing that as an avoidance measure or a minimization measure?
A (Barnum) I think it's a little bit of a semantic argument here. I would classify it as a minimization measure.
Q So forget the chart then if this isn't up to date. How would you, what are you using search and rescue for qualifying it as? Avoidance? Or minimization? Or whatever category you want to put it in.
A (Barnum) Minimization.
Q Okay. Thank you.
Would you agree that heavy equipment traveling up and down the right-of-way during construction and maintenance of Northern Pass Transmission will create a road-like environment?
A (Barnum) I would.
Q And would you agree that this access road may be

better described as a long-term impact, not a temporary impact?

A (Barnum) I would defer to Lee on that.

A (Carbonneau) All of the proposed access roads are designed to be temporary or any improvements made to them. So the plan is to restore them to their preconstruction condition, and if they're in a place where there is no access road, then that will be removed. They're not designed for long-term use.

Q But with ongoing maintenance, upgrades, even utility activities, you cannot envision by the time that, for instance, that right-of-way area off of Mountain Road, by the time that switchback gets reestablished, in comes another project. So it's more of a -- and long-term is not a category, I realize, that fits into this Application, but can we agree that there are areas, and due to ongoing activities that it isn't temporary if another project comes right in behind it and it gets disturbed and habitat use and all these impacts are ongoing and not temporary?

A (Carbonneau) Well, I think that the lines that

go through Deerfield now, if they're the D118 line, again, was very recently rebuilt. The G146 had upgrades. In some locations that line, I believe, is going to be relocated. There will be new structures. The Northern Pass structures will be new. I don't think there will be heavy structural maintenance required for the near term along this right-of-way, but there will be ongoing maintenance, much as is conducted when there isn't a big project going on which is typical.

So, you know, annual helicopter fly-downs, annual foot patrols, occasionally driving along, you know, to allow for maintenance personnel to inspect the structures, but it's not, it's not like a local road. It doesn't get that level of traffic. It's reduced. The vegetation maintenance happens every 3 to 5 years so it's periodic and it has always been so, and I think that's what should be expected in the future.

Q From the Application, Exhibit 74, in the turtle section which is too small to read, so I just have one question, and I'll read the section at the very first condition. And we're going to

switch from the location to open water, from right-of-way to open water discussion.

Avoid and minimize impacts to open water and mucky substrates in all seasons to the greatest extent possible.

Did I read that correctly?

A (Barnum) Practicable, not possible.

Q Excuse me. Thank you. Good catch. I didn't do that intentionally.

Are you familiar with the Wetlands Sheet, the Function and Value Sheets? Who is familiar with the Wetland Function and Value Sheets?

A (Barnum) That would be Lee.

A (Carbonneau) Yes, I am.

Q Jo Anne, can you put -- let's take a look at, I'd like to take a look at DF 31. This is a high quality wetland, and I need to apologize. Can I go off the record for a second?

PRESIDING OFFICER HONIGBERG: Sure.

(Discussion off the record)

Q In relation to the condition on the Exhibit 74, I'd like to just ask two questions relating to the heron rookery which is a large body of water just west of the substation. Are you familiar

with that site?
A (Barnum) Yes, I am.
Q The sediment depths that from this area are labeled on Deerfield Abutter Exhibit 107. I don't know if this has been produced in another exhibit. These depths were as a result of a Counsel for the Public's data request, and it was, this work was done when they were doing work in this pond a few years ago, and you can see from this open water wetland sediment depth that would you agree that the depths are deeper, as the notation says, these depths were deeper than the sampling rods could reach?
A (Barnum) That's how it's labeled, yes.
Q Okay. And do you agree from the next chart that the water depths will be deeper than timber matting would allow in order to access, to build roads for tower construction?
A (Barnum) I'll defer to Lee on this.
A (Carbonneau) Yes. I don't know the maximum depth that they can stack mats, to be honest with you. I'm not sure.
Q Okay. How did you calculate impacts to this pond? Actually, I'll back up.

Did the construction team work with you in your impact analysis to this pond?

A (Carbonneau) Yes. They are the ones who actually devised the way to access the various work locations.

Q Specifically, what strategies for avoidance and minimization are in place in this heron rookery pond, do you know?

A (Carbonneau) The general avoidance and minimization is, first of all, to try to do the work when the pond is frozen. That's how it was done for the D118 Project. I think the G146 also tried to get in this pond. This pond has been worked on fairly recently, as you know. And one of the other methods that was used on those two Projects was to actually access the construction sites from a different angle with landowner permission. We're not counting on that for this.

But the method is initially to try to get there during frozen conditions. If the ice is not thick enough, there are ways to try to make the ice thicker and also putting timber mats on the ice can help. Barring that, they will

either need to stack mats or use a shallow barge, if that's appropriate, but that is something the contractors will need to work out depending on the timing of that work.

Q Do you have any research or evidence that shows that timber matting does not affect species like turtles?

A (Carbonneau) Not specifically.

Q Okay. And same area, different topic. Avian collisions. Just a couple questions remaining here.

You note that on Appendix C, which is the -- actually, I'll just read this for you.

That avian collisions with power lines does not appear to be a notable source of avian mortality in the region. Does that sound right?

A (Barnum) That's correct. Yes.

Q Would you agree that changing the configuration of the lines from a horizontal arrangement to a vertical configuration may cause confusion to herons and increase the risk for avian collisions?

A (Barnum) Potentially. There are a lot of factors, however, that go into creating

collision risk, and the line that's most commonly struck by birds when they collide is the shield wire at the very top of the configuration, and that's because the other lines are thicker, they're more likely to be seen, the bird makes a quick move to avoid and that little thin wire is still there. And regardless of the configuration, the number of lines, et cetera, you still have that issue of having that thin shield wire.

So changing configuration can certainly have some effect on risk, but it doesn't, it's the ultimate, it's probably not the most important facter that causes collision to happen so --

Q Okay. Do you agree or disagree that introducing structures of 120, 125 and 135 feet to the ponds may also be cause for collisions as birds are adjusting to the new configurations, the new heights, just the new, something new and different?

A (Barnum) Yes. I agree. Like I said, there will no doubt be some change in the collision risk as a result of adding more structures to the pond.

Certainly.
Q Okay. Do you have any studies that you relied upon to demonstrate that line marking actually works for herons?
A (Barnum) There have been numerous studies of different line marking methods and numerous studies of different species. There's not enough, based on a metaanalysis of all the existing information that was conducted I believe in 2014, there's not enough data on any single species or any single line marking method to suggest what's the best for a specific species. It's just understood that line marking in general has benefits.
Q Okay. It's my understanding that any consideration of line marking would only occur after the fact of having reported incidences of collisions; is that correct?
A (Barnum) That's correct.
Q Okay. And the last few questions relate to my family's pond. Let's use this map. This is Applicant's Exhibit 3, sheet number 671.
Can you tell me why the pond was not labeled in terms of as a designated wetland?

A (Carbonneau) It is part of, the wetland boundary is not the edge of the standing water. The wetland boundary is shown in green as part of DF 28.
Q So you're not making a distinction between the ponded body of water and the vegetative wetland type on the right-of-way? That's all one and the same type of wetland?
A (Carbonneau) No. We're not saying that it's the same type of wetland. The wetland is, the pond is part of the wetland. So we're showing the boundary on this. We're not making a distinction between the water portion and the shallow portion.
Q Don't other ponds have designations of PUB?
A (Carbonneau) If that's the dominant part of the wetland in the right-of-way, then that would be how we would designate it, yes.
Q So impacts to this pond are calculated and recorded in the Application?
A (Carbonneau) Yes, as part of the wetland system that's within the right-of-way. So the impacts would be on the plan sheet as identified associated with DF 28.

Q I'm sorry. I didn't understand that last sentence. As associated with what?
A (Carbonneau) There's a table on each plan sheet.
Q Yes.
A (Carbonneau) And it includes the names of the wetlands, labels, and the impact area associated with that wetland.
Q Okay. So Jo Anne, can you move that up a little bit higher so that lower chart --

So when you did calculations, this pond is an acre and a half. So roughly what? 43,000 square feet per acre. So 60,000 square feet. In any way impacts to the pond such as like potential impacts. I'll make a distinction here. Potential impacts to the pond as a result of runoff or other Project influences, the area calculation is only based on the section physically located in the right-of-way. Is that true?

A (Carbonneau) Physically located in the right-of-way and that would be disturbed in some way by the construction activity.
Q Okay. So this structure in the northeast corner of the pond is a big ledge knob, and it actually

is, its footprint would be sitting, if not in, I don't know how they can build that crane pad without being in the pond, but I'm not going to argue that point. So impacts, if you need to, for instance, blast that ledge, did you consider impacts of that activity on the pond?

A (Carbonneau) We're not expecting that impacts associated with the construction are going to have an overall effect on the pond. We based our examination on the construction disturbance area that the engineers in conjunction with the contractors anticipate for the Project. We don't include, you know, hypothetical what-if impact calculations because we're not anticipating them.

Q Okay. Well, I'm anticipating them. Sorry.

And there's a spring which feeds the pond right in that northeast corner, like five feet off the edge of the pond. And blasting that knob would create an impact. So aside from, I'll get educated in terms, I'm going to take your, I'm going to appreciate your understanding and I've missed a point in terms of somewhere you have calculated impacts to this pond. I

didn't see a notation on the pond like I've seen on other ponds on the right-of-way. But I'm going to yield to your expertise and accept that fact.

Would you agree that, again, just going back to our overall theme here of protection to turtle species, that a pond such as this might be impacted and some of the core-area activities, for instance, like basking of turtles. And basking of turtles is not sun bathing. It's a core area activity. They need to raise their body temperature so they're in the ponds in the spring raising their core body temperatures, and with construction activity, would you agree that they're not likely to be able to be doing that in ponds and wetlands along the right-of-way?

A (Barnum) I don't have any opinion on how sensitive turtles might be to that activity. I understand that turtles are sensitive to certain types of activity. It would depend on where their log was and what the angle of the sun was and what log they wanted to use at a specific time and other factors like that and how close

they would actually be to the activity.
A (Carbonneau) We have acknowledged that there will be potentially some temporary displacement of wildlife during construction activities for the Project. I mean, that's intuitive, and we recognize that. We don't expect that to be a long-term impact, and we don't know that they're actually going to have to do blasting on this particular location. We don't have that information.
Q So there are impacts that might occur but because you don't have the information, you don't know.
A (Carbonneau) What I'm saying is we're anticipating and expecting that there will be some temporary displacement of wildlife. It's not quantifiable, and it will vary by species, and it will vary by construction season. If this work took place in the winter, we don't think there would be an impact at all.
So it's not that we're not recognizing it or that we've left it out. It's just, it's temporary, it could be minimal depending on the season, and we have addressed it in our wildlife

report.
Q Okay. And lastly, the habitat for that Delineation of Wetland chart.
Two questions. DF 7. If you look across, this is a chart that has all the various values and functions of wetlands this are charted out very nicely and DF 7 exceeds your 14 score ranking determination that I would have concluded it to be a high quality wetland and yet it's labeled no. Do you happen to know why that is?
A (Carbonneau) I don't. It could be an error.
Q And DF 31 which is a wetland in Deerfield is designated as high quality, and you can see it has all the attributes that contribute to value with the exception of recreation. I'm not going to argue that point.
The question is does Northern Pass Transmission in any way enhance either the function or the value of this wetland or any wetland for that matter?
A (Carbonneau) If you're asking if the Project results in an enhancement of wetlands functions and values, that's not our expectation. Our

expectation is to restore the wetlands so that to the extent possible the existing functions and values will remain, and for any residual long-term permanent impacts we have developed a mitigation plan.

Q Would you agree that Northern Pass, if it had any impacts to adult mortality with the endangered species column that that indeed would be a detriment and would be of serious concern?

A (Carbonneau) Sure.

Q Okay. Thank you. I have no further questions.

MR. IACOPINO: Before you step away, your reference to the DF lines, am I correct that they were in Applicant's Exhibit 1, Appendix 31, page 138?

MS. MENARD: Yes. And this is from Appendix B.

MR. IACOPINO: Thank you.

MS. MENARD: Thank you.

PRESIDING OFFICER HONIGBERG: Mr. Cote, how much do you have?

MS. COTE: About an hour.

PRESIDING OFFICER HONIGBERG: Ms. Bradbury, how much do you have?

MS. BRADBURY: About an hour. I'm guessing, but I think an hour.

PRESIDING OFFICER HONIGBERG: All right. We're going to take our lunch break now. We'll be back at about 1:30. Off the record.

(Discussion off the record)

(Lunch recess taken at 12:07 p.m. and concludes the **Day 19 Morning Session**. The hearing continues under separate cover in the transcript noted as **Day 19 Afternoon Session ONLY**.)

C E R T I F I C A T E

I, Cynthia Foster, Registered Professional Reporter and Licensed Court Reporter, duly authorized to practice Shorthand Court Reporting in the State of New Hampshire, hereby certify that the foregoing pages are a true and accurate transcription of my stenographic notes of the hearing for use in the matter indicated on the title sheet, as to which a transcript was duly ordered;

I further certify that I am neither attorney nor counsel for, nor related to or employed by any of the parties to the action in which this transcript was produced, and further that I am not a relative or employee of any attorney or counsel employed in this case, nor am I financially interested in this action.

Dated at West Lebanon, New Hampshire, this 15th day of April, 2017.

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Cynthia Foster, LCR