STATE OF NEW HAMPSHIRE

SITE EVALUATION COMMITTEE

June 14, 2017 - 1:40 p.m.
49 Donovan Street
Concord, New Hampshire

DAY 16
Afternoon Session ONLY

{Electronically filed with SEC 06-21-17}

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 Whitaker	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	DENNIS MAGEE ROBERT VARNEY LEE CARBONNEAU SARAH BARNUM JACOB TINUS	PAGE NO.
Cross-Examination by Ms. Connor		4

E X H I B I T S

EXHIBIT ID	D E S C R I P T I O N	PAGE NO.
CFP 343	Northern Pass EIS meeting minutes, 7/23/13	34

P R O C E E D I N G S

(Hearing resumed at 1:40 p.m.)

PRESIDING OFFICER HONIGBERG: All right. Ms. Connor, although you said you had nothing further, we understood that you were just talking about those specific topics. You may proceed.

MS. CONNOR: Thank you very much.

CROSS-EXAMINATION CONTINUED

BY MS. CONNOR:

Q I wanted to start by bringing up Applicant's Exhibit 72. Ms. Carbonneau, when we were talking about the mitigation parcel you mentioned a Best Management Practice for the pine barrens. Is that what you were referring to in terms of Exhibit number 72?

A (Carbonneau) Yes. I believe that this is the document.

Q And it was my understanding that you referenced this Best Management document in connection with efforts that would be undertaken at the Concord Mitigation site to reintroduce the wild lupine and the Karner butterfly. Can you point to the section of this document that provides for that?

A (Carbonneau) No. That's not correct. This is specifically for managing the right-of-way, the existing right-of-way, not for any management work on the mitigation parcel itself.
Q And am I correct that this particular document, Exhibit 72, in fact says nothing specific with regard to the wild lupine?
A (Carbonneau) Well, I see the words wild lupine in there in the second to last paragraph. It is meant to be an overall management plan that will benefit wild lupine as well as all of the other plants that are relied upon by Karner blue butterflies and the other moths and butterflies that are listed, State-listed species, as well as some wildlife as well.
Q Would you agree that this Best Management Practice guide is primarily geared at making sure that other vegetation doesn't come into the site as opposed to doing anything in particular with regard to either the wild lupine or the Karner?
A No. I would disagree with that. The input that we received from Fish & Game and Fish & Wildlife was specific to creating the right mosaic of

plants that would promote a variety of wild lupine locations as well as other nectarine plants for Karner blue butterflies and sort of the right mix of the right vegetation for those species.

Q Perhaps I misunderstood your testimony, but it was my understanding that when you raised this document, it was in reference to how the mitigation parcel and/or the existing right-of-way could be managed to bring back the wild lupine or the Karner butterfly, and I just don't happen to see that in this document. I'm hoping you can point it out.

A (Carbonneau) That wasn't my purpose in bringing it up. When I described this right-of-way management plan, it was specific to the pine barrens habitat, the open pine barrens habitat that is in the existing right-of-way that currently does support lupine and Karner blue butterfly, and the goal is to ensure that it continue to do that in the future. It's the type of regular maintenance and disturbance that is required for these species to thrive and that's why they're there already, but this plan

helps tweak it so that it does that even better by specifically working towards the perfect combination of plants at different heights of different species as Fish & Game and Fish & Wildlife described would be ideal for these species going forward. It's a long-term plan, not related to the mitigation site itself necessarily.

Q And it is a long-term plan that's already in existence so it's not as if it's providing something in addition as an offset to what will happen should this Project be approved to go through the Concord wild lupine site.

A (Carbonneau) It's not currently being managed in quite this way. Right now, Eversource manages this right-of-way in a standard method, I believe, that is like just mowing it every three to five years. This plan requires a survey first to determine how much pitch pine and scrub oak there are, in what kind of mosaic, how much they should cut each year. So it's much more prescriptive so it is not implemented right now exactly, but it is designed to improve the habitat even further in the future.

Q Will this Best Management Practice be applied to the mitigation site or just the existing right-of-way?
A (Carbonneau) That will be up to the Fish & Game who we assume is going to be managing that mitigation site. So they may have something in addition to this. This is really specific to right-of-way management. Fish & Game may implement something a little different on the mitigation parcel.
Q So we have no idea what protocol will be followed on the mitigation parcel?
A (Carbonneau) We have a pretty good idea of what they might do based on what they do on all of the other places where they actively manage for Karner blue butterfly.
Q I'd now like to turn to bats. Can I bring up Exhibit 306?

Dr. Barnum, I think this is probably your area of expertise. Am I correct that Exhibit number 306 depicts a picture of an eastern small-footed bat?
A (Barnum) Because it's labeled as such, I'll accept it as such.

Q Does it resemble a small-footed bat?
A (Barnum) It does.
Q Thank you. Can you describe for the Panel for the level and the rate of the population of the small-footed bat in New Hampshire?
A (Barnum) The small-footed bat in New Hampshire like other locations is known to be rare, and precise information about its population is not available.
Q Has the small-footed bat been impacted by white nose syndrome?
A (Barnum) All the Myotis species have been impacted to some degree, eastern small-footed bats probably as well, but they are not the species that have been found dead in the thousands, and that could be because they're rare. To begin with, there never were a lot of them so there were less to be found. It could also be because they may be somewhat less susceptible than the other Myotis. It's unclear at this time.
Q Can you describe what white nose syndrome is?
A (Barnum) It's a fungal disease that is relatively novel. It first showed up in 2008 in

the State of New York, and it has spread rapidly since then. It causes up to 99 percent mortality of bats that overwinter in caves.

Q And how does it cause the bat mortality?

A (Barnum) There are a couple of different pathways. One thing it does is because it's, it's a fungus that basically spreads over the exposed skin, the membranes of the wings, the nose, the ears. The bats have to awake to remove it, and so they're burning energy each time they awake to do that over the winter. Normally, they would spend the whole winter in a state of hibernation. Every time they rouse they burn precious fat reserves so some of them are starving.

And then there's also an infection, the fungus can actually burroughs into the membrane, the wing membranes. So there's an infection sort of effect which while the bats are hibernating is suppressed, but once they arouse then the body kicks in and has this reaction and that can be fatal as well. Those are two pathways.

Q And you mentioned that this particular disease

has had less of an impact on the small-footed bat and more on other types of bats?
A (Barnum) Potentially, like I said. Their populations have always been smaller so it's difficult to say whether we're finding fewer bats, fewer small-footed affected because there are less of them to start with or just because it may not affect them.
They tend to hibernate in the coldest part of the cave, and they also go into hibernation later than other species and come out of it sooner so they also may also have less exposure, and because they're in the coldest part of the cave, the fungus may not grow as well on them, although it is a cold-loving fungus so that's why it's a problem for the bats.
Q I understand that you attended the Northeast Bat Working Group meeting at UMass Amherst this past winter?
A (Barnum) I was there. Yes.
Q And at that meeting, did you learn that the small-footed bat in terms of New Hampshire is, that the population is stable at the moment?
A (Barnum) That portion of the meeting, the State

reviews I don't believe are open to, I think that portion of meeting happened in a -- I wasn't part of that.

Q You mentioned that we don't know a lot about this particular bat, is it fair to take from that that we don't know a lot about its populations along this route? We don't know a lot about it in general?

A (Barnum) We assume that they're present along the route, yes.

Q And because we would assume from the type of habitat that's present along this route to find this bat, did the U.S. Forest Service request a habitat suitability assessment?

A (Barnum) This bat is a State-listed species so the U.S. Fish & Wildlife Service made no requests about how to assess the bat. Additionally, I didn't receive much guidance from the State from Fish & Game so I did decide, however, that a habitat evaluation was appropriate and conducted one.

Q Did New Hampshire Fish & Game recommend such a study based on GIS modeling?

A (Barnum) There was some discussion of that.

However, better than GIS modeling is actually going out and looking at it on the ground, and I have walked extensive parts of the Project right-of-way and feel that my direct observations were far superior to any modeling I could have done.

Q Can you describe or define what GIS modeling is?

A (Barnum) GIS stands for Geographic Information System, and so it refers to a whole family of different data products that you can put together to come up with information about the world outside.

Can you repeat your question?

Q I just wanted to make sure I understood and everyone else in the room understood what GIS modeling was.

A (Barnum) Was that sufficient?

Q That works. Instead of doing GIS modeling, it's my understanding that you began your study of bats potentially affected by the Project with a database search supplemented with aerial photos, is that correct?

A (Barnum) Yes.

Q Can you explain how that protocol is different

from either a habitat suitability study or GIS modeling?
A (Barnum) Well, aerial photos are a form of geographic information. So the information I was considering were aerial photos. I didn't add any additional geographic data layers to that consideration because, as I mentioned, I have seen in person what an awful lot of the right-of-way looks like. So by looking at the aerials and comparing that with my own personal experience walking the right-of-way, I was able to draw what I feel is very accurate conclusions about what was represented in those photos.
Q Do you agree that identifying potential bat habitat is an imprecise science?
A (Barnum) To the degree that the information available in the literature about bat habitat may be imprecise, then, obviously, what is being identified is imprecise.
Q You're aware that Counsel for the Public retained Dr. Scott Reynolds from Northeast Ecological Services?
A (Barnum) I am.
Q And am I correct that Dr. Reynolds is an expert

in this area?
A (Barnum) I understand him to be such, yes.
Q And he prepared, did he not, a GIS model of potential roosting locations along the route?
A (Barnum) Yes, he did.
Q Can we pull up Exhibit 332? Yes.
You've seen this before today, correct?
A (Barnum) I have.
Q It's my understanding that the red bubbles reflect potential sites that Dr. Reynolds identified that were also identified in your study? Is that correct?
A (Barnum) That's what the caption on the figure says.
Q And the purple bubbles reflect areas where there are potential habitat based on aerial photos, correct?
A (Barnum) That's what the caption says.
Q And the yellow stars reflect areas that Dr. Reynolds concluded were likely habitat spots based on GIS modeling?
A (Barnum) That's what the caption implies, yes.
Q Would you agree that there is a fair amount of variation depending upon which method you use as

to potential bat habitats along this path?
A (Barnum) Yes, I would agree. That's why I think that actual, on-the-ground, visual inspection in person is the best way to make a determination whether the habitat might be suitable or not.
Q Well, it's my understanding that the small-footed bat roosts in rocky outcrops?
A (Barnum) That is correct.
Q So if you're walking the path, you're not actually walking on these rocky outcrops, are you?
A (Barnum) In some cases, yes.
Q Not in all cases, are you?
A (Barnum) Not in all cases, but --
Q You would need rock climbing gear; would you not?
A (Barnum) In this particular right-of-way, none of the rocky outcrops are so extreme that you would require that kind of gear. Some places you need to go around because you certainly don't want to be going down them, but in all cases you can certainly walk around, look up, observe them, or actually stand on them.
Q It's my understanding that you concluded that

this Project may impact three known small-footed bat locations.

A (Barnum) So of all the locations that identified to potentially have suited habitat for small-footed bat roosting, there are actually four locations where the Project's structure might actually be placed. So there are many locations where there's suitable habitat. There are four that are potentially going to be impacted by construction of the Project.

Q It is my understanding that once through modeling you identified a potential habitat, to determine whether in fact that potential habitat might be a known habitat, it was followed up with further studies; is that correct?

A So the locations which look like there's potential habitat, and there might be an impact on it, we placed acoustic detectors and collected data about the kind of bat species that were present.

Q And, obviously, those acoustic detectors, if you start with a smaller number, then you are excluding a large number of sites of potential bat habitats; in other words, all of the yellow

stars and all of the purple bubbles?
A (Barnum) Well, those are not my locations so I wasn't looking at that to start with.
Q I understand that.
A But yes, we excluded areas were not going to be impacted. There was no reason to determine whether bats are present there or not because we were not going to have an impact on them. We limited our examination to those locations where an impact had the potential to occur.
Q And it's my understanding that in reducing the scope of potential habitats, you excluded sites which, in your opinion, provided inadequate protection from temperatures for the winter; is that correct?
A (Barnum) That's not correct. The reason I excluded sites was because they were not going to be impacted by the Project. That was the only basis on which I excluded an area from the acoustic survey.
Q Can we pull up Appendix 36 to 9? Can we zoom in on the bottom paragraph?
Dr. Barnum, I put on the screen here a portion of the report that you put together on

that with regard to this particular Project. I'm assuming you recognize it?

A Yes.

Q One of the statements that you made in the report on bats is that, "impacts could be avoided or limited if construction occurred in the time of the year when bats are active but when they didn't have pups so that they could escape as needed."

Are you aware of any empirical studies that support this theory that bats if subjected to construction noise or blasting will escape?

A (Barnum) So I'm not. There are no empirical studies available, and upon further consideration of this issue and in coordination with Fish & Game, we are revisiting this recommendation, and we are going to design an avoidance minimization recommendation that will consider the fact that there is no empirical evidence suggesting that bats can escape. So this is going to be reworked.

Q So, in other words, there's no scientific basis for this proposition that bats are going to be just fine because they can fly out on their own?

A (Barnum) Right.
Q Once the blasting starts.
A (Barnum) That is correct. There is no empirical evidence that they will fly out. There is no empirical evidence that they won't. It's just a complete unknown. There have been some suggestions to do some studies, but to this date, nobody has followed through and collected that information.
Q As we sit here today in front of the Panel, we then don't have an avoidance BMP with respect to small-footed bats because this was the one that you designed.
A (Barnum) Yes. That's correct. Currently, I'm actively working with New Hampshire Fish & Game to design avoidance minimization measures for small-footed bats.
A (Carbonneau) If I might, there is a condition in the New Hampshire Wetlands Permit Conditions that we continue to work with New Hampshire Fish & Game and resolve any ongoing areas of AMM development prior to construction, and we are actively engaged in that.
Q Can we pull up that Best Management which is

Exhibit 336?

Small-footed bats is in the third column at the top.

So I understand from your testimony that it is your expectation to add to the minimization protocol, but for the moment, what we know is that you are recommending that roosting habitats be avoided between June 1st and July 30th; is that correct?

A (Barnum) That's currently what's in this recommendation here, but that is going to be changed.

Q Do you know in what respect it's going to be changed in terms of length of time or seasonal restrictions?

A (Barnum) I don't know at this point.

Q The second bullet point indicates that if these features cannot be avoided, which sort of sounds similar to if a particular practice is not practicable, that there's going to be some kind of survey between June 1st and July 30th; is that still the case?

A (Barnum) I believe that the avoidance minimization measures that we will be adopting

will involve surveys, yes.
Q And will those surveys be conducted during the course of construction after construction has started?
A (Barnum) That's part of what has to be decided. I mean, bats are only active and available to be detected during certain times of the year. So any avoidance and minimization measures that rely on survey need to take that into account. So there has to be a decision about at what point in the construction process it would be most appropriate to do the surveys, and that's sort of the crux of discussions.
Q The Best Management Practice also indicates that potential habitats must not be subject to blasting from October 15th through April 15th, and that's because that's when the bats could be hibernating; is that correct?
A (Barnum) Correct. Yes.
Q Actually leaves you a really small window of time in which blasting could occur, does it not?
A (Barnum) That is correct.
Q Especially if the June 1 to July 30th time frame is expanded?

A (Barnum) I believe that the use of the surveys to detect whether bats are actually present or not is going to be important to how this plays out.
Q Doesn't this Best Management Practice concede that the bats could be present basically at any point in time during the calendar year making it impossible to blast without impacting then?
A (Barnum) That is correct. That's why survey is important. Survey techniques to detect whether they're actually there or not will become important to the whole process.
Q Is there a survey that can detect a hibernating bat?
A (Barnum) Not to my knowledge which is why the surveys have to take place during the nonhibernating season. You could do some infrared type-survey. However, I would believe the bats would be deep enough in the crevasses that that wouldn't work so --
Q Do we know anything about this preblasting survey in terms of whether it would involve bat calls or calls manually vetted so as not to include the small-footed bat?

A (Barnum) If we used an acoustic survey, the analysis of the acoustic data after it's been collected would be appropriate to the species, and it would follow any recommendations given to us by the agencies to satisfy their needs in terms of identification.
Q And who is going to be responsible for identifying the sites, monitoring them acoustically, analyzing the data to determine the presence or absence and then authorizing the ability to move forward with blasting?
A (Barnum) That will be the responsibility of the environmental monitor.
Q Is this Project going to have an environmental monitor exclusively for bats?
A (Barnum) If the AMMs call for those skills for somebody who has that, who's qualified to do that work, then the Project will need to hire an environmental monitor who can do that work.
Q That's why we're kind of in an unfortunate Catch-22 because you've told me that the small-footed bat BMPs are going to be rewritten so I don't know what they're going to call for, and no one else here in the room is going to

know.
A (Barnum) Correct.
Q Does this mean we're at this proceeding prematurely?
A (Barnum) I don't understand your question.
Q Well, how can we determine what impact this Project is going to have on these bats if we don't have an inventory or Best Management Practice or an avoidance practice?
A (Barnum) The conditions of the permit that's being issued by the DES requires that we meet those standards in order to move the Project forward.
Q Does the Applicant have the right to overrule whatever determination is ultimately made by whatever environmental monitor you hire for this part of the project?
MR. WALKER: Objection. This calls for a legal conclusion.
PRESIDING OFFICER HONIGBERG: Ms. Connor?
MS. CONNOR: All right.
BY MS. CONNOR:
Q Do we have any protocol as to how the environmental monitor will interact with the

Applicant?
A (Carbonneau) At this time, we don't know exactly who the environmental monitors will be. Presumably, they will be hired by the Project. The requirements of the permit conditions and the avoidance and minimization measures indicate that the individuals who perform environmental monitoring associated with wildlife or rare plant avoidance and minimization during construction have the appropriate credentials to do that work, and that is a commitment that Northern Pass has made. So those individuals will have a variety of responsibilities. Implementing a bat survey could be one of them. They need to have the credentials that Fish & Game is satisfied with in order to do that work.
Q In terms of timing as we move forward, we know that we can only do this potential survey of the bats during the summer. Is there a proposal for some type of survey to be done this summer?
A (Barnum) So when we did our bat survey in 2015, we did specifically survey for small-footed bats, and of the locations that we surveyed for them, we did detect them in one location. So we

know they're present. There is no proposal currently to survey this summer, but if it's part of the avoidance minimization measures for the Project, there will be appropriate survey done at an appropriate period before construction occurs.

Q Well, we know that the bats aren't going to fly away when you start blasting, and I understood from your answer what we're going to do instead is have some kind of survey but nothing is planned.

A (Barnum) We don't know if bats will fly or not. There's no proof that they will and no proof that they won't.

Q But you've decided to abandon that as a BMP?

A (Barnum) It seems more prudent to confirm beforehand whether they're there or not.

Q What you're telling me, as I understand it, is there's no process yet or no plan for how you're going to decide whether they're present on a going-forward basis?

A (Barnum) We'll conduct a survey and the survey will be designed to either detect presence or absence.

Q But we don't know when the survey is going to be conducted, we don't know who's going to do it or how it's going to be done?
A (Barnum) The process plays out that way. It's the standard sort of approach when you've got a construction project like this. You may make a plan for what you're going to do before the construction happens, and then as the timeline of the Project progresses you implement that plan, and this will be part of that plan.
Q But doesn't that preclude this Committee's ability to review the merits of the plan?
A (Barnum) That Committee will have to make that decision, yes.
A (Carbonneau) The plan will be reviewed by New Hampshire Fish & Game so we do know that the experts in the field will have that input into the plan, and we're talking about a fairly limited number of locations along the Project route. So they are areas that can be returned to later on.
If construction in those locations is imminent, then the survey will be conducted in a timely manner. It doesn't mean that work on the

Project cannot begin, but these are very limited locations, and they will be thoroughly evaluated with input from Fish & Game prior to any work that could impact small-footed bats in those locations.

Q Have you identified the size of the population of the four locations you discovered?

A (Barnum) So the four locations that have potential habitat that might be impacted by the Project at one of those locations we had a positive finding from the acoustic survey. Acoustic surveys can tell you presence or absence. They can't give you any information about population size. So we know we had a positive hit at one location, and that's the information we have.

Q Can you describe what mist netting is?

A (Barnum) Yes. It's using a fine mesh net to capture bats.

Q Was mist netting used as a mechanism to determine potential populations at any of the four locations?

A (Barnum) No. The Project has not implemented mist netting for any species at any location.

Q Why not?
A (Barnum) The surveys we did were all presence/absence surveys, and the US Fish & Wildlife Service recommends acoustic survey for presence/absence surveys. You can use mist nets, but they also approve the use of acoustic surveys.
Q Is mist netting more precise than acoustic?
A (Barnum) You can actually capture the bat in your hand, you can take a look at it, you can get a definitive species assessment. The amount of area that you're surveying with a mist net is very limited. The amount of area that you're surveying with acoustic survey is also limited. They both have limitations. I wouldn't say that mist netting is more precise. It's just a different approach.
Q Am I correct that New Hampshire Fish & Game indicated that if you were unable to guarantee clearing out of season, then some level of both acoustics and targeted mist netting was required?
A (Barnum) No. That's not correct.
Q I'm sorry. U.S. Fish & Wildlife.

A (Barnum) U.S. Fish & Wildlife requested that we follow the Indiana Bat Summer Guideline Survey protocol. That also applies to northern long-eared bat which was the main target of our survey, and as long as we followed that protocol, they were satisfied with what we were doing. We indicated to them we'd be using the acoustic approach, and they indicated that that was sufficient.

Q I'm looking at the July 23rd, 2013, meeting minute notes. I'm not sure if we're able to pull these up? I can put it on the ELMO. Okay.

(Discussion off the record)

BY MS. CONNOR:

Q These are the meeting minute notes from July 23rd, 2013. I'm going to flip the page because that's where it has the part that I was interested in, but I wanted you to know where I was reading from.

I'll give you a minute to read what I circled in red pen.

So am I correct that, according to these meeting minutes, if any of those bats were found through the acoustic study, in fact, you were

asked to do mist netting?
A (Barnum) If Northern Pass wasn't able to guarantee clearing out of season, then some level of survey was required. In the locations where we have detected northern long-eared bat through our survey or have an inclusive result which might or might not be in the northern long-eared bat or in the locations where the survey didn't provide enough data to make a conclusion, the Project has guaranteed out-of-season clearing at all those locations. So we met the request here.
Q With the disclaimer that I know nothing about bats, I read this sentence to suggest that unless you get no hits acoustically that you're supposed to mist net. Am I missing something?
A (Barnum) Yes. That's not how I understand this sentence.
Q You understand it to not impose a requirement for mist netting?
A (Barnum) If Northern Pass is unable to guarantee clearing out of season, then, blah, blah, blah. So in those locations where we we're not able to make a determination that the bat wasn't

present, we will be clearing out of season, the project will clear out of season. Therefore, no further survey is required in those locations.

Q So no mist netting is required because you're going to clear out of season.

A (Barnum) Correct.

Q And yet the Best Management Practices don't require that. So how do we know you're going to clear out of season?

A (Barnum) Our Best Management Practices do state that we'll clear out of season in those locations where we either thinks bats are present or we don't have enough data to make a determination.

Q And there's no escape clause if it's not practicable?

A (Barnum) There is no escape clause.

Q Okay. So you're telling this Panel that you will absolutely clear out of season.

A (Barnum) In those locations where we think bats might be present, where we don't know for sure whether they're there or not or we don't have enough data. Location where we did the survey and we got no hits, then those locations could

be cleared in season.

PRESIDING OFFICER HONIGBERG: Ms. Connor, is the document on the ELMO an exhibit already marked or not? Seems like the answer might be no.

MS. MERRIGAN: I don't believe it is, but we'll mark it, and I'll have it emailed and loaded up tonight.

PRESIDING OFFICER HONIGBERG: Okay. Thank you.

MS. MERRIGAN: You're welcome.

MR. IACOPINO: Do you know what number it will be?

MS. MERRIGAN: It will be Counsel for the Public's Exhibit 343.

BY MS. CONNOR:

Q All right. I'm going to move on to the northern long-eared bat. Can you explain what this animal is?

A Northern long-eared bat is another species of Myotis. We have three Myotis species in New Hampshire: little brown, northern long-eared and small-footed. The northern long-eared bat was once one of our most common bats. Widely

distributed, abundant. If you went out and surveyed bats in any location in New Hampshire, you would have expected to detect this bat. They have been severely decimated by white nose syndrome, up to 99 percent mortality, 100 percent in some locations. As a result of this precipitous drop in population, they've been listed as threatened by the U.S. Fish & Wildlife Service, and that listing occurred in 2015. They're also listed by the State of New Hampshire.

Q And do I have up on the monitor here Exhibit number 305, a picture of a northern long-eared bat?

A (Barnum) Again, because it's labeled as such, I'll accept it as such.

Q Now, it's my understanding that there is no inventory of northern long-eared bats. We just know that there are very, very few of them left because of white nose disease?

A (Barnum) All researchers who work on bats, there's a consensus that that is the fact for northern long-eared bats.

Q Are there long-eared bats implicated by this

Project?
A (Barnum) Please clarify your question.
Q Well, does this Project go through habitat where one would expect to find northern long-eared bats?
A (Barnum) Yes, the entire State of New Hampshire. This is a forest dwelling bat. Like I said, it used to be found throughout the state in pretty much every forested habitat. So the entire State of New Hampshire is suitable habitat for this species, and the Project passes through, you know, the state. It's all suitable basically.
Q Can we pull up Exhibit 336? You found it before I did.
The very bottom of middle column here on Exhibit 336, it's my understanding that in terms of Best Management Practices for the long-eared bat consists of one bullet?
A (Barnum) Correct.
Q And that is no tree cutting shall occur during the active season, April 15th to September 30th, correct?
A (Barnum) Yes.

Q You mentioned that the northern long-eared bat is forest dwelling. Do they also dwell in the trees beyond that time frame?
A (Barnum) No. This seasonal closure reflects their behavior to hibernate in caves, and so after September 30th and before April 15th, generally speaking, they're going to be in their hibernacula and not in the trees.
Q This Best Management Practice indicates that no tree cutting shall occur during the active season in, quote, "known," unquote, northern long-eared bat locations.
A (Barnum) That's correct. And that should be modified to reflect known locations, locations where we may or may not have them and then the locations where we don't have enough data to make a determination.
Q So the northern long-eared bat BMP is also going to be amended?
A (Barnum) Correct.
Q And can you give that to me one more time as to how you're going to amend it?
A (Barnum) So locations where the bat is known to be present, locations where the bat has the

potential to be present based on the data that we got was ambiguous. We couldn't determine whether there were northern long-eared bats or not. And locations where we don't have enough data to make any determination at all.

Q Given those additional locations where know tree cutting is going to occur between April 15th and September 30th, can you give this Panel some idea of how many locations we're talking about?

A (Barnum) It's about 40 kilometers of the Project.

Q The Best Management Practice says that in these areas, no tree cutting shall occur. No tree cutting within what zone? Five feet, 100 feet, a mile?

A (Barnum) No tree cutting within the right-of-way.

Q So if there is a bat that is hibernating in a tree right outside the right-of-way, trees can be felled?

A (Barnum) Bats don't hibernate in trees. Bats hibernate in caves.

Q You're right. I should have used the word roost. Sorry.

A Yes. They're roosting.
If the bat is not within the right-of-way, the tree will not be felled. I mean, we're only felling within the right-of-way. So if the bat is outside the right-of-way in a tree, if it's outside the right-of-way, that tree won't be felled, and it won't be subject to impact.
Q And all of the trees that are felled are going to line up neatly right inside the right-of-way?
A (Barnum) To the degree possible, yes, because there are other considerations that the, they need to, it's not, if it's not their property, whatever, the trees need to come down inside the right-of-way.
Q Are there recognized protocols where Best Management Practices identify and prohibit construction activities within a particular buffer zone from known roosting sites?
A (Barnum) There are.
Q And why is it that you're not considering that Best Management Practice for the northern long-eared given how precarious its situation in New Hampshire now is?
A (Barnum) We are following the guidance that the

U.S. Fish & Wildlife Service provides through the 4(d) rule, and that guidance states that you need to avoid clearing within areas that have a known maternity tree or hibernacula, and we don't have any known maternity trees or hibernacula within the right-of-way.

Q Would you agree that a Best Management Practice that also included a buffer zone might be a preferred practice for purposes of safeguarding the northern long-eared bat?

A (Barnum) If we had those resources, we would have followed those buffers. However, we don't have those resources within the right-of-way.

Q Did the Applicant generate an environmental monitoring plan?

A (Barnum) We don't have anything labeled as such.

A (Carbonneau) That's right. We have several monitoring plans that are required as a condition of the Permit Applications. We have notes about what the environmental monitors have as part of their responsibilities on the Project. Those are in plan sheet notes. We have monitoring requirements for restored wetland areas.

So there's a variety of environmental monitoring requirements, some of which have plans already and some of which are identified as needing to be completed 90 days prior to construction, for example.

Q Did the Applicant generate a compensatory preservation forest plan?

A (Barnum) There's no such plan. The mitigation does include 150 acres of land, most of which is forested.

Q Did the Applicant generate a postconstruction monitoring plan?

A (Barnum) I'll let Lee speak to that.

A (Carbonneau) We have postconstruction monitoring requirements in the permit conditions that apply to restored wetland areas and wild lupine temporary impact areas.

Q But no postconstruction monitoring plan with respect to bats?

A (Carbonneau) Correct.

A (Barnum) Correct.

Q Did the Applicant generate a construction blasting impact plan which I understand was requested by New Hampshire Fish & Game?

A (Barnum) We don't have anything yet.
Q Did the Applicant develop a programmatic agreement with impact on northern Myotis?
A (Barnum) So at one point during discussions about northern long-eared bat prior to its listing, there was a discussion of having a programmatic agreement in order to determine how we were going to survey for the bat and what the approach to minimization would be.

However, since the bat was listed in 2015, and U.S. Fish & Wildlife service issued general guidelines about how all projects should approach the species in terms of survey and then avoidance once survey had been conducted, the guidance that is applicable to all projects all throughout the US became the document that we followed instead of generating our own specific programmatic for this Project.

Q Am I correct that that particular agreement as well as all the other plans that I was referring to were items of discussion that the Applicant was going to at one time produce?
A (Barnum) They're all items that were discussed. The listing of the northern long-eared bat and

the adoption of general guidelines that were to be used throughout the US for all types of Projects superseded a lot of those discussions.

Q So we're left with a Project with an application that is pending that, at least with respect to bats, sounds like there's a lot more work to do.

A (Barnum) For the northern long-eared bat, we've conducted the surveys, we've determined where the bat is present, where we think it might be present. We know the locations where we don't have enough data. We've submitted our information to the agencies, the agencies have accepted the information we've submitted, and we feel very confident that the plan we have for northern long-eared bats going forward is sufficient.

Q You left out of that answer anything about the small-footed bat.

A (Barnum) The small-footed bat is not regulated by the U.S. Fish & Wildlife Service. We don't have the same level of guidance or specificity for that, which is why we are currently working with New Hampshire Fish & Game to develop similar guidance because we don't have that same

national guideline to apply to that species.
Q And without any of that information, how is it we can determine whether this Project will or will not have an unreasonable impact upon the small-footed bat?
A (Barnum) The locations where we potentially might impact the bat are very limited, and the work we're doing with the agencies is appropriate. It's an appropriate way to move forward when you have a species where there aren't well-established guidelines and procedures, and we feel confident that what we come to for an agreement with Fish & Game will provide sufficient protections for that animal.
Q I'm going to move on to deer. I don't know if that's still you, but if it is, we can have a discussion about deer.
A (Barnum) Okay.
Q Can you describe for the Panel what a deer wintering area is? Commonly known, apparently, as a DWA?
A (Barnum) Yes. Deer Wintering Areas are the locations where white-tailed deer will spend the winter when conditions are right. There are

locations where the snow depths are limited, where there's typically softwood overstory to protect from wind, also keep the temperatures a little higher there so just a place where the deer are going to have less stress and expend less energy because the snow isn't as deep and the weather conditions aren't as harsh. Typically, they also provide some level of browse so that there's something to eat.

Q And am I correct in imagining that a deer wintering area would be a location where there would be a number of deer clustered together?

A (Barnum) Yes. The higher value Deer Wintering Areas will have a number of deer, and one of the things that they'll do since there's a bunch of them is they'll create paths and all be walking in the same place, and that also helps with conserving energy because obviously it's easier to walk in a path that the other deer have stompled down already.

Q Is there any average size to a deer wintering area? In other words, do you have to have a certain number of deer within it to qualify to be a DWA?

A (Barnum) No. Other states may identify their Deer Wintering Areas in different ways, but in New Hampshire there are no parameters like that that are applied.
Q What is an MCA?
A (Barnum) MCA is a moose concentration area. Moose Concentration Areas are somewhat similar. Moose are not nearly as limited by deep snow and cold temperatures as deer. They are designed to survive those conditions. So MCAs are generally places where moose are finding browse and a lot of times it's counterintuitive. They're actually up in higher elevations, where the conditions may be harsher but because of the wind might make the snow a little less deep, the browse is exposed. And MCAs are also less static on the landscape. DWAs tend to be very used repeatedly over generations by deer whereas MCAs can move around in response to how the vegetation is succeeding. If one place the vegetation grows to a certain level and is no longer good browse, the moose might start using a different location where the browse is good so they're a little trickier.

Q And how are either the Deer Wintering Areas or the Moose Concentration Areas impacted by this Project?
A (Barnum) Removal of the vegetation would remove the features that are in part responsible for making those areas into MCAs or DWAs.
Q All right. I've enlarged the Deer Wintering Area Best Management Practice in Exhibit 336. This indicates that the Applicant should avoid work in these areas, again, when practicable. When would it not be practicable to avoid work in the DWAs since they are important to that particular species?
A (Barnum) Construction has many considerations, not all of which I'm privy to, and so those considerations need to be made when deciding whether it's practicable or not.
A (Carbonneau) One potential conflict is where there are wetlands, for example. Wetlands are best cleared if you're doing work in them or worked on during frozen conditions in the winter so there's a conflict there. And it's relatively common for DWAs to be located in wetlands so it's absolutely an area where

conflict might occur.
Q In that particular instance, you have to choose between the deer and the wetlands?
A (Carbonneau) Yes.
Q The Best Management Practice which indicates that you should avoid work when the snow depth is deep, what's the significance of that? The 16 inches or greater?
A (Barnum) That's a standard that comes from the literature. The literature, you'll see references often to 16 inches or greater being the conditions where deer start to yard up. Crusted snow is also really important, too, though.
Q The point of my question is why is that so? I understand, it's in the literature but why?
A (Barnum) Because deer are that tall. At that point, it's hard for them to walk through the snow, and as cloven-hoofed animals they don't have much surface area on their feet compared to their body weight. So at some point, based on how tall they are, how long their legs are, it just becomes really difficult to move and they're expending a lot of energy in order to

walk through the snow particularly when it's crusted.
Q So would that size differential explain why the avoidance of work in the moose areas is 30 inches or greater as opposed to 16?
A (Barnum) Absolutely. Exactly.
Q And again, I think we've had this discussion repeatedly now with various species, but the determination of whether or not it's practicable comes down to the environmental monitor, the contractor and the Applicant?
A (Barnum) Yes. And also the Agency would be part of the discussion.
Q According to the transcript from the May 31st hearing before this Panel, Kenneth Bowes was asked about this concept of the independent third party oversight, the environmental monitor, and I understand that it was recognized that this person, whoever they are, should indeed be independent. Do you agree that that's important?
A (Barnum) Well, somebody has to pay that person so --
Q That is true. But then how do you assure that

the environmental monitor is independent?
A (Barnum) There's going to be multiple monitors. Monitors hired by the construction company. And they'll be monitors from DES? Is that correct?
A (Carbonneau) We don't know.
A (Barnum) So there's different layers of oversight.
Q Is there any written protocol to your knowledge explaining how the environmental monitor is selected?
A (Barnum) I'll have to defer to Lee on that.
A (Carbonneau) I don't know that there's anything written about exactly how the selection takes place. If there is, I'm not aware of it. What we do know is that the monitors who are responsible for wildlife-related issues need to have adequate credentials to assess those particular resources that they become responsible for, and the same would be true for anything related to rare plants.
Q And because we're talking about a wide variety of species from the lupine to the moose, is it fair to say we're going to need environmental monitors from many different backgrounds?

A (Carbonneau) There will be certainly more than one monitor, and depending on their credentials, will depend on how many are needed and where they get deployed.
Q Should the environmental monitor have the authority to halt construction?
A (Carbonneau) Yes.
Q Is there anything that you're aware of that's written either in a Best Management Practice or a protocol that indicates whoever is identified as an environmental monitor or monitors on this Project will have that authority to halt construction if he or she determines it appropriate?
A (Carbonneau) I'm not aware of that at this time.
Q So we agree that they should have that authority, but we don't know if they will have that authority.
A (Carbonneau) Again, I have not seen anything in writing to that effect. I don't know if Jake Tinus, are you familiar?
A (Tinus) I'm not familiar with that aspect as you just described, but I do recall from the Construction Panel discussing that they envision

the monitors to be sort of spread out geographically, one perhaps in the north, one in the central part and one in the southern part that would oversee the work for Eversource, and then contractors would also have their own set of monitors. And DES and these, the monitor from Eversource and the monitor from the contractors would meet regularly and be able to make decisions on whether or not an action would require, you know, some level of stopping of work, for example, or some other activities that need to be rectified. I'm just trying to reiterate what I recall the Construction Panel saying for you.

Q I appreciate that since I wasn't at that Panel. But what I'm hearing from your testimony, it sounded as if Eversource would have an environmental monitor, the contractor would have one. I'm not hearing a description of one that is truly independent that's representing just the animals or the plants that are impacted here.

A (Tinus) Well, I think the person that would be responsible for monitoring work as it's relating

to a particular species is going to need to know that there's certain protocols they need to follow to protect that species. To be a representative for those species. That's part of the role of the monitor.

A (Carbonneau) It's in the best interest of the Applicant who holds these permits to comply with all of the permit conditions and the avoidance and minimization measures because that becomes part of their permit, and if they violate that, there are consequences. So it would make sense that that monitor would have the ability to prevent the Applicant from getting into trouble by not complying with these in whatever fashion is appropriate for the event.

Q Given that all of the Best Management Practices contain an exception for things that are not practicable, it seems truly important to have an environmental monitor that's both independent and with authority to halt construction, and yet I understand from your testimony we don't have any written assurances that that's going to happen.

A (Carbonneau) I guess the idea of what is

independent is somewhat subjective, but it is certainly the intent of the Project as it's been explained to me that the people who are responsible for making sure these permit conditions are complied with have the ability to actually do that job because it's in the Applicant's best interest to do that.

And I don't agree with the premise that there's a way out of all of these. I think that's not the case. In all cases, if there is practicability issue, it is something that needs to be reviewed in conjunction with the experts at either Fish & Game or DES or National Heritage Bureau, and that is not something that the Project can just override at their will.

Q Would you agree that if we had a written protocol or a Best Management Practice that indicated the various factors that would go into deciding whether a Best Management Practice could be avoided based on practicality that we'd have a better sense of what process this environmental monitor is going to go through?

A (Carbonneau) I think there's probably too many possibilities that I may not even be aware of to

be able to articulate that that well in a sentence.
Q Would it be very difficult to put in a bullet, BMM, that the environmental monitor shall have the authority to halt construction?
A (Carbonneau) It's not up to me to put that in there, but I don't see how that would necessarily be a problem.
A (Tinus) Could I just add that there is a requirement, a permit condition requirement that the Applicant produce a document that's the Best Management Practice and inspection monitoring protocol for construction activities. So a lot of the particulars will be spelled out in that, and that's due to DES within 90 days of construction. So there already is a permit condition allowing further documentation of how this process will play out.
Q Back to the Deer Wintering Areas. DWAs. Am I correct that the Project path intersects 17 DWAs?
A (Barnum) 18.
Q 17 that were identified by Fish & Game and one that was previously unmapped?

A (Barnum) Right. They know about it. But yeah, it's not mapped.
Q That points out, does it not, that the maps are not necessarily up to date?
A (Barnum) They, yeah. They were done in the '90s, and they've been tweaked, but they are not necessarily completely up to date.
Q And that 18 DWA figure does not take into account any DWAs that might be located immediately outside of the right-of-way, correct?
A (Barnum) Does not.
Q And yet would you agree that those areas will be impacted by construction given the distance deer travel?
A (Barnum) They have potential to suffer disturbance effects during construction, that is correct.
Q It's my understanding that Vermont Fish & Game includes a construction buffer in addition to the DWA to encompass areas adjacent to the right-of-way. Would that be a Best Management Practice to adopt in this case?
A (Barnum) It could be.

Q Because that way you would avoid the hardship which the deer are going to incur right outside the right-of-way?
A (Barnum) If construction occurs during winter, there's potential for the deer to be affected by that activity.
Q But the Best Management Practice doesn't currently include a buffer zone?
A (Barnum) It does not.
Q Is Vermont's designation of 300 feet, is that reasonable? Should it be more? Should it be less?
A (Barnum) It appears reasonable on the face of it, yes.
Q If we were to add a 300-foot adjacent buffer to the 28.3 acres currently implicated by the DWAs, do you have any idea what acreage we're talking about?
A (Barnum) I do not.
Q Exhibit 336 contains construction restrictions based on the depth of the snow. It doesn't include anything beyond that. Would a seasonal construction requirement to not allow construction during the entirety of the winter

months foster less impact on either the Deer Wintering Areas or the Moose Concentration Areas?

A (Barnum) So the restrictions that apply to DWAs and MCAs are also under discussion. We just recently were talking with staff at Fish & Game, and we have agreed that a seasonal restriction that's not dependent on snow depth will be used for construction.

Q And so that avoids the problem of having to have somebody go out there to measure to try to figure out whether we're at 16 or 30?

A (Barnum) Exactly.

Q This seasonal requirement, do you have any information as we sit here today what it's going to be? Are we talking about, you know, November to April?

A (Barnum) I don't remember the exact dates at the moment off the top of my head. I do know that it's a longer period up north and it's a shorter period down south because the winter season is less severe in the south and don't have the same snow depths over the course of the winter.

Also there are no MCAs in the southern part

of the state so it only applies to Deer Wintering Areas in the southern part of the state.

Q How can we ensure that that seasonal restriction as opposed to a snow depth restriction is included in the Best Management Practice?

A (Barnum) The AMMs that are going to be included in the plan sheets will be modified to reflect those dates rather than the snow depth that's currently written here.

Q And if anyone was interested in finding out what those precise calendar seasonal requirements are going to be, where might we go look for them?

A (Carbonneau) We're currently working on them now so they're not currently available, but the discussions with New Hampshire Fish & Game have been ongoing. Our last meeting was last week, I believe, and that necessitates a little bit of back and forth with them to make sure that they are comfortable with the language as it's been discussed, and so they'll be available soon, we hope.

Q Dr. Barnum, you mentioned earlier, you conceded that the New Hampshire Fish & Game maps of DWAs

are somewhat dated. I believe they were drafted in the '90s. In order to ensure that you located all of the DWAs, should you have expanded your protocol beyond those maps?

A (Barnum) So when I went out looking for DWAs, I wasn't just checking DWA areas. I was in the course of doing general survey throughout an extensive portion of the right-of-way, whenever I encountered a DWA, I made notes of that. And the wintering areas can be identified in all seasons based on the cover that's there, and also if you take a look at the plants in historic Deer Wintering Area, you see the scarring from the browse. The preferred browse species tend to be deformed from repeated browsing. Hemlocks in particular, you see scarring on the trunks so it's, you can identify those areas in the summer as well as the winter.

Additionally, a lot of times you can also see the pellet groups which is polite way of saying deer poop. Winter pellet groups look different than summer because they're eating different things and they persist on the landscape for a season or two so even in the

summertime when you're walking through it's fairly straight-forward to identify a deer wintering air area.

So as I was doing surveys in general for a wide variety of wildlife resources, when I encountered a DWA I made notes. I compared that to the mapping that I had. It lined up very well in all cases. In some cases, they were a little bit larger and in some cases a little bit smaller, but the general locations were correct.

Q Are you aware that the experts retained by Counsel for the Public identified three additional unmapped DWAs?

A I am aware that they made that conclusion.

Q And did you happen to look at those three additional unmapped DWAs to conclude whether you might share that agreement?

A One of those locations I have not been to and I have not had occasion to visit since they submitted their testimony.

The other two locations they identified I have visited in person. One of them I have notes indicating that there's deer yard nearby and that it also has a potential to be a deer

yard, but at that particular time I didn't consider it to meet the standards. I visited it probably three, maybe four years before they did.

And the other location I've been to, and I don't have anything in my notes to indicate it as a deer yard. So, again, big difference in the timing of our visits. Maybe something had changed in the interim, but I don't have that recorded as a deer yard.

Q Of those three additional DWAs identified by expert for the Public, one of them you haven't been to, one you were at three to four years before the expert was there, and the other you have no notes.

A (Barnum) Well, I have notes, but there's nothing in my notes indicating that I thought it was a deer yard so --

Q So two out of the three, in fact, might be additional DWAs that aren't included in your study?

A (Barnum) Potentially.

Q Do you plan to do anything further to conclude whether they should be added?

A (Barnum) The impacts that may occur to deer yards will all be compensated for through the mitigation which includes two large nice deer yards. I feel that the impacts, any additional impacts beyond what we've already identified will still be mitigated for. So at this point, I don't plan to do anything further.
Q So mitigation instead of avoidance or minimization?
A (Barnum) Yes.
Q The Best Management Practices with respect to deer or moose do not include a restriction on winter motorized use of access roads, do they?
A (Barnum) They do not.
Q Can you tell the Panel what impact increased motorized use of the Project access roads would have on DWAs and MCAs?
A The alternative suggests that recreational use is not a major impact on these resources. Deer and moose habituate relatively quickly to the noise and activity associated with snowmobiles. What bothers them is stop and start, people moving around, unfamiliar activity. If you have a snowmobile trail through a DWA, the deer

habituate to it, and they also gain some benefit from having the compacted snow for their own travel benefit.

Q So I take it from that answer that you don't believe increased motorized use of the access roads are going to have an adverse impact on either the deer or the moose?

A (Barnum) Some of the current deer yards that are in the, that are going to be impacted by the right-of-way already have existing snowmobile trails through them.

Q I understand that, but we're talking about potentially increased areas because we're talking about an increased amount of access roads.

A (Barnum) The Project doesn't plan to retain any of the access roads or maintain any of the access roads created for the Project. They're all going to be taken out of service. If there are going to be new trails, new snowmobile trails, those would have to be negotiated with the landowner and appropriately permitted.

Q Why not avoid the potential adverse impact on DWAs and MCAs by posting the right-of-ways so

there could not be increased motorized use?

A (Barnum) In many cases, Northern Pass doesn't own the land so it's up to the landowner to make that decision. In most cases, I suppose.

PRESIDING OFFICER HONIGBERG: Ms. Connor, sometimes in the next five minutes or so we're going to need a break.

MS. CONNOR: I'm about to go to my next animal so perhaps this is a good time.

PRESIDING OFFICER HONIGBERG: As a preview, what is the next animal?

MS. CONNOR: An American marten.

PRESIDING OFFICER HONIGBERG: Very tastefully named.

MS. CONNOR: It is not a mallard. I keep envisioning a mallard. I couldn't be more wrong.

PRESIDING OFFICER HONIGBERG: All right. Do you have good pictures?

MS. CONNOR: I do.

PRESIDING OFFICER HONIGBERG: We'll break, and we'll be back in 10 minutes.

MS. CONNOR: Thank you.

(Recess taken 3:04 - 3:22 p.m.)

PRESIDING OFFICER HONIGBERG: Ms. Connor. You may continue.

BY MS. CONNOR:

Q Dr. Barnum, do you recognize Exhibit 304?

A (Barnum) I do.

Q What is it?

A (Barnum) That is an American marten.

Q And what type of animal is an American marten?

A (Barnum) American marten are a member of the mustelid family. So they're related to otters, fisher, weasels, mink. They're mid-sized, about the size of a mink. Or a large marten also overlaps in size with a small fisher.

Q And what is their level of protection in the State of New Hampshire?

A (Barnum) They are State -- I'm not sure if they're endangered or threatened, I have to admit.

Q I believe they are State-threatened.

A (Barnum) Okay.

Q Am I correct that the marten was reestablished in New Hampshire in the late '70s, early '80s?

A (Barnum) I believe there was a reintroduction program, yes.

Q And your tracking confirmed the presence of martens in 12 locations in the northern section of the newly proposed right-of-way; is that correct?
A (Barnum) I found marten tracks both within the existing right-of-way in multiple locations and multiple towns as well as in multiple locations in what's proposed to be the new right-of-way.
Q The proposed new right-of-way, am I correct that some folks have described that as prime marten habitat because it's going to have deep fluffy snow and a lack of competition; i.e., fisher cats?
A (Barnum) There are certainly portions of the new right-of-way which are, I would also describe as prime marten habitat, absolutely.
Q Did you make any recommendations to avoid or minimize the Project path into this what we can call prime marten habitat?
A (Barnum) Yes. There was one area which had high value multiple for multiple species including marten, and I recommended moving the right-of-way out of that area.
Q It's my understanding that 485 acres of existing

forest cover are going to be converted to grassy or shrub cover in this area; is that correct?

A (Barnum) Yes. The new right-of-way will convert existing forest into early successional vegetation.

Q Won't the loss of this forest cover expose the marten as prey to fox and coyotes in a way that it's not currently exposed?

A (Barnum) The existing right-of-way is used by marten. So although there may be higher exposure, they still use the area, and you're converting the habitat, you're changing its quality of cover, but you're not eliminating it.

Q I understand that. But by converting it, there is a loss of cover for the marten; is there not?

A (Barnum) In some locations, there'll be less cover for them, yes.

Q And that will expose them to fox and coyote?

A (Barnum) The real exposure vector for fox and coyote to prey on marten, which they do, is adding compacted snow. Marten are designed to travel in snow or a lot of times through the snow under the snow. They have a lot of subnivean behaviors. Fox and coyotes need or

benefit from having packed snow trails to access habitats and do their hunting in the wintertime.

Q Did you do any investigation as to the impact the loss of the forest cover is going to have on the marten population?

A (Barnum) I didn't quantify that impact. I assume there will be one.

Q And I assume it's not going be a positive impact?

A (Barnum) Correct.

Q Do we know what the marten population in the right-of-way is?

A (Barnum) We don't know that per se. Research that was done for the Granite Reliable Project indicated that that area, that high elevation area, is probably at carrying capacity for marten. I don't know what that density of marten would be, but it indicates that we have a pretty robust population of marten in the area.

Q Can we zoom in on the upper part of the State? Do you have that on your screen?

A (Barnum) I do.

Q This is from Exhibit 136. Counsel for the Public. It's a table from Arrowwood. I'm

assuming that you've seen this before?
A (Barnum) I have.
Q It indicates, according to the color margin, the new right-of-way in the northern part of the state, and as I understand the margin, dark blue is prime marten habitat which we just talked a little bit about, but what I'm really interested in is it also references the Granite Reliable Wind Farm. Do you see that?
A (Barnum) Yes.
Q And it also references with the little triangles the current MET towers. Did those Projects have an impact upon the martens? Or would you have anticipated that they had an impact on the martens?
A (Barnum) Yes. The Granite Reliable Project absolutely had an impact on marten. As I just referenced, the study that was conducted in conjunction with the construction of that Project indicated that the area where Granite Reliable was built is currently at carrying capacity in terms of its marten population. So changing the habitat by putting in the roads and the wind turbines to construct the Project

definitely reduced the amount of habitat that was available for marten.
Q So since the marten habitat has already been impacted by the Reliable wind farm, this proposal is further burdening the adverse impact to their habitat, correct?
A (Barnum) This will be an additional impact, yes.
Q And each time we have an adverse impact, that's not good for the population, right?
A (Barnum) That's correct, and that is why for Granite Reliable they had a mitigation and compensation package that they provided which included payment to Fish & Game and protection of high elevation acreage, and that was deemed to compensate for the impact that was created by that Project.
Q But, ultimately, compensation doesn't help the marten population.
A (Barnum) If it protects areas from further development, that will provide a benefit to them.
Q The Best Management Practice with regard to martens is Exhibit 334, and the marten is on page 2. This does not, this indicates that

there is going to be no seasonal soil restriction with regard to the marten habitat. Is that still the case?

A (Barnum) That's correct.

Q Do we know what kind of impact construction activities might have on the marten breeding season?

A (Barnum) In any season, construction activities will create disturbance which could affect marten.

Q Isn't that particularly so during breeding season?

A (Barnum) Marten change their den sites pretty regularly, maternity den sites. The mom moves the kits around. It's part of her natural behavior. The disturbance of the Project construction could induce her to move a little sooner than she might have been planning to anyhow, but it's a behavior that she's adapted to do and that she's perfectly capable of.

Q You indicated in response to my question about the loss of forest cover that you didn't believe that was going to have significant impact on exposing the marten as prey but that compacted

snow would; is that correct?
A (Barnum) Correct.
Q And I understand that this Exhibit 334 is the only Best Management Practice with respect to martens so that means there is going to be no recommendation that the right-of-way and access roads be closed to winterized motor traffic. Is that correct?
A (Barnum) That is incorrect. There will be a recommendation to do so, and the project has committed to, like I said, not maintaining any of the access roads they create so those will not be available for recreational activities unless some other entity brings that idea forward, in which case it's going to go through its own permitting process.
Q Well, if that's going to be a Best Management Practice, that's wonderful for the marten, but it's not in writing yet, is it?
A (Carbonneau) Actually, there is a condition of the Wetlands Permit to close off the access in the North Country to the right-of-way to prevent unauthorized ATV use in those areas.
Q If the right-of-way in the northern part of the

State can be closed to motorized travel, why can't the rest of it?

A (Barnum) In the northern portion, the Project actually owns a fair amount of the property that the right-of-way will go through. They have the authority, and they have the ownership. Many of those parcels are also part of the mitigation package, and so it makes sense to restrict activity there.

In other parts of the right-of-way, the Project does not own the right-of-way. The underlying landowners do. And in some cases, I suppose that some kind of accommodation could be made in those locations, but the marten are more abundant in the northern part of the project area.

Q So we understand then as a condition of moving forward that Best Management Practice will be changed so that the access roads will not be open to motorized traffic because if it was, we would have compacted snow and we would have far fewer marten, is that correct?

A (Barnum) The compacted snow would potentially be a detriment to them, and yes, close it.

A (Carbonneau) The access roads will be removed and restored so there will not be access roads going forward in the future if they're not there now.
Q I understand that the access roads will not be maintained, but will there actually be some process through which winterized motorized access is going to be prohibited? There's a difference between simply not maintaining an access road and actually policing it to make sure that it's not used.
A (Carbonneau) That's correct. The access roads will be removed and so the areas even in upland areas and wetland areas will be restored so that they don't appear to be access roads. In the time that it takes for that restoration process to occur, where gates are necessary to keep off unauthorized vehicles, those will be put in place.
Q So the roads are not going to be maintained. We're going to have gates until they go back to natural habitat, and this is going to be a condition of some permit in the future?
A (Carbonneau) It is already written into the

Wetlands Permit conditions.
Q Dr. Barnum, can you tell the panel what a mast stand is?
A (Barnum) So mast refers to trees that have fruit that, fruit in the broad sense. It can be actually soft fruits or nuts. So it's -- or it can also be trees and it can also be things like raspberry bushes. So fruit-providing woody vegetation.
Q Trees providing fruity vegetation for what animal?
A (Barnum) A wide variety of species. Anything from chickadees to black bears and everything in between.
Q Did you undertake some effort to inventory the mast T stands implicated by this Project?
A (Barnum) Again, as part of my general wildlife habitat assessment conducted through the vast majority of the right-of-way, whenever I saw mast resources, I made notes about their presence.
Q You're aware that Arrowwood has identified at least three towers that are going to result in the removal of various mast stands?

A (Barnum) Yes. I am aware.
Q And have you made any recommendations to change anything about the tower configurations to save those mast stands?
A (Barnum) So in the southern part of the state the most common mast is oak. Oaks are essentially ubiquitous throughout the southern part of the state. Any place you remove some trees, you're bound to be removing some oaks. So that impact will occur. There's no way around it.

I might also note that throughout the existing right-of-way, there's a lot of raspberry and blackberry. It just grows up as part of the regeneration of vegetation during the veg management so those resources are currently impacted and will also be impacted.

In the North Country the species that's of most interest is American beech, and there are two stretches of the new right-of-way which go through areas where there are American beech. American beech is a pretty small component of the forest cover in the North Country. It's a bit, conditions are a bit far north, a bit too

far north for beech to really be abundant. So there are these two areas in the new right-of-way which have beech and the beech that are there in the right-of-way will be removed as part of the clearing.

Q Is there going to be any process by which contractors are going to be instructed how to recognize a mast stand?

A (Barnum) The right-of-way needs to be completely cleared so irregardless of whether those beech are there, they're going to be removed.

Q Dr. Barnum, can you identify what's on the screen now as Exhibit 318?

A (Barnum) That are two Canada lynx.

Q What exactly are the Canada Lynx?

A The Canada lynx a felidae, member of the cat family. It's one of the smaller bobtail cats. It's closely related to the bobcat. You can differentiate it from the bobcat by the little ear tufts it's got, the great big furred paws. If these guys were standing up, you can see they're relatively long-legged.

They're designed to operate in deep snow conditions. The long legs help, the thick fur

and those big paws. It's pretty amazing when you find their tracks. They do not sink into the snow. They've got this huge paw, and you think any animal that's got such a huge footprint is going to sink right in, but they go in like maybe an inch into fluffy snow. It's really striking. So they're super well-designed for the deep snows and harsh conditions of the North Country.

Q Am I correct that the lynx are both federally threatened and State endangered?

A (Barnum) That is correct.

Q How many lynx are there currently in New Hampshire?

A (Barnum) Undetermined, but probably less than ten. There's an existing population in Maine, and most of the lynx that are found in New Hampshire are probably transients from Maine. Occasionally, we might have a female who has a litter here in the State, but most of the lynx that we see here in New Hampshire are part of the Maine population.

Q The transients that are coming through New Hampshire, where within the state would they be

found?
A (Barnum) In my own personal work, I've found tracks crossing Route 2. As part of the work for this project, we observed tracks in the Town of Whitefield. There are multiple records from the Town of Pittsburg, and there are also some records from the White Mountains. So anywhere from the White Mountains north is potential for lynx to travel through.
Q In your 2011 survey, you just talked about one set of lynx tracks in the Whitefield right-of-way. Am I also correct that you also identified potential denning habitat in five locations that are adjacent to what's going to be new structures?
A (Barnum) I found two areas of potential denning habitat in the new right-of-way. Off the top of my head, I can't tell you exactly how many structures they encompass, but there's one relatively small bit of potential denning habitat, and then there's another area that's a bit longer so --
Q If the lynx are transient, as you described them, is it fair to say the potential, the

denning habitat is going to change from year to year?

A (Barnum) Yes, and denning habitat changes from year to year no matter what. They like very thick regen so very high-stem densities or wind throw and tip-ups, and these are both transient conditions on the landscape. Trees grow taller, they become less dense, they don't provide the cover that you need for denning. Tip-ups rot and fall apart and they don't provide the cover either. So denning habitat is always moving around on landscape. It's not static.

Q So the denning locations that you observed in 2011 within the Project path are not necessarily the denning locations that are going to be there when construction starts.

A (Barnum) Probably ten to 20 years before conditions change. I would say that the conditions that I observed three years, four years ago now are probably still similar. And having walked, essentially, all of that right-of-way, I can't think of any place that will be suitable denning habitat within the next, say, five years. There are a lot of

clearcuts that are regenerating, and I think though those areas could potentially provide some kind of denning habitat.

I would also note, though, that in the opinion of the Fish & Wildlife Service that denning is highly unlikely in any town except Pittsburg, and the little sliver of Pittsburg that is included in our Project area does not contain any suitable habitat for lynx. It's too low in elevation. It's down by the river.

Q So the Best Management Practices, Exhibit 336, has a few recommendations with regard to the lynx. The number one being to avoid clearing around denning habitat from May 1st to July 15th. I'm assuming because that's their breeding cycle?

A (Barnum) If Canada lynx are present, yes, they have their kittens during that period.

Q And we wouldn't want construction near a denning lynx especially if we have only ten lynx; is that correct?

A Yes.

Q As you say, the qualification on avoiding suitable denning habitat is a big one. It's

only if they're actually there.
A (Barnum) Correct.
Q And who is it that's going to determine if they're actually there?
A (Barnum) That would also be the environmental monitor.
Q And it says that during the denning season, this unidentified-yet environmental monitor is going to survey the denning habitat prior to clearing to determine if it's occupied.
A (Barnum) Correct.
Q Is there a protocol by which the environmental monitor goes back on several occasions because, say, in the first day that they go there, the mom is out foraging before she has her pups? Or cats?
A Kittens?
Q I'm not sure what they call them.
A (Barnum) Kittens. If there's not a lynx present, and then they come in and clear, than the habitat is gone, and she will have to go find some other spot, and there's plenty of it up there. So it's not like we're taking the only -- these are not the only two possible

places where a lynx could place a den.
Q Well, if there's plenty of denning habitat outside of those that you've identified, who's going to check those?
A (Barnum) They're not within the right-of-way so they won't be disturbed.
Q How close are they to the right-of-way?
A (Barnum) They could be fairly close, but, again, like the marten, lynx naturally change their den site every week, ten days anyhow. So where disturbance might induce the mother lynx to move her kittens before she had planned to, but it's a behavior that she's perfectly well adapted to do, and because there's an abundance of denning habitat, she won't have any trouble finding a new spot.
Q Your testimony makes it sound like they are actually very few suitable denning habitats in the vicinity of the Project. Why not just avoid them all together as opposed to waiting to see whether or not a lynx decides to occupy one of them?
A (Barnum) Lynx are very rare in the state, as I've already noted. The US Fish & Wildlife

Service is only concerned with denning in the town of Pittsburg. It seems overly protective to just shut down all activity on the very, very small chance that an animal might be present. So it seems prudent and best that during this short time period when she might be present, take a look and not there, proceed.

Q Isn't the fact that there are so few of these animals, doesn't that warrant a more protective measure on the other end?

A (Barnum) There are very few in New Hampshire, but there's a healthy population right across the state boundary in Maine.

Q So because there are lots in Maine, we don't care what happens in New Hampshire? Is that sort of what you're saying?

A (Barnum) I'm saying that impacts to the small population in New Hampshire will not cause lynx to disappear from the northeast.

Q This Best Management Practice which says, actually, it's the other one, page 2 of 334, please.

Page 2 of 334 with respect to the lynx indicates that the occupancy survey that this

environmental monitor is going to do is appropriate, quote, just prior to construction.

What's the timing of that within the breeding cycle which has kind of a wide window, May 1 to July 15th?

A (Barnum) So the word "construction" here is encompassing clearing. So if you're going to be clearing this area during the denning season, that's the time to be concerned about potentially having an impact on lynx. And so if the clearing is proceeding and there's no possibility of clearing occurring at those locations during that time period, there's no need to look for the animal because it's not using the resource in that way at that time. And then once the right-of-way has been cleared, there is no denning habitat. It requires vegetation, and so once the clearing has occurred, then there's no need to survey because there's no habitat.

Q If the environmental monitor encounters a lynx that is using one of these areas as a habitat, what happens then?

A (Barnum) Then there can be no tree clearing

until the denning season is over in that location.
Q And that would be no tree clearing between May 1st and July 15th?
A (Barnum) Correct. Yes.
Q What type of animals prey on the lynx?
A (Barnum) In the State of New Hampshire? Bobcat could. Bobcat and lynx don't get along. Bobcats generally win that battle. So bobcat, whether it's prey or competition, is a threat and potentially coyotes could corner lynx.
Q The Best Management Practice does not prohibit the use of right-of-ways by motorized recreational vehicles postconstruction in the area of the lynx?
A (Barnum) So we just covered this exact topic with the marten, and everything we said about the marten applies to the lynx.
Q So they are going to be protected as well?
A (Barnum) Correct. Yes.
Q Dr. Barnum, have you seen this April 4th, 2016, letter by the Executive Director of New Hampshire Fish & Game?
A Yes, I have.

Q One of the first things that Mr. Normandeau talks about on page 1 of Exhibit 337 near the bottom is a concern about why a alternative of using the Vermont transmission lines rather than building new lines in the North Country wasn't considered. Do you have any information as to why the decision was made to expand the right-of-way in the North Country as opposed to using the Vermont transmission lines?

A (Barnum) I know that multiple factors were considered when choosing the route, but I don't have any details or information about this particular issue.

Q Go to page 2 of the letter.

Mr. Normandeau goes on on page 2 to talk in particular about this expanded new right-of-way in the northern country because of its high value of marten habitat as well as some of the other large animals: fisher, bobcat, black bear, Canada lynx and American marten. Do you have an opinion as to whether expanding the right-of-way in that area is going to adversely impact any of those species?

A (Barnum) I observed tracks and other sign of all

these species within the existing right-of-way, and these animals seem to use that, and I would expect that the new right-of-way will employ the same type and level of habitat that the existing right-of-way does, and, therefore, these animals will continue to use those habitats as they do now.

Q It seems, bearing in mind I am not the animal expert here, that there is a concern with New Hampshire Fish & Game that having this expanded the right-of-way could be adversely impacting the animals because it's bisecting a region that currently doesn't have that interference. It's a big track where they can go back and forth freeing without interference and now that's not going to be the case.

A (Barnum) Again, I observed track and sign of all these species within the existing right-of-way. Obviously, they use it currently, they cross it. I do not feel that the new right-of-way will create a barrier to their movement. There will be some impact due to the alteration of habitat, but the mitigation parcels that we are providing for this Project in total provide small really

first class habitat for all these different species and will compensate for whatever impacts that will be created through the conversion of habitat.

Q Page 3. On page 3, Fish & Game is talking about Deer Wintering Areas. I believe in the first one where he's talking about your reliance on the maps was not complete, you have, in fact, identified the Deer Wintering Area that was not on Fish & Game's map; is that correct?

A (Barnum) That is correct, yes, and I'll note that that Deer Wintering Area is within one of the mitigation parcels that we're providing as mitigation for the Project.

Q If you look at the very last paragraph dealing with Deer Wintering Areas, Mr. Normandeau goes on to talk about some shortcomings in the Wildlife Technical Report and that's your report, correct? Applicant's 36?

A (Carbonneau) I'm sorry. I don't think this is referencing Sarah Barnum's Technical Report. This is about the Draft EIS, I believe.

Q All right. There's no way of knowing. It references the Wildlife Technical Report which

is what Appendix 36 is titled.

In any event, his concern is that the expansion of the right-of-way into the North Country is going to not only permanently remove functional deer winter cover but also interrupt connectivity of the remaining cover, thus degrading the Deer Wintering Areas as an overall ability to harbor wintering deer.

Am I correct that he's talking about something called fragmentation?

A (Barnum) That is one way to describe fragmentation, yes.

Q And that's because with the path now in the middle, you don't have the wide open area without human involvement, and it degrades the DWAs.

A (Barnum) In the existing right-of-way, the existing right-of-way passes through numerous deer yards, and my observations while tracking indicated that the deer crossed those. I observed deer directly walking back and forth across the right-of-way as well as numerous well-used paths.

Q Well, the fact that the deer have adapted to

what the humans have done to them already doesn't make it the preferred habitat, does it?
A (Barnum) It does not.
Q And at some point, doesn't the fragmentation reach a round where it has an adverse impact on the population of deer?
A (Barnum) Fragmentation will have an adverse impact, and impacts that may be created by the Project are being compensated by the mitigation package, which I pointed out a minute ago do include two large deer yards which will be managed to support their capacity to act as deer yards.
Q Providing land in another location doesn't help the deer that are impacted by this particular portion of the pathway.
A (Barnum) The right-of-way will pass through both those deer yards so it will help those deer right there.
Q So we're relying on the deer to know that they should go somewhere else.
A (Barnum) There are plenty of deer and plenty of deer yards in the state. So the small impacts that will occur will not have an overall impact

on the --
Q Would you agree with me that the Executive Director of New Hampshire Fish & Game Department doesn't share your optimism in that regard?
A (Barnum) I would agree with that, yes.
Q I want to go to the next page. Page 4 of the same exhibit. The two paragraphs right above Ridge Side Habitat.
In the discussions with respect to the marten, am I correct that Mr. Normandeau has written here that further loss of these forests, the new expanded right-of-way could lead to a point where habitat on the landscape is at a critical tipping point and will no longer support marten?
A (Barnum) That's what he wrote, yes.
Q So, again, in addition to your conclusions that the Deer Wintering Areas really aren't being impacted, Mr. Normandeau disagrees with your opinion about the impact of your Project on the marten?
A I agree there will be an impact to marten, and the mitigation provides compensation for that impact.

Q Well, can it provide adequate compensation if the habitat for the marten is at a critical tipping point where it will no longer support them?
A I don't believe that our Project will create a typical tipping point for the species.
Q Fair to say then that apparently the data is such that there can be a difference of opinion on something like that?
A (Barnum) The Director states that further loss of these forests could lead to a point. He doesn't state that it will. He doesn't have any information to support that it will so he's speculating.
Q Okay. We're talking about the Executive Director of the New Hampshire Fish & Game who is concerned enough about this Project's impact on the marten that he says the landscape's at a critical tipping point, but we sit here today, it's not your opinion apparently that this Project is going to have an unreasonable impact on the marten.
A (Barnum) It is not my opinion.
Q Go to page 4. The very bottom. Sorry. 5.

In Exhibit 337, the Executive Director of Fish & Game expressed concerns on the future motorized use of the access roads, something that we've been talking about, and he notes in there that we haven't seen assurances that these roads, even if they are not maintained, will not remain open to the public.

I understand that perhaps since this was written in April of 2016 you have decided that, in fact, that there will be assurances, at least for the upper northern part of the project, and that there will be no open ability to the public, but that's not true about the rest of the right-of-way, is that correct?

A (Carbonneau) That's correct.

Q And so although you have addressed Mr. Normandeau's concerns about the very tip-top of the state and the Project, you have not addressed his concerns about the access roads throughout the rest of the project.

A (Carbonneau) This excerpt is taken from the letter that addresses the Draft EIS which is not a document that we wrote, and the work that we have done with Fish & Game has superseded some

of what may have been in the Draft EIS, which, again, is not our document. So these comments, I'm not certain exactly where he is referring to because I don't, I don't know if he is limiting this comment to the North 40. It sounds like he's specifically discussing the Northern 40, and that is the area that we know that they are most concerned with and that we have addressed in our Application materials.

Q You've addressed it in terms of now changing how the access roads are going to be handled, but you haven't changed it with regard to fragmentation for Deer Wintering Areas or the impact on the marten.

A (Carbonneau) Right.

Q In this April 4th, 2016, letter, Mr. Normandeau also talks about, again, in the context of the marten habitat a concern about this Project because of the potential for further wind park development, and am I correct that the Applicant holds a lease for a further wind development project in that area? Which I believe was on the map that I had up a few minutes ago.

A (Barnum) I have no knowledge of any wind park

document planned by the Applicant.
Q And again, the thought being at some point the number of projects that impact the marten habitat is going to cause the habitat to be, in his words, at the tipping point in terms of whether it will continue to support the population?
A (Barnum) That is what he expresses in this letter, yes.
Q Do you agree that when dealing with an animal species, at a certain point the number of additional intrusions into their habitat has a cumulative effect?
A (Barnum) Yes.
Q We can zoom in a little bit.
Are you aware since you've walked this area so frequently whether the MET towers are currently on line? Or is that a proposed project?
A (Barnum) I have no knowledge of that project.
Q Certainly if the Applicant had plans for a further project, a wind farm in this area where the marten are already being impacted by this Project, that could lead to a cumulative adverse

impact on them?
A (Barnum) Additional Projects would lead to additional impacts.
Q Thank you.
Dr. Barnum, what birds are encompassed by the term raptors?
A (Barnum) Raptors include hawks, eagles, falcons.
Q So generally larger-size birds?
A (Barnum) They are birds of prey, they have talons that can grip, and they have beaks that can rip basically. But the gripping talons is important. For instance, vultures are not included as raptors because they don't have that same ability to grip.
Q Which of the raptors do we need to be concerned about in terms of being a threatened or an endangered species?
A (Barnum) The species with status in our state are northern harrier, and then bald eagle and osprey are also listed as special concern.
Q Best Management Practice with regard to wildlife, which includes raptors, at 336 has a table in terms of nesting dates. Do you see that? I suspect you're familiar with that?

A (Barnum) Yes.
Q And am I correct that the recommendation is to avoid construction activities wherever any of these particular raptors might be located during their nesting periods which is basically April to the end of, well, the middle of August?
A (Barnum) It varies by species, yes. Right.
Q Would all of these species be located in similar locations of the Project or are they going to be separated out?
A (Barnum) They all have their own unique habitat requirements.
Q Am I correct that in terms of who is going to implement this Best Management Practice, we are back to the environmental monitor?
A (Barnum) That is correct.
Q The Best Management Practice indicates that construction should not be undertaken during the nesting season when any of these raptors might have an active nest.

What is the protocol for locating an active nest?
A (Barnum) It will be, again, this is one that's currently under discussion with Fish & Game. It

will be some form of survey, probably a walk-down of the right-of-way for the large stick nests which would be osprey and bald eagle which has got its own AMM but is also a raptor. Those nests could be spotted by helicopter.

Q So this is an area where the Best Management Practice is currently being rewritten?

A (Barnum) Being, yes.

Q To afford more protection than the original plan?

A (Barnum) The rewrite will have a little more detail, little more specificity, but it will be essentially the broad overview that you see here.

Q Why is there no Best Management Practice for interference with raptors outside of the nesting cycle?

A (Barnum) Because the nests and the young are unable to move away from disturbance. Adult raptors can move easily, and they have large home ranges. Construction disturbance in a small portion of their home range should be essentially irrelevant to them because they have large area which they can go and use instead.

And the right-of-way, for the most part, doesn't provide any essential habitats for these species.
Q Who is going to have the final say over the rewriting of this Best Management Practice in terms of determining the identification of active raptor nests?
A (Barnum) Fish & Game.
Q Dr. Barnum, do you recognize Exhibit 308?
A (Barnum) That is the common nighthawk.
Q What is the status of protection for the common nighthawk?
A (Barnum) Common nighthawk is listed as endangered by the State of New Hampshire.
Q Do we know how many of them there currently are in the State of New Hampshire?
A (Barnum) New Hampshire Audubon has been conducting summer survey for the last ten years now. The number of nesting pairs varies. I think there's been a high of maybe 15, and some years I don't know that they find any.
Q It's my understanding that the Audubon tracking in Concord has confirmed the presence of this particular endangered bird within the Concord

Eversource right-of-way; is that correct?
A (Barnum) That is correct. It nested successfully there for three years. Two maybe.
Q Your Best Management Practices call for a buffer area around an active common nighthawk nest.
A (Barnum) Yes.
Q But they don't detail the size of that buffer zone?
A (Barnum) That is correct. That would be subject to the conditions at the nest site. The successful nests in the Concord area in the right-of-way were within an active concrete yard where the company that owned the land was able to keep right on doing what they were doing and still the bird was able to nest successfully based on a buffer that they placed around that nest with the advice of Audubon and Fish & Game. So it would be, you know, the local conditions at that moment where the nest is placed is going to dictate what the appropriate buffer will be.
Q What was the buffer employed by the concrete company?
A (Barnum) I don't know. I don't have that information.

Q And would you agree that there might be some locations where in fact the bird is not subjected to those types of disturbances?
A (Barnum) They nest in many different settings and situations. So, yeah, there's going to be birds who might choose a site that's a little less active.
Q Are there no empirical studies indicating what might be a desirable buffer zone around an endangered bird that has numbers under 20?
A (Barnum) Not for this species. I mean, every bird is different. They have a wide variety of behaviors. You know, some birds are very sensitive and would flush as soon as you're within a hundred yards. This species is highly cryptic. It depends on its feathers for protection. Its general strategy is to hold still and sit still and not move, and you will not notice it. And it's far less sensitive to disturbance than some other species would be just because of the strategy it has employed to survive over time.
Q The Best Management Practice indicates that prior to initiating work during the nesting

season there's going to be a survey for active nests.
A Correct.
Q And then it goes on to note that the methodology is going to be reviewed, but the methodology itself is not described. Do we know what the methodology is going to be?
A (Barnum) That will be discussed with Fish & Game.
Q So this Committee is sort of not being given an opportunity to weigh in on whether that methodology provides the best protection for this bird?
A (Barnum) The details of that methodology will be part of the conditions of the permit.
Q Again, that doesn't provide this Committee or the Public with input on the conditions, does it?
A (Barnum) Not at the moment. No.
Q Do you have that exhibit in front of you?
A Yes. Exhibit 333?
Q Yes. Am I correct that this Exhibit 333 is a table from the Normandeau Wildlife Report in which you identified a number of structures

within the Project path that had the highest risk of avian collision?

A (Barnum) These are locations, yes, between structures, essentially, where it appears based on the surrounding habitat that there is a higher risk of collision.

Q And if you look at the list of potential known species, we're talking primarily about larger birds: loons, bald eagles, herons and osprey?

A (Barnum) That's correct.

Q Why is it these larger birds have the greater risk of avian collision?

A (Barnum) There's multiple reasons why certain species have higher risk. Size obviously plays into it. Behavior. Raptors, in general, are excellent flyers, high mobility and wouldn't collide normally, but if they're hunting or distracted in some other way, there's a risk for collision for them.

Waterfowl, which includes ducks, swan, geese, et cetera, they are not excellent flyers. They're kind of a little bit clumsy so they don't have great maneuverability. They don't have the ability to get out of the way of a line

as readily as some other species.

And if you think about the way their vision is constructed, as prey animals they've got their eyes on the side of their head so they can see things coming. They are literally blind to the front while they're flying which is fine because they evolved in a world without transmission lines or other obstructions so there wasn't anything to hit. Now that there are things to hit, their vision, which was adapted, designed to keep them from getting eaten, doesn't really help them avoid collision. And then you combine that with their not-so-great flying skills, they'll see it at the last second, but they may not be able to maneuver their way out.

Loons, also not very skilled flyers. Very heavy body, small wings. They don't have a lot of maneuverability in the sky.

So you have a whole combination of factors. Another thing to consider is the kind of habitats that these guys use. And the waterfowl, again, they use a certain kind of habitat. They congregate in great numbers.

You'll have flocks in the thousands, particularly out in the western United States, and, again, if you're flying in a group of a thousand other birds, the ones in the front might see the obstruction and get out of the way, but the ones in the back might not have enough time.

So there's a whole host of reasons why certain birds are more susceptible, and it's different for different species.

Q Can you identify the protected status of these larger birds?

A (Barnum) Loon is listed in the State of New Hampshire as is the osprey.

Q What does "listed" mean?

A (Barnum) Listed as either threatened or endangered. Loons are threatened.

Q Bald eagles?

A (Barnum) Bald eagles, I believe, are threatened in the state. Osprey are special concern. Some of them have status. Not all of them.

Q Your report indicates that studies have quantified that the rate of collision reduction following the implementation of something called

a "lane marker" is commonly as high as 60 to 70 percent. Can you describe what a lane marker is?

A (Barnum) There are whole variety of different kinds of deterrents or markers that they can put on power lines. They come in different shapes and sizes. There's flappers, there's balls, there's spirals. So it could be any one of those things.

Q How do bird diverters work to avoid avian collision with towers and wires?

A (Barnum) Birds don't generally hit towers. They hit wires.

Q Okay.

A Generally speaking, they're hitting the shield wire which is the thin wire above the thicker wires. What happens is they're flying, they do see that thicker wire, and they go "yikes," up they go, but then the shield wire, which is thin and they miss that, that's what they hit. So if you put the diverters, the flapper, the ball, the spiral onto the shield wire you make that wire more obvious, and, hopefully, the bird will see the whole thing to start out with and will

pick a trajectory which will avoid the entire set of wires.

Q Diverters. Page 3 of 334. In the Best Management Program laid out in Exhibit 334, on the last page, there's an entry regarding potential avian collision areas, and as I understand the Best Management Practice that's going to be used in this case, it is to install bird diverters on the highest lines, if necessary.

Who gets to decide whether they're necessary and when?

A (Barnum) Currently, there's no indication that bird collision is a high source of mortality in New Hampshire or I'm unaware of any example in New England. If in the future after the line were constructed, somebody noted that there was a lot of mortality under a section of line, then there should be a discussion whether that section of line required diverters.

Q So the Best Management Practice is going to be to wait until we have a lot of dead birds?

A (Barnum) Correct. Yes.

Q Since you actually studied the birds that are

most likely to be impacted and the location of those birds, wouldn't it make sense to put line diverters at those half a dozen locations?

A (Barnum) The areas where you tend to have high rates of mortality due to collision are places where you have high densities of especially waterfowl. They're particularly susceptible. Also cranes. And there are no locations in New Hampshire where we have those high density large populations. Most of the examples of high collision areas come from the western United States where you have hundreds of thousands of waterfowl gathering during migration on specific large open water habitats. We don't have the habitats here which is probably why we don't have the species here. There's, like I said, there's no known example in New Hampshire of large mortality events for birds due to power lines.

Q Aren't these power line structures going to be taller so we've got a higher wire that's even taller then what currently exists?

A (Barnum) The height of the wire is not an important factor in collisions. The factors

that I just discussed about the birds themselves, and then habitat factors are the most important. Weather, inclement weather also is a real driver of collision. So the height of the wire itself, low wires and high wires, it doesn't make any difference, you still get mortality events, and those locations that are prone to them will have them regardless.

Q Back up to 333.

So the table that you compiled with respect to structures that may have a higher risk of avian collision appear to be located next to large bodies of water which is consistent with the concern in terms of larger birds. Is that correct?

A (Barnum) Consistent with concerns of the species that are most susceptible to collision, yes.

Q How many dead bald eagles would it take before it would be appropriate to install lane diverters?

A (Barnum) I don't have an answer for that.

Q Of the various birds on this list, isn't the bald eagle one of the ones of more concern?

A (Barnum) That's correct.

Q So, in fact, wouldn't one death be enough for the cost of a lane diverter?
A (Barnum) There are other considerations for adding the diverters to the lines. There are operational considerations. Lines that have diverters are more prone to icing. There can be wind impacts. They need to be maintained. And there's also aesthetic impacts to installing the diverters.

So until there is a compelling reason from the collision point of view to add them, since there's not generally an issue with collision in our state, I think that the, the multiple considerations, there's, like I said, there's things besides the birds to consider, and I think until there's a compelling reason, the other considerations outweigh that.
Q As I understand the equation here, we've got the death of the bird on one hand, and on the other hand we have the cost of the lane diverters and the maintenance?
A Well, and there's also the issue of icing and reliability. So power outages, et cetera.
Q And even though, I mean, we're also not talking

about a huge universe in terms of the number of structures with the greatest impact.
A (Barnum) That's correct.
Q Talking about a dozen tower structures.
A (Barnum) We're not, we're considering the area between the structures so in some cases it's more than, yeah, but --
Q It's certainly not as if it's unreasonable in terms of the number of lane diverters that we're talking about, is it?
A (Barnum) I'm not in a position to determine what's reasonable in this particular indication.
Q If you were simply looking at this particular topic from the standpoint of the bird, would you agree it would be appropriate and perhaps preferred to install these lane diverters before the bird has a collision because isn't a collision going to be fatal?
A (Barnum) Almost always, yes.
Q From the bird's perspective, wouldn't it be preferable to have these?
A (Barnum) If birds were the only consideration, certainly.
A (Carbonneau) It's important to note, though,

that the collision event is a remote possibility. It's not likely. And, therefore, I think that needs to be taken into consideration before a decision is made about how to proceed with that.

Q That may be, but, again, that goes back to my question of how many dead bald eagles we need to have before it gets deemed appropriate.

A (Carbonneau) And chances are, there won't be any.

Q It seems unusual to establish a protocol only after the bird has died as opposed to in advance.

A (Carbonneau) I disagree with that. These are adaptive management strategies. They're used all the time in the wind energy department.

Q 311. Dr. Barnum, do you recognize Exhibit 311?

A This is Bicknell's thrush.

Q And what's important about a Bicknell's thrush?

A They're very rare. They summer in high elevation areas and in the northeast, and they overwinter in islands in the Caribbean, especially the Dominican Republic where their habitat is being severely restricted, and so

there's real bottleneck to their overwintering habitat and survival.
Q How many Bicknell's thrush are there here in New Hampshire?
A I do not know that.
Q You mentioned that they are a high elevation bird?
A Correct.
Q So where in the Project path would we anticipate encountering a Bicknell's thrush?
A (Barnum) So there's a model to determine what is suitable habitat for Bicknell's, and as you go up in latitude, lower and lower elevations are suitable for this species. Within our Project area, the area that is determined to be suitable is the Sugar Hill area in Stewartstown and Dixville so 27,000 feet, well, 26,000 feet and higher essentially. 2600. I'm sorry. It's not the Himalayas.
Q That went right by me.
Am I correct in thinking that there are no Best Management Practices specifically dealing with the Bicknell?
A (Barnum) That is correct. I conducted a survey

for this species in the area for suitable habitat, and we did not detect it. For the survey, I followed the protocol recommended by the Mountain Birdwatch which is organized specifically to survey for this species throughout the northeast.

Q So you surveyed what area?

A (Barnum) The Sugar Hill area which is Dixville and Stewartstown.

Q And how was that --

A (Barnum) So not the town of Sugar Hill but the mountain called Sugar Hill. It's confusing, two different.

Q And what did you rely upon in conducting that study?

A (Barnum) I used the protocol recommended by the Mountain Birdwatch which is an organization dedicated specifically to surveying for high elevation birds, and they have a specific protocol which is used throughout the northeast. It's a standard protocol that allows different survey efforts to all be compared.

Q I appreciate that it's got credentials, but what is the protocol?

A (Barnum) You need to survey for this species, it's a point count protocol which means you're going to different points, and you're listening for all the birds that you hear. Needs to be conducted between June 1st and June 30th, and you need to do the survey between sunrise and 8 a.m. You go to your points which need to be 250 meters apart. You listen for five minutes. You write down everything you hear. If you don't here a Bicknell's thrush, you use a taped recording of the call, you play that back three times, and after each playback you listen for one minute, and see if you draw any in to respond to your recording.
Q And when was the survey conducted?
A (Barnum) 2013.
Q Are Bicknell's thrush migratory?
A (Barnum) They are, yes, which is why you have the specific dates to make sure you are surveying during the time when they would be present.
Q But does that migration vary from year to year?
A (Barnum) It does, and that's why June 1st is used. Some years they're going to come earlier,

but even on a cold slow year, they will be there by June 1st, and, again, this was, this protocol has been developed and refined over years, and it's used because it's known to be accurate.

Q If there were no birds detected by the study in 2013, does that guarantee that there are going to be no birds there whenever this Project construction gets under way?

A (Barnum) The results of the survey one year would not guarantee it. However, in addition to doing the survey, I also accessed the habitat, and the habitat at this location, although the elevational requirements are met, the structural component of the vegetation is extremely marginal for this species, and probably gotten only less good for them in the intervening time as the trees have grown up.

These guys require shorter trees. Fir waves are what they really like. They like the edges of open areas so envision the little trees at the top of the ski area at the edge of the ski run. That's perfect for them. They love that.

And the top of this hill has been logged.

It's regenerating, and the trees are, in general, much taller. There is some small pockets of areas where the habitat was marginally suitable, but, again, over time these trees are just getting taller and becoming less suitable.

Q So as I understand it, you undertook this study in the northern elevations because you thought the habitat could support this very rare bird?

A Had the potential to, yes.

Q You didn't find any. Just because you didn't find any in 2013 has no bearing on whether they're going to be there two years from now, and there is no further followup?

A (Barnum) It does have some bearing. Like I said, I assessed the habitat. I determined that the habitat was marginal, and based on successional growth, the vegetation which is well understood, I determined that the habitat will become less good over time.

Q I guess I'm not following the reasoning that further followup isn't warranted because the habitat was marginal. The habitat is the same as it was when you decided that it warranted a

study.
A (Barnum) No. It's different. Trees continue to grow.
Q Well, trees growing up little, but it still could support this bird.
A (Barnum) Maybe.
Q I take it, even though it's rare, it doesn't warrant any kind of Best Management Practice for somebody like an environmental monitor to keep their eyes peeled for this bird?
A (Barnum) We're not recommending that at this time.
Q Would it be difficult to recognize this bird versus other birds?
A (Barnum) The call is distinctive. That's generally how you locate them. You can see they're not brightly colored. They're quite cryptic, and they spend most of their time down in the lower vegetation. So the call is what you're listening for.
Q So if an environmental monitor was trained on the call, they would be able to know whether this rare bird was indeed present.
A (Barnum) They could, yes.

Q And if the bird was present, what type of measures should be undertaken to safeguard it?
A (Barnum) No activity during the breeding season which is June 1st through June 30th.
Q There are a number of other birds mentioned in your study that as I understand it might be impacted by the Project: the sedge wren, the rusty blackbird and the pied-billed grebe.
A It's just grebe.
Q Why is it that those three birds were selected to be included in your report?
A (Barnum) Those three birds are all species of special concern.
Q What does it mean when you say they are a species of special concern?
A (Barnum) They are designated by New Hampshire Fish & Game to have that status, and that means that they are species that could potentially become listed as threatened or endangered in the future.
Q So, in other words, their populations are decreasing?
A (Barnum) They are decreasing or they are animals that were recently listed as threatened or

endangered whose populations are increasing but haven't increased to the point yet where they want to not give them some consideration.

Q And although these three birds were referenced in your report, it's my understanding that you actually didn't do an inventory with respect to whether they might be impacted by this Project. Is that correct?

A (Barnum) I didn't do direct surveys for them. I evaluated habitat, and this was in line with what was recommended to me by Fish & Game in terms of choosing which species to do a direct survey for versus species to simply evaluate habitat for.

Q And describe the merits of a direct survey versus an analysis of evidence of habitat.

A (Barnum) The species which -- so for Bicknell's thrush, I chose to do a direct survey rather than just analysis of the habitat because this species is a candidate for federal listing. So in the event that it became federally listed before the Project was constructed, I wanted to have some baseline information on that species.

The other three species that we're talking

about are not candidates for federal listing, and are not known to breed -- I'm trying to remember now. Not known to breed within the state or very uncommonly breed in the state. So that if a bird was present, it's not that its nest would be impacted. It would be an adult bird who could move from the construction area easily.

Q Am I correct that a direct survey is a more accurate survey versus simply evidence of habitat?

A (Barnum) You have a more, yeah, you have a better understanding about presence based on a direct survey.

Q Evidence of habitat is basically desktop modeling?

A (Barnum) Again, as I mentioned before, I've directly observed vast stretches of the right-of-way. So it was a combination of looking at aerial photography and my own personal direct observations of the suitability of the habitat.

MS. CONNOR: I'm going to turn to snakes unless folks have had enough fun.

PRESIDING OFFICER HONIGBERG: Well, we're going to have to break around five. So if you can do something in 10 minutes or so, that would be great.

BY MS. CONNOR:

Q Ms. Barnum, with respect to the three birds that we were just talking about, the sedge wren, the rusty blackbird and the pied-billed grebe, you've indicated that you don't believe that these birds would be nesting in New Hampshire because they're migratory?

A I misspoke. So the sedge wren, there are no nesting records. They're known to breed in other locations. They tend to show up in the state later in the summer, and they're probably not breeding. I don't know that anybody knows that for sure.

The pied-billed grebe, there are some nesting records. Rusty blackbirds are known to breed within the state, and I also assume for the rusty blackbird that it's present within the right-of-way. I observed it there and that it probably does nest within the right-of-way.

Based on that assumption, some impacts to

that species will occur during construction or of the Project, and those impacts will be compensated for, mitigated for through the mitigation package. The parcels of property that will be protected provide areas with plenty of suitable habitat for rusty blackbirds within its range, and they should be able to take advantage of those locations.

Q If as you just indicated that you misspoke and that these birds not only nest in the right-of-way or not only nest in New Hampshire but also in the right-of-way, why not, as you did with the other threatened bird species, include at a minimum a nesting moratorium with regard to active nests? Seems like a pretty small restriction.

A (Barnum) That would be May 25th through July 25th. It would be a fairly substantial restriction.

Q So that's why we don't include it? Because it's too much of a restriction on construction as opposed to too much benefit or protection for the bird?

A (Barnum) It is also difficult to locate these

nests. They're not easy to find. And the mitigation package does provide benefits to the species.

Q Well, again, without a direct survey, we don't know how many birds we're talking about this having an impact upon?

A (Barnum) Correct. However, I did do some habitat analysis for this species. It is a wetland breeding species. It breeds in wetland areas with coniferous trees that are maybe between five and 15 feet tall, and it also only breeds in the northern part of the state. So, essentially, Whitefield north might have habitat for this species.

Wetlands within the existing right-of-way generally would not have suitable nesting habitat because the current vegetation management would keep the vegetation lower than they would like for their nesting. In the new right-of-way there's actually very few wetlands because of the topography that we're traveling over. There are a few areas, certainly.

However, I don't believe that suitable nesting habitat for rusty blackbirds is

widespread or extensive within the new right-of-way where impacts might be most likely to occur.

Therefore, it's my professional judgment that while there would be impacts, they would be relatively minimal, and that the mitigation would provide suitable compensation for them.

Q And what about the pied-billed grebe which you've also indicated would be nesting within the Project path?

A (Barnum) So, again, habitat analysis for pied-billed grebe, these guys need large open water areas with a 50/50 mix of open water and tall emergent vegetation. These are habitats that are rare throughout New Hampshire to begin with. There are a couple of very marginal areas within the Project right-of-way. And the potential for impacting a nesting pied-billed grebe, while not zero, is very low.

Q I want to return to the Bicknell's thrush which is still up on our screen here. You indicated that you did a survey pursuant to the protocol. It was in 2013. Are there other protocols that recommend more, a wider range of sampling rather

than one year for the Bicknell's thrush?
A (Barnum) If there are, I'm unaware of them.
Q The standard protocol with regard to tracking the migration of an endangered bird, sort of like when we went back on the egg count with respect to the butterfly, isn't it always more reliable to get increased data points as opposed to doing it in just one segment in time?
A (Barnum) If we're talking about tracking migration, we'd be using a completely different survey protocol.
Q How about tracking location within New Hampshire? Nesting?
A (Barnum) More data points are always more reliable. If the habitat were of higher quality, I'd feel like multiple years of survey might be preferred. I'm comfortable with the effort that I put forth. In my professional judgment, it was a suitable amount of effort.
Q So the decision to inventory or investigate the habitat of the Bicknell's thrush on just one year as opposed to several years is sort of based on your professional judgment as opposed to a standard protocol?

A (Barnum) Fish & Game has reviewed the work I've done. They haven't requested an additional survey. If they were to request an additional survey, we could do that.
Q I'm a little confused about the reliance upon Fish & Game. It appears that when Fish & Game agrees with what has happened, that's the answer, but when they disagree as with the Normandeau letter, then it doesn't matter.
A (Barnum) That letter was directed at the EIS.
Q Well, it was also directed at decisions that have been made such as fragmenting the Deer Wintering Areas and fragmenting the area for the lynx and the marten, and that hasn't changed. So whether they were upset about the EIS or upset about where this Project is going --
A (Barnum) That's correct. So they expressed an opinion in that letter, but as a consequence of that opinion, they haven't asked us to do anything different with our AMMs. We've been consulting with them, as Lee alluded to. We had a meeting with them just last week. They haven't requested any additional measures. They have had every opportunity to do so based on

their opinions which they expressed in that letter, and they haven't.

Q So even though they may not be content with the status of the protection being afforded certain animals, unless they push back, nothing further is going to be done in order to afford more protection under the Best Management Practices?

MR. WALKER: I'm going to object to that characterization of that letter.

PRESIDING OFFICER HONIGBERG: I don't know that that was a characterization of the letter. Can you repeat that question?

MS. CONNOR: I'll try.

PRESIDING OFFICER HONIGBERG: Or if you can word a question to avoid the issue, that's fine, too. I didn't hear it that way, but I wanted to see what --

BY MS. CONNOR:

Q Am I correct that the Best Management Practices, that you're not going to take action under the Best Management Practices to provide greater protection unless any displeasure by Fish & Game results in more strenuous pushback?

A (Barnum) The AMMs that we're offering are

appropriate and suitable based on my professional experience and opinion. If Fish & Game has a different opinion, they can express that, and we'll respond to it.

Q Well, it appears that that has been expressed with regard to Deer Wintering Areas, the lynx and the marten, and the Best Management Practices haven't changed.

MR. WALKER: Same objection as to the characterization of Fish & Game's. What she's expressing as to what Fish & Game has said, we disagree with, and we'd object to that.

PRESIDING OFFICER HONIGBERG: Dr. Barnum, is there anything beyond what you just said in how you'll deal with Fish & Game you want to add in response to the questioning you're getting from Counsel here? Or have you said all you can say about how you're going to deal with Fish & Game?

A (Barnum) Yes, I think so.

PRESIDING OFFICER HONIGBERG: Is there anything else you want to ask about, Ms. Connor?

MS. CONNOR: No, I will move on to another topic, but it's also 5.

PRESIDING OFFICER HONIGBERG: Yes, it's going to have to wait until tomorrow. We'll break for the evening. The hearing will resume Friday at nine o'clock.

Tomorrow morning we'll be receiving public comment. There has been a notice issued for the three public comment sessions that are on the schedule. The expectation is that we'll probably need one more. I'm sure you've all seen the notice, and it doesn't really apply to anybody in this room unless there may be some members of the audience who are part of that. But we're going to go on, I think it's going to be hour 39 of public comment before the Committee. That doesn't include the other opportunities members of the public have had to attend the prefiling meetings that the Applicant was required to hold, and the sessions that took place in early 2015 in the five counties.

So it's part of the process, and we will continue to go through it. We've also received, I think, over a thousand written comments thus far that are all being posted to the website. So we're certainly hearing from people, and we

expect to hear more tomorrow. And then we will see you again on Friday. Mr. Walker?

MR. WALKER: Mr. Chairman, just very briefly, I wanted to raise a scheduling issue. As a result of some these hearings days and the schedule being modified, I wanted to alert everyone that Mr. Varney has a conflict that has come up on the 16th which is Friday. He will be here for the morning session, but not the afternoon session so as people are planning questioning because he's going to be back here on the 20th. So that, obviously, if we have to juggle and move things around and come back to him, that's fine, but I wanted to make sure people knew that.

He does have additional conflicts, and if this gets pushed into the end of June --

PRESIDING OFFICER HONIGBERG: Yes, we'll jump off that bridge when we get to it, but people can adjust to Mr. Varney's schedule on Friday. Thus far, he's been blissfully, I'm sure for him, quiet, but I'm sure that will change at some point, but people can work around that, and if there's a need to rearrange

people's schedules on the questioning side to make sure they have an opportunity to ask Mr. Varney questions they need to ask, then we'll deal with that.

MR. WALKER: Thank you.

PRESIDING OFFICER HONIGBERG: So we're going to close the hearing today and adjourn. Off the record.

(Hearing recessed at 5:02 p.m.)

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 18th day of June, 2017.

_____
Cynthia Foster, LCR