STATE OF NEW HAMPSHIRE

SITE EVALUATION COMMITTEE

June 26, 2017 - 9:00 a.m. **DAY 20**
49 Donovan Street **Morning Session ONLY**
Concord, New Hampshire

{Electronically filed with SEC 07-10-17}

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

WITNESS PANEL	LEE CARBONNEAU SARAH BARNUM JACOB TINUS	PAGE NO.

P R O C E E D I N G S

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

PRESIDING OFFICER HONIGBERG: Good morning. We are going to resume and finish with the Environmental Panel this morning. We have one more abutter group, the Ashland to Deerfield Non-Abutters. Ms. Townsend is going to question, and I understand that by agreement, the Nongovernmental Environmental Groups has a few more questions to follow up on something, and the Applicants agreed to allow that to happen, and then the Committee will have its questions. So Ms. Townsend, are you ready to go?

CROSS-EXAMINATION

BY MS. TOWNSEND:

Q Good morning. I'm Heather Townsend, and I'm representing the Ashland to Deerfield Non-Abutting Property Owners.

Okay. We've met before at Technical Sessions.

In comments on the 14th, Dr. Barnum, you explained why it is that large birds were a particular concern for avian strikes. You said

that raptors generally fly well but may be distracted if they're hunting. You also noted that waterfowl are not excellent flyers, can't get out of the way as readily, their eyes are on the side of their head and they're blind to the front. They evolved in a world that did not have electrical power lines and are not equipped to see and avoid them. Is it a fair characterization of what you said?

A (Barnum) Yes.

PRESIDING OFFICER HONIGBERG: Off the record.

(Discussion off the record)

Q So it might be a particular concern where you have herons distracted as they're fishing since they're both blind to the front and ungainly as well as being distracted, sort of a triple threat.

A (Barnum) I don't believe they're blind to the front. They're a predatory bird so they would have good binocular vision so that they could catch the things they're trying to eat.

Q Gotcha. Okay. So they're more, it's more for them that they're ungainly?

A (Barnum) I would say so, yes.
Q And distracted. So locally, on the Pemigewassett, we've observed that herons, osprey and eagles follow the Pemigewassett River while hunting over water as well as following the Squam River from Squam Lake and headed over to Webster Pond. Does that conform to your understanding of those species' behavior?
A (Barnum) I haven't studied what those species do in that particular area so I have no comment on that.
Q Okay. PRLAC and I discussed this with other residents. That's what we observed.
Do loons tend to behave this way as well? Do they hunt over water?
A (Barnum) Loons and I would also note herons don't hunt over water. They get into the water and they dive. Well, loons dive. Herons hunt by stalking so neither of these two species are distracted by hunting behavior while they're flying.
Q Okay. So it's really, it's the osprey and the eagles that are potentially distracted.
A (Carbonneau) Potentially. Yes.

Q We do still see the herons flying down the river. I don't know what they're doing, but that's something that they seem to do in our area.

So the new high voltage lines which criss-cross the river would create a particular kind of barrier in that the new lines and the old lines would be at different heights from one another and not predictably so.

So if you could put up the first.

So that's just one cross-section where there's the new proposed tower. The 115 kilovolt. And then sometimes there's also a distribution line along with the rest, and you can see that those lines aren't going to line up with one another. They're going to be at different heights.

If you can move on to the next one.

So this shows a portion of the Pemi with a number of crossings, and you can see where I have 1 and 2. That's the first crossing. And you can see that those are very different heights for the existing and the proposed. In addition to crossings, the same is true also

down at the crossing 6 and 7.

In addition, can you fit two pages on there? That would be great.

In addition to crossings, there are near approaches. In fact, towers that are so very close to the river, in fact, within the floodplain some of the structures that Max Stamp was showing on Friday that are between the lagoons and the waterfront. Do you recall those, Ms. Carbonneau?

A (Carbonneau) Yes, I do.

Q Yes. So those are at 3. At 4 is where the lines cross the Squam River, and that's one of the places where there are three sets of lines including a distribution line. And then at 5, there's a very strange dog-leg that happens with a tower that comes within, I think, 50 feet. And because of the way that the dog-leg works, it's also going to be perpendicular to the river so perpendicular to the way that birds would tend to be flying, either coming from the Squam River or coming down the Pemi but just not directly over the river. And then the second piece of paper is just showing two other

crossings, and this is all within, I would say, close vicinity to one another.

So my question is given that what you cited as being a danger to birds that are approaching a power line, a high voltage line, that they don't tend to hit the line itself, but they try to avoid the line and then hit the -- did you call it a guard wire?

A (Barnum) The shield wire, yes.

Q I'm wondering whether you consider that having multiple wires at different heights offers a similarly dangerous situation but perhaps more so for being more lines.

A (Barnum) Yes. I would agree that given the multiple lines and the crossing of the river, this would be a particularly difficult spot for birds to navigate.

Q Okay. In response to Jeanne Menard on Friday, you said that there will be some change in collision risk due to a change in configuration of wires. Would you say that this would be an increased collision risk?

A (Barnum) Yes, I would agree with that.

Q Okay. Thank you. So if I understand correctly,

the common loon are threatened, are a threatened species?
A (Barnum) I believe that's correct. State threatened. Yes.
Q And then golden eagle is endangered?
A (Barnum) That is also correct. State endangered.
Q So it seems as though impacts that the river crossings make on those bird populations are not being avoided; is that fair to say?
A (Barnum) Based on the distribution and behavior of these two species, I would actually think that of the species that might have trouble navigating, they're probably the two least likely species to encounter these particular locations. Golden eagles are only present in the state during migration, and they tend to be following features of the landscape that allow them to travel on thermal updrafts. And loons, for the most part, spend their summers when they're here in the state on their breeding ponds and don't spend a lot of time on the river or any rivers.
Q We have observed them on the rivers.

A (Barnum) I understand. They're not saying they never are, but it's not where they spend most of their time.
Q Right. Okay. So above and beyond those birds that are listed, we have birds that are collision risks in addition to the listed ones, and I'm wondering under what means might the impacts be minimized?
A (Barnum) I think that these locations would be very good spots to put some kind of diverter. As I noted in my report, there's no agreement in the alternative about what kind of diverter would be best, but these seem like good locations to consider those options.
Q Oh, we didn't talk about osprey or which are listed as special concern or bald eagles.
A (Barnum) Correct. Those two species are much more likely to be in these locations than the two you mentioned previously.
Q Right. And they're listed species and they're being impacted; is that correct?
A (Barnum) They have the potential to be impacted.
Q Okay. Where you have an impact that is not being minimized necessarily, is there not

usually a mitigation? That's a question.
A (Barnum) Mitigation for the Project, the overall impacts of the Project is being provided. It's not necessarily species specific or location specific, but there is mitigation, and if collision were shown to be an issue in these locations certainly adding diverters would be mitigation that could be added.
Q Okay. Are any of the mitigation areas river ecosystems?
A (Carbonneau) Yes. We actually have mitigation along Halls Stream, we have mitigation along the Connecticut River as well, and many of the others have smaller water bodies that wouldn't necessarily be applicable for osprey and eagles but Halls Stream and the Connecticut River would be.
Q Okay. Can you give me a little bit more detail about the Connecticut River? Because I hadn't seen that listed as part of the mitigation package.
A (Carbonneau) Yes. There is Mitigation Site B has considerable amount of shoreline along the Connecticut River on the, I guess it would be

the northern and western side of the river in that location. It's thousands of linear feet. I don't know the number off the top of my head, but it does protect the shoreline where eagles would be roosting, and in that location, the Northern Pass Transmission line is actually going under the river so there would be no additional lines across the river in that location.

MR. IACOPINO: Was that B bravo or V Victor?

A (Carbonneau) B bravo.

MR. IACOPINO: Thank you.

Q Of course, we wish that the lines were going under the Pemigewassett as well because of all the species that are going to be impacted without minimization so considering that the line comes up right at Bridgewater and then crisscrosses the river, that's something that we would actually prefer to a mitigation package which is very far from where these species actually are now. But that's a comment.

Can I just ask about the markers that would be put on the lines? First of all, you

mentioned previously that markers were not likely to be placed unless there was evidence of a large bird die-off in the area. Is that the case?

A (Barnum) There's no plan currently to put markers on the lines.

Q Okay. What would happen to a bird of prey or multiple birds of prey that struck lines above a river, what would happen to them?

A (Barnum) They would fall into the river.

Q Under in winter conditions, on ice, under snow most likely?

A (Barnum) I don't know if the river freezes over at this location.

Q For the most part it does.

So if you're saying that they fall into the river, then it's quite likely that the bird deaths would be missed; is that fair to say?

A (Barnum) That's a possibility, yes.

Q So we have a situation where what might be a minimization actually is quite unlike, the impetus for the minimization is a marker that we might not ever actually see.

A (Barnum) That's correct. Yes.

Q In addition, you had said that the reason why markers aren't put up to start with is because they tend to ice up and cause line failures. Is that correct?
A (Barnum) There's multiple reasons why markers aren't just placed routinely on lines. Operational issues are one thing. Icing. They also, more wind loading, other kinds of damage, and that can lead to reliability problems. In addition, there's aesthetic conditions. And then the maintenance, you can place the, you place the markers, but then they have to be maintained, and so that is another consideration. The east of maintenance, et cetera.
Q So we're already going to have in all of these places in addition to areas along the bank where the towers are quite close to the bank, we already have aesthetic issues for people who will, this is a tourism location, we have campgrounds, we have kayakers coming down, campers. So an aesthetic consideration is one that would need to be taken into account in this, I would think?

A (Barnum) I would agree with that, yes.
Q Okay. Is there, have there been any studies down on the failure rate of stringing the high voltage lines across a body of water like a river?
A (Barnum) I'm not aware of any of those, but that's not my field of expertise either.
Q So even if we did put up the markers, they would, in order to -- okay. So we've got sort of a multi-tiered thing. If the birds do strike the lines, which you said is more likely because of them being multiple and not even being, if I can say, always at 110 and 75 or the distance between the lines varies from crossing to crossing, that is more likely to have an impact on the birds. If they do strike the lines we might not know that they were striking the lines; is that, just to review, is that a fair?
A (Barnum) That sounds like a fair summary, yes.
Q If by any chance people were really watching for them and sort of noticed the birds' carcasses and yielded an installation of markers, we would then run, we would have impact upon aesthetic concerns and tourism; is that fair to say?

A (Barnum) That's a potential, yes.
Q And it would, we don't know what kind of failure rate there is given that it's over a body of water and wind is a concern coming, because there's no tree cover over the water, can you tell me what happens if a line fails and falls into a river?
A (Barnum) I can't. That's not my area of expertise.
Q Okay. From what I've read, it's an electrical --

MR. WALKER: Objection.

MS. TOWNSEND: Okay.

MR. WALKER: Seems to be that there's some testimony here outside of the questions.

PRESIDING OFFICER HONIGBERG: I tend to agree. What's the question you were about to ask?

MS. TOWNSEND: I was going to ask what effect it might have on specific species that were touching the ground.

PRESIDING OFFICER HONIGBERG: You could certainly ask that question. I'm not sure anybody knows the answer, but you can certainly

ask that.
BY MS. TOWNSEND:
Q What effect would it have on species that were touching the ground?
A (Barnum) Again, that's not my area of expertise. I can't comment on that.
Q Can you explain how a bird electrocution happens in the case where they're touching wires, for example?
A (Barnum) Bird electrocution? Birds are generally electrocuted when they touch two different energized portions of the structure. Most electrocution or all electrocution happens through perching and is generally larger birds who have either the height or the wing span to touch two energized portions of the structure.
Q Not that you have technical expertise in what happens when a live wire is dropped into a river, but what do you imagine might be the impact?
A (Barnum) I assume that the electricity travels through the water and that there's some risk to animals in the water because of that.
Q Thank you. Can we move on to the next?

So here is a data response that we received. It's listed as ADN ABTR Exhibit 47. We asked, please describe in detail Eversource's plans for maintaining the right-of-way at each river crossing while minimizing the disruption to river banks, including without limitation methods to be utilized by Eversource or subcontractors' equipment to carry out the right-of-way maintenance and each access road layout and maintenance of each access road.

And the response was, Eversource will continue to manage the right-of-way consistent with its current right-of-way management policies which comply with the Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Water Bodies in New Hampshire, and it's dated 2010. Stream and wetland crossings when necessary are conducted under a utility maintenance notification to New Hampshire DES. Major rivers are typically not crossed by vehicles or heavy equipment unless a bridge or culvert is present. To the extent that existing access roads are present, they may be used for maintenance access.

Okay. And can you put up the next?
So here's one exhibit of current right-of-way maintenance using the current right-of-way management policies. Does that look like it is an erosion risk, Ms. Carbonneau?
A (Carbonneau) I'm not sure. I would need to look at this in the field and get a better view of it.
Q Okay. Do you recall the exhibit that Max Stamp showed of Blake Hill Road with the undercutting erosion below the power lines?
A (Carbonneau) Yes, I believe I do.
Q Okay. Do you think that those are, do you find that those practices would be conducive to nonerosion on the river?
A (Carbonneau) The practices that are currently being used? I believe that there is some value in leaving woody vegetation along a steep stream bank, to the extent that that doesn't interfere with the lines above it. I don't agree that that could be the only reason why there might be erosion in that location. I mean, erosion and bank changes are part of the natural process of rivers in some cases. There's always a bank

that's being cut, and another one that's being formed so rivers are dynamic. In any given location, you'd have to do a little research to determine whether or not activities that are ongoing are actually contributing to that. I think in some cases the right-of-way maintenance activities that have happened over decades may have contributed to erosion in some locations.

Q And yet, those same management practices are the ones that are going to be carried forward by Northern Pass?

A (Carbonneau) Well, don't forget. Some of these rights-of-way have been around for decades and the BMP manual's been around for less than one decade. So they are always adapting their management methods to comply with the regulations that are in hand, and I believe I've heard some testimony or read some testimony from the Construction Team that they may make some modifications in areas that are immediately adjacent to some of the rivers where there's crossings and where they do right-of-way maintenance.

And, in fact, I know that Eversource did a

study or actually went out and did a survey at the Pemigewassett River crossings and made some recommendations in their report about how they might modify their right-of-way maintenance in those locations going forward.

Q When would you expect those to take effect? Because these are recent photographs. There's been no change.

A (Carbonneau) I'm not an Eversource maintenance employee. I don't know what their time frame is. I think it's a commitment that's been made since the Northern Pass review of the right-of-way took place, but I can't speak for the Eversource maintenance folks.

Q You understand that PRLAC has been bringing this to Eversource's attention year after year?

A (Carbonneau) Again, I'm not an Eversource employee. I'm working on the Northern Pass Project. So to the extent that it's been brought up in the context of Northern Pass, I am familiar with it, but what's gone on before that, I'm afraid I'm not.

Q Okay. But aside from a few comments that you thought you heard on the Construction Panel,

what we have is a promise to keep the Best Management Practices that are being used now. Can you understand why we would have some concerns about a continuation of that BMP?

A (Carbonneau) I can certainly appreciate concerns, yes.

Q Who coordinates the activities of the Environmental Monitors?

A (Carbonneau) Well, as I understood it, there will be Environmental Monitors that are hired directly by the Construction Team and the contractors, I should say, and I believe that there are some Environmental Monitors that will also work for Eversource directly during construction. Who coordinates them? I don't know that anyone has been named a coordinator, and I'm not sure exactly how the hierarchy is going to work.

Q How would a number of, given that there may be up to 30 Monitors at one time, can you imagine a situation in which they did not need coordination?

A (Carbonneau) I'm sure that they will be coordinated. I'm not saying they won't. I just

don't know how exactly that's going to take place.

Q When would you know?

A (Carbonneau) That's a construction-related question. We're not necessarily involved in sorting that out at this point, but there's going to be a mentoring plan that's developed which will have most of that information in it. So the tasks of the Environmental Monitors have been identified. The exact number and how they're going to be coordinated, I'm not sure that has been developed yet. I think that's one of the plans that needs to be submitted to New Hampshire DES at least 90 days before construction. So I'm assuming that all those details would be worked out by then.

But I'm sure there will be some type of coordination between the Monitors that are in the field and an oversight Monitor or Monitors who have responsibility for the different sections of the Project. I think the Construction Panel alluded to sort of a northern, a central and a southern set of Monitors, and then there will likely be someone

in charge of the Regional Monitors. So I'm guessing that's how the structure will be set up, but, again, I don't know the details yet.

Q Is your assessment of the impact of the Project based on your understanding that there will be somebody coordinating some middle level of Environmental Monitoring where they're coordinating on their Monitors?

A (Carbonneau) I'm not sure I understand your question.

Q If there were only to be Monitors that were hired by construction companies and the possibility of appealing something to the DES, would you have the same assessment of the impact of the Project on endangered species and on the environment?

A (Carbonneau) I'm not sure I know how to answer that. What I can tell you is Environmental Monitoring is very important. The Environmental Monitors will need to have the ability to stop work to prevent additional impacts beyond what has already been assessed for the Project in the Permit Applications.

The Application materials assume that

monitoring will take place and that additional impacts will be avoided through the monitoring process to make sure that, you know, accidental impacts don't occur. And there's a very good reason for that to happen because if the Project doesn't recognize those ahead of time, the work can be shut down. They could be in violation of their permits, and the work would be shut down which would be a much greater hardship than to step back, stop, fix a problem and then move forward so --

Q Who would be reporting them?

A (Carbonneau) The Monitors will report to the folks that are responsible for construction, the foremen in the field, but they will also be responsible for notifying New Hampshire DES of any egregious issues that take place, and regular monitoring reports to New Hampshire DES will be required during the construction process so the Monitors will have responsibility for informing both the Project and the regulators.

Q But you're describing Monitors who are specifically the ones that are hired by contractors; is that correct?

A (Carbonneau) I don't know how Monitors hired by the contractors versus Monitors hired by the Project will be different, if they will. I'm not sure. I'm just not familiar with exactly how that's going to work and who's going to hire who at this point.

Q It does seem confusing. I wonder how you're able to make a firm assessment of impact when you don't have a firm plan for monitoring.

A (Carbonneau) There is a firm plan for monitoring, and that will be these are the tasks that they need to do and here is their responsibility. How that gets implemented requires a little bit more thought from the Project and input from the contractors.

So, I mean, there's no question that it's going to have to take place. The tasks that the Monitors need to do have been spelled out in our Application materials as well as in the permit conditions that came from New Hampshire DES. They're also spelled out in the avoidance and minimization measures for wildlife and rare plants.

So these are things that have to take

place. I just, you know, we're not at construction yet so those individuals haven't been hired yet, the exact chain of command is not something I'm familiar with. I believe it's being considered now, but I just don't have those details.

Q Okay. But you're asking the Committee to assess the impact, the possible impact on these species, but there isn't a plan in place for how the monitoring is going to work?

A (Carbonneau) This is pretty typical of a construction project. The information that's been provided is very specific about what the Monitors need to do and where they'll need to do it and what abilities they need to have and their ability to actually stop work if necessary. By naming individuals or providing an exact chain of command, I don't think that's critical for an evaluation of this Project.

You know, the impacts have been estimated based on standard construction procedures. All of the details that have been provided already in the Permit Application for the design, for avoidance and minimization measures. Those

impacts are a fairly well quantified and identified. And the Environmental Monitors are there to make sure that the plan that's been devised is implemented properly. I think that is a good plan, and it's going, you know, exactly who does what and who they report to I think is less important than the fact that here's what needs to be done to be in compliance with the plan, and, therefore, all of the permits and the permit conditions. And those things may change a little bit. I mean the SEC has an opportunity to provide their own conditions so, you know, there's a lot of information available at this point in time for review by the SEC.

Q Can you understand a concern that Environmental Monitors exclusively that are hired by the construction companies would tend to minimize their report of impacts to the construction companies because they're being paid by the construction companies, and then where is the teeth behind any of the things that you're recommending.

A (Carbonneau) The teeth are in the Permit

Conditions. If they're not followed, if they're not adhered to, they can be fined, they can have the Project shut down. They'll be in violation of their permits. That's teeth.

Q Who would be reporting them?

A (Carbonneau) The Environmental Monitors are responsible for doing that, and they understand that there is going to be additional Monitors out there, possibly from the public, probably from the State, who will be checking in and making sure that everything is followed. So I don't believe they're all going to be paid by the contractors. I think Eversource has said there will be Environmental Monitors working for them as well, and they're the permit holders. Their names are on these permits so they need to be sure that they are following all of the requirements in their permits.

Q But what you just said, you said that the Contractor Monitors will know that there is somebody else who will be overseeing what they're doing and potentially reporting on them. But 15 minutes ago you said that you didn't know whether there would be a second level, a level

of monitors who are coordinating other Monitors or overseeing other Monitors. So I don't know. Which is it?

A (Carbonneau) I think that we're not answering quite the same question.

Q Okay.

A (Carbonneau) I thought you were speaking about a hierarchy of Monitors from the Project, and I don't know exactly how many Monitors they'll be at each level that the Project is overseeing. I fully believe they'll probably be many other eyes on the Project, and I don't know to what extent those Monitors will be working for New Hampshire DES or other folks that have an interest.

I know from my experience that New Hampshire DES does do spot checks of work on Projects. So does the Army Corps of Engineers, and they have an interest in these permits as well.

Q But that's a little bit of a black box at the moment as to who might report a problem with implementing any of the BMPs.

A (Carbonneau) It's not a black box in my mind. A

Monitor goes out, and they report what's going on in the field, and they include that in their report. We've done monitoring, and we do that as well, and we don't hold back that information. It needs to be brought to the attention of the Project Directors, but all of those monitoring reports and field inspection reports go to the New Hampshire DES as well.

Q So it sounds like you're relying fairly heavily on DES and on the Agencies in this process?

A (Carbonneau) We're relying on the Monitors. The monitoring is a very important process in this. And if there's a violation, if it's small and it can be corrected right away and restoration takes place, then that's what takes place and it's documented going forward.

If there's a more serious problem, then the Project work stops in that location and additional coordination with the Agencies is required.

Q In developing plans and guidelines for how Environmental Monitors would work once you have necessary design details that you don't currently have, including placement of the

underground route, you've said that you would work closely with DES and other Agencies on developing those plans and guidelines. Is that a fair characterization? The outstanding BMPs?

A (Carbonneau) Well, I can't speak for construction-related BMPs for the underground. Maybe Jake can add to that. But for the environmental permits that we're working on right now, all of the Best Management Practices and avoidance and minimization measures with the exception of a few details on the wildlife-related ones have been submitted or referenced in the documents. So I don't think there are big holes in the process or the procedures that are planned to be followed.

Q So I would refer to, so Mr. Tinus, can you describe how people are going to understand whether their wells are within a blasting range? Do they know now?

A (Tinus) Well, we don't know all the places that we would conduct blasting at this point.

Q Why is that?

A (Tinus) There are, there's information that's still to be collected along the overhead route

for geotechnical information, but as I stated previously, it's the intention of the construction folks and the contractors to limit the amount of blasting. This is a, blasting is a last resort.

Q That wasn't actually my question. My question was to what extent are these details being worked out still now. Do you people know where the lines are going to be in underground to the north?

A (Tinus) Very close to what was submitted with the original drawings, yes. They're making some changes, making some adjustments. Right now they're working on final design plans. So those will be submitted shortly. DOT is going to need to look at those.

Q So they aren't actually set now so there are still things to be decided about?

A (Tinus) Sure. Right.

Q About the Best Practices.

A (Tinus) Well, the Best Practices are very similar to the, they're construction practices so they're typical construction practices. You're still going to need erosion control

measures along the road where there's potential sensitive resources. You're going to have a plan that addresses any potential issues associated with horizontal directional drilling. It's not anticipated that there's going to be problems. That's why you have these BMPs in place to prevent problems. So the plans will be submitted 90 days ahead of construction so there's going to be more detail forthcoming in that regard.

Q Okay. And then they'll be worked out after that.

A (Tinus) As far as specifics, in terms of what's required in which location, again, I think the drawings that were submitted, we have shown, for example, erosion and sediment control barriers in a general sense. Now, that doesn't mean that we know specifically we're going to just silt fence and straw waddles or compost mulch berms or perhaps all three in some locations to have a triple layer of protection. It varies from location to location. Contractors do have to do some more analysis in the field. Lockdowns, they're called. And they will on a case-by-case

basis take a look at each location to figure out what's right. And I expect that they'll be environmental folks along with the contractors so that they're very well versed in where sensitive resources are in the context that they're looking at.

Q So. For example, people from New Hampshire Fish & Game?

A (Tinus) Well, I mean, part of the requirement of the permit conditions is that we continue to work with Fish & Game. That's not typically done, but perhaps. You know. They could be consulted and brought in to take a look if that's deemed necessary.

Q Okay. Thank you. Dr. Barnum, you had been talking about on the 14th about the small-footed bat. You noticed that there is no avoidance, Best Management Practice now for the small-footed bat but you were actively engaged in developing better or further avoidance and minimization measures and that a pre bat survey would be crucial to avoidance, but that the Best Management Practice hasn't been written yet. Is that fair?

A (Barnum) That's correct. Yes.
Q Okay. What is the process by which, or how do you interact with New Hampshire Fish & Game or Natural Heritage Bureau to determine whether Monitors have the correct credentials for monitoring the specific species that they're being sent to work on?
A (Barnum) In the case of species where handling is required, they'll have to, Monitors will have to hold a handling permit. It's up to Fish & Game to review the credentials of those folks and decide whether they qualify or not. In the case of bats where potentially handling won't be required, where the monitoring could take place through other methods, there is no existing document specifying what qualifications Fish & Game would like to see, and so we're going to have to discuss that. That's part of what we're developing now because they don't have those existing standards for us to work from.
Q Okay. So is it fair to say that your assessment of the impact is in part based on an understanding that you will continue to be able to work with New Hampshire Fish & Game and DES

with their current staffing levels?
A (Barnum) I'm not sure I understand your question.
Q Do you assume that those Agencies are going to interact with you at the same level that they interact with you now?
A (Barnum) That is part of what we're discussing, what level of oversight or interaction will be required based on the methods we develop for going forward.
Q What would happen if many of the staff members that you were currently working with were laid off?
A (Barnum) If the agency doesn't have staff to do their job, then the agency can't do their job. That's not just, wouldn't just affect our Project. That would affect all projects throughout the entire state.
Q I totally agree. Yes.
What I'm asking is really to what extent does your assessment of how this next stage works depend on continuous staffing of those Agencies?
A (Barnum) If the agencies don't have staff to do

their jobs, they can't do their jobs.

Q Okay. So this is just to give a little bit of context for some of the concerns that we might have over this issue. The first article is from Scientific American. It's talking about cuts to environmental monitoring and to environmental Agencies, federal and state. This first, I've got some sections underlined there, but they say the cuts would strike hard at the core of the nation's primarily institutional guardian of the environment, the USEPA. They would slash the agency's budget by 31 percent, eliminate EPA positions out of about 15,000 and reduce its Office of Research and Development budget by almost half.

It continues, even EPA's staff who are not directly involved in monitoring help run grant programs for outside groups that track the environment and a number of those positions could get cut as well.

And then the next article, please.

This article is talking about the cuts to the Department of the Interior as well.

If enacted Trump's budget proposal would

offset a 54 billion boost to defense spending by cutting foreign aid and domestic programs. This includes a proposed 12 percent decrease to the Department of the Interior budget which is likely to slash resources needed to manage public and private lands, support state management of Fish & Wildlife, and enact conservation across the country.

And this next one. This is just from the website of New Hampshire Fish & Game, confirming that federal funds make up 33 percent of the New Hampshire Fish & Game budget. And then the last article?

They're not just threats. People are actually already starting to be laid off. There's an existing hiring freeze at the EPA, but this last one, the Environmental Protection Agency plans on shedding more than 1200 employees by early September through buyouts and early retirements as part of a broader push by the Trump administration to shrink a government entity the President once promised to eliminate in almost every form.

MR. WALKER: Mr. Chairman, is there a

question here? I think this is about the fourth article, and we don't have a question here.

PRESIDING OFFICER HONIGBERG: Is there a question that's going to be associated with these articles?

MS. TOWNSEND: Yes.

PRESIDING OFFICER HONIGBERG: What would it be?

MS. TOWNSEND: Is your assessment of the impact of -- she had previously said --

PRESIDING OFFICER HONIGBERG: What's the question?

MS. TOWNSEND: The question is whether, as Dr. Barnum said, if the agencies don't have the staff, how would the Environmental Monitors proceed and the hiring of the Environmental Monitors proceed. Would there be delays.

PRESIDING OFFICER HONIGBERG: And how were those articles related to that question?

MS. TOWNSEND: Because the assessment that Normandeau is making is contingent on assuming that there will be continued staff at the level that there is now.

PRESIDING OFFICER HONIGBERG: Yes,

Mr. Roth?

MR. ROTH: May I help her formulate a question for this?

MR. WALKER: Objection.

PRESIDING OFFICER HONIGBERG: There is no procedure in which that would be appropriate for you to do that, other than privately before she stood up here. Although I do understand that you have been assisting folks as they've been going to help smooth things out, and we appreciate that. Perhaps, why don't we take a two-minute break and nobody move, and you confer with Ms. Townsend, and then we'll see if we can get an unobjectionable process to ask these questions.

MR. ROTH: I think there's just one question I would --

PRESIDING OFFICER HONIGBERG: Why don't you take two minutes and discuss this.

MS. TOWNSEND: Thank you.

(Discussion off the record)

PRESIDING OFFICER HONIGBERG: Ms. Townshend, do you have a question?

MS. TOWNSEND: I do.

BY MS. TOWNSEND:
Q In light of all of these cuts to federal programs, and in light of Fish & Game's reliance on federal funding that is being cut, do you believe that they will be able to respond, Fish & Game, and the federal offices that you deal with, appropriately to your concerns, to your requests of them?
A (Barnum) I don't understand the structure of New Hampshire Fish & Game's funding sufficiently to make a comment upon how changes in that funding might affect their ability to carry out their jobs, particularly specific to this Project.
Q What happens if there's a delay in a monitor assessing an area?
A (Barnum) It's not Fish & Game's responsibility to get the Monitors out there so I don't see the connection here.
Q Leave aside the connection. If there is a delay, what is the effect on the Project if a Monitor is not able to immediately assess an area? Or if a Monitor is not immediately hired at the appropriate time?
A (Carbonneau) I guess I'm not understanding how,

if you think that the Agencies are hiring Monitors for this. The monitoring that we've been speaking of are Monitors that will be paid for by the Project.

Q So my question was about the outstanding BMPs that you are developing with Agencies as well as the process of hiring Monitors which you had said is reliant upon Fish & Game. They have to approve of the Monitors' credentials.

A (Carbonneau) Right, and I don't anticipate that that's going to require extensive amounts of hours from Fish & Game. The avoidance and minimization measures that we're working on now, they're not brand-new. We're making minor adjustments to things that we've been working on with them for many months. So from that perspective, I don't think there's a lot of work that remains to be done. It's very close to being done. As far as the ongoing consultation with them, we expect it to be continuing but not necessarily at the same level.

I mean, they've spent a lot of time looking in great detail at what has been proposed by the Project, and I can understand that's taken them

quite some time. But going forward, their participation will be needed in specific locations at specific times as opposed to something at the same level, but we can't speak to exactly how funding may affect their interaction with us. The Project's intention is to continue implementing the AMMs as they are finalized throughout the construction Project and report to Fish & Game, and what happens from there is going to be something that they will have to figure out.

Q As you said previously, is it the case that you consider that DES is the teeth behind the implementation of monitoring? If there is a problem with monitoring, are they the place to which you would or Fish & Game that people would appeal?

A (Carbonneau) Yes, I believe so. The New Hampshire DES Wetlands Permit incorporates the Fish & Game and the Natural Heritage Bureau concerns and areas of expertise under the umbrella of the State Wetland Permit.

Q If a number of those teeth were to go missing, would there be less teeth in the backup to the

implementation of the monitoring or on people having an opportunity to appeal where they feel that something is not being monitored or complied with or a species is being harmed?

A (Carbonneau) I can't speak to what would happen at New Hampshire DES. I know that the Project has submitted the Application materials with a pretty hefty Application fee, and my understanding is that fee, which is well over $1,000,000, is in part to help fund New Hampshire DES's review of the Project during construction. But I don't know how their finances work beyond the fact that they require these Application fees because it's sort of, it's their self-sustaining process that they have in place for wetlands permits.

Q Okay. Given that matting may stay down all the way from the construction of foundations of towers through the stringing of the lines, might not a delay yield matting remaining in place for longer than recommended? And what would happen, what would likely happen to a species if, for example, matting had to stay down through a second breeding season?

A (Carbonneau) Well, that's kind of a hypothetical situation. I don't think the intent is to leave the matting down longer than is necessary, but the longer timber matting stays in place, the more detrimental the effect on certainly the plants that are under the matting so --
Q And species like turtles. Invertebrates.
A (Carbonneau) Potentially.
Q Jefferson salamanders.
A (Carbonneau) We didn't identify Jefferson salamanders that are actually breeding in any pools that will be temporarily impacted by the Project. We did find them in one pool, but that one's avoided.
Q All right. Thanks very much. That's my questions.

PRESIDING OFFICER HONIGBERG: Dr. Publicover or Mr. Plouffe, who is going to be asking questions?

MR. PUBLICOVER: Mr. Plouffe is not available today.

PRESIDING OFFICER HONIGBERG: Okay. Dr. Publicover.

CROSS-EXAMINATION

BY MR. PUBLICOVER:

Q Thank you. David Publicover from the Appalachian Mountain Club and the NGO Intervenors Group substituting for Bill Plouffe, and I would like to thank Mr. Needleman and the Committee for being amenable to giving us this opportunity to ask a few followup questions of the Panel.

I'd like to take you back to Friday, June 16th, when Mr. Plouffe was questioning the Panel about the exemplary northern hardwood seepage forest designated NHSF-1. You may recall the map, the confidential map of this community occurrence that we put up. I'm not going to show that, but for people who are privy, to the confidential information, it was NGO 121.

Now, during questioning by Mr. Plouffe, Ms. Carbonneau, you stated that the Natural Heritage Bureau had determined that because of recent logging of a portion of this community they no longer considered it exemplary.

Do you recall making that statement?

A (Carbonneau) Yes. And that was in relation to an email that I had received from Amy Lamb to

that effect.
Q Have you subsequently learned anything that would cause you to change that statement?
A (Carbonneau) Directly from Natural Heritage Bureau, no.
Q All right. I'm going to put up a couple of exhibits here.
This is Exhibit NGO 129, and this is the email you received from Amy Lamb on April 21st.
A (Carbonneau) Yes.
Q This was the basis for your statement that this occurrence was no longer exemplary.
A (Carbonneau) Yes.
Q Do you do any followup with Natural Heritage to confirm this?
A (Carbonneau) No.
Q Is this type of informal email, sort of commenting on vacation plans, the way in which Natural Heritage normally communicates official information?
A (Carbonneau) We communicate official information by email all of the time. The fact that she added this comment to email, an email related to other business relevant information, that's

their choice, but I felt that this was, this came from the Natural Heritage Bureau. It was related directly to the questions that we had asked them and the information that we had provided so I took her at her word.

Q All right. And I'm going to put up NGO 130. This is an email sent by Sabrina Stanwood, the head of Natural Heritage, to me after I asked them to confirm the status of NHSF 1.

Would you please read the underlined portion of this paragraph? Actually, could you read that entire paragraph?

A (Carbonneau) Your reference to an email from NHB to Normandeau dated April 21st, 2017, NHB stated that our general feeling is that the natural communities recently designated as exemplary would no longer be categorized in this way in light of the recent timber harvesting.

This statement was made in error. The recent timber harvesting did not change the status of exemplary of NHSF-1 or NHSF-4 in our database.

Q Thank you. And I'd add that that underlining was put in by Ms. Stanwood, not by me.

Now, for the opportunity for a few additional followup questions based on this misunderstanding. The Application describes NHSF-1 as being about 61 acres in size, correct?

A (Carbonneau) I think that's correct.

Q Application Appendix 35 Section 3.11.1.1 states, the full boundaries of this community have not been determined.

So you really don't know how large it is. It could be significantly larger than 61 acres.

A (Carbonneau) I believe that we went out subsequent to the materials that you just referenced and got a better handle on the size, but it wasn't necessarily a complete assessment of the area.

Q In fact, as you've mapped it, and I don't want to have to clear the room and put the map back up, some of the boundaries you mapped actually follow straight along the edge of the corridor and natural communities wouldn't follow a straight line like that. Is that correct?

A (Carbonneau) They could. They might not.

Q All right. Now, I believe that we established during Mr. Plouffe's questioning that there are

15 documented exemplary occurrences of this community type in the State including the two documented by Normandeau's surveys, that the largest is about 68 acres. The next largest after NHSF-1 is 23 acres. Do you dispute this?

A (Carbonneau) I don't know the details, but I can't dispute it or accept it.

Q I can put up an exhibit confirming it or you can accept what I say.

PRESIDING OFFICER HONIGBERG: I think she's willing to accept it for purposes of this question. And you're not allowed to talk over each other. If she's talking, you need to wait until she's done.

Q All right. I apologize.

All right. Section 2.21 of Application Appendix 35 states, this community is considered potentially exemplary due to its large size, remote location, relatively pristine condition, rich soils and large seeps. In addition, it contains 8 state watch or indeterminate plant species. Don't these facts make NHSF-1 a very significant example of this rare natural community type?

A (Carbonneau) I don't know if I would say it's very significant. I'm not the botanical expert, but we did submit this information to the Natural Heritage Bureau for their assessment so that they could compare it to other locations, and they agreed that it was exemplary. So we first identified it as a potential exemplary natural community, we give the information to them, and they make the final determination.
Q All right. The Application states that the new right-of-way would permanently clear 24 percent of this occurrences mapped, correct?
A (Carbonneau) Yes.
Q And the remaining part of community would be subject to its effects that it could extend several hundred feet into the interior, correct?
A (Carbonneau) I don't think that was a statement in our Application materials.
Q No, it's not. I'm asking that question. The remaining part would be subject to edge effects from the cleared corridor.
A (Carbonneau) Potentially.
Q You did not document or consider edge effects in your natural communities report, did you?

A (Carbonneau) We did not calculate impacts beyond the cleared right-of-way.
Q So doesn't that mean that your assessment understates the extent of the Project's impacts on this rare natural community occurrence?
A (Carbonneau) Well, the potential effects, the edge effects that you're talking about, are not evenly distributed in that area. Different effects could extend different amounts. There's a lot of variables there so we stuck to the known footprint of the Project within the plant community.
Q Unlike the logging impact, the impacts from the clearing of the corridor would be essentially permanent, correct?
A (Carbonneau) Yes.
MR. WALKER: Objection, Mr. Chairman. This is going beyond. I mean, this is an area that's been covered in prior questioning, and this is going beyond the one change that we were allowing Mr. Publicover to discuss today.
PRESIDING OFFICER HONIGBERG: You want to respond?
MR. PUBLICOVER: I believe I was given the

opportunity to ask followup questions about this community occurrence that were not asked by Mr. Plouffe because of the misunderstanding about its status.

PRESIDING OFFICER HONIGBERG: So these questions are specifically directed to the one area -- let me finish. You can't talk while I'm talking or the transcript won't be readable. Okay?

So these questions are directed at the same community that where the answer has been amended or updated in light of these emails?

MR. PUBLICOVER: Yes.

PRESIDING OFFICER HONIGBERG: And no other areas?

MR. PUBLICOVER: No.

PRESIDING OFFICER HONIGBERG: You may continue.

MR. PUBLICOVER: And I only have one more.

BY MR. PUBLICOVER:

Q All right. SEC Rule Site 301.14(e) states in part, in determining whether construction and operation of a proposed energy facility will have an unreasonable adverse effect on the

natural environment, including rare natural communities, the Committee shall consider, one, the significance of the affected rare natural communities, and, 2, the nature, extent and duration of the potential effects on the affected rare natural communities.

Given this guidance and rule, a severe and permanent impact to a highly significant rare natural community occurrence would be considered an unreasonable adverse effect. Would it not?

A (Carbonneau) Well, there are other considerations as well that you did not read, and it also includes what the Agencies have, their input on this as well as what mitigation is being proposed. So those are not the only two factors that the SEC is required to review.

And we have made the determination that that is not an unreasonable adverse effect overall for the Project, and that the effect on that particular community given that there are others, that it's fairly common in the North Country, that that was not a significant impact to that type of northern hardwood seepage forest.

In addition, it has been at least half cleared now and anyone who walked out there, whether it was actually considered exemplary or not, would be able to see that the logging has basically removed the tree canopy, the logging equipment has run all over the ground out there, and the remaining community is potentially susceptible to the same logging activity. We don't know if that logging that happened in 2016 is the beginning of additional logging in that area or not, but we're comfortable with the assessment that we made. We're comfortable with the impacts that we provided for review on that, and Natural Heritage Bureau had agreed, even when we thought it hadn't been cut over, that the mitigation that we were providing on the Project would adequately address all of their concerns.

Q All right. Just one or two followups based on her answer.

If this community type is so common and ordinary, why does the NHB status require us to clear the room before we put up a map showing where it was?

A (Carbonneau) I'm not sure that the exemplary natural community information is as sensitive as the actual location of individual rare plants, and there are no listed plants in this community. However, all of our Natural Heritage Bureau data is usually combined so we have exact rare plant locations and natural community information. We want to make sure that we don't slip up and reveal something that we're not supposed to. The northern hardwood seepage forest, those natural communities are common in the North Country. They're not necessarily common elsewhere, which is one of the reasons why they're ranked as an S 3 community and not a more common S 4 or S 5 community which would be likely seen statewide.

Q All right. You've made the point multiple times that this community is common in the North Country, and I don't dispute that there are additional undocumented occurrences, but isn't it likely that most of those additional undocumented occurrences are either small or degraded by logging and roads and that large exemplary occurrences are actually quite

uncommon?
A (Carbonneau) I don't know enough about all of the other sites to know. I think that logging is pretty common activity up north so it's very likely that many of them have been logged, and I'm sure this one has been logged in the past as well. It's not pristine. It's not like it's never been cut. It's just at a more mature stage than perhaps some of the others that are out there.
Q All right. Thank you.
PRESIDING OFFICER HONIGBERG: All right. Let's take a 10-minute break.
(Recess taken 10:16 - 10:29 a.m.)
PRESIDING OFFICER HONIGBERG: We're going to resume with questions from the subcommittee starting with Mr. Wright.
EXAMINATION BY DIR. WRIGHT:
Q Thank you, Mr. Chairman. Ms. Carbonneau, I think my first question is for you, and if I flip back and forth between my glasses, it's simply because I can't tolerate bifocals yet.
A (Carbonneau) I may do that, too.
Q So I apologize for that.

On a number of occasions it's been mentioned that in terms of the wetlands impact of the Permit Application field by Northern Pass, it was prepared in terms of overestimating the impacts to wetlands; is that correct?

A (Carbonneau) I would say it's a conservative approach. We were trying to accommodate a slightly larger footprint than is actually needed for the Project to allow the contractors a little bit of flexibility in exactly where they put their mats down. So it's a slight overestimation.

Q Okay. I like your term of conservative versus what I was going to use was worst case so I like your term conservative much better.

Is that in terms of temporary impacts only or permanent impacts as well?

A (Carbonneau) That's in terms of temporary impacts.

Q Okay. And I think one of the examples you used was the width of the timber mats, 20 feet, which is what you permitted versus you believe they'll actually be 16 feet when deployed in the field.

A (Carbonneau) Typically, the timber mats are

about 16 feet wide, yes. They may vary a little bit depending on the supplier.

Q Is there any other examples as to how you kind of were conservative in your approach?

A (Carbonneau) We made assumption that the work pads that are associated with each of the structures, the new Northern Pass structures, would be about 100 by 120 feet. In the field, especially if that's in a wetland area, the contractors may be able to reduce that footprint. If there is a slight encroachment into a stream, they can probably avoid doing that. But we wanted to make sure that we gave the contractor that flexibility without having to go back to New Hampshire DES Wetlands Bureau for more impacts that they could work within the footprint that was permitted, but we do expect in the case of the access roads and the work pads in wetlands that those impacts will probably be less.

Q We heard from both the Construction Panel and you just reiterated here that there would be in-the-field adjustments as you move along. What incentives are in place for you to minimize

the impacts if we permitted a very conservative scenario or worst case scenario?

A (Carbonneau) Well, one of the incentives is making sure that the Project continues to avoid and minimize impacts. That's actually a condition of our New Hampshire DES permit so there's an obligation for the Project contractors to do that. It also helps in the event that there is a new impact that might have to happen somewhere that wasn't permitted for some reason that we're not yet aware of, we want to make sure that additional impacts don't exceed what would be permissible for a permit amendment. And I don't think we'll get to that point, but by making sure that impacts are minimized, and that's part of the Monitors' job to make sure that that happens, we're providing a bump of safety for the Project Construction Team.

Q Okay. You kind of went where I was going next with this. I'm just trying to understand if by permitting conservatively, does that mean in no case will we have impacts above what's currently contained in the DES recommendations?

A (Carbonneau) We're not expecting them. But we can't guarantee that there might not be something that has to change based on field conditions. For example, there could be a new beaver dam somewhere on the alignment that floods a new area and it ends up we have to treat that as a wetland in which case we might have to go back to New Hampshire DES and say things have changed out in the field, we need to address this additional area now as a wetland. And in that case, we would, we may need to have an expansion of the permits.

The contractors may also need, when they do their construction lockdown, they may find that rather than going right here, they actually have to move an access road a little bit for reasons that we are not aware of at this point. In that case, they may not increase the wetland impact but they might move it, and that is another, if it's outside of the permitted footprint we still would need to go back to New Hampshire DES. They have a mechanism for doing that. It's the Permit Amendment Process, and there's a limitation on how much additional wetland area

you can impact before you have to start over with a whole new Permit Application. But we have no qualms about what's been permitted. We think that we won't need to do a Permit Amendment like that.

Q Okay.

A (Carbonneau) We don't think we'll have to redo a Permit Application. We think we can work with what we have and that we've done as accurate a job as we can in identifying the likely impacts.

Q Okay. Thank you. You kind of went where I was going next, and that was to try to understand what are the scenarios that you have to go back to DES and do some repermitting, but I'm hearing that's an unlikely scenario?

A (Carbonneau) We've tried to include every anticipated impact for the Project so we do think it's unlikely but there can be unanticipated changes that are associated with this.

Q Is there a minimum threshold level where you have to go back to DES in terms of changes?

A (Carbonneau) No. No. Any change that is outside of the footprint that's been permitted,

even if it's a couple of feet, we would go back, or any increase at all in any square footage.
Q Do you do that before you make the change in the field?
A (Carbonneau) Yes.
Q You communicate with DES before you make those in-the-field changes?
A (Carbonneau) Yes.
Q Okay. I want to switch gears a little bit. Mr. Tinus. You're responsible overall for the Project in terms of the Water Quality Permitting?
A (Tinus) That's correct.
Q I just really briefly want to walk through the various permits that were required as part of the Application process.
A (Tinus) Okay.
Q There's, obviously, the DES Wetlands Permit which we've talked a lot, I think, so far so I won't ask you to provide what that permit is. I think most people understand that.
There's the DES Alteration of Terrain Permit, also known as the AOT permit; is that correct?

A (Tinus) Yes.
Q And what's the purpose of that permit?
A (Tinus) That's whenever you have alteration of land exceeding 100,000 square feet you need to prepare the permit plans with supporting engineering calculations, and it's largely a permit to manage stormwater in New Hampshire, if you will. So that it includes details on not only the structural elements of a site development but also, importantly, the stormwater controls, grading, you know, fill areas, and all the features that you're proposing.

In this Project, in the Northern Pass Project, there were, there's nine separate locations so nine separate sites, if you will, development sites as we're calling them, and then the accompanying remainder of the transmission line. So it's all included in the Alteration of Terrain Permit.

Q Does that extend to the linear underground section at all of the Project?
A (Tinus) It does. Those are shown on the 11-by-17-inch sheets that are included.

Q Okay. And then there's the DES section 401 Water Quality Certification. What's the purpose of that?
A (Tinus) That's correct. That's where the State certifies that by meeting the conditions that it imposes that you're not going to have an impact to water quality, adverse impact to water quality.
Q And then there's the DES Shoreland Protection Permit?
A (Tinus) Right. So I believe there's 39?
A (Carbonneau) 33.
A (Tinus) 33, okay, separate Applications that address the alterations within the protected shoreland area. So within the 250-foot setback area, there's different zones. For the purposes of our Applications, we address new impervious areas within those different 50-, 150- and 250-foot lines that are included within the 250 feet so the natural wooded buffer, and I can't remember the next one, but regardless, it describes the activities, describes the amount of impervious surface that we're adding which is negligible because there's very little other

than cutting going on in those zones to accommodate the transmission lines.

Q Would the impervious services be like the foundations for the structures?

A (Tinus) That's correct. That would be an impervious surface.

Q And then there's two federally required permits. The 404 Wetlands Permit?

A (Tinus) 404 Wetlands Permit or the Army Corps Permit, right.

Q And what is the status of that permit?

A (Tinus) That will, that was applied for simultaneously with this Project, but it includes a lot of the same information that is included in the Wetlands Permit, only there's different aspects, including an analysis of mitigation that's slightly different than the State. That's probably the biggest difference.

Q Was that the secondary impacts that we heard about earlier?

A (Tinus) Correct. Yes.

Q Have they issued a final permit in this case?

A (Tinus) No.

A (Carbonneau) No, they haven't. They have

reviewed the Application materials, and they are waiting for the outcome of the SEC process before they issue their permit.

MR. DAY: Mr. Wright, may I ask a question?

DIR. WRIGHT: Sure.

MR. DAY: So On the 404 permit, is that considered an individual Wetlands Permit or are you staying within the boundaries of a general permit being managed by DES?

A (Carbonneau) They are going to process it as an individual permit.

MR. DAY: Thank you.

A (Tinus) Although, arguably, the amount of impact is less than three acres and it could fall under the PGP, under strict interpretation. I think we wanted to be very cautious and provide as much information as we needed to to make sure that the Corps of Engineers was satisfied with the analysis.

MR. DAY: So it was your choice to go for the individual permit versus staying within the under 3 acres for the general permit?

A (Tinus) Lee is probably better to answer this one.

A (Carbonneau) Actually, our initial discussions with the Army Corps of Engineers who participated in all of our pre-Application meetings had indicated that they would consider it as general permit. More recently, they decided that they would process it as an individual permit because it gives the cooperating agencies more say in the review of it and an opportunity to impose some conditions if they choose to do that.

So either way, we were prepared to submit it as an individual permit so we made sure that we had provided all of that information, and then we just left it up to the core to make a final decision on how they would review it.

MR. WAY: And just one last question, Mr. Wright.

In terms of the individual permit, so I understand you're going to have a 404 federal permit and you're also going to have a DES Wetlands Permit or is it all one permit rolled in together?

A (Carbonneau) They are separate.

MR. WAY: They are separate with separate

leads. Thank you.

BY DIR. WRIGHT:

Q Does the Army Corps enforce their permit or is that delegated to DES?

A (Carbonneau) No. They enforce their own.

Q In reviewing parts of the Application, it came across, I think it was Appendix 48, there's a very extensive listing of interactions the company has had with State agencies including DES, Fish & Game, U.S. Fish & Wildlife Services. I think I counted, I think it was numbered and it was between 2010 and October of 2015, I think there was something like 104 separate communications with those agencies. Does that sound about right to you?

A (Carbonneau) Yeah, I think there's about that many, if not more. It's in the table.

Q My question was has that been kept up to date? That was filed, I believe, with the Application. That's why it ended in October. I assume that's been kept up to date?

A (Carbonneau) It has. I think in response to a Data Request we updated that, and I believe the last communication is somewhere around April of

2017. So yes, it's been updated. And I think that was the last update.

Q Is that part of the record? I'm just curious.

A (Carbonneau) Yes, that's part of the record so far, but, obviously, our consultations continue so there are things that have taken place that aren't yet in the record.

Q Could you maybe talk a little bit about what's the importance of having those pre-Application meetings with the Agencies?

A (Carbonneau) It gives the Project an opportunity to let the Agencies know what's being planned at a high level without detailed plan sheets, and gives the Agencies an opportunity to describe what their concerns could be, either from construction or from the natural resources that they're responsible for, what their expectations might be on what is submitted and what kinds of studies they think are appropriate for the Project. So it lays the foundation really of what is going to be submitted in the Application materials that will satisfy them and provide enough detail for their review.

Q Do you know if part of their review, did DES

conduct any field inspections with the Applicant?

A (Carbonneau) We did not inspect the entire right-of-way with DES. I went out with New Hampshire DES and the Army Corps of Engineers to look at the mitigation sites, and in the course of traveling from one to another, we stopped at a number of locations where the right-of-way, the new right-of-way or the existing right-of-way crossed major roads, and we got out and we walked and we talked about some of the impacts there.

So we did a more intensive review of the Project area with the Army Corps of Engineers. We had many days in the field with them where we'd stop and look at the delineations, make sure they agreed with the way we had delineated the wetlands, hear any of their issues or concerns.

Q Now, on March 1st, 2017, DES issued its final recommendations to the SEC, and that was specific to address those four DES permits that we spoke with earlier about Mr. Tinus, is that correct?

A (Tinus) That's correct.
Q That list of recommendations consisted 31 pages of conditions. Has everybody on this Panel reviewed all 31 pages of those conditions?
A (Tinus) We have.
A (Carbonneau) Yes.
Q Ms. Barnum?
A (Barnum) I reviewed the sections that were pertinent to wildlife.
Q Okay. In your professional experience, is there anything within those recommendations that was unexpected?
A (Carbonneau) I would say one thing that I had not seen before on any permit conditions was a requirement to have the Natural Heritage Bureau review and approve any seed mixes used on the Project area. That was a new one for me. That's never been required on any of my Projects before. I don't know. Jake?
A (Tinus) I think the stream crossing upgrades. In prior Projects, DES had conditioned that. But for Northern Pass they wanted us to go ahead and design where we would replace or upgrade culverts along certain access roads. So that

was new. And I would also say the gates and barriers along portions of the land that the Project will be crossing in the North Country, that was new, but I think that's in direct response to some of the concerns that were expressed about access from ATVs and whatnot.

Q I want to follow up on that one a little bit later.

Based on your understanding of the Applicant's plans, does anybody see any issues with the ability of the Project to meet the terms and conditions as outlined by DES?

A (Tinus) No.

A (Carbonneau) No.

A (Barnum) No.

Q In reviewing the DES recommendations, I counted at least 14 types of plans or reports that will be needed to be submitted to DES prior to certain activities. I have a list of them. I won't run through them all, but I want to hit a couple of them because they've been talked about so much, and that's the wildlife avoidance and minimization measures and time-of-year restrictions, rare, threatened and endangered

species and counterprotocol. Stream temperature minimization plan for cold water fish species. Stormwater pollution prevention plan, that's the SWPPP. I think we talked about that. Minor operation plan for underground stream crossings. This is related to the directional drilling and the microtunneling.

A (Tinus) Correct.

Q And how to respond to frackout situations. Construction BMPs, inspection of maintenance plan, and then an oil spill prevention control and countermeasures plan. That's just a couple of them. Does that sound about right though?

A (Carbonneau) Oh, yes.

Q Did I miss anything big that in your mind is a plan that's due to DES?

A (Carbonneau) I think one of the biggest ones is the Water Quality Monitoring Plan.

Q Based on your understanding of the Applicant's plans, does anybody see any issues with the Applicant being able to develop and submit those plans to DES?

A (Tinus) No, and as soon as we're done with the

proceedings, that's what we're going to be getting busy to work on with the contractors.
Q I was going to ask that question. Ultimately, who is responsible for developing those plans?
A (Tinus) Right now it's Northern Pass/Eversource is going to be working with the contractors to develop though plans in consultation with DES.
Q Because, ultimately, it is the Applicant's responsibility to submit the plans.
A (Carbonneau) Yes.
A (Tinus) That's correct. Yes.
Q Whether they're developed by the consultant or the contractors or not, it's the Applicant's responsibility.
A (Tinus) Right.
Q What would happen if those plans were failed to be developed and submitted?
A (Tinus) Work cannot go forward until they are, and they need to be approved by DES, and they need to be in hand and followed.
Q Now, a lot of those plans are due 90 days prior to commencement of construction or what's related to this particular plan.
A (Tinus) That's correct.

Q That doesn't seem like a very long time period to develop something and submit it to DES for approval.
A (Tinus) Well, that's rest of this year. Hopefully.
Q Okay. Is it typical in your experience that the development of these plans and submittal after permit issuance, is that the normal course of business from what you've experienced in the past?
A (Tinus) Yes. For large projects, yes.
Q I think, Ms. Carboneau, you stated this earlier today, you would recognize that SEC has the authority to require additional conditions or to require more stringent conditions than outlined in the DES recommendations?
A (Carbonneau) That's my understanding. Yes.
Q I want to talk a little bit about Environmental Monitors. There seemed to be some confusion about that. I think, Ms. Carbonneau, I think last Friday you gave the actual probably best description of what a typical day is like for an Environmental Monitor so that helped shape my mind a little bit. But I think we'd all agree

that Environmental Monitors are an extremely important component of assuring that this Project can meet its environmental regulations.

A (Carbonneau) I would agree with that.

Q And there is somebody within the Northern Pass structure who has the overall responsibility for ensuring environmental compliance; is that correct?

A (Carbonneau) That's correct.

Q So there would be an Environmental Project Manager employed by Northern Pass?

A (Carbonneau) That's my understanding. I think the ultimate responsibility is with the Project Director for Northern Pass.

Q And we've heard multiple times there's actually in my mind kind of two sets of inspection teams out there. There's the teams that are hired by the contractors in the field, and then there are Northern Pass, there's a Northern Pass team; is that accurate?

A (Tinus) That's correct. Yes. And I think the Construction Panel testified, the way they envisioned it was sort of a north, central, south arrangement with a responsible part for

each of the regions, and a number of individuals under that responsible party that would report in to Eversource. So that would be going on with the Applicant as well as the contractors.

Q Okay. I know you can't comment yet as to how many environmental inspectors, but I think as you can see there's a lot of interest --

A (Tinus) Um-hum.

Q -- in that from folks participating.

Will there eventually be a single document that outlines the role and responsibility of the Environmental Monitors and how many there will be and how many times, how often they'll be on a particular site? Will that be clearly delineated at some point?

A (Tinus) Yes. In terms of how often they have to visit a site, from a Water Quality perspective that's dictated by the DES Permit Condition and also the Construction General Permit. So they have to get out to a site and monitor within 24 hours of, I believe it's a half inch of rain at least once per week. We also have to get out there and plan for any impending large storms. So you have to look at the precipitation events,

the weather events on a daily basis to understand what's going to happen on a site and be very aware of what the conditions are.

In addition, the monitoring is going to reflect what kind of activities are going on where with respect to what resources you have nearby. So not only will you be looking at erosion control, but as we've talked about and other members of the Panel have talked about, you'll have specialized monitors for wildlife and rare plants.

So the details will be worked out. In the Best Management Practices, one of the documents required by DES is to explain how you're going to do the monitoring during operation, monitoring operations of the Project. So I forget the exact title, but those details will be included probably in an org chart so it all be spelled out very clearly how this will proceed, when they need to be there, who will be their contact names, phone numbers, et cetera.

Q And that will be all in the plan submitted to DES?

A Correct.

Q And also to this Committee as well?
A (Tinus) Correct.
Q What kind of assurances do we have as a Committee and probably more importantly the Public that the Environmental Monitors are going to be effective in doing their job here?
A (Tinus) Well, I think that individuals that are credentialed as DES wants them to be, you know, whether they be a certified wetlands scientist or a certified professional erosion sediment control or whatnot, they have to follow certain ethical standards to perform their job, and should they be called to question on a decision they made or whatnot, that could have personal or individual repercussions.

But, clearly, as Lee stated, the meat of the matter here is the teeth is with DES and any potential violations that would occur potentially resulting in fines. We don't anticipate getting there which is why we want to have, will have a robust monitoring program that makes sure that the contractors are employing all the Best Management Practices and following the various procedures that they need to to make

sure that they stay in compliance.

Q Ms. Carbonneau, I think you mentioned more than once that it's in the Applicant's best interest to ensure environmental compliance. Could you explain that premise to me, why you believe that?

A (Carbonneau) I think complying with the regulations before something bad happens is always easier and more cost effective for the Applicant. They will have detailed plans on what they will need to do in each location to avoid having an unanticipated impact. And as long as they follow that, work can proceed smoothly. If they don't follow that, and something adverse happens, the Monitor has the ability to shut the Project down for that time period until it gets fixed. So that results in cost and schedule implications.

But even beyond that, if it has an egregious effect, then the Agencies can shut the Project down, and they will probably require some kind of remedial plan or something that will have much greater impact on the schedule and the process of construction.

So it's much easier to implement what's already been identified and agreed to than it is to stray from that and risk having the Project get shut down, risk fines, risk actually just being out of compliance with the rules and regulations.

Q I think it's probably safe to assume that if the facility gets a Certificate and construction begins, I think it's fair to assume that DES, Fish & Game and other Agencies will be conducting random, unannounced inspections of the operations?

A (Carbonneau) I would expect so, if possible.

A (Tinus) I would agree.

Q I assume that there will be a number of eyes watching this Project if it moves forward, and I'm assuming that those citizens obviously have the ability if they spot something in the field to, one, either report it directly to the company or to DES for further investigation.

A (Carbonneau) Yes.

Q I want to talk just a little bit about blasting. Does the DES recommendations cover blasting?

A (Tinus) Not specifically, no.

Q Okay. Thank you. Because I searched it and I couldn't find any reference to blasting in there at all.

The Construction Panel made a commitment when I asked this, that they would follow Attachment A which is the DES Model Regulations for Municipal Ordinances. Is that your understanding?

A (Tinus) That's correct.

Q Is that part of the record in this case?

A (Tinus) It is. I believe it was provided in a Data Request or maybe it was Supplemental Testimony, but it is part of the record.

Q Okay. Because generally blasting in New Hampshire is regulated at the local level so that serves as the cookbook, so to speak, for municipal regulations, but those may not be applicable in this case because of the SEC proceeding. So I just want to make it clear what those standards are that will be followed.

A (Tinus) In terms of addressing procedures that they need to have in place to make sure that the blasters know exactly what they're doing, where that they have complete characterization of the

materials that they'll be working with, they'll also have to have keen understanding from how much they would need to use in terms of blasting materials, and it also, I believe, covers water quality monitoring in the vicinity of the blast. So that was the intention of saying that they'll be responsible for all the elements in that plan.

Q And there was a commitment to monitor private or public wells within 500 feet of the blast zones as I recall.

A (Tinus) That's correct.

Q And that was both a premonitoring and also post-monitoring?

A (Tinus) Correct.

Q Of blasting activities. And I think I asked the Construction Panel this, too, but if somebody was to be 600 feet away, could they request to be included in that sampling?

A (Tinus) That's not unheard of.

Q Okay. How long do you monitor post-blasting for nitrates and things like that? Do you know?

A (Tinus) I think there's two or three samples taken post. If I'm not mistaken, for Groton

that's what they did.
Q Some fixed periodic schedule?
A (Tinus) Yes. And so if anything were to appear, then you would certainly have to take another sample and look at it, but I believe there's an element in there that talks about if you have a certain amount but it's lower or on the low end of the detectable limit, then you would do one, and maybe if you had a negative or nondetect, then you wouldn't need to do anymore.
Q Okay. Shifting gears a little bit again on the avoidance measures and mitigations. That is still in draft form at this point. Is that correct?
A (Carbonneau) The wildlife avoidance and minimization measures are still being, putting final touches on those. The plant avoidance and minimization measures for rare plants are agreed upon by Natural Heritage Bureau so those won't change unless what they read now becomes a conflict with what's proposed for wildlife where their interests overlap. For example, lupine and Karner blue butterfly, if it's more stringent for Karner blue, then we'll change the

language in the plant AMMs to make sure there's no misunderstanding.

Q And the current draft is dated June 24th, 2017, is that right, of the Wildlife Mitigation Plans?

A (Tinus) That sounds right.

Q That was five or six months ago at this point. What's the expectation for finalizing those measures?

A (Carbonneau) We're very close. We have another draft in-house that we're having the contractors take a look at, and we'll, our plan is to submit this latest version to New Hampshire Fish & Game for their review. It's based on a meeting that we had just a couple of weeks ago where we came to a good agreement on many issues. So I think it's very close. I can't give you an exact date of when it will be available, but, hopefully, within a month.

Q Okay. I'm anxious to see that.

When I look through the AMMs, there's a lot of time windows in there when work is to be avoided, if possible, or where practical, I believe. Who lines all of those things up? I mean, there's things that seem to be very

challenging in terms of scheduling a long-term, two-year construction project, at the same time avoiding all of those time frames windows identified in the AMMs.

A (Tinus) I can tell you right now that the contractors, presumably the chosen contractor, PAR, is right now working on a very detailed analysis of all, what we call restrictions, environmental restrictions to construction. So they're trying to gain a visual understanding of how that looks on different documents and also in a schedule form.

A (Carbonneau) And I'll add that in many cases the time-of-year restrictions don't apply to a huge area. In many cases, they're somewhat limited in where they would apply. So we think they'll be able to work around these fairly effectively, but they're working out the long-term schedule here to make sure that it's works.

Q One of the things I noticed in the draft AMMs, there's some of the buffer zones, I think, for some of the bird species weren't quite yet defined yet. Is that something that will be defined as part of the final AMM?

A (Carbonneau) Yes. There have been some modifications to the buffer zone for nesting raptors, for example. Fish & Game suggested that we reference Good Forestry in the Granite State as a source for the buffers and so actually those have now been put into the avoidance and minimization measures so, yes, they have changed a little bit.
Q I want to switch gears a little bit and kind of sticking with the AMMs in general, but I want to talk a little bit about the Karner blue butterfly, and that is both a state and federal endangered species; is that correct?
A (Barnum) Yes. That's correct.
Q What's the difference between endangered and threatened?
A (Carbonneau) There is a technical definition which I don't know by heart, but the endangered species have a higher possibility of becoming extinct than a threatened species does.
Q And the Karner blue is endangered?
A (Barnum) That's correct.
Q So that means that it is illegal to possess, harm, injure, kill or even harass such a

species; is that correct?
A (Barnum) Correct. Yes.
Q And as far as you know, the Concord location is the only location in New Hampshire where the Karner blue exists?
A (Barnum) There are multiple locations around Concord where there are butterflies. It's not just a single group of them. There's more than one group, but, yes, the Concord area is the location.
Q And those areas are managed by Fish & Game and the U.S. Fish & Wildlife Service?
A (Barnum) Yes.
Q What's the overall goal of the project in Concord?
A (Barnum) The Karner blue project?
Q Yes. The Karner blue.
A (Barnum) To maintain a self-sustaining population.
Q Are we at that point at this point?
A (Barnum) At this point, it is self-sustaining, but given the nature of butterfly populations and the small area which they inhabit, they require ongoing management and monitoring to

ensure that remains the case.
Q Okay. So we currently don't do any captive breeding for the Concord area at this point?
A (Barnum) I don't believe for the last couple years there has been any for the Concord area. They have been sending some butterflies to Albany, New York, because their population which is where the Concord butterflies originally came from.
Q I was going to say --
A (Barnum) Their population is having some troubles, and because there is good captive rearing in Concord, they've been doing some exchange.
Q Okay. I found that interesting that the New York butterflies came to New Hampshire, and now we're sending some back to New York.
Do you have any way of estimating how is this going to impact the population in Concord for the species?
A (Barnum) I'm not a butterfly population expert. My understanding is that there are ten subpopulations in and around the airport, the Concord Airport, of which the population that

will be impacted by Northern Pass is one. So it's one of ten. So since there are those, since the bulk of the population, the subpopulations, will not be affected by our Project, my assumption is that the overall impact to the entire population will be relatively small. However, the impact to the population, the subpopulation that is being impacted, that could be a larger impact to them.

Q To the point where we could no longer have a self-sustaining population in Concord?

A (Barnum) No, not for the whole population throughout the town.

Q Okay. And the current plan as part of the mitigation package is to set aside a 6.9-acre parcel of land to develop as further habitat for the butterfly?

A (Barnum) Correct.

Q And that's been agreed to by Fish & Game and the U.S. Fish & Wildlife Service?

A (Barnum) Yes.

Q As appropriate mitigation?

A (Barnum) Yes.

A (Carbonneau) And that agreement was based on our

original estimates of impacts to Karner blue butterfly. Since that time, we've been able to actually reduce the area of impact to wild lupine so there would be a consequence logical reduction in impacts to Karner blue butterflies as well. So the mitigation was already considered adequate, and it's probably going to be more adequate now.

Q I read the first AMM is to do work in the wintertime. I assume that's because the butterflies are dormant at that point in time?

A (Carbonneau) There's a lot of good reasons to try to do work in the wintertime. One of them is the impacts to lupine will also be reduced. But Karner blues are considered to be in the right-of-way any time of year. They're probably a little bit less susceptible to impacts during the winter though.

Q That was my question. I assume there could still be some impact even if work is done in the wintertime.

A (Carbonneau) Yes.

Q Ms. Barnum, you're shaking your head yes as well?

A (Barnum) There's always some life stage of the Karner blue present, either eggs, pupa or adults. So in the wintertime it's eggs, but you can still affect them. However, as Lee stated, since you're reducing your impacts on the lupine, when the growing season, next growing season happens, then there's going to be more lupine available if you do the work in the winter.

Q If the work is not done in the winter, the plan is to put down padding of some kind in the entire work zone to help minimize impacts to the lupine, I assume?

A (Carbonneau) Yes. Timber mats would be used across the lupine patches.

Q Okay. Should there be some sort of time constraint associated with that? Because I think it would matter what stage the butterflies are at that point. If they're obviously in flight, then they could obviously just fly away as the timber mats were being laid down, but if they're in egg stage, I assume they're on the plants at that point?

A (Barnum) I think the bigger impact is the fact

that the plants aren't available for them to use, and that would both be the lupines for the larvae to eat and then other species of plant for the adults to nectar on. So it's the loss of habitat that's really the impact, and that's the impact that the Agencies were considering. When they thought about what level of mitigation was appropriate, they're really thinking hard about all right, what's happening to the habitat and how do we compensate for those impacts to the habitat.

Q Okay. Maybe this was a question for Mr. Magee, and if it is, I apologize. There could still be, what happens to the plants if they're covered by a timber mat for what, two months, three months, six months? Do the plants die at that point and then they would be no longer available to the butterflies?

A (Carbonneau) I don't know exactly how long a plant will survive under a timber mat during the growing season. I think certainly in the period where the plant is dormant because these are perennials, the root system remains alive in the soil, the aboveground part of the plant dies

back in the fall. So any time probably from October through March, the impacts of leaving a mat down for several months is not going to affect them. It's probably not going to have a significant effect. During the growing season, it's more of an effect on the plants.

Q Okay. I'll shift gears to bats a little bit. Ms. Barnum, do you know what type of bat flies over my house every night, just out of curiosity?

A (Barnum) Well, based on what's happened with white nose syndrome, the species that are most common in the state now are the big brown bat, and then the tree roosting species which have never been that common but things like red bat, hoary bat and silver-haired bat.

Q Thank you. But a serious question on the bats, the small-footed bat, that's a threatened species in New Hampshire?

A (Barnum) It is State-endangered.

Q Okay. And as part of the AMMs, there will be no blasting of rocky outcrops between June 1 and July 30th if the Environmental Monitor verifies the presence of the small-footed bat, is that

correct?
A (Barnum) That's one of the most important things we're working on right now with the AMMs, exactly what that time period should be, and it may change.
Q Okay. How do you verify the presence of the small-footed bat? Is it a visual inspection of a rocky outcrop? Is it nighttime acoustics? How do you verify that?
A (Barnum) There are a number of options for verifying bat presence. Acoustic work, putting out acoustic monitors overnight, you could net and have them in hand and verify that way. You can also do what we call exit surveys where you simply sit at dusk and observe what's coming out. Now, you can see bats, you can't identify to species. So either at that point you make an assumption that because the habitat was suitable for small-footeds, that's what came out, or you say well, I saw bats, and now I'm going to take one of these other two measures to verify exactly what species.
Q So they roost in rocky outcrops and have their young during that time of year?

A They do.
Q That's not where they winter though, right?
A The small-footed bats may overwinter also in those rocky outcrops. If there are crevasses that are deep enough to go below frost line, these small-footed bats are very cold tolerant, more so than some other species. They're also very rarely observed in other kinds of hibernacula, deeper caves, and so a lot of bat specialists believe at this point that there are overwintering in the same places where they spend the summer if you've got those below frost line crevasses where they can retreat to.
Q You mentioned the overwintering. Do bats typically hibernate in the same place year after year?
A (Barnum) Yes.
Q So if you were to identify a rocky outcrop that needed to be removed as part of this Project, that particular hibernation spot would no longer obviously be available.
A (Barnum) Potentially, yes.
Q And how good are bats at finding another place to spend the winter?

A (Barnum) I don't know how much research has been done on shifting overwintering hibernacula; however, bats are extremely adept at finding new spots during the summer. It appears that sort of that prospecting behavior is part of their, part of how they function. So the assumption is they would find a new place to overwinter, but like I said, I don't know if there's any research specific to that wintering versus the summering behavior though.

Q Has any locations been identified on the route that will need to be removed that currently serve as a hibernation spot for the bats?

A (Barnum) We haven't identified any hibernacula on the route.

Q Okay. I'm going to shift gears again. Go back to -- before I leave the AMMs. The lynx population in New Hampshire. I think you said it was extremely, they're extremely rare in New Hampshire?

A (Barnum) That's correct.

Q Is it because we are at the southern edge of their range or is it the fact that they get outcompeted by bobcats?

A (Barnum) We are at the southern edge of the range. There's a variety of reasons why we're the southern edge of the range. One of them is we have bobcats. Others are just the snow conditions in winter favor bobcat in some cases as opposed to lynx. We move them to northern Maine, and then the snow conditions are a little more severe and the lynx gains the advantage.

Q The fluidized thermal backfill. I asked this question of the Construction Panel, and I asked specifically, had there been any discussions with DES about the use of this material in the construction zone, and the clear answer was no, there had been no discussions with DES from the Construction Panel.

I'm going to ask you guys as the Environmental Panel, are you aware of any discussions with DES about using the fluidized thermal backfill?

A (Tinus) No, and it's a product that DES has previously certified for reuse. It's used widely across the United States in various construction activities for backfill.

On this Project, the Project is working

with DOT to take a look at use of this product. So we're going to continue to work with them on that issue in terms of, for a specific Application to this.

Q The certified waste derived product approval that DES did in 1997 was specific to fly ash that came from Merrimack Station and Schiller Station. Is that your understanding?

A (Tinus) That's correct.

Q So is the use of this going to be under that certified waste derived product determination that DES did or is it now currently covered under a separate section of the DES rules?

A (Tinus) In terms of the product being fluidized thermal backfill, it is covered under the rules specifically. The solid waste rules.

Q So it's beyond just the certified waste derived determination that was done?

A (Tinus) Correct.

Q So under the current state rules, it could be applied to fly ash from any facility, not just Merrimack and Schiller Station; is that your understanding?

A (Tinus) That's correct.

Q Okay.
A (Tinus) The EPA also has indicated acceptance of it as a nonhazardous material, and they've encouraged use of it. The different areas, different DOTs around the country use it. In fact, in most states it's used, as I said, widely in various construction projects.
Q Is there a nationally recognized standard for fluidized thermal backfill?
A (Tinus) I think the constituents that are contained within it are -- they have to meet certain standards at the source. So that's what's followed in terms of making the different preparations for different applications.
Q Okay. I just have a couple kind of random questions so I'll just throw them out there and anybody can answer them.

As part of your mitigation package, there was an agreement on the now right-of-way up north to limit access to motorized vehicles; is that correct?
A (Carbonneau) That's correct.
Q How was that done?
A (Carbonneau) The Project has agreed to, if

necessary, install gates at locations where unauthorized ATV use may take place. That could be from public roadways or it could be anywhere where an existing snowmobile or ATV trail, and there are some up there now, intersects the new right-of-way or signage and gates, whichever seems necessary at the time.

Q If I know anything about ATV riders, and I don't mean to disparage a whole group, but they're pretty creative in their ability to access right-of-ways, I think. Will there be any monitoring being done by the company as part of ensuring that there will be no access up there?

A (Carbonneau) I would say that a fair amount of the property that will have the new right-of-way in the northern section will include properties that are part of the mitigation package. Typically, those properties are monitored annually by the easement holder for the properties, and so any issues or problems would be identified during that monitoring process.

I don't know what would be planned for the properties that are not part of the mitigation package. There are a few.

Q Okay. I want to talk just a little bit about removal of timber mats and wetlands. Ms. Carbonneau, I assume that would fall to you, but I know the DES Application says that within 7 days of completing construction, the timber mats need to be removed. Is that your understanding?
A (Carbonneau) Yes. I think that's correct. Does that sound familiar?
A (Tinus) Yes.
Q And you talked a little bit about this could be a two-year construction cycle, these mats could be in place, and I'm just really trying to understand from an environmental standpoint what makes more sense. To leave a mat in place for two years or to remove it and then put it back on some sort of basis whenever you're accessing the right-of-way or the wetland? Ms. Carbonneau, what makes more sense to you?
A (Carbonneau) It makes more sense to me to place them for a particular task, and then if you're not going to return to that location for months, they should be removed. From an environmental standpoint, that's less of an impact.
Typically, when these are placed, they

press the vegetation down. When they're removed, the vegetation can spring back to some extent. The longer they're down, the harder that is and the more likelihood there would be mortality of the plants that are under the mat. Particularly, if it's during the growing season.

From a construction standpoint, I mean, this Project is going to have activities happening in different places. To purchase or lease enough timber mats to cover the whole Project site from one end to the other and leave them there is going to be substantial. So I think the contractors would probably agree that moving them around to actually where they need them is going to be a more acceptable process from their standpoint as well.

Q But under the DES approval, you could, in fact, leave them there for the entire two-year cycle of construction if you so chose to?

A (Carbonneau) I think from the DES standpoint, that's true. The Army Corps has a limitation on the length of time that timber mats can be in place. Jake, I think it's what, 12 months or 18 months? I forget.

A (Tinus) I can't recall. It is less.
Q That would be part of the 404 permit we talked about earlier?
A (Carbonneau) That's likely, yes.
A (Tinus) That's correct.
Q And that will be issued at some point.
A (Carbonneau) Right.
Q After this proceeding is, I think, what you said?
A (Carbonneau) I believe they're waiting for the SEC process to be completed before they issue their permit.
Q I think just one more question. Two more. Sorry.

Tree removal within the right-of-way. Obviously, you don't own beyond the right-of-way so all trees would be dropped into the right-of-way. Is that a fair assessment?

A (Tinus) I think that's the intention. Yes.
Q Literally what happens to a tree that's 50/50 on the property line? I mean, obviously, you can't remove half a tree. I assume that entire tree would come out?
A (Carbonneau) If it's required for the clearance.

If the bowl of the tree is not the issue but the branches, then they can also do side trimming, and that's fairly common.

Q Is all the removed material from the trees taken out of the right-of-way?

A (Carbonneau) Typically, it's removed if it's going to hinder vegetation management. So they try not to leave large logs in the middle of the right-of-way even though I have worked on right-of-way projects where Fish & Game actually said can't you leave some more woody debris in the right-of-way, it's a great cover for small animals. If it hinders ongoing maintenance, they tend not to do that so most material is removed.

Q I know every time I build a pile of branches in my yard, somebody inhabits it pretty quickly. So I can understand Fish & Game's desire there.

Is there any, there's no open burning of the tree materials or anything along that line within the right-of-way?

A (Tinus) No.

A (Carbonneau) No.

Q I didn't suspect, but I felt as the air guy I

needed to ask.

Okay. Last question. Refueling of equipment within wetlands. I haven't heard anybody brought that up. I'm assuming that there are BMP as to how you refuel construction equipment within the wetlands?

A (Tinus) Yeah. That's really discouraged.

Q I assume the preference is to remove the equipment from the wetlands and refuel it uplands of the wetlands, is that accurate?

A (Tinus) Correct, and if it does need to happen, then there would have to be some secondary containment of some sort. Some device to potentially capture fluid that could release from the container or out of the vehicle or whatnot. But we don't anticipate that's going to be the case; that they're going to be able to refuel in the appropriate locations and not have to get to a point where you need to do it in a wetland.

Q Okay. I think I'm all set for the moment, Mr. Chair.

PRESIDING OFFICER HONIGBERG:

Mr. Oldenburg?

MR. OLDENBURG: Thank you, Mr. Chair.

BY MR. OLDENBURG:

Q I have a series of questions. I think Mr. Wright has asked quite a few of them so if I hesitate and pause it's because I have to skip forward and rethink my questions.

Ms. Barnum, I think he just asked all the questions I had, especially about the Canada lynx. It's called a Canada lynx for a reason. This is not its typical habitat and range.

A (Barnum) Correct.

Q But of the animals that you studied and looked at for the Project, does any of them give you pause to concern of the impacts the Project will have to either their habitat or their ability to survive or anything like that? If there's one or two that strike you as --

A (Barnum) The only species that I had any particular concern about was the Karner blue butterfly because it is so limited in its distribution population. However, I feel that the mitigation that we're offering more than compensates for the impacts and will in the end create a net benefit to that species. That's

what Fish & Wildlife requires under the Federal Endangered Species Act, a net benefit, and I really believe that the mitigation really does achieve that for them.

Q So correct me if I'm wrong, but the wild lupine was planted or grows in the power line right-of-way, correct, for the most part?

A (Barnum) That's correct.

Q So without the power line right-of-way, you wouldn't have wild lupine or Karner blue butterflies?

A (Barnum) Yes. The habitat conditions that lupine requires are maintained within the right-of-way because of the maintenance of the right-of-way. It's a species that requires a low amount of cover, overhead cover but some cover but not too much, and so it needs that just right. And disturbance, continued disturbance is what maintains that. It used to be that the Pine Barrens burned, and that's how you got that ideal mix of cover and openness that the lupine really like. Most of the Pine Barrens in Concord have been developed, and the remaining areas don't burn naturally anymore.

People don't like it when stuff burns near their house so we put the fires out. So some other disturbance was required to maintain those conditions. As it turns out, right-of-way maintenance does a pretty good job of it.

Q All right. Thank you. The rest of my questions are mostly about wetlands. I'll toss that up to anybody who wants to answer.

You testified that Normandeau is currently working for Eversource, not any of the contractors that are currently working on the Project.

A (Carbonneau) That's right.

Q And you're aware that the contract was bid soon after the Application to the SEC was put in and that Quanta Construction was chosen?

A (Carbonneau) Yes.

Q To actually build the Project if it's approved.

A (Carbonneau) Yes.

Q And I think you stated that you don't know of Quanta or their myriad of subsidiaries, PAR and all those folks, they haven't hired their environmental consultant yet or do they typically use in-house staff to do like the

Environmental Project Managers and the monitoring?

A (Carbonneau) I couldn't say what they typically do. I don't believe I've worked on a Project with Quanta or Par before during construction. I have worked with some companies that work with them, and typically, I would imagine they may have some Environmental Monitors in-house for specific things like erosion and sedimentation control, but I don't know that for a fact.

Q But you haven't met them or you don't know who they are yet?

A (Carbonneau) I've met several people from PAR, their schedulers, and also we worked with them, not for them, to monitor some of the geotechnical boring work. So we actually did receive their health and safety training just for that very limited purpose, but we don't have a contract with them.

Q Okay. During the Construction Panel testimony, and I use Construction Panel loosely because that's what it was called, but Mr. Scott testified that he actually did the design of the underground for the preliminary design that was

used in the Application, and he's currently overseeing the review of the design that's being done by PAR Electric who's the contractor.

So my understanding is that Burns & McDonnell did the bridge engineering for the Application. Now the contractor is doing the final design and the construction. PAR Electric is doing like the underground section of the final design. So Mr. Scott while he was up in a Construction Panel was actually the original designer for the permit and is actually in charge of reviewing the underground design for the final design overseeing what PAR Electric does. Do you understand that? Part of it or take my assumption as being correct?

A (Carbonneau) I'll take your word for it. Correct.

Q On the other side, Mr. Bradstreet has testified that he actually did the overhead design, the overhead transmission design, and he is actually going to continue doing the overhead transmission design through final design. That was my understanding. So actually it was a Construction Panel half Design Panel, too, so I

call it a Design and Construction Panel because a lot of the information that Mr. Scott and Mr. Bradstreet testified about was the design itself.

So what they testified to was that there's actually four separate construction components. And as part of that, there was an attachment to Mr. Fortier's testimony, his Attachment B, it was the org chart, if you will, the organizational structure of how the contract would work; that there was Eversource on top, and there were four separate construction operations, the overhead transmission, the underground transmission, the substation construction, and then sort of a specialty HVDC converter, SVC and cable construction; four separate construction components, if you will. Each one of those construction components -- this is long setup for a question. I apologize.

All of these four separate construction components had an Environmental Project Manager, and under that Environmental Project Manager were the Field Monitors or Inspectors. Does that make sense?

A (Carbonneau) That makes sense.
Q Okay. Now, on the other side is Burns & McDonnell as the owner's engineer. Burns & McDonnell plus maybe some other consultants. But they also have an Environmental Project Manager that's assigned to oversee -- their Project manager also has monitors in the field that oversees what the contractor is doing. Does that make sense to what you've heard?
A (Tinus) That's correct.
Q Okay. But do you know, I think you just testified, that from the contractor's standpoint you don't know who those Environmental Project Managers are yet?
A (Carbonneau) No.
A (Tinus) No.
Q So you don't know whether they understand, agree with, all the details, the AMMs and everything else you've come up with for requirements that are going to be put on them and the contractor?
A (Carbonneau) Well, I'm not sure who those folks will be, but they will certainly need to come up to speed if they don't already know about those things, but we have been discussing these with

both the design team and the contractors to make sure that they understand what is being developed now so I'm not sure who those, who their individual Monitors or monitoring supervisors will be, but they have been incorporated as best we can now with the people that are involved so far in the process of developing these AMMs.

Q Because that was one of the, if you say one of the advantages to doing this type of contract which we call a design/build is that the contractor actually finishes the design and then builds it so they have input into what the requirements of the design are so they can say no, you don't want to do that. But it sounds like that you haven't really been involved in that one-on-one back and forth with the contractor to say whether the AMMs and other restrictions that are being put on the contract from an environmental standpoint they agree with or can do or there's a better way.

A (Carbonneau) Well, they have been involved. We actually have had several meetings with them --

Q Okay.

A (Carbonneau) -- involved so we call them the AMM meetings, and they involve sitting around and showing plans on the screen and going over what the expectations are and what's being proposed for an avoidance and minimization measure and then discussing what the ramifications to the schedule and the constructability of the Project are.

We also provide every time we make a small update or a change to the AMMs as they're being developed, we submit those to Jerry Fortier, and he shares those with the contractors, and they give us comments back. So we are incorporating their concerns. Most of them relate to will the restrictions extend the time frame for this construction project beyond something that's reasonable or is it something that we can work around. How much of an area does it affect. What are the potential risks to the schedule. Those are the kind of things that they are giving us input on.

So while we don't know exactly who the people will be that are responsible for making sure on their side that these are implemented,

we have definitely been engaging them in the process so they're aware of where the discussions stand and what some of these restrictions are likely to be.

Q And I'm assuming that applies to the Burns & McDonnell's folks on the outside?

A (Carbonneau) Yes, they're heavily involved as well, yes.

Q Ms. Carbonneau, in your Prefiled Testimony, and just for the record it's on page 3 of 15, starts on line 19, I'll just read it because it's pretty short.

"The decisions to place an additional approximately 52 miles of the Project underground in roadways and shoulders from Bethlehem to Bridgewater reduced direct permanent wetland impacts by approximately .6 acres, reduced temporary impacts by over 30 acres, and reduced secondary impacts to wetlands, streams and vernal pools by over 70 acres."

Since that was your original testimony back in October of '15, when you talk about reduced, I mean that's the original, that's the only plan

that we see. So reduced from what?
A (Carbonneau) Reduced from an earlier design that actually used the overhead existing transmission line through the White Mountain National Forest. So originally, the plan was to have the line go through the White Mountain National Forest, and we had already calculated impacts associated with that route. So by placing the route underground which is the route that you saw in your Application materials, that impact was eliminated.
Q That makes sense. Thank you.
I won't read through the litany of Applications. I think Mr. Wright went through them, but from what I found in the Applications, so the AOT Application was submitted and dated in October of '15, Wetlands Impact Plans are dated October of '15, there appear to be a Revised Wetlands Plans in February of '16, and DES's Final Decision Letter, I'll call it that, of March 1st, 2017, number one -- so I'm trying to get, my goal is trying to figure out what plans were used.
A (Carbonneau) Okay.

Q In their Decision Letter in number one it says, "All work shall be in accordance with Revised Wetland Impact Plans by Normandeau dated May 2016 as received by DES on May 10th, 2016, and the Revised Plan Sheets submitted by the Permittee December 14, 2016, and January 25, 2017. So the May '16 plans are the original permit plans. And then if I got through the information right, the December 2016 plans, if I remember right, they dealt with the Shoreland Permit Update Plans and some Transition Station Impact Plans that were updated.

A (Carbonneau) I think that's true. Yes.

Q And then the January 2017 plans that were some very specific wetland plans that were changed.

A (Carbonneau) Yes.

Q But it encompassed, if I remember right, maybe 12 sheets or something like that or maybe more.

A (Carbonneau) I think that's about right all together.

Q So you used, the plans that were used for the underground section were the October 2015 plans that were in the permit; is that correct?

A (Carbonneau) Yes. I believe that's correct.

A (Tinus) Right.
A (Carbonneau) I'm not sure if modifications were made to those.
Q So were the wetland impacts given to you by the designers or did you calculate the wetland impacts?
A (Carbonneau) Well, we delineated the location of the wetlands, provided that to the design engineers, and they overlaid the proposed work on those, and they actually measured it with their GIS system. So the impact areas were calculated by the engineers.
Q So for the underground section, and let me talk just about the underground section for a while, I mean the way wetland impacts are typically determined is the Project is designed, you have a length, you have a width of the cut or the fill lines, and you use the depth, the depth of the facilities is used to determine what that cut or fill line is for the outside limits. So you have a length and a width.

Then you overlay the wetland delineation over that and then you just digitize or calculate what the area of impact is. That

sound reasonable?
A (Carbonneau) That's reasonable.
Q But the October 2015 plans, the design plans, didn't have any depth information, and if you looked at the plans it was a centerline down the road, each splice vault was just a box. There were no slope lines. So it appears to me that you didn't have enough information or at least those plans didn't show enough information to actually calculate where the slope lines were and what the impacts would be.
A (Carbonneau) For the underground route, my understanding is that the design at that time called for having it either in the disturbed road bed or under the pavement.
Q Correct.
A (Carbonneau) And to the extent that there were wetlands in that area, which apparently there were not based on where they expected the line to be, they would calculate the impacts. And we were, I think the wetland impacts were fairly minor in that underground route because the expectation is that there would, I think they knew what a trench width would be, but they

believed that it was all going to be in the disturbed roadbed at the time. So that was the basis for the impact calculation for the underground route.

Q So did you update the impact plans or look at the impacts based upon the November/December 2016 designs that were done by PAR Electric? Were they moved, the underground?

A (Carbonneau) Yes. We were given those plan sets to look at. In locations where the DOT had questioned whether or not they could move outside of the roadbed, we were charged with looking at those locations and trying to determine if there were wetlands or streams or other natural resources that would be affected if they moved the line outside into those locations. So we reviewed the plans, we looked at the tables of, I think they call them exceptions, to figure out if there would be impacts. And while we didn't quantify them, we did point out to the design team and to PAR where there were potential natural resource impacts associated with those plans.

Q Okay. Dawn, if you could bring up, it's

Applicant's Bates number 12267, and this is, it's Appendix 31, it's entitled Wetlands, Rivers, Streams, Vernal Pools Resource Report and Impact Analysis. It's Figure 56 which is shown on page 4-23 for the record.

And it basically, if I understand this right, is a summary of the permanent and temporary impacts for the underground section that was included as -- I'm assuming this is where there's no impacts to the, no permanent impacts and where the temporary impacts were tabulated, correct?

A (Carbonneau) Yes.

Q Could you help me read this? So if you just take Bethlehem, the wetlands that are shown on the first line. It says that there's 20 wetlands.

A (Carbonneau) Yes.

Q And the area of those 20 wetlands totals .6 acres?

A (Carbonneau) Yes, within the area that we delineated.

Q But there's no permanent impacts and no temporary impacts.

A (Carbonneau) Right.
Q And then you did the same thing for the next line is rivers and streams. Then vernal pools. So those numbers represent the total number within that town and then the area that you found within the right-of-way basically?
A (Carbonneau) Yes, of the existing resource.
Q So one of the key things is that the wetlands that are delineated or the vernal pools or the rivers and streams, you only had the ability to delineate those within the right-of-way unless a property owner gave you permission, correct?
A (Carbonneau) Yes. Our efforts were directed at the right-of-way. Yes.
Q And it appeared to me by what was shown in the delineations that it was mainly within the right-of-way. Didn't go outside the right-of-way in a lot of locations?
A (Carbonneau) We tried not to go outside of the right-of-way.
Q So when you total this all up, Table 56 and it continues on to the next page for each town, you have zero square feet of permanent impacts and about 3400 square feet of temporary impacts,

correct?
A (Carbonneau) Yes.
Q And of those temporary impacts, they're all shown in river and streams. Why is that?
A (Carbonneau) I think that's just associated with crossings of streams through culverts in the road right-of-way.
Q So there's no permanent, no temporary impacts of wetlands at all.
A (Carbonneau) Right.
Q So as part of the construction testimony, Mr. Johnson of Burns & McDonnell stated that the plans were being revised again, and, basically, when I reviewed the October 2015 plans, the plans that were submitted, they were down basically the center of the road. The conduit and the splice boxes were in the center of the road. It makes sense that there were no wetlands impacts because it's under the road.

The PAR Electric plans in November/December of 2016, I think that's right, showed them off to the side. Most of them under the shoulder of the road or the edge of the road. So then Mr. Johnson stated, and this is just for the record,

it was on Day 7, Morning Session, May 2nd, page 120, starts at line 7. He was in a discussion back and forth with the Counsel for the Public, and Mr. Johnson stated, "So there are 159 splice vaults in the underground section. In the next version of plans, if you will, 23 of those are proposed to be in the road." Then the question was from Mr. Pappas, "And when you say the next version of the plans, when do you anticipate those?" Mr. Johnson's answer was we're working on those exceptions. Once those are complete, we'll generate the next version of the drawings.

So you haven't seen those updated plans yet or have you?

A (Carbonneau) I have not.

Q Okay. So it makes sense that the original plans that shows zero impact had all 159 splice vaults and the conduit leading to them under the pavement. Now over 100 of the splice vaults are going to be outside the pavement. Doesn't that make sense that that could have an impact to the wetlands that are on the side of the road?

A (Carbonneau) That's possible.

Q Have you been involved in any of the discussions

with Burns & McDonnell or any of the designers about those wetland impacts based upon the new design?

A (Carbonneau) Not beyond reviewing the plan sets that we saw in the fall.

A (Tinus) Could I add something here? I'd like to add something.

I did have a brief conversation a few weeks back with the design team, and they indicated to me that they're approximately 50 percent done and in only one location did they have potential temporary impact. They were able to design these splice vaults and other elements of the underground in such a way that there's very little impact even with moving it off to the side of the road. So that's sort of the current state as of a couple of weeks ago. But I think it's positive in that they're anticipating that there aren't going to be many additional impacts to resources along the way.

Q Okay.

A (Tinus) So I just wanted to put that out there because it just came to mind.

Q Which leads me up to my next question which is

Dawn, if you could bring up the Bates number Applicant's 1181. I tried printing this out and the colors just don't work. So if you could zoom in a little bit to it.

Basically all this shows is this is a section through Franconia on Route 116, and the teal colors along the edge of the right-of-way are the delineated wetlands, correct? And it shows in, especially just to the right of the 116 area where there's wetlands on both sides of the road. And is that correct? Am I reading that plan right?

A (Carbonneau) Yes. Those look like the wetlands.

Q And again, because you only delineated in the right-of-way, they look small, but you have no idea how big these really are outside of the right-of-way. The wetlands.

A (Carbonneau) Right. Typically what we do is, well, we have some idea just because we had to meet the SEC requirements submit a set of plans that showed what we think was happening outside of where we actually delineated. That included an aerial photo interpretation and soil review of areas within 100 feet of the edge of our

delineation and then sort of a GIS exercise to go even beyond that.

So we have a couple of ways of knowing whether there are wetlands outside of where we delineated. One of them is in our field delineations we would note whether it was an open or a closed wetland, and if it says open, it means it keeps going. And then we have this additional mapping that was done, not on foot, but from existing information.

Q Okay. So this exhibit comes from the Project maps which to me weren't very specific about -- you can only zoom in so close to get an idea. But Dawn, if you could bring up, it's the Bates number is APP 26499, and this is actually a plan from the DES Wetlands and Army Corps Permit which shows in more detail how some of these wetlands are fairly close to the road, it appears to me. Within the right-of-way but close to the road.

So if the splice boxes and conduit trenching weren't underneath the pavement, they could potentially go through these areas, correct?

A (Carbonneau) Yes.
Q And let's making an assumption for a second because I know that the width is in question. How much can you fit in for the splice box and everything else and get beyond the pavement and the wetlands.

So just for assumption, all the work they said was going to be done within the right-of-way, no work's outside the right-of-way. The typical right-of-way width through a lot of this area is 66 feet. If there's no shoulder on the road, and we assume the pavement is 24 feet, right? 12-foot lane, 12-foot lane, no shoulder. If there's a shoulder it hurts, it's not a positive for you so I did -- I was conservative. 24 feet of pavement. So if you take half of that. So from the centerline of the road, 33 feet to one side, left or right, to the edge of the right-of-way. Of that, 12 feet is going to be pavement. So if you're outside the pavement that leaves 21 feet of slope, soil, area to build, and the Construction Panel testified that the trench box, the width, work area needed to put in a

splice vault was 12 feet. That leaves 9 feet really if you lined that trench box up with the edge of pavement, it only leaves you nine feet to the right-of-way.

A lot of those wetlands that appear in these plans appear a lot closer to the road then nine feet. So I'm guessing that there's going to be a lot more temporary impacts or maybe permanent impacts if the underground is off the road.

A (Carbonneau) It's possible. To the extent that they can select a side of the road with fewer wetlands or farther out wetlands, I think that's part of their goal here, but it's possible that there will be additional temporary impacts.

Q Okay. So and I think Mr. Wright talked about some of the DES conditions. Is there a rule DES has about increasing the impacts, temporary or permanent, on a Project more than 20 percent?

A (Carbonneau) Yes.

Q What does that rule consist of?

A (Carbonneau) It basically says that you can file for a Permit Amendment up to 20 percent of the original impacts without having to go back and

start over and submit a whole new Wetlands Application.

Q Okay. So in the underground section, you have 50 miles and what the Application says is you have zero square feet of permanent impacts and 3,400 square feet of temporary impacts. With this new design, there's a huge potential that in the underground section you'd be over that if the design shows it outside the edge of pavement.

A (Carbonneau) Well, they take the impacts of the Project as a whole. So there's 138 acres of temporary impacts. I think the idea is you can apply for up to 20 percent of that.

Q Right. It looks at all as a whole.

A (Carbonneau) The Project as a whole because it's one single permit. Yes.

Q I'll get to the overhead in a minute.

But before I leave the underground, one of the things that was talked about is the trench for the conduit, and the fluidized thermal backfill. So let me talk about one thing that was commented on about the, sort of this French drain. So now if the trench is under a wetland,

and you dig up the side of the road, you put in the trench, and it has this thermalized backfill which I think it was testified to is not impervious so water will flow. Is there a potential of draining a wetland in that area and having the water, if you will, go up and down the trench?

A (Carbonneau) I guess we couldn't necessarily rule that out as a possibility. My understanding is the fluidized thermal backfill is more permeable than, let's say, clay and less permeable than a sand for a gravel. So it's somewhat, it's in that range somewhere, and I don't know exactly where it will fall.

So it's not dissimilar from a lot of native soils in its permeability, but it will be different, could be different from what's there now.

Q And so this trench could in effect become a conduit to changing the hydraulics in that wetland?

A (Carbonneau) Well, it's possible, but at the same time you wouldn't necessarily want it to be impermeable because then it could completely

reduce flow across the landscape under the road. So, I mean, it could be a change, but my understanding is it's not too dissimilar from what's in the roadbase already for permeability. So our expectation is that the impacts may not be significant, but we haven't looked at that in great detail.

Q Okay. How would you quantify that if it did? So if this trench was the outlet of a wetland and the wetland changed, say, I wouldn't say drained the wetland but changed the hydraulics and lowered the quality of the wetland or so it didn't florish anymore. You changed the classification or it became smaller. Would that be quantified at all after the fact? I mean, you wouldn't know that until after the construction was done, correct?

A (Carbonneau) Right. That's true. The Project for areas that are going to be temporarily impacted, that we know are going to be temporarily impacted need to be monitored for a two-year period beyond construction. In this case, if it's a wetland that's not directly affected by the Project but could have its

hydrology changed, that might not necessarily be part of the monitoring plan originally, but impacts caused by the Project, the Project's not permitted to exceed the impacts. So if it came to the Project's attention that they had done something that modified a wetland to the point where it no longer functioned as a wetland, that would be considered an impact. In that situation, my expectation is that New Hampshire DES would look at what was provided for mitigation and determine if any additional impacts were adequately compensated for already in the mitigation plan, and, if not, they could potentially request additional mitigation.

Q But you haven't taken that design element into account to minimize the wetland effect?

A (Carbonneau) We looked at it to make sure that it wasn't something that was so permeable that it would clearly change the drainage or that it was totally impermeable and that it would also change the drainage.

So in any given location, we're not sure exactly what the effects could be. Kind of depends on what the native material is there

now.
Q The one thing I would just mention is that the fluidized thermal backfill from the DOT standpoint, my understanding from their comments is it's only being reviewed for its compaction suitability. It's not being reviewed from a hazardous materials standpoint, a specifications standpoint, or what the heat element is actually going to have. Do I understand that right? Have you heard of anything else?
A (Tinus) I think some material information was provided to DOT as well addressing some of those other aspects. I can't recall the name of the supplier, but I believe there's some technical information and references to specifications in the additional reference materials supplied to DOT.
Q Okay. All right. And this goes a little bit to what Mr. Wright had just asked about. For fear of bringing on the wrath of asking the same question, I will modify it a little bit.
Ms. Carboneau, when you were questioned by Attorney Manzelli of SPNF, she asked you about avoiding and minimizing wetland impacts in the

overhead section, and you responded with the following. And this was just last -- I forget what day it was. It was recent, and the transcript isn't up so I'll paraphrase since the transcript isn't available, but this is what my notes say.

There's small opportunities to avoid wetlands that exist, that Normandeau has done everything possible to help the designers change the plan to minimize wetland impacts. We've reached the point of diminishing return.

Do you remember that discussion and those type of comments?

A (Carbonneau) I do.

Q Okay. During the Construction Panel, and this would be great to have you both on the same side to clarify this.

During the Construction Panel testimony, we heard several times that the wetland impacts to the overhead transmission line were overpermitted; that the impacts were conservative, thus giving the contractor options. You've just answered that question from Mr. Wright. So you were aware of that.

A (Carbonneau) We're aware that, and I can see where this sounds like it's contradictory.

Minimizing impacts from our perspective was the location of the structures and the location of the access roads and the work pads, shifting those within the right-of-way to try and minimize those. But without having walked down every location with the contractors, there may still be some things that they need to shift within that footprint slightly. Or as we mentioned, they may be able to impact less and we're expecting that to take place.

But as far as minimizing during the permitting process, we were not trying to overly confine the contractors to have to try to build something that wasn't possible from their perspective, but we wanted to make sure that the temporary and permanent aspects of the Project, the design elements were in places that minimized impacts to the extent possible.

Q Okay. I didn't want to do this, but I think I will. Could we bring up the ELMO? Thank you.

So this is Committee's number 4 that I had presented to the Construction Panel. I have

written on it so you can see what the pads are and where the towers are. But one of the questions that I asked the Panel was this is the existing access road and this area, just for reference, this area is up in Millsfield. Dixville, I think. Dixville. It's through the Wagner Forest.

So they explained that this existing access route was a logging road that they used to access, and then the solid red lines represent the new access roads. So one of my questions was, it seems like an overkill. If you could access this pad from this road and this pad from this road, you wouldn't have to build this and you could avoid that wetland impact. And that's where they stated, well, it's basically overpermitted. We wanted to give the contractor options.

So really if you look at this, the access to this pad, this wetland here, you could avoid it by moving that access just a little to the north so that the access road to DC 205, if you move it forward, you have avoided that wetland impact. If you move the access to DC 204 over

here to the middle, you've avoided this wetland impact and this wetland. So you've sort of minimized the wetland impact. And then still again, you could eliminate the new access road to DC 203 to DC 204 and almost avoid that wetland impact. So in this one sheet, I've eliminated two wetland impacts and minimized one.

So that was my question to them, and I think it's more appropriate to you is how is that minimizing or helping the designers minimize or avoid wetland impacts?

MR. IACOPINO: Bill, would you leave that up? They may need it to answer.

A (Carbonneau) Yes. Thank you. Well, not being a contractor or a design engineer, I can tell you that construction is facilitated by being able to drive from one structure to the other without having to go through the structure that you've just placed there. So that's one reason why you'll see a work pad and then the access road sort of at the bottom of the work pad so it sort of bypasses the structure. Because in some cases these are large structural components that

they have to get from one place to another. And having, trying to wiggle around a structure that they just placed to get to the next one can be problematic. So one of those design elements is trying to keep the access road as straight as possible but not go right through the middle of the work pad of the previous structure because the structure is going be in the way at some point.

There may be slope issues, too, for example, your shifting of the line from DC 205 to the east, I believe that would be? West perhaps. May run down a slope that would be problematic for their equipment. It looks like a side slope there slightly. They may have already determined that that wasn't possible to make that shift of the access road.

You are correct that they might be able to eliminate this access road between the two work pads, and to the extent that they can do that in the field, they will. It's kind of a balancing act between making sure we don't eliminate what turns out to be the best access for the contractors by minimizing their options through

our minimization process. We have to sort of take their issues into consideration with this, and in many cases the design engineers have not been able to make shifts we've requested because of things that we didn't consider. Terrain, existing structures, other things that they believe that the equipment that they're using isn't going to be able to navigate.

So leaving the contractors some options, although some of those options may involve some wetland impacts, it was something that we didn't have enough, necessarily, input from the contractors on in order for us to take it out of the design completely.

MR. WAY: Followup, if I could?

MR. OLDENBURG: Sure.

MR. WAY: Ms. Carbonneau, one of the benefits of having the Construction Team before us was when suggestions might be put to them, Mr. Bowes was very clear that he'd make a commitment to go back and review the design. When you have something put before you like, say, Mr. Oldenburg suggested or that somebody else may have suggested, what's that process for

taking that suggestion forward and getting the same level of scrutiny that just so happened to happen because they came before you.

A (Carbonneau) Oh, yeah. Absolutely. The Construction Team or this Panel certainly can take any suggestions back and work through them and see if there's something that can be done in that case. Until the contractors do their walkdown, sometimes the commitment isn't as firm as we'd like it to be because they may see things in the field that make it obvious to them as to what they can do, but we have taken constructive criticism from others and tried to implement that in the plan set. Ultimately, there's definitely still opportunity to do that right up through construction.

MR. WAY: So the suggestions that are being put forth, let's say, today and from the previous week, they're being put on a punch list as getting the same level of scrutiny that we would be getting through approaching Mr. Bowes.

A (Carbonneau) Yes. Absolutely.

MR. WAY: Thank you.

BY MR. OLDENBURG:

Q So the Construction Panel also testified about the access roads, that the access roads aren't designed. They basically, they walked them and said yes, these two lines that are 24 feet or however far apart, that should be where the access is, but they use a bulldozer to make them. They have to be relatively flat from side to side. They also said that grade, it's construction equipment so the grade could be tolerated, have a steeper than normal grade. But I guess if, and on this same sheet, the access road between DC 202 on the far left and DC 203 appears to go through some pretty steep terrain, cutting crossways against the topography which to me if you're putting a dozer road in, you're going to have a pretty steep cut and fill line that I don't think, I can't imagine is going to stay within 20 feet or 24 feet, whatever your impact limit is.

So if they haven't designed the access roads and they haven't really determined what the cuts and fills are, how accurate are the wetland impacts associated with the access roads as well?

A (Carbonneau) Right. They're based on the design as its presented on the plans, and that's typical of a Project that's going through the permitting process. There may be some modification that get made in the field, in which case if there's a change to the impact area, then that needs to be cleared with New Hampshire DES before they do it. So I mean, there's a number of challenging locations on this site.

This is probably one of the most challenging areas, this portion of Dixville where we're on this fairly steep terrain. There are some existing logging roads but there's some new areas that will need to be traversed, and generally speaking, the pathway that's needed for the equipment is really 16 feet wide. So it does give them a little bit of leeway for creating some cut and fill slopes, and if that's not adequate in some locations, and it affects a wetland, then we would need to review that with DES.

Q The other example I gave them, and I won't put it up on the ELMO, but I think you've seen it

before, was in Deerfield where the two towers have to be placed basically in open water. I submitted it as Committee's number 5 and number 6. Where there are, the access road is an impact to that waterway. So I asked how they were going to do that, and they basically agreed with what you've been testifying is they do it in winter. Wait for the water to freeze. What their comment was is that they wanted to show a wetland impact in case that didn't happen or occur, and this was sort of a worst case scenario.

So I'm trying to play the fact against that on the underground section you've got no wetland impacts and it looks like you're going to have wetland impacts, but on the overhead section you've got overestimated wetland impacts. Is the intent or do you think it will even out or are you going to meet that 20 percent rule from DES and have to reapply?

A (Carbonneau) I think it will -- it was never intended to be an evening-out process. From the beginning, our understanding was that the underground section would be in disturbed

roadbed, and that's why the impacts were assessed as no wetland impacts there. To the extent that the design has to be modified or final design indicates something different, then we address that as it comes up.

In the case of accessing across wetlands, if we know that the wetland needs to be crossed and there are structures in it, we have to show some kind of an impact. We can't guarantee that there won't be. And in that case, we have to put something on the plans. Otherwise, DES is going to come back to us and say how are you getting out to this structure. What if in the odd situation you don't have enough ice to get out there during the winter to make this work. You're going to have to have some kind of an impact. And I've worked on two Projects with Eversource on that pond.

So the D118 line and the G146 line both have structures in that pond. They were able to do that work in the winter on the ice which was great. The impacts were very minor. But they also were able to get out to those locations from getting permission from a landowner to

access them differently which would have resulted, even if it weren't covered in ice, a much reduced impact. We can't make that assumption on this Project. Those are kind of the negotiations that happen with the contractors during construction.

So if there's a way they can build this to minimize those impacts they're going to want to do it because it helps them out as well, but we have to make an assumption that there could be impacts by putting those structures in the ponds.

Q How does it help them out? I mean, we have an approved wetland plan that allows them to build the Project exactly as designed. So I'll sort of repeat what Mr. Wright said is what incentive does the contractor have to do anything but what the plans say which is impact all those wetlands?

A (Carbonneau) Well, it can save them money. I mean, if they can access these without having to put down extra timber mats and worry about access or maybe the ice not being sufficient that particular year when they want to get out

there to do the work, then that could be an incentive to find an alternative route that doesn't go straight across the pond.

Q One of the things that I did and I sort of laid it out, I don't have the number, but for the Construction Panel, I sort of did the gut check of what has to be constructed in the overhead line. So if you went down the overhead line, their construction period is two years. That's what they basically said they were going to build the Project in. And you have 130 miles of access road, 1100 towers, 1100 crane pads for those towers. And if you did the math over two years, that means they have to have, they have to build at least 1100 feet of access road a day and two crane pads and two towers per day.

It's multiple crews, I understand that, so they have five, six, 10, 20 crews working all at once to get this work done, but a lot of the times you had mentioned the seasonal restrictions. But as you just sort of admitted, this is a sequential construction whereas you have to go from tower 1 to tower 2 to tower 3. Skipping the tower because it would potentially

have to be left for winter doesn't seem to be a viable option.

So a lot of the ifs/ands statements that have been made about we're going to restrict work here, we're going to restrict work there doesn't make sense that they can actually do that when a Project is so sequential. You just can't skip a tower or skip an area and go around.

A (Carbonneau) That is one of the things that the Construction Team is trying to work into their schedule right now to see exactly where those constraints are. Generally, the seasonal constraints aside from wanting to do as much clearing as possible in the winter and trying to access these open water areas in the winter, they're typically not affecting huge areas. They're often overlapping.

So, for example, open water areas are fairly limited on the Project route. But the Concord Pine Barrens has many competing overlapping restrictions. They're related to birds and wildlife and plants and a variety of things. So there will be sections where only

one aspect of the Project is limited to the time of year, for example, for northern long-eared bats, forest clearing wherever they've been detected is limited to the winter season. But other work after the clearing has taken place isn't restricted seasonally.

So some of the restrictions only apply to certain aspects of the construction, not all of the construction. And many of them are very specific in their location. So it's very complicated. There's no question about it. The Construction Team is grappling with that right now. These things are all going on a plan set. And they're trying to wrap their heads around how they're going to make this work.

Q And I have no doubt that it is extremely complicated when you take into account the plants and the birds and the bats and the winter and this, that and the other thing, it just seems extremely complicated and just hard to fathom how it's all going to get done in two years, but --

And this is actually my last question. Several times you given the explanation to

questions that DES, you have DES approval and you're going to meet the DES requirements. But it doesn't appear that DES has the final set of plans or the design plans for the underground, and we really don't know what the final impacts are going to be for the overhead section because the contractor can move their impacts or eliminate impacts or avoid impacts. So how do you manage, "I have an approval, but it's not what I'm going to build."

A (Carbonneau) During this process, if there are changes in the plan set, for example, in the underground, and that is all worked out, to the satisfaction of the SEC, those plans will be resubmitted to New Hampshire DES. And obviously, if there are changes in the impact that will be noted. During the construction process, any modifications have to be documented by the Monitors in the field, and DES has requested that the Monitors provide that to them at intervals. They want to make sure that the impacts are staying within the permitted amount, and if more occur, they're going to require more mitigation. That was their primary purpose.

But it all has to be documented on plan sets as to exactly what's happening where.

Now, our expectation is the impacts won't exceed what's out there, what's in the Permit Application at this time, and that they have a footprint that we all feel pretty comfortable is going to contain the work that's being proposed. Obviously, if there is a minor change in that, that gets reported to DES, and it all gets documented in the end so they can feel confident that the Project has done what it said, it's stayed within its permitted impact area, and if not, they have the documentation of what happened and why and they can deal with that.

That's happened on a number of projects I've worked on with Eversource. Things change a little bit in the field, they figure out they need a different foundation structure here or there, the impacts change a little bit, DES has been very responsive in addressing those things on the fly during construction.

Q Okay. I think that's all I have.

PRESIDING OFFICER HONIGBERG: All right. We will take our lunch break and return as close

to 1:30 as we can.

(Lunch recess taken at 12:26 p.m. and concludes the **Day 20 Morning Session**. The hearing continues under separate cover in the transcript noted as **Day 20 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 10th day of July, 2017.

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Cynthia Foster, LCR