

1 **STATE OF NEW HAMPSHIRE**2 **SITE EVALUATION COMMITTEE**3 **June 14, 2017 - 9:04 a.m.**4 **DAY 16**

5 49 Donovan Street

6 ***Morning Session ONLY***

7 Concord, New Hampshire

8 {Electronically filed with SEC on 06-26-17}

9 **IN RE: SEC DOCKET NO. 2015-06**
10 **Joint Application of Northern**
11 **Pass Transmission, LLC, and**
12 **Public Service Company of**
13 **New Hampshire d/b/a Eversource**
14 **Energy for a Certificate**
15 **of Site and Facility.**
16 **(Hearing on the merits)**17 **PRESENT FOR SUBCOMMITTEE/SITE EVALUATION COMMITTEE:**18 **Chrmn. Martin P. Honigberg** Public Utilities Comm.
19 *(Presiding as Presiding Officer)*20 **Cmsr. Kathryn M. Bailey** Public Utilities Comm.
21 **Dir. Craig Wright, Designee** Dept. of Environ. Serv.
22 **Christopher Way, Designee** Dept. of Resources &
23 Economic Development
24 **William Oldenburg, Designee** Dept. of Transportation
25 **Patricia Weathersby** Public Member26 ***ALSO PRESENT FOR THE SEC:***27 Michael J. Iacopino, Esq., Counsel for SEC
28 *(Brennan, Caron, Lenahan & Iacopino)*

29 Pamela G. Monroe, SEC Administrator

30 *(No Appearances Taken)*31 **COURT REPORTER: Steven E. Patnaude, LCR No. 052**

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(resumed)**

JULIA FRAYER

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[WITNESS: Frayer]

P R O C E E D I N G

1
2 CHAIRMAN HONIGBERG: All right. Good
3 morning everyone. We're going to be resuming
4 and finishing the questioning of Ms. Frayer
5 this morning, before we move onto the next
6 panel.

7 I think we're going to return to
8 Commissioner Bailey right now.

9 (Continuation of the testimony
10 of **Julia Frayer.**)

11 CMSR. BAILEY: Thank you. Good
12 morning, Ms. Frayer.

13 WITNESS FRAYER: Good morning.

14 CMSR. BAILEY: I want to follow up on
15 some line of questioning that the Chairman
16 began yesterday in follow-up to my questions.

17 WITNESS FRAYER: Yes.

18 BY CMSR. BAILEY:

19 Q. Assume with me that the New England Clean Power
20 Link, the TDI line, wins the RFP in
21 Massachusetts. Would the savings in the energy
22 market and the capacity market be about the
23 same as if -- as you predicted would occur if
24 Northern Pass wins, or, if Northern Pass gets

[WITNESS: Frayer]

1 built and --

2 A. The savings as a consequence of the New England
3 Clean Power Link?

4 Q. Yes. Like New England Clean Power Link wins,
5 Northern Pass doesn't get built, isn't the
6 savings going to be in the same ballpark?

7 A. I have not specifically studied the New England
8 Clean Power Link, *per se*. But, if it were
9 projectwise, in terms of its characteristics,
10 like -- like for like with Northern Pass, I
11 would agree with the conclusions you're making
12 that the savings should be the same.

13 We do know, though, that it's a little bit
14 different, in terms of -- and I should restate.
15 Let me step back. In terms of its electricity
16 markets impact, electrically, from a
17 transmission system perspective, it's very
18 similar. And I -- but I recall reading in its
19 Vermont application that they had assumed only
20 a 500 megawatt CSO. I don't know the details
21 behind that.

22 Q. Okay.

23 A. So, as long as we assume it's a thousand
24 megawatt CSO, as we're assuming for Northern

[WITNESS: Frayer]

1 Pass. As long as we assume also that, in terms
2 of energy flows, we had made a more
3 conservative assumption. Again, and I believe
4 in their Vermont application, they had assumed
5 a much higher capacity factor on the line for
6 energy flows than what we have.

7 But, assuming they're the same, I think
8 the conclusion one would have to draw is that
9 the electricity -- wholesale electricity market
10 benefits would be the same. Of course, the
11 local economics would not be the same.

12 Q. Yes.

13 A. Very different construction projects,
14 locations, different local economies. Vermont
15 and New Hampshire are very different, in terms
16 of their ability to handle this type of
17 project.

18 Q. Yes.

19 MR. IACOPINO: What is a "CSO"?

20 CMSR. BAILEY: Capacity Supply

21 Obligation.

22 MR. IACOPINO: Capacity Supply

23 Obligation.

24 WITNESS FRAYER: Good job.

[WITNESS: Frayer]

1 CMSR. BAILEY: All right. Maybe we
2 shouldn't talk in acronyms.

3 BY CMSR. BAILEY:

4 Q. All right. Do you have an active copy of the
5 ORT -- the worksheet that the internal Market
6 Monitor might use or would use to calculate the
7 Offer Review Trigger price?

8 A. Yes.

9 Q. Okay. And that's the price by which you would
10 have to -- the price that you would have to
11 meet in order to clear the market -- well, why
12 don't you tell me, so that the record is
13 clearer.

14 A. So, the minimum offer price offer is developed
15 in a workbook that ISO-New England actually
16 puts out. This is the workbook we're talking
17 about. So, ISO-New England publishes a
18 workbook with fields that a project sponsor
19 fills in. And, once all the fields are
20 populated, it itself calculates, at the bottom
21 of the workbook, FCM minimum offer floor price,
22 in dollars per kW per month, which is
23 representing the true economic costs of the
24 project and what the project would have to bid

[WITNESS: Frayer]

1 into the market in order to recover and earn a
2 reasonable return on all those costs. And that
3 cost will then be binding on that project and
4 the sponsor in the next FCA. It will, if, as
5 the auction moves from round to round and
6 prices get lower, if the prices move to a point
7 where they are lower, and the ISO is one that
8 actually sets those round prices, once the ISO
9 moves to the next round, and in that round of
10 prices are lower than this FCM minimum offer
11 floor price, then that project is removed from
12 the supply, and it can no longer participate.
13 So, it will not clear.

14 Q. Right. And, if that happens and it doesn't
15 clear, there's no savings from the capacity
16 market?

17 A. From this Project, yes.

18 Q. Okay. All right. Now, yesterday --

19 A. Well, actually, let me step back. There is no
20 savings that year.

21 Q. Right.

22 A. The Project can actually reapply with the --

23 *[Court reporter interruption.]*

24 **CONTINUED BY THE WITNESS:**

[WITNESS: Frayer]

1 A. The Project can reapply with the MOPR, M-O-P-R,
2 in the next Forward Capacity Auction. And, if
3 the next Forward Capacity Auction has a higher
4 price than the MOPR, the Project will clear.
5 So, then, there's a loss of one year's of
6 capacity benefits. Or, not even a loss, it's
7 more of a timing, a shift.

8 BY CMSR. BAILEY:

9 Q. Okay. And, just so the record is clear, the
10 MOPR, the "Minimum Offer Price Rule", is the
11 rule that establishes the Offer Review Trigger
12 Price. So, the price that this worksheet is
13 calculating is the Offer Review Trigger price,
14 right?

15 A. I always -- so, this worksheet is actually
16 calculating a project's -- a project-specific
17 offer floor price.

18 Q. Right.

19 A. The concept of "ORTP", I usually use it more as
20 a way to, when I explain it to clients, is that
21 the ISO also, in advance of each auction,
22 establishes those ORTP values generically for
23 specific technologies, and that determines
24 whether they then need to -- that determines

[WITNESS: Frayer]

1 whether a new entrant in a particular class of
2 technology needs to go in and submit then this
3 worksheet.

4 Q. Okay. So, if the ORTP that the ISO sets is
5 higher than the cost that you believe is the
6 true cost, then you can use this worksheet to
7 convince the Market Monitor that your price --
8 your minimum price should be lower?

9 A. Exactly.

10 Q. Okay. Thank you. All right. So, yesterday we
11 talked about opportunity costs, and that's the
12 cost of the supply that you would not -- the
13 second best alternative to investing in
14 Northern Pass and selling the energy into the
15 New England market, and, according to your
16 analysis, that was the Ontario off-peak price,
17 right?

18 A. Yes.

19 Q. Okay. So, and in the spreadsheet or in this
20 workbook, I had said yesterday that I thought
21 that that was input in the variable O&M block,
22 and you said that variable O&M was operation
23 and maintenance costs of maintaining and
24 operating the Northern Pass Transmission line.

[WITNESS: Frayer]

1 Do you remember that?

2 A. Yes.

3 Q. Okay. So, can you look in the spreadsheet, and
4 I'm going to try to do this in the public
5 record, in the "Project Inputs" tab?

6 A. Yes. And one should, in the "Project Inputs"
7 Tab, one would go to Line 110 --

8 Q. Well, no. Wait a minute.

9 A. Oh.

10 Q. I don't want to go to 110 yet.

11 A. Okay.

12 Q. I want to go to Line 66, "Variable O&M". And
13 then click on that dollar figure that's there,
14 and look at the formula.

15 A. Yup.

16 Q. And where does that lead you? Well, I can't
17 say it -- well, it leads you to Line 110.

18 A. Yes.

19 Q. Which is the cost of the Ontario energy. So,
20 the variable O&M is where you input the
21 opportunity cost, the supply cost?

22 A. The variable O&M in the financials, but there's
23 a line item for it. So, I apologize. I
24 mistook what you were saying. So, there's a

[WITNESS: Frayer]

1 line item in our model. We're not burying it
2 in the variable O&M. 110 specifies those
3 opportunity costs.

4 Q. Right. But --

5 A. From our -- as an input from our perspective.

6 Q. Okay.

7 A. And, then, in terms of the DCF, Discounted Cash
8 Flow calculations, that gets then aggregated in
9 on the cost side. So, it's not a revenue line
10 item, it's a cost side. And I think, though,
11 it gets brought in, as you said, on the cost
12 side in --

13 Q. Variable O&M?

14 A. -- under operating costs and variable O&M.

15 Q. Yes. And that's the cost -- that's the
16 opportunity cost or the proxy for the cost of
17 the supply, since you're not building a new
18 dam?

19 A. Yes.

20 Q. Okay. So, assuming that the TDI line was a
21 viable option, wouldn't that opportunity cost
22 be the TDI line cost?

23 A. I don't believe that the IMM would be -- so,
24 let's step back, and let's talk about where I

[WITNESS: Frayer]

1 think the opportunity cost could be used in
2 consideration of your hypothetical.

3 If, continuing the hypothetical you
4 started, if the Massachusetts RFP is awarded to
5 TDI, and TDI then gets a Forward Capacity
6 Auction commitment. Let's say it's not even
7 yet built. It's getting constructed. It's got
8 the commitment, it's got the contract, it's
9 getting constructed. And, then, Northern Pass
10 comes in in the next Forward Capacity Auction,
11 in that case, because there's already a
12 commitment that the ISO can rely on for New
13 England Clean Power Link, I then think they
14 might consider that as the best alternative.

15 But they would not consider it as the best
16 alternative today for HQ, because it's not a
17 commercially realistic alternative today for
18 the shipper, for Hydro-Quebec.

19 Q. If TDI won the Massachusetts RFP, and Northern
20 Pass wasn't built yet, and didn't get a
21 capacity supply obligation in the next auction,
22 would the Market Monitor perhaps use the
23 opportunity cost of Northern Pass in its
24 calculation for the TDI minimum offer price?

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[WITNESS: Frayer]

1 A. I don't believe they would.

2 Q. Okay.

3 A. And, if I can extend the hypothetical a little
4 bit further, let's say that, again, the TDI,
5 with their New England Clean Power Link,
6 hypothetically won the Massachusetts RFP, they
7 cleared the Forward Capacity Auction. They've
8 started construction, they built it. Energy is
9 flowing on it. So, some time has past.
10 Northern Pass then comes and says "I want to
11 participate" at that time, and says "Here is
12 our MOPR analysis." When they are at that
13 point submitting their MOPR analysis, the
14 sponsor, Hydro-Quebec, would need to again look
15 very critically at its opportunity cost.
16 Because, at that point, they can't use
17 Northern -- TDI, because TDI is already fully
18 loaded.

19 Q. Right.

20 A. There is no more room. So, again, they have to
21 go back and think "Okay, but for the project
22 that I'm trying to evaluate right now, what are
23 my opportunities, subject to the limits of the
24 transmission system, to flow energy?" And they

[WITNESS: Frayer]

1 might go right back to square one, that "I do
2 have opportunities", but it will be off peak,
3 maybe sending to a less -- a lower price
4 market, like Upstate New York or Ontario.

5 Q. So, what you're saying is that any of these
6 projects would never use opportunity cost of
7 another possible project, because it's not
8 really possible yet?

9 A. It's not commercially realistic. Once it
10 becomes commercially realistic, I think it's
11 very plausible that it would be part of the
12 discussion with the internal Market Monitor.

13 Q. Except if it's already filled, then there's
14 no --

15 A. But, if it's filled, then it's no longer --
16 exactly.

17 Q. There's no transmission capacity available.
18 Okay. All right.

19 If Northern Pass were granted a
20 certificate, with a condition that it can only
21 go forward if it receives a capacity supply
22 obligation in the capacity market, without the
23 substitution auction, what would the
24 ramifications to your clients be of that

[WITNESS: Frayer]

1 condition?

2 A. I can't speak for Eversource or Northern Pass
3 specifically, or, for that matter, for
4 Hydro-Quebec, what we believe to be the shipper
5 on the Project. But, I think, from my
6 perspective, if I was maybe in their shoes, and
7 I'm not, --

8 Q. Okay.

9 A. -- I would say that, well, it is my business
10 intent to sell capacity, and because the
11 economics of just selling energy aren't very,
12 let's say, aren't as convincing, because
13 there's a lot of revenues to be made from
14 selling capacity, and actually I have the
15 capacity to sell that would otherwise literally
16 be valueless. Because one other element of
17 this, of course, is on the opportunity cost, we
18 put in opportunity costs for energy sales.
19 Hydro-Quebec today has no alternative channels
20 for monetizing the value of its capacity. It
21 can't sell capacity into Upstate New York or
22 into Ontario. There are no capacity -- in
23 Ontario, there's no capacity market. And, in
24 Upstate New York, they don't have CRIS

{SEC 2015-06} [Day 16/Morning Session ONLY] {06-14-17}

[WITNESS: Frayer]

1 rights --

2 *[Court reporter interruption.]*

3 WITNESS FRAYER: Oh, sorry. It's an
4 acronym.

5 **CONTINUED BY THE WITNESS:**

6 A. They don't have -- New York-ISO requires
7 capacity rights to sell capacity. And capacity
8 rights on the interties was essentially
9 auctioned off a very long time ago. Sometimes
10 they become available, but Hydro-Quebec doesn't
11 own capacity rights on a year-round basis to
12 sell capacity into Upstate New York. And their
13 other market opportunities, New Brunswick,
14 again, no capacity market.

15 So, for them, there is -- they have a
16 resource that has capacity value. They can't
17 monetize it but for a project like this.

18 So, just a long-winded way of responding
19 to your answer, I think that they are very much
20 aligned with a view that they need to be --
21 they need to have an economic project that can
22 take advantage of the ISO-New England capacity
23 market, provide value to ISO and to consumers,
24 in terms of reliability, but also monetize a

[WITNESS: Frayer]

1 value for themselves.

2 BY CMSR. BAILEY:

3 Q. But, as a Committee member, I want to be really
4 sure that the savings that you're projecting
5 are robust. And, so, one way to do that would
6 be to make a condition that they have to clear
7 the capacity market.

8 A. And I appreciate that. I don't know what the
9 legal ramifications of that is. It's probably
10 above my expertise and --

11 Q. I'm not asking you for a legal opinion.

12 A. Okay.

13 Q. I'm asking you for an opinion as an advisor to
14 the client, with all your knowledge, and you're
15 really sure that this is going to clear the
16 capacity market, so that condition wouldn't be
17 a problem?

18 A. I am highly confident that it should clear the
19 capacity market. And I think there, as
20 alignment with the Project about the value of
21 those capacity -- they're interested in
22 clearing the capacity market, not -- for their
23 own economic rationale, not because of the
24 benefits that are created for consumers.

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[WITNESS: Frayer]

1 I just can't anticipate right now, sitting
2 here today, off the cuff, if there are other
3 ramifications of that type of condition. I
4 suspect that everybody needs to think through
5 it and make sure that it doesn't create
6 unintended --

7 Q. Right.

8 A. -- and negative consequences.

9 Q. Do you think that they would build it if they
10 didn't have a capacity supply obligation?
11 Would it make sense?

12 A. I think they would say that they could be --
13 they'd be open to evaluating all commercial
14 opportunities. I think that's what they would
15 say.

16 Q. Okay.

17 A. And that's a little bit of a no answer to your
18 question. Personally, I think that the
19 capacity revenues are a large element of this
20 Project. On a dollar basis, of course, energy
21 revenues are bigger than the capacity revenues
22 that a shipper would be making. But they're
23 still significant dollars, and we discussed how
24 big those dollars are in my Rebuttal Report.

[WITNESS: Frayer]

1 CMSR. BAILEY: Right. Okay. Thank
2 you.

3 CHAIRMAN HONIGBERG: Ms. Weathersby,
4 I think, has a few more questions as well.

5 MS. WEATHERSBY: Good morning,
6 Ms. Frayer.

7 WITNESS FRAYER: Good morning.

8 MS. WEATHERSBY: Welcome back. The
9 danger of giving us more time is we think of
10 more questions.

11 BY MS. WEATHERSBY:

12 Q. Mine concerns back on jobs. It's my
13 understanding that the national unemployment is
14 now around 4.2 percent, and New Hampshire is
15 below 3.

16 MS. WEATHERSBY: I'm sure Mr. Way
17 could tell me exactly what it is?

18 MR. WAY: 2.9.

19 MS. WEATHERSBY: 2.9.

20 BY MS. WEATHERSBY:

21 Q. So, I'm wondering, this job -- the Project is
22 anticipating creating a lot of jobs. Are those
23 jobs -- does New Hampshire need those jobs?

24 A. Even with -- even as New Hampshire seems to be

[WITNESS: Frayer]

1 in an envious position of generally low
2 unemployment rates, relative to perhaps other
3 parts of the U.S. economy, or even
4 internationally, I think, to the individual who
5 gets the job, those jobs are gold. And I think
6 New Hampshire does, in that perspective, need
7 to take into account the point of view of the
8 individual and the jobs that are created.

9 To the more macro question you're asking,
10 given the fact our unemployment -- and maybe
11 you're not even asking this, I'm sorry. But,
12 given our unemployment rate is so low, do we
13 have the bandwidth to create the jobs? And the
14 answer to that is "yes". These are New
15 Hampshire -- when we -- actually, I should
16 probably even take the opportunity to kind of
17 clarify on the discussion yesterday we had.
18 When New Hampshire -- when the client told me
19 that "these number of jobs I expect to source
20 from New Hampshire", they didn't simply mean
21 that the jobs themselves would be located in
22 New Hampshire. They were looking to give
23 preference to New Hampshire residents. And my
24 understanding is that that's part of their PLA,

[WITNESS: Frayer]

1 the labor agreement that they have. And my
2 understanding is, even the national --
3 international firm that's won the EPC, is going
4 to be subject to that PLA, and that they will
5 be using local offices -- local people living
6 in New Hampshire today for those jobs in New
7 Hampshire.

8 So, I think it is important. We're not
9 talking about eliminating the unemployment rate
10 to zero, but it is contributing to those
11 individuals that will get this opportunity.

12 Q. So, you partially answered my next question, is
13 that -- that is whether or not we think there's
14 an adequate supply of workers, you know, even
15 if New Hampshire residents are given first
16 priority, *etcetera*, are those workers out there
17 to fill this, to fill the need?

18 A. And I believe that was exactly the question
19 that was before us when we were initially
20 talking to Eversource about the data that we
21 would need in order to do these estimates. The
22 labor spending, we wanted to be realistic to
23 the labor markets here in New Hampshire.

24 So, for example, I agree that there might

[WITNESS: Frayer]

1 be very specific technical jobs, splicing of
2 cable I think came up on the construction
3 panel, that will not be sourced in New
4 Hampshire. We were realistic about that. But
5 there are many other jobs that are necessary
6 during the installation and construction of the
7 Project that can be sourced from New Hampshire,
8 and that New Hampshire workers will be given a
9 preference, as my understanding of the PLA. I
10 might not be using the exact words, but that's
11 my interpretation.

12 Q. So, your answer to my question is that you feel
13 as though there's enough New Hampshire workers
14 to meet the demand of this Project?

15 A. Yes. And, in fact, the REMI model helps us
16 also gauge that. Because I have done similar
17 analysis in other states, where the REMI model
18 basically said "No, we can't fill it. So,
19 you're asking me to spend this much in this
20 sector of our state economy, and I don't have
21 labor to fulfill that need." So, the REMI PI+
22 model is also kind of a sanity check on those
23 inputs. It didn't tell us that it's -- it's
24 basically then dragging in jobs from

[WITNESS: Frayer]

1 neighboring states because it can't fulfill
2 that demand for labor within New Hampshire, for
3 those sectors that were affected.

4 Q. Does your answer change when you take into
5 account the number of other transmission line
6 projects that are underway or scheduled to go?
7 Merrimack Valley, Seacoast Reliability, perhaps
8 the TDI, which I know isn't a reliability
9 project, but if the -- the New England Power
10 Link goes. Are there sufficient workers in New
11 England, or even nationally, that can come and,
12 I guess, New England for the not highly
13 specific jobs, but even nationally, are there
14 enough folks that can, you know, do the HDD
15 drilling for three, four or more projects just
16 in this region, never mind what else is going
17 on in the country?

18 A. So, let me speak a little bit to that. We -- I
19 think the term I like to use to the issues
20 you're raising is "supply chain pressures",
21 where the entity, Northern Pass, is trying to
22 hire workers and is competing with other
23 projects. I don't think that will be an issue,
24 relative to some of the ongoing

[WITNESS: Frayer]

1 reliability/transmission-related work, at all.
2 In fact, I think it's actually a positive,
3 because most of that work, timingwise, has --
4 some of that work, because it's been more
5 ongoing, there are other transmission projects,
6 reliability transmission projects in the region
7 that have been completed. That has actually
8 created some of the more trained employment for
9 this Project. So, it's actually a positive,
10 that we've had that build-out in other states
11 in New England and in this state.

12 I think, in terms of competition with
13 other projects, frankly, I don't think there's
14 a lot of direct overlay with the TDI/NECPL
15 Project. That's an underwater project, and
16 very much so, the skill set for that underwater
17 cable-laying that's not here in the region.
18 There is some undergrounding, just like there
19 is in Northern Pass as well. But I think that
20 there shouldn't be a crunch on the labor market
21 from having, let's say, two projects over the
22 same time frame, when we look at it on a
23 regional basis.

24 Q. Do you anticipate then any effects on the

[WITNESS: Frayer]

1 Project regarding perhaps project scheduling,
2 in that maybe there -- it may take a while to
3 find enough qualified workers, or will they
4 have to pay more for the workers, and therefore
5 affects project budget, due to the low
6 unemployment?

7 A. I'm not an expert on their construction
8 costing. But my understanding is that, unlike
9 perhaps traditional utility projects that were
10 kind of built with utility -- direct labor or
11 contracted labor through the utility, I think
12 that the budget here is more contained, because
13 of the presence of the EPC, which is the
14 more -- the more common way of doing it.

15 I think, also, on the flip side, to the
16 extent that there is more labor spending spent
17 in New Hampshire, that's a benefit to New
18 Hampshire. Because it's more dollars in the
19 pockets of New Hampshire residents to spend on
20 other goods and services in the region.

21 Q. But it can also affect project viability?

22 A. At the margin -- oh, I shouldn't say the word
23 "margin". At a certain point, I would
24 definitely agree it could. But I think there

[WITNESS: Frayer]

1 are controls in place in their agreements for
2 the construction of this Project that hopefully
3 would prevent that.

4 MS. WEATHERSBY: Okay. Thank you.
5 Nothing further.

6 CHAIRMAN HONIGBERG: Mr. Way.

7 MR. WAY: So, I just -- Ms. Frayer,
8 thank you. And I just want to follow up a
9 little bit on what Ms. Weathersby said.

10 BY MR. WAY:

11 Q. So, in terms of the REMI model, you seem to
12 suggest that that REMI model takes into account
13 the skill set that we have here in the state.
14 Is that what I heard?

15 A. The skill set and the labor pool by sector that
16 we have in this state. Yes.

17 Q. The labor pool. And that data comes from,
18 because we were talking yesterday about whether
19 state data was used, so that would make it --
20 that would say to me that state data was used
21 in the REMI model?

22 A. That's my understanding, yes. I'm still
23 checking on your more local data use question.
24 But my understanding is that it is reflective

[WITNESS: Frayer]

1 of the differences between the state economies.
2 And, again, I've run into this issue where I've
3 put perhaps the same project, in terms of labor
4 spending, in another state and it has a
5 different impact.

6 Q. All right.

7 A. And because of the lack of resources, local
8 resources.

9 Q. Is it also the understanding that, when we look
10 at the state as a whole, as a labor pool for
11 this Project, versus, as Mr. Oldenburg said, if
12 they came from Texas, and they brought their
13 own specialized people, it's assumed that
14 they're going to come here, they will stay in
15 local establishments and vouchers and all that.
16 But, for the state pool, let's say I'm in
17 Keene, and I'm traveling up to Berlin, is it
18 assumed that I'm going to move temporarily up
19 to Berlin? Or is it I'm going to commute or --

20 A. I don't think the model is at the level of
21 detail that it provides that granularity
22 regarding decisions on commuting within the
23 state or temporarily moving within the state.
24 And I, frankly, don't know what the specific

[WITNESS: Frayer]

1 plans might be as part of the construction, to
2 accommodate the construction crews.

3 Q. And because that's somewhat of an important
4 point, because we have an idea of how far
5 people will commute to a job under lots of
6 circumstances. And, if you get past a point,
7 they won't take that job. Even though it may
8 seem very lucrative, they just can't afford to
9 do the distance, unless they're living right
10 there in the vicinity.

11 So, once again, that would be the regional
12 concern. How far from the footprint of the
13 Project do you have the skill set and the
14 people available to be able to accommodate that
15 Project?

16 A. I will -- I understand your question, and I
17 will have to take it away. But my
18 understanding is the granularity of the model
19 isn't that specific. Because, again, the
20 analysis is being done on a state level.

21 Q. Okay.

22 A. But I will take it away and think about it.
23 And, if I can come back with more details, I
24 will definitely do so, as part of our record

[WITNESS: Frayer]

1 requests from yesterday.

2 MR. WAY: Thank you.

3 CHAIRMAN HONIGBERG: Mr. Oldenburg.

4 MR. OLDENBURG: Thank you. I think
5 it was said, you give us more time, we come up
6 with more questions.

7 BY MR. OLDENBURG:

8 Q. When Mr. Quinlan was up testifying, I asked him
9 a question, and I'd like to repeat it, because
10 you're probably the better person to answer the
11 question. And, at that time we called them
12 "ancillary jobs", jobs that would be created to
13 support the Project. Now, I think the term you
14 used is "indirect jobs". Not -- and
15 understanding the fact that all these
16 specialized people probably won't be hired from
17 the New Hampshire workforce, but the ancillary
18 jobs, the ones -- so, the people that might
19 supply security or the porta potties or the
20 hotels or, you know, the waitstaff at the local
21 restaurants.

22 And, previously, we talked about the range
23 that people -- that the crews are going to be.
24 So, you're in Colebrook, and you're supplying

[WITNESS: Frayer]

1 porta potties for the Project, there's only
2 going to be, and you have, say, a range, I
3 don't know what a range of a porta potty
4 supplier is, 30, 40 miles maybe. So, that work
5 takes a certain time that you're in the area.

6 And, so, maybe the crews are only in that
7 area and need those porta potties for three
8 months. Does that company hire a person to
9 supply the porta potties or do they just say
10 "It's so short-term, I don't want to have to
11 hire somebody. They might need a CDL license,
12 because of the vehicle they drive. I got to
13 train them, I've got to do this. I'm just
14 going to suck it up and I'm going to work nine
15 hours a day, instead of eight hours, for the
16 three months. I'll take the money, sure. But
17 I'm not going to hire somebody to do that. I'm
18 just going to -- I'll just work with the staff
19 I have."

20 Is there any of that? Like we said, the
21 work -- the pool of people is sort of low, and
22 the incentive might not be there to go through
23 the hassle of hiring somebody temporarily for
24 three months.

[WITNESS: Frayer]

1 A. So, if you -- I appreciate that there are
2 probably businesses that do need to make those
3 types of, I would say, very difficult
4 decisions, kind of lay out the options.

5 I think, in terms of the modeling and the
6 predictions, the model has some flexibility,
7 because it doesn't need to assume right away,
8 when you're hiring somebody, you're hiring
9 somebody full time. So, the model has probably
10 a little bit more flexibility in thinking about
11 those jobs than what a business has to
12 practically go through in making that decision.

13 That said, let's think about the
14 alternative. Let's say that the model
15 predicted there would be an additional
16 part-time job made, but that business decided
17 "No additional part-time job. I'm going to
18 work more, I'm going to collect more profits."
19 Those profits eventually also help the economy.
20 So, although the model didn't model it as a
21 profit, didn't capture -- assumed there would
22 be a part-time job or predicted a part-time
23 job, it didn't capture then the additional
24 profits that are pocketed by the local business

[WITNESS: Frayer]

1 owner, that local business owner, with that
2 additional money in his pocket or her pocket,
3 would be able to go and spend on other goods
4 and services.

5 So, I think what the trade-off is is
6 actually between indirect and induced jobs in
7 the modeling, where we may have maybe more
8 indirect jobs, but what you're suggesting is
9 less indirect jobs, but then more induced jobs.

10 Q. Okay.

11 A. So, on a total job basis, I really still think
12 that the estimates are quite pragmatic, and
13 reasonable, given the scale and scope of the
14 investment required here.

15 MR. OLDENBURG: Thank you.

16 CHAIRMAN HONIGBERG: I believe that's
17 it.

18 Mr. Needleman, do you have any
19 further questions for your witness? It appears
20 that you do.

21 MR. PAPPAS: Mr. Chairman?

22 CHAIRMAN HONIGBERG: Mr. Pappas.

23 MR. PAPPAS: Before Mr. Needleman
24 begins, I'd request that the witness identify

[WITNESS: Frayer]

1 the website that she and Commissioner Bailey
2 were referring to, so the record is complete.
3 Because they were referring to a website --

4 MR. ROTH: A spreadsheet.

5 MR. PAPPAS: A spreadsheet, I'm
6 sorry, a spreadsheet from -- I believe from a
7 website.

8 CMSR. BAILEY: It's an exhibit. It's
9 the Applicant's Exhibit 140 - confidential.
10 Sorry. I meant to put that on the record, but
11 thank you for --

12 MR. PAPPAS: Thank you.

13 CHAIRMAN HONIGBERG: Mr. Needleman,
14 you may proceed.

15 MR. NEEDLEMAN: Thank you. Yesterday
16 afternoon, Chairman, you were asking Ms. Frayer
17 about other examples of 40-year amortization
18 schedules, and she talked about several
19 examples in the New York-ISO market. We have
20 exhibits that we will submit, which she
21 referenced yesterday. And those will be
22 Exhibit 165, Applicant 165, and we'll direct
23 people to the specific pages in there of those
24 examples.

[WITNESS: Frayer]

1 And, then, Mr. Iacopino also asked
2 Ms. Frayer yesterday about links for exhibits
3 that she was relying on with respect to her
4 statement about the availability or lack of
5 availability of room on the Phase 2 line. We
6 will submit links to the ISO website. And, in
7 addition, Ms. Frayer has reminded me that, in
8 her October 2015 Report, at Page 34, Footnote
9 29, there's also relevant information about
10 that issue.

11 **REDIRECT EXAMINATION**

12 BY MR. NEEDLEMAN:

13 Q. Ms. Frayer, I want to call up a couple of
14 exhibits, and I want to start with some
15 questions that Mr. Baker and Ms. Birchard were
16 asking you yesterday about press releases. And
17 we'll start with Mr. Baker.

18 He referred to the March 8th press
19 release, and suggested, in going through that
20 with you, that there is some question about
21 whether HQ is committed to paying for the
22 Project in the United States. This was the
23 subject of substantial testimony from Mr.
24 Ausere.

[WITNESS: Frayer]

1 And I want to direct your attention to
2 Applicant's Exhibit 83, which is a later press
3 release that deals with this same topic. And
4 ask you if there is information in this release
5 relevant to the responses that you were giving
6 yesterday?

7 A. I believe so. I think that this exhibit
8 categorically refutes the presumption that
9 somehow the agreement between Northern Pass and
10 an affiliate of Hydro-Quebec has now been
11 terminated and canceled. If you go to the
12 fifth paragraph, and the last sentence, really,
13 it says "The Transmission Service Agreement
14 would" -- sorry. "The Transmission Service
15 Agreement...remains in effect today", and "will
16 be amended and supplemented to reflect the
17 outcome of the Massachusetts solicitation".

18 And I think, even more generally
19 throughout this press release, it talks about
20 Northern Pass and its partnership with, I
21 guess -- or, commitment with Hydro-Quebec to
22 move forward on Northern Pass, and submit the
23 Northern Pass Project into the Massachusetts
24 solicitation, the RFP that we were talking

[WITNESS: Frayer]

1 about.

2 Q. And, if we could put the exhibit up that
3 Ms. Birchard used yesterday, that is NGO
4 Exhibit 30, that was an April press release.
5 Ms. Birchard highlighted those two paragraphs
6 in yellow and asked you about those. I
7 actually want to ask you about the second
8 paragraph, and ask you to explain if there's
9 information there that's relevant?

10 A. Very much so. I think Ms. Birchard asked me
11 just to read the highlighted sections, so I
12 couldn't read the middle paragraph. But I
13 think the middle paragraph, basically, again,
14 goes on to say that the most immediate
15 opportunity is the Massachusetts RFP, and
16 "NPT's advanced stage and comprehensive cost
17 control measures", I'm reading from the last
18 sentence, "make it a good fit with the
19 technical requirements of the Massachusetts
20 RFP".

21 So, I think that press release -- when
22 reading that press release, one can't overlook
23 the fact that Hydro-Quebec is saying that it is
24 behind Northern Pass, and believes it is a

[WITNESS: Frayer]

1 great candidate for that RFP.

2 Q. I want to take you back now to some questions
3 that Mr. Pappas was asking you. Counsel for
4 the Exhibit -- Counsel for the Public
5 Exhibit 146 was the Kavet Rockler report. And,
6 in particular, Mr. Pappas was asking you about
7 this highlighted sentence, and we went through
8 this a fair bit.

9 During the discussion of this paragraph,
10 you attempted to explain why you disagreed with
11 the claim that you had overstated employment
12 impacts by 20 percent. You called it -- you
13 called Kavet Rockler's assertion a "silly
14 mistake", but you didn't get a chance to
15 elaborate. And I want to ask you to do that
16 now.

17 A. Thank you. We actually discussed this also in
18 the Rebuttal Report, in Section 5.5, on Page 32
19 [Page 52?].

20 But, in a nutshell, once we received KRA's
21 workpapers, and loaded up their REMI workbook,
22 which is kind of a customized input file that
23 gets loaded into the model. It's called an
24 "RWB" file. That's its file extension. Once

[WITNESS: Frayer]

1 we loaded it up, we realized there's a
2 discrepancy. And it's a significant
3 discrepancy. I believe it's just a data entry
4 problem. And I think we have some copies of
5 that.

6 Q. Yes. So, what I want to do is I want to call
7 up Exhibits 167 and 168, which I understand are
8 screen shots of the Kavet Rockler workbook, and
9 ask you to explain these and explain what you
10 mean by "discrepancies".

11 A. So, the screen shot that you're looking at, at
12 the left is our workbook. And were we also
13 going to load up the --

14 Q. Yes.

15 A. -- screen shot of the KRA workbook? Yes.

16 Q. Right. And we want to blow those up so people
17 can read them please.

18 A. Perhaps what we can do is maybe even just blow
19 up KRA, that side, so I can talk a little bit
20 through that.

21 But the issue we discovered is, as we were
22 looking into a category of labor spending, and
23 specifically it's labeled -- I think it's in
24 relation to "professional services".

[WITNESS: Frayer]

1 "Professional, scientific, and technical
2 services", I should be using my glasses. What
3 we realized is that, for incremental labor
4 spending, for New Hampshire, you can see that
5 there's a column that dictates which state
6 input you're looking at. But, for New
7 Hampshire, we had zero dollars. And that
8 struck us as very, very wrong and very
9 problematic. Because, in fact, as we all know,
10 within the New England, a majority of the
11 labor -- local labor spending is in New
12 Hampshire.

13 And, then, we realized that, in fact, it
14 wasn't just New Hampshire. What had happened
15 is that the correct data was transposed across
16 four different states. There was a mix-up in
17 rows. So, Rhode Island, we had zero labor
18 spending, as an input from Eversource for Rhode
19 Island, and that ended up in KRA's workbook as
20 the input for New Hampshire. That's why the
21 zeros. New Hampshire's input ended up in
22 Connecticut. Connecticut's input ended up in
23 Maine. And Maine's input ended up in Rhode
24 Island.

[WITNESS: Frayer]

1 So, that created a problem. That is the
2 primary reason why KRA's results suggested a
3 much lower impact number during construction.
4 And it's a problem not just for New Hampshire.
5 Clearly, if you have labor spending in New
6 Hampshire, jobs, but you're paying them zero
7 dollars, that's going to not work out very
8 well.

9 But the problem also happens in other
10 states, and it magnifies also across the
11 region, because you're mixing apples and
12 oranges, in terms of inputs, where you have
13 potentially an implicit number of direct jobs,
14 but with a zero incremental labor spending or
15 compensation rate.

16 So, it rippled through their analysis for
17 the construction period. And, in my opinion,
18 that's what's responsible for the conclusions
19 they draw.

20 Q. At one point Mr. Pappas asked you about
21 property taxes, and how you used them in the
22 REMI model. And you said that you allocated
23 100 percent to municipal spending. Can you
24 clarify that?

[WITNESS: Frayer]

1 A. That was incorrect. I think I got a little
2 confused myself. If you go to Page 51, in my
3 Rebuttal Report, it goes through the details.
4 But, essentially, we took 50 percent, only half
5 of the property tax revenues collected from
6 Northern Pass, and assumed those would go into
7 local government spending. The remaining
8 amount was assumed not to create any increases
9 in economic activity. Essentially, they would
10 be debt reductions without any effect.

11 Q. Mr. Pappas and Mr. Baker, at various times,
12 asked you "what would happen, given lower
13 electricity consumption projected by ISO-New
14 England in the CELT 2017 Forecast?" And you
15 said, at various times, "the energy market
16 benefits would be lower, but that, in turn,
17 would make capacity prices higher." And at one
18 point you said "ISO-New England was well aware
19 of that".

20 I don't think that you had the opportunity
21 to point to anything in support of that. And,
22 so, I want to put on the screen, as
23 Exhibit 169, the May 25th, 2017 ISO PAC
24 presentation, and ask you to identify where in

[WITNESS: Frayer]

1 here there is something that supports that
2 position?

3 A. I think we are now looking at it. It's Slide 9
4 of a presentation that Mr. Bob Ethier made at
5 the PAC, in the context of ISO's own analysis
6 of the Forward Capacity Auction, within the
7 area of system planning. And, as you can see,
8 by his figure, it's not too subtle, there is
9 this linkage or relationship that he's also
10 speaking to, in terms of shifts in revenues,
11 which come because of price effects, that then
12 create pressures on the overall market costs.

13 Q. We've had several discussions about the 40-year
14 amortization issue. When Mr. Anderson was
15 questioning you, he cited to a long list of
16 resources that ISO has used a 20-year
17 amortization for. And, during that
18 questioning, you implied -- or, he implied that
19 virtually everything at ISO uses a Easton0-year
20 amortization and questioned your 40-year usage.

21 At one point, you mentioned that there is
22 a workbook that you use to assess this issue,
23 which is an ISO workbook. Is that correct?

24 A. That is correct. That's the workbook we were

[WITNESS: Frayer]

1 speaking about with Commissioner Bailey.

2 Q. And, in that ISO workbook, they offer a
3 drop-down menu for amortization choices. Is
4 that right?

5 A. Yes. They call it "Estimated Project Life".

6 Q. And one of the choices in the ISO workbook in
7 that drop-down menu for an amortization period
8 is "40 years", is that correct?

9 A. Yes. That's a choice that ISO permits to be
10 selected.

11 Q. And, so, in your view, is it reasonable to
12 conclude that, if ISO gives you the choice to
13 use "40 years" as an amortization period in its
14 own workbook, that they might expect it would
15 be used by parties at times?

16 A. I think so. That sounds reasonable.

17 Q. Mr. Pappas asked you about resources retiring
18 as a result of Northern Pass coming on line,
19 and we've heard you say that, in your Base
20 Case, you don't expect that to happen. But
21 people have asked you what would -- "if it did
22 happen, what would the consequences be?" And I
23 want to ask you, if that did happen, if
24 Northern Pass caused retirements, wouldn't it

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[WITNESS: Frayer]

1 be because Northern Pass is lower priced and
2 more economically competitive than the retired
3 resource?

4 A. Yes.

5 Q. And wouldn't that mean that consumers are
6 getting lower energy prices as a result of the
7 competitive market doing what it's supposed to
8 do?

9 A. Definitely.

10 Q. And, to that point, I want to call up the next
11 exhibit. Mr. Iacopino asked you yesterday
12 about a report/comment that was submitted by
13 someone named Sue Tierney. And this is a Union
14 Leader article that followed up on that report,
15 and they interviewed Ms. Tierney. And, at the
16 bottom of the article, I think Ms. Tierney said
17 something that is actually relevant to this
18 issue. Can you read that statement?

19 A. "In an interview, Tierney acknowledged
20 consumers will see lower prices with Northern
21 Pass. She just said the drawbacks were not
22 considered. "Consumers will love it (Northern
23 Pass), for sure," she said."

24 Q. Okay. And, then, speaking of Ms. Tierney, I

[WITNESS: Frayer]

1 want to go back to the report that Mr. Iacopino
2 was questioning you about yesterday. Did you
3 have a chance to go back and look at that
4 report last night?

5 A. Yes. I did a quick scan of it in the evening.

6 Q. So, now that you've reviewed it, can you expand
7 on the answer you gave Mr. Iacopino yesterday
8 about your reactions to the report?

9 A. It became very clear to me that, and I, for a
10 fact, knew this also before, but Sue Tierney is
11 not a party to this case. And she hasn't had
12 access to the volumes of information and data
13 we've provided. I believe she only reviewed
14 the redacted version of my October 2015 Report,
15 and hadn't had access to anything -- or, hadn't
16 reviewed, because there are other public
17 reports and testimony available, haven't
18 reviewed anything since then.

19 So, I believe her conclusions are wrong,
20 based on the fact that she hasn't reviewed
21 additional information, hasn't had access to
22 the full data. For example, she had concerns
23 about outdated assumptions. Well, that has
24 been addressed in the Updated Analysis. In the

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[WITNESS: Frayer]

1 Rebuttal Report, she had concerns about large
2 areas being blacked out. There's a reason for
3 redactions. But there's also, to the extent
4 that a party is participating in this case, a
5 mechanism by which they have access to all the
6 information, all the data, all the discovery,
7 and could have participated in the technical
8 sessions to better understand our assumptions.

9 It generally boils down to the fact that,
10 as she recognizes that my results are correct,
11 that there are lower prices to consumers, there
12 are electricity market cost savings, her
13 concern is that -- about generators. She
14 falsely concluded that I had simply assumed
15 there were no retirements. I simply assumed
16 there was no new entry. But, in fact, as we've
17 discussed over the course of the last few days,
18 and a third review of my materials, would
19 suggest I didn't make those assumptions.
20 That's actually a result of the modeling and
21 analysis that we did. That we get to those
22 conclusions.

23 And I think, if Ms. Tierney had the
24 opportunity to review all these materials, she

[WITNESS: Frayer]

1 might have come to a very different conclusion.

2 Q. When Mr. Anderson was questioning you, you at
3 one point said something about ISO-New England
4 "liking" or "favoring projects like Northern
5 Pass". And you didn't have an opportunity to
6 point to anything in support of that.

7 So, I want to put Exhibit 171 up now and
8 ask you to look at that exhibit and speak to
9 that issue.

10 A. I, on the fly, couldn't think of documents to
11 respond to Mr. Anderson, but there are quite a
12 few documents, in fact. If you go to ISO-New
13 England's Annual Regional Outlooks that they
14 publish, they have, for the last few years,
15 talked about their challenges, fuel security is
16 top on the list, because they believe security
17 of fuel supply impacts their ability to manage
18 the system in a reliable manner for resource
19 adequacy. And Mr. Gordon Van Welie is the CEO
20 of ISO-New England. And here, in an op -- I
21 believe this is an op-ed that he put -- written
22 for a magazine, he talks about those. And the
23 highlighted paragraph here he states "The
24 region's reliance on natural gas will only

[WITNESS: Frayer]

1 intensify." And he then goes on a few pages
2 later to talk about the fact that large
3 transmission lines that deliver hydro and wind
4 resources will essentially be extremely helpful
5 in alleviating his concerns. In fact, he goes
6 on to say that "Until large transmission lines
7 are built", and I can skip on to the last
8 portion of that quote, "we see a future with
9 challenges that may require the ISO to comply"
10 -- "employ suboptimal solutions."

11 So, from my reading of these words, I came
12 to the conclusion that they are definitely
13 interested and engaged in seeing such projects
14 being built in the region.

15 Q. When Mr. Reimers was questioning you, there was
16 a back-and-forth about the case before FERC,
17 and the brief that ISO-New England lawyers
18 filed critical of your positions. You were
19 working for NEPOOL in that matter. What is
20 "NEPOOL"?

21 A. "NEPOOL" is a voluntary stakeholder
22 organization that -- the way I like to describe
23 it is that it represents all stakeholders in
24 the wholesale markets. It's representing IPPs,

[WITNESS: Frayer]

1 renewable suppliers, municipal utilities, local
2 distribution utilities, transmission owners,
3 and end-users/consumers. So, it's representing
4 the marketplace. It actually predates, as an
5 organization, ISO-New England. But, when
6 ISO-New England was formed, the actual
7 day-to-day management of the markets were
8 handed over to ISO-New England. But NEPOOL
9 continues to coexist today and engage with
10 ISO-New England on various issues.

11 Q. And my understanding is that it can be unusual
12 for NEPOOL and ISO-New England to disagree on
13 issues. What is the nature of that particular
14 proceeding that Mr. Reimers took us through?

15 A. It was a jump-ball proceeding before the
16 Federal Energy Regulatory Commission, where the
17 debate was around ISO-New England's proposal
18 for performance incentives in the capacity
19 market.

20 And it is quite unusual. I'm not sure
21 I've seen anything like this before. But,
22 essentially, over 60 percent of the membership
23 in NEPOOL voted in disfavor of the ISO-New
24 England proposal, and that then triggered the

[WITNESS: Frayer]

1 need to come up with an alternate proposal by
2 NEPOOL, and to contemporaneously file their
3 alternate proposal at FERC.

4 Q. And what was the substance of the testimony
5 that you offered there that the ISO-New England
6 lawyers seemed to be critical of?

7 A. Well, I was concerned that a comparison of the
8 ISO-New England proposal, relative to the
9 NEPOOL proposal, I was concerned that the
10 ISO-New England proposal had unintended
11 consequences in its aggressive stance on no
12 exemptions. And that those unintended
13 consequences could actually mean potentially
14 low reliability or potentially -- and/or
15 potentially higher costs to consumers. And, in
16 fact, as part of this, it wasn't just NEPOOL,
17 that we were representing several state
18 regulatory utilities commissions also joined on
19 the side of NEPOOL in this particular contest
20 at FERC.

21 Q. And, in the ultimate order, did FERC echo or
22 acknowledge any of the criticisms of your
23 testimony that Mr. Reimers cited?

24 A. No. It did not.

[WITNESS: Frayer]

1 Q. And how did FERC dispose of these two competing
2 proposals?

3 A. FERC essentially chose bits and pieces of each.
4 It started with a good portion, a majority of
5 the ISO-New England proposal, but went in and
6 acknowledged some of the concerns issued --
7 raised and alternatives presented in the NEPOOL
8 alternative proposal. And, in fact, in one
9 way, I think, although it's not by name or
10 reference, FERC went back and said to ISO-New
11 England that "perhaps some of your positions on
12 no exemptions are not that reasonable. And,
13 for example, a generator, in a constrained
14 transmission zone, may not -- may not be
15 suitably liable for those types of penalties
16 that you have assumed would arise."

17 Q. You were asked about, moving onto a different
18 topic, you were asked about your estimate of
19 the minimum offer that a shipper over Northern
20 Pass would have to pay pursuant to the MOPR
21 rule. And you explained that you used a cost
22 of construction in the Project of 1.6 billion.
23 Did that amount include the cost of the
24 upgrades to the AC system that Northern Pass

[WITNESS: Frayer]

1 anticipates having to fund in order to connect
2 to the grid pursuant to its I-39 approval?

3 A. Yes, it does.

4 Q. And how was your Northern Pass able to estimate
5 those costs?

6 A. Those costs are estimated in the ordinary
7 course of developing a project and taking it
8 through the interconnection process. So, it
9 was part -- my understanding, it's part of the
10 overall construction budget at the moment.

11 Q. And we've also heard about a separate set of
12 improvements to the AC grid that may be
13 required, in order for an NPT shipper to
14 qualify for a capacity supply obligation in the
15 Forward Capacity Market. How are those
16 improvements identified?

17 A. So, after the ISO receives, in its cycle,
18 applications for the show of interest, which is
19 applications from new resources who want to
20 participate in the next Forward Capacity
21 Auction, it takes all that information, and
22 looks at the existing system with existing
23 generators, and all those new potential
24 suppliers, and does something called the

[WITNESS: Frayer]

1 "Overlapping Impact Test". And I think we had
2 a little bit of a discussion with Mr. Anderson
3 about that. It conducts a preliminary test.
4 And then gives an opportunity for participants
5 who want to -- participants who may need to
6 make some reinforcements to the grid to fund
7 those.

8 Interestingly enough, I think the ISO also
9 does a restudy after the auction clears.
10 Because the way the test works, it can't be
11 definitive until the ISO knows for sure which
12 resources are on the system. So, it needs to
13 actually look at -- wait for the results of the
14 Forward Capacity Auction to refine its estimate
15 of the reinforcement needs.

16 Q. Does the \$1.6 billion assumed cost that you
17 used in your workbook include an allowance for
18 the cost of these OIT upgrades that might be
19 required?

20 A. No, it does not.

21 Q. And why didn't you include those costs?

22 A. Because they are not known at this time.

23 Q. And are you concerned that adding in the OIT
24 costs to the capital costs of the Project might

[WITNESS: Frayer]

1 inhibit the Project's qualification for the
2 Forward Capacity Auction when those costs are
3 determined?

4 A. No. I'm not concerned.

5 Q. Why?

6 A. Well, frankly, there's a lot of cushion in
7 between our minimum over price calculated and
8 our projected capacity price. So, even if you
9 were to say, hypothetically, throw in an
10 additional, I don't know, 25 million or 50
11 million, or even as much as 100 million of
12 additional OIT-related upgrade costs, it would
13 not move the needle sufficiently to change any
14 of my conclusions about the MOPR and whether
15 it's binding on the Project from clearing the
16 Forward Capacity Auction.

17 Q. Moving to another topic. Ms. Pacik asked you
18 about direct jobs during construction. And she
19 was looking for a pie chart, similar to what
20 you had for the indirect jobs in your
21 October 2016 [2015?] Report. You directed her
22 to your workpapers, but there wasn't a pie
23 chart. And I understand that you've compiled
24 one based on the information in your workpapers

[WITNESS: Frayer]

1 that was already furnished to the parties.

2 And, so, could we put that up please. And I'm
3 going to ask you to explain that now.

4 A. Yes. I thought it was a fair question. We
5 only had indirect jobs presented in pie charts.
6 So, we put together the direct jobs. This is
7 by broad industry sector categories, not by
8 necessarily additional detail beyond that.

9 So, what we see here, just as an example
10 or a demonstration, in New Hampshire, for
11 Figure 1 -- oh, and I can't read my own
12 numbers, but -- oh, 47 percent of the jobs are
13 in the Construction sector; 5 percent
14 Manufacturing; 3 percent in Professional,
15 Scientific, and Technical Services; small
16 amount, 1 percent, in Administrative and Waste
17 Management Services; and another 44 percent in
18 the Forestry, Fishing, and Related Activities.

19 Q. And can you speak to the second one, too?

20 A. The second one is a depiction of what the
21 breakdown is across all of New England. So,
22 it's combining here all six New England states.
23 And, as you could imagine, a much larger share
24 of the direct jobs than across New England is

[WITNESS: Frayer]

1 in the Construction sector.

2 Q. And, moving on, based on the jobs reported in
3 your workpapers, which Ms. Pacik took you
4 through, she concluded that 570 direct jobs --
5 or, she indicated that in your papers there
6 were 570 direct jobs that you reported in 2017
7 and 436 direct jobs in 2018 in the logging
8 sector. And there was a question about exactly
9 what these jobs were. Were they purely logging
10 jobs or did they relate to something else? And
11 I want to ask you to expand on that.

12 A. So, Eversource, as an input to our analysis,
13 provided us with a budget breakdown. And, for
14 logging and site preparation, which is clearly
15 labeled in those input files that have been --
16 and in our workpapers, that was -- there was a
17 significant amount of dollars spent associated
18 with labor spending in that category.

19 And, as part of our review, we thought
20 that the forestry -- that forestry sector would
21 be the most apropos to reflect that level of
22 labor spending. But it isn't all loggers. In
23 fact, the name of the budget line item is
24 probably more reflective, if you want to think

[WITNESS: Frayer]

1 about the underlying jobs in there. There's
2 truck drivers. There is going to be some
3 loggers clearing land, but there's also workers
4 working on road construction, access road
5 construction, leveling of a site in preparation
6 for installation.

7 So, there's a lot of different types of
8 jobs. We could have, in fact, taken and broken
9 down that budget line item further and put some
10 of those dollars as jobs, direct jobs in, let's
11 say, the road construction sector. But the
12 impact on the results would be *de minimus*, less
13 than one percent difference, in terms of total
14 direct jobs. A classification difference in
15 the industry, but, in terms of total direct
16 jobs, and then indirect and induced jobs during
17 construction, less than one percent.

18 Q. Last topic. When Mr. Anderson was questioning
19 you, you were discussing something called
20 "price separation" in the Northern New England
21 market. Can you just very briefly, at a high
22 level, describe what is "price separation" and
23 why it's relevant here?

24 A. "Price separation" is an element of the

[WITNESS: Frayer]

1 capacity market rules. It occurs when there
2 are too many resources in a designated zone or
3 part of the New England system for resource
4 adequacy, where they're not necessarily
5 contributing to resource adequacy of the entire
6 system.

7 Q. And -- sorry, go on.

8 A. I wanted to say that, although the last Forward
9 Capacity Auction had no price separation, and,
10 in our analysis, we aren't predicting any
11 significant price separation. If it were to
12 occur, it's actually a benefit to New
13 Hampshire. New Hampshire consumers would see
14 lower capacity prices, holding all else
15 constant, which -- relative to their peers in
16 other parts of New England.

17 Q. So, do you agree with Mr. Anderson's
18 characterization of how much price separation
19 there should be?

20 A. No, I do not.

21 Q. Why?

22 A. I feel that Mr. Anderson put up a number of
23 hypotheticals, and then created an interesting
24 illustration using one of my exhibits. But I

[WITNESS: Frayer]

1 think that the hypotheticals together aren't
2 properly reflecting the actual market rules and
3 the actual details.

4 First, for example, although Mr. Anderson
5 suggested that the MCL forecast projections
6 being updated now by ISO-New England would be
7 lower. His proposition that they would be with
8 Northern Pass at FCA 11 levels for the MCL
9 value, the Northern New England MCL value and
10 the MRI is not correct. Because he overlooked
11 the fact that I said in my testimony and in my
12 report that Northern Pass would actually also
13 positively affect the interface limit between
14 Northern New England Zone and the rest of the
15 pool.

16 He also hypothesized that there would be
17 more resources in Northern New England, because
18 I didn't anticipate the fact that, for FCA 12,
19 some resources that I had retired in my Base
20 Case, hadn't applied for retirement delist.
21 But they could apply for a retirement bid in
22 FCA 13. So, that focus on a single snapshot,
23 with several hypotheticals, I think gives an
24 incomplete picture.

[WITNESS: Frayer]

1 And, more importantly, also there's a
2 linkage between the Northern New England price
3 and the rest-of-pool price that's important and
4 can't be ignored.

5 MR. NEEDLEMAN: Okay. Thank you.
6 Nothing further, Mr. Chairman.

7 CHAIRMAN HONIGBERG: All right. I
8 think you're finally done, Ms. Frayer.

9 WITNESS FRAYER: Thank you.

10 CHAIRMAN HONIGBERG: Mr. Needleman,
11 who's next?

12 MR. NEEDLEMAN: We're going to ask
13 the environmental panel to come up.

14 While they're doing that, I wonder
15 whether it might make sense for me to take a
16 minute and talk about witness scheduling?

17 CHAIRMAN HONIGBERG: Why not.

18 MR. NEEDLEMAN: So, we've made an
19 effort to discuss with as many of the parties
20 as we could what we're anticipating for witness
21 scheduling. I think as everyone knows, we
22 presented an initial schedule of witnesses for
23 Phase 2. And one of the major premises
24 underlying that schedule was the estimates that

1 people had of time, for how much time they
2 would need for witnesses and panels.

3 And, as a consequence of things going
4 a fair bit slower than had been anticipated, we
5 have some issues emerging, and we're going to
6 need to shift witnesses around a bit. And I've
7 tried to work with folks. What I want to do is
8 try to be transparent about this, and let
9 people know what we're thinking and the
10 variables associated with it.

11 But the short version of this is that
12 I believe that the various estimates for the
13 environmental panel average end up at about
14 three to three and a half days. Speaking with
15 some folks, there seems to be some consensus
16 that it might take longer than that, and I
17 don't believe that that accounts for Committee
18 questioning either, or redirect.

19 So, that's a long way of saying that,
20 if the environmental panel takes four days or
21 more, then we could move to Ms. Shapiro next.
22 And, then, after that, to Mr. Nichols, who has
23 a fairly narrow availability window.

24 And I will say that we did intend to

1 go to aesthetics next, but the problem is that,
2 if the environmental panel finished in four
3 days, our aesthetic witnesses would only be
4 available for two days, and then run into
5 conflicts. And I don't believe there is any
6 chance they will be done in two days, and I
7 don't want to start a panel and then interrupt
8 it. So, I'm trying to manage that.

9 And then I would say the only caveat
10 to all of that is that in some way the
11 environmental panel takes fewer than four days,
12 Ms. Shapiro would not be available to go on on
13 the 23rd. And I don't want there to be any
14 gaps. So, the only individual witness we would
15 actually have to go on on the 23rd would be
16 Mr. Chalmers.

17 My best guess, and everyone can make
18 their own best guess, is that the environmental
19 panel will take those four days, which means we
20 can turn to some combination of Shapiro and
21 Nichols afterward. But that is the best
22 thinking I can give at this point as to who's
23 coming up next.

24 CHAIRMAN HONIGBERG: All right. Does

1 anyone out there have comments or concerns or
2 praise for that alternative? I mean, we show
3 up either way. I know some of the parties have
4 specific lawyers or members of their coalitions
5 that would be asking questions. And I don't
6 know who Mr. Needleman has conferred with, but
7 I can guess at some of them.

8 Mr. Pappas, Mr. Roth, what's the
9 feeling, at least at your table?

10 MR. PAPPAS: First of all, we can
11 sympathize with the need to juggle and witness
12 availability, and understand there will be
13 issues. And everything that Mr. Needleman said
14 is understandable.

15 My only question would be this. If
16 Mr. Chalmers starts on June 23, there is only
17 June 23 and June 26, and then we jump to
18 July 18. And I don't know off the top of my
19 head what the estimates were for Mr. Chalmers.
20 But, if there's any concern that he would take
21 more than two days, that could be an issue, in
22 terms of splitting his testimony, literally,
23 several weeks, start to finish his testimony.
24 I know he flies in from somewhere out west.

1 MR. ROTH: And, Mr. Chairman, I have
2 a somewhat more pedestrian concern. And that
3 is the Applicants have previously provided to
4 all the parties, and I believe the Committee,
5 kind of a schedule of who's going to be coming
6 in what order, not necessarily on what day.
7 And we've all kind of pieced together when we
8 thought who was going to be next based on that
9 schedule.

10 And I understand the difficulty in
11 the "if/then" kind of problem that he has, or
12 that they have, but I would like to see a
13 similar program be filed by the Applicants,
14 which perhaps shows the "if/then" scenarios, so
15 that we can all work with that. Because there
16 is some uncertainty about how things are going
17 to play out beyond these, this, you know, the
18 month of June, and going into July and August.

19 MR. NEEDLEMAN: And I'm happy to try
20 to do that, as long as people understand that
21 there are two critical limitations.

22 The first one is that, again, we'll
23 be in a position where we're going to have to
24 predict how long witnesses will take. And, if

1 we don't get those predictions right, or, if
2 the numbers people have predicted turn out not
3 to be right, that will affect it.

4 And the other issue is, it appears as
5 though it's possible that it may take beyond
6 August 3rd for the Applicant to finish
7 presenting its case. And, without knowing what
8 the next hearing days are, I can't know whether
9 the remaining witnesses would have any
10 conflicts.

11 CHAIRMAN HONIGBERG: Yes. All of --
12 both of you have said things that are true.
13 And it doesn't seem unreasonable at all for
14 you, Mr. Needleman, to be able to map out the
15 tree of possibilities, based on the various
16 scenarios.

17 And, yes, that may mean people are
18 going to have to be ready for things in a
19 slightly different order than they anticipate,
20 but they're going to have to do that, I think.
21 You're going to have to identify, you know,
22 specific problems, specific individuals who are
23 essential, and their unavailability, to make a
24 legitimate objection about changing the order,

1 especially if Mr. Needleman is able to map out
2 the most likely possibilities.

3 I don't know that there's anything
4 more we can do about it right now. I do think
5 that it would be wise for all of the people who
6 have mapped out lines of questioning for
7 witnesses to look at them carefully to see if,
8 in fact, all of the lines of questioning they
9 have planned for a particular witness or a
10 particular panel will really advance the case
11 they ultimately want to make. You know, decide
12 what arguments you think are the ones that are
13 going to help you win the argument in front of
14 this panel, and think long and hard about
15 whether the other things you have on there
16 advance those, that case or not. Because you
17 might be able to cut out some lines of
18 questioning, if you conclude that they are not
19 ultimately going to help you, even if you get
20 all the answers you plan on getting.

21 But we can only ask people to do
22 their best job of estimating how long they
23 think they will take with a panel. I think,
24 based on the experience people have had so far,

1 that may give them some indication of how long
2 it takes them to do what they want to do.

3 We all have a problem, when asking
4 questions, of adding commentary in between, we
5 do it up here, I do it, we all do it. But, to
6 the extent you can limit that, and focus on the
7 questions, and getting the witnesses to answer
8 those questions, the better off you'll be, the
9 cleaner the transcript will look, and the
10 easier it will be to work through that
11 transcript at the end of the process.

12 I guess, if there's others who have
13 comments about the schedule, we'll take them.
14 But, other than that, I think, you know, I
15 think, Mr. Needleman, you're doing what you
16 need to do to work with, you know, the folks
17 all around you on what the schedule is going to
18 look like.

19 Yes?

20 MR. NEEDLEMAN: And I can make one
21 other suggestion. We've got the environmental
22 panel today and Friday. Maybe at the end of
23 the day Friday we can all assess where we are,
24 and maybe that will give us a better sense of

1 what's going to come next.

2 CHAIRMAN HONIGBERG: And I will -- I
3 agree. And I will say that I think Ms. Monroe
4 has sent out a scheduling poll to the
5 Subcommittee members to try and identify dates
6 when a Subcommittee quorum can be assembled for
7 additional dates, which I think is clear to
8 everyone we're going to need going forward.
9 And we'll assess that as people's schedules
10 come into focus.

11 Are there others who want to comment
12 on this discussion?

13 MR. IACOPINO: Mr. Chairman, I would
14 just point out that there was reference to
15 Mr. Chalmers' testimony possibly being moved.
16 The estimate that we had at the end of the
17 prehearing conference was two and a half days
18 for Mr. Chalmers.

19 CHAIRMAN HONIGBERG: Anyone else?

20 MR. ROTH: Mr. Chairman.

21 CHAIRMAN HONIGBERG: Mr. Roth.

22 MR. ROTH: With respect to the last
23 bit of information that you've provided, in
24 terms of polling the Subcommittee for

1 additional days, and, you know, perhaps this is
2 asking for a show. But do you know whether
3 those dates include dates in July? Because I
4 think folks need to make vacation plans.

5 CHAIRMAN HONIGBERG: I think we had
6 exhausted July dates at this point.

7 MR. ROTH: Okay.

8 CHAIRMAN HONIGBERG: I think we
9 already knew, based on the earlier Committee
10 availability about what in July was possible.
11 I think we had exhausted all possible dates in
12 July and had moved into August.

13 MR. ROTH: Thank you.

14 CHAIRMAN HONIGBERG: Anything else?
15 Ms. Monroe, can you confirm that we've already
16 also eliminated the first week of August?

17 ADMIN. MONROE: Through -- I think we
18 currently have through the 3rd scheduled, and
19 the next week was not an option. So, we're
20 beyond that.

21 CHAIRMAN HONIGBERG: Yes. That's the
22 week I meant, the first full week in August?

23 ADMIN. MONROE: Yes. That is
24 correct.

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 CHAIRMAN HONIGBERG: All right.

2 Thank you. So, for planning purposes, you can
3 assume we will not be getting together during
4 that week.

5 All right. Anything else?

6 *[No verbal response.]*

7 CHAIRMAN HONIGBERG: All right. It
8 appears that Mr. Walker looks like he's going
9 to be grabbing the microphone here.

10 MR. WALKER: Yes.

11 CHAIRMAN HONIGBERG: We're off the
12 record for a minute.

13 *[Short pause.]*

14 (Whereupon **Sarah Barnum,**
15 **Lee Carbonneau, Dennis Magee,**
16 **Jacob Tinus,** and **Robert Varney**
17 were duly sworn by the Court
18 Reporter.)

19 MR. WALKER: Good morning, Mr.
20 Chairman and Committee members. Again, my name
21 is Jeremy Walker. I'm with McLane Middleton,
22 on behalf of the Applicant.

23 **SARAH BARNUM, SWORN**

24 **LEE CARBONNEAU, SWORN**

{SEC 2015-06} [Day 16/Morning Session ONLY] {06-14-17}

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DENNIS MAGEE, SWORN

JACOB TINUS, SWORN

ROBERT VARNEY, SWORN

DIRECT EXAMINATION

BY MR. WALKER:

Q. Why don't we just go one-by-one and introduce ourselves to the Committee, starting with Mr. Magee. Could you just state your name to the Committee and explain where you're employed please.

A. (Magee) Dennis Magee, employed at Normandeau Associates.

Q. Mr. Magee, have you filed prefiled testimony in this matter?

A. (Magee) Yes, I have.

Q. Have you also filed supplemental testimony in this matter?

A. (Magee) Yes, I have.

Q. And your testimony deals generally with rare plants and rare or exemplary natural communities, is that right?

A. (Magee) Correct.

Q. Do you have any changes that you would like to make to your testimony?

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Magee) No.

2 Q. Do you swear by and adopt your testimony?

3 A. (Magee) Yes, I do.

4 Q. Next, to Mr. Varney, could you introduce
5 yourself to the Committee please.

6 A. (Varney) Yes. Bob Varney, President of
7 Normandeau Associates, in Bedford, New
8 Hampshire.

9 Q. And you, too, have filed prefiled testimony and
10 supplemental testimony in this matter, Mr.
11 Varney?

12 A. (Varney) Yes, I have.

13 Q. And your testimony deals generally with the
14 benefits to air quality anticipated by the
15 Project, is that right?

16 A. (Varney) Yes.

17 Q. Do you wish to make any changes to your
18 testimony?

19 A. (Varney) Yes, I do.

20 Q. And, to your prefiled testimony, do you have
21 changes to make?

22 A. (Varney) Yes. To my April 17th testimony.

23 CHAIRMAN HONIGBERG: Before you do
24 that, Mr. Varney, Mr. Walker, why don't you

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 tell us what exhibit numbers we're talking
2 about here, for those who are trying to
3 feverishly to pull them up on thumb drives and
4 databases.

5 MR. WALKER: Thank you.

6 CHAIRMAN HONIGBERG: So, why don't
7 you start with Mr. Magee, and tell us which
8 exhibits constitute Mr. Magee's testimony, and
9 then deal with Mr. Varney.

10 MR. WALKER: And I can do that, just
11 to move that forward. Thank you, Mr. Chairman.
12 Mr. Magee's prefiled testimony is Exhibit 24,
13 Applicant Exhibit 24, and his supplemental
14 testimony is Exhibit 100.

15 BY MR. WALKER:

16 Q. And, then, turning to Mr. Varney, your prefiled
17 testimony is Exhibit 19, and your supplemental
18 testimony is Exhibit 141. And do you have
19 copies of those before you, Mr. Varney?

20 A. (Varney) Yes, I do.

21 Q. And you mentioned that you had some changes to
22 make. Was that to your prefiled testimony or
23 your supplemental testimony?

24 A. (Varney) Only to my supplemental testimony.

{SEC 2015-06} [Day 16/Morning Session ONLY] {06-14-17}

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. Which is Exhibit 141, correct?

2 A. (Varney) Correct.

3 Q. And could you please explain slowly to the
4 Committee, by page number and line number,
5 where your changes are?

6 A. (Varney) Yes. Page 1, Line 23, should read
7 "nitrogen oxide", rather than "nitrous oxide".
8 And the amount should read "663 short tons",
9 and striking the "565 - 650", replacing that
10 with "663", a single number. And Line 24,
11 striking the "107 - 198", and replacing that
12 with the number "136".

13 And that would be all of my changes.

14 Q. With those changes, Mr. Varney, do you swear by
15 and adopt both your prefiled testimony and
16 supplemental testimony?

17 A. (Varney) I do.

18 Q. Thank you. Ms. Carbonneau?

19 A. (Carbonneau) I'm Lee Carbonneau, with
20 Normandeau Associates, Incorporated.

21 Q. And you, too, have filed prefiled testimony,
22 which you have before you, Ms. Carbonneau?

23 A. (Carbonneau) Yes, I have.

24 Q. And that is "Applicant Exhibit 22", correct?

{SEC 2015-06} [Day 16/Morning Session ONLY] {06-14-17}

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Carbonneau) That's correct.

2 Q. You also have before you your supplemental
3 testimony, which is "Applicant Exhibit 98",
4 correct?

5 A. (Carbonneau) Yes.

6 Q. And your testimony, Ms. Carbonneau, deals
7 generally with wetland and aquatic resources,
8 is that accurate?

9 A. (Carbonneau) Yes.

10 Q. Do you have any proposed changes to your
11 testimony?

12 A. (Carbonneau) I do.

13 Q. And, again, do you have changes to your
14 prefiled testimony?

15 A. (Carbonneau) It's to the prefiled testimony
16 only.

17 Q. Okay. If you could just describe to the
18 Committee, and slowly please, where that is,
19 where the changes are, by page and line number.

20 A. (Carbonneau) Yes. On Page 5, Line 14, I would
21 strike the word "moved", and replace it with
22 the words "modified to reduce wetland impacts".

23 Q. Do you have further changes?

24 A. (Carbonneau) I do. On Page 12, Line 18, --

{SEC 2015-06} [Day 16/Morning Session ONLY] {06-14-17}

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 CHAIRMAN HONIGBERG: Hang on, just a
2 minute. It's on Page 5, Line 14, it's the word
3 "movement" that gets changed, correct? Whereas
4 I think you had said "moved".

5 WITNESS CARBONNEAU: It's "moved".

6 CHAIRMAN HONIGBERG: All right.
7 Then, we're looking at the wrong testimony
8 here. Go to the first page. What exhibit
9 number is the prefiled testimony?

10 MR. WALKER: It's Exhibit 22.

11 CHAIRMAN HONIGBERG: That would
12 explain the problem. Got it. Thank you.

13 BY MR. WALKER:

14 Q. So, Ms. Carbonneau, your next change?

15 A. (Carbonneau) Yes. It's on Page 12, Line 18,
16 the number "34 percent" should be replaced with
17 the number "52 percent". And, in parentheses,
18 "66 miles" should be replaced with "100 miles".

19 Q. Do you have any further changes?

20 A. (Carbonneau) I do not.

21 Q. And do you have any changes to your
22 supplemental testimony?

23 A. (Carbonneau) No.

24 Q. With those changes, Ms. Carbonneau, do you

{SEC 2015-06} [Day 16/Morning Session ONLY] {06-14-17}

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 swear by and adopt your prefiled and
2 supplemental testimony?

3 A. (Carbonneau) I do.

4 Q. Okay. Dr. Barnum, could you introduce yourself
5 for the Committee please.

6 A. (Barnum) Yes. I'm Sarah Barnum, and I work for
7 Normandeau Associates.

8 Q. And, Dr. Barnum, you have filed both prefiled
9 testimony and supplemental testimony in this
10 matter, correct?

11 A. Yes.

12 Q. And your prefiled testimony, which is before
13 you, is "Exhibit 23", correct?

14 A. (Barnum) Correct.

15 Q. And Exhibit 99 is your supplemental testimony?

16 A. (Barnum) Correct.

17 Q. Do you have any changes you would like to make
18 to either your prefiled or supplemental
19 testimony?

20 A. (Barnum) Yes, I do. To my prefiled testimony
21 only.

22 Q. And that's Exhibit 23, correct?

23 A. (Barnum) Twenty-three (23), yes.

24 Q. Okay.

{SEC 2015-06} [Day 16/Morning Session ONLY] {06-14-17}

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Barnum) On Page 2, Line 3, currently it reads
2 "I have flown the entire right-of-way". It
3 should read "I have flown the entire existing
4 right-of-way." And, then, on Page 10, Line 26,
5 it says "The Project intersects 17 deer
6 wintering areas." That should read "18 deer
7 wintering areas".

8 And that's it for the two corrections.

9 Q. With those changes, Dr. Barnum, do you swear by
10 and adopt your prefiled and supplemental
11 testimony in this matter?

12 A. (Barnum) I do.

13 Q. Turning to you, Mr. Tinus.

14 A. (Tinus) My name is Jacob Tinus, and I'm
15 employed with Burns & McDonnell.

16 Q. And, Mr. Tinus, you have filed prefiled
17 testimony, which is "Exhibit 21", correct?

18 A. (Tinus) That is correct.

19 Q. And supplemental testimony, which is
20 "Exhibit 97", correct?

21 A. (Tinus) That's also correct.

22 Q. And your testimony deals generally with the
23 potential affects of the Project on surface
24 water and groundwater quality?

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Tinus) Correct.

2 Q. Do you have any changes you would like to make
3 to your testimony?

4 A. (Tinus) I do not.

5 Q. And do you swear by and adopt your testimony in
6 this matter?

7 A. (Tinus) Yes, I do.

8 MR. WALKER: Nothing further at this
9 time, Mr. Chairman. Thank you.

10 CHAIRMAN HONIGBERG: All right. Is
11 there anyone from the Business Organizations
12 Intervenor Group? Cate Street Capital, the
13 IBEW, etcetera, anybody here who wants to ask
14 questions?

15 MR. RAFF: Thank you, Mr. Chairman.
16 No. We're all set.

17 CHAIRMAN HONIGBERG: All right. City
18 of Franklin/City of Berlin? I don't see Mr.
19 Boldt.

20 *[No verbal response.]*

21 CHAIRMAN HONIGBERG: Wagner Forest
22 Management?

23 *[No verbal response.]*

24 CHAIRMAN HONIGBERG: Counsel for the

1 Public.

2 MR. ROTH: Mr. Chairman, for Counsel
3 for the Public is Doreen Connor of the Primmer
4 firm.

5 CHAIRMAN HONIGBERG: Whose appearance
6 arrived in our in-boxes yesterday, I believe.

7 Ms. Connor, you may proceed.

8 MS. CONNOR: Thank you, Chairman.
9 Before I begin, I wanted to clarify a
10 housekeeping matter dealing with confidential
11 filings. Am I correct that any questions and
12 exhibits with regard to those should be held
13 until the end of the panel, as you have been
14 doing with other witnesses?

15 CHAIRMAN HONIGBERG: Not necessarily
16 at the end of all questioning of the panel. It
17 may make more sense for you to do all of your
18 public, and then do your confidential. I'm not
19 really sure who else is going to have
20 confidential. But, generally, the goal is for
21 you to do your questioning and be done.

22 MS. CONNOR: Okay. Well, with that
23 in mind, I will hold all of my confidential to
24 the end of my proceeding.

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CROSS-EXAMINATION

BY MS. CONNOR:

Q. Can we bring up Exhibit 322? No. That's 307.

CHAIRMAN HONIGBERG: 307 is a great picture.

(Laughter.)

CHAIRMAN HONIGBERG: I think we'd like that left on the screen. Whenever that screen is blank, we would like that picture up.

MS. MERRIGAN: On my screen, it's 322.

MS. CONNOR: All right. Well, we'll move on.

BY MS. CONNOR:

Q. Mr. Magee, I was going to bring up a picture of wild lupine. Can you explain for the panel the protected status of the wild lupine in New Hampshire?

A. (Magee) It's threatened. It's on the threatened list.

Q. Am I correct that the lupine we often see on the side of the highways and dividers is different than the wild lupine that is a threatened species?

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Magee) No, it's the same. It's the *Lupinus*
2 *perennis*.

3 Q. Okay. But is there a difference between the
4 domesticated lupine and the wild lupine that
5 are implicated by the Project?

6 A. (Magee) There's *Lupinus perennis* and *Lupinus*
7 *polyphyllis*, and they're distinguished on the
8 basis of the number of leaflets per leaf.

9 Q. Which one is the wild and which one is the
10 domesticated?

11 A. (Magee) *Lupinus perennis* is the wild,
12 *polyphyllis* is the other one.

13 Q. Thank you. How many populations of wild lupine
14 have been located and inventoried in New
15 Hampshire?

16 A. (Magee) I think there were three.

17 Q. Okay. Three that are implicated by this
18 Project, but not three total in the whole
19 state, correct?

20 A. (Magee) I think that's correct.

21 Q. Okay. Would it be correct that there are
22 approximately 17 wild lupine populations that
23 have been inventoried in the entire state?

24 A. (Magee) Perhaps more than that. In my general

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 experience, I see it not infrequently,
2 especially on roadsides.

3 Q. Am I correct that two of the populations
4 implicated by this Project are located in
5 Concord and Pembroke?

6 A. (Magee) Correct.

7 Q. Is the Concord population the largest?

8 A. (Magee) Yes.

9 Q. And am I correct that that particular
10 population includes fifteen patches of plants
11 totaling 529 individual plants?

12 A. (Magee) I believe that's correct.

13 Q. And what about the Pembroke site? Can you tell
14 the panel the size of that particular
15 population?

16 A. (Magee) It was about the third -- a third of
17 the size of the one in Concord.

18 Q. So, approximately 143 plants?

19 A. (Magee) Approximately.

20 Q. Based upon the current path of this Project,
21 you have estimated that 62 percent of the
22 Concord population will be adversely impacted,
23 and 17 percent of the Pembroke population, is
24 that correct?

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Magee) That's correct. But we have new
2 information. As I had stated previously, I
3 think during the technical sessions, we're
4 doing all we can to work with the Project
5 engineers to reduce Project impacts, as the
6 design and the scheduling are being refined.
7 And we've been able to do that. We've been
8 able to reduce the impact to the Concord
9 population by 5,500 square feet. Temporary
10 impact reduces from the 60 percent, down to
11 something like 40 percent. And we will
12 continue ongoing efforts to further reduce
13 impacts.

14 Q. Can you explain that math for me? Because I
15 understood that, by changing the access road in
16 Concord, you changed the square footage impact
17 from 17,451 to 15,625. How does that change
18 the percentage from 62 percent to 40?

19 A. (Magee) I'll have to defer to Lee Carbonneau on
20 this.

21 A. (Carbonneau) Yes.

22 Q. Okay.

23 A. (Carbonneau) Thank you. There have been two
24 efforts to reduce impacts to wild lupine. The

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 one that you probably are familiar with is one
2 that happened during the Winter of 2017, where
3 some shifts in the work pads and the access
4 roads in the larger lupine population in
5 Concord were made, and the reduction was on the
6 order of 1,600 square feet or thereabouts.

7 Since that time, we have worked with the
8 engineers to actually relocate two of the
9 structures in the lupine patch in Concord. It
10 hasn't shown up on the plans yet. It's
11 something that we have discussed with them.
12 They have indicated that it is very likely that
13 they can shift one of the Northern Pass
14 structures and one of the relocated existing
15 structures, to move them further away from the
16 large lupine patch where the bulk of the
17 impacts occur. We believe that that's going to
18 reduce the impacts by between 5,000 and 5,500
19 square feet. But this is an estimate at this
20 point.

21 Then, in Pembroke, we have discussed the
22 possibility of relocating the access road that
23 currently clips the lupine patch in Pembroke,
24 to completely go around that patch. And the

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 engineers have so far indicated that they
2 believe that can be done, pending a walk-down
3 of the right-of-way by the contractors.

4 Q. But, currently, we don't have any guarantee
5 that either of these changes are going to take
6 place?

7 A. (Carbonneau) It's -- I wouldn't say, no, that
8 it's guaranteed.

9 Q. Okay. So, with the change that has yet to
10 materialize on a plan, is Dr. Magee correct
11 then that the percentage of the wild lupine at
12 the Concord site, the adverse impact has been
13 reduced to he said "40 percent", or is it in
14 the 40s?

15 A. (Carbonneau) It's in that range.

16 Q. Somewhere between 40 and 50?

17 A. (Carbonneau) I think that's probably correct.

18 A. (Magee) And these are temporary impacts. The
19 7 percent or so of permanent impacts have been,
20 I think, completely eliminated. So, it's
21 40 percent of temporary impact.

22 Q. Did Normandeau make any recommendation to the
23 Applicant to reroute the path of the Concord
24 site to completely avoid the wild lupine patch?

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Carbonneau) I can speak to that. It has
2 always been a high priority to try to keep
3 those impacts to a minimum. But it is not
4 possible to avoid it completely, as the
5 structures that are unable to be moved are
6 angle structures, and those are sort of -- they
7 have to be where they are planned to be,
8 because of the angle of the right-of-way in
9 that location. So, accessing those particular
10 structures is really not possible, and working
11 on those structures is not possible, without
12 some impacts to wild lupine.

13 Q. So, I'm correct then that no recommendations
14 were made about rerouting the path to
15 completely avoid the Concord wild lupine?

16 A. (Carbonneau) I wouldn't say "we didn't
17 recommend it." It's always a high priority.
18 But we were told that it could not be done
19 without some impacts to lupine.

20 Q. Am I correct that the preferred order of
21 sequence with respect to a project that's going
22 to impact a rare or threatened plant, such as
23 the wild lupine, in the first instance, is to
24 avoid -- attempt to avoid the adverse impact

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 altogether?

2 A. (Carbonneau) Yes.

3 Q. And I understand from what you just told me
4 then that the engineers told you that that
5 couldn't be done in Concord?

6 A. (Carbonneau) That's right.

7 Q. The square footage that we're talking about in
8 Concord is less than a quarter of mile, is it
9 not?

10 A. (Magee) Yes.

11 Q. And would it not be possible to direct drill a
12 quarter of a mile to completely avoid the
13 Concord wild lupine population?

14 A. (Magee) It would be depending upon, you know,
15 what's feasible, as far as engineering design.

16 Q. Was the feasibility of putting a quarter of a
17 mile of line underground to avoid impacting the
18 Concord wild lupine considered?

19 A. (Carbonneau) We don't know.

20 Q. Were you asked to consider that?

21 A. (Carbonneau) No.

22 Q. Would you agree that putting a quarter of a
23 mile under line **[underground?]** is certainly
24 something that could be done, since, in the

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 northern section of the state, we're putting
2 32 miles underground?

3 A. (Carbonneau) I don't know. We're not experts
4 in the design --

5 Q. Okay.

6 A. (Carbonneau) -- of underground structures.

7 Q. The second option, after trying to avoid
8 altogether, is to minimize the impact on the
9 rare plant, correct?

10 A. (Carbonneau) Yes.

11 Q. And that's where we've gone from a 62 percent
12 impact, to an impact between 40 and 50 percent,
13 in terms of the Concord lupine patch, is that
14 correct?

15 A. (Carbonneau) That's an approximate estimate at
16 this time.

17 Q. And it's my understanding that you concluded,
18 even when we were dealing with a 62 percent
19 impact on the wild lupine population at
20 Concord, that that was not an unreasonable
21 impact, is that correct?

22 A. (Magee) Correct, because it's a temporary
23 impact.

24 Q. What if it was an 85 percent impact, would that

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 be unreasonable?

2 A. (Magee) If it was a temporary impact, no.

3 Q. And, if it was 100 percent temporary impact,
4 would it still be not unreasonable?

5 A. (Magee) Correct, because of the AMMs that we're
6 implementing.

7 Q. And, again, by "temporary impact", you are
8 assuming --

9 CHAIRMAN HONIGBERG: Wait, wait. We
10 all want to know what's an "ANM"?

11 WITNESS MAGEE: Avoidance
12 Minimization Measures.

13 CHAIRMAN HONIGBERG: So, it's "AMM"?

14 WITNESS MAGEE: Yes.

15 BY MS. CONNOR:

16 Q. Let's talk about those -- can I see, hopefully,
17 Exhibit 341? Great. Dr. Magee, is Exhibit
18 341, which you were just talking about, in
19 terms of avoidance measures, best practice
20 measures?

21 A. (Magee) Yes. There are a number of these that
22 apply to rare plants.

23 Q. Okay. Are these recommendations binding upon
24 the Applicant?

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Magee) They're recommendations.

2 Q. So, are they binding upon the Applicant?

3 A. (Magee) Depends upon engineering feasibility.

4 Q. If you look at Exhibit 341, dealing with wild
5 lupine, I'm looking at the second column at the
6 very bottom, perhaps we can zoom in a little,
7 because my eyes aren't that good. Great. That
8 introduction states "Where practicable, these
9 particular minimization measures will be
10 applied." Who gets to decide what's
11 practicable?

12 A. (Carbonneau) If it's okay, I would like to
13 respond to this, because I've been heavily
14 involved in the development of these Avoidance
15 and Minimization Measures, and in the meetings
16 with the Natural Heritage Bureau as these were
17 developed.

18 "Practicability", as we're using it, is a
19 term that can encompass a number of different
20 issues, whether it is possible, capable of
21 being done, given technology. We use the
22 "practicability" definition that's in the
23 44(b)(1) guidelines, basically.

24 And determining who -- determining whether

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 it's practicable is basically an issue that
2 needs to be resolved between the Applicant and
3 the contractor and, in this case, the Natural
4 Heritage Bureau, as these are the plants'
5 avoidance and minimization measures.

6 But practicability issues could include
7 things like whether or not an outage is
8 available. So, the practicability here
9 typically is a seasonal restriction. If that
10 seasonal restriction, for some reason, cannot
11 be obtained because they cannot get an outage
12 for the work during that particular time
13 season, then the next best option for avoiding
14 and minimizing impacts needs to be considered.
15 So, it's a stepwise process.

16 Q. Okay. You mentioned three individuals that
17 might be involved in deciding whether a
18 particular course of action is practicable,
19 correct?

20 A. (Carbonneau) Correct.

21 Q. And that is the contractor, the Applicant, and
22 the Heritage Society?

23 A. (Carbonneau) The Natural Heritage Bureau.

24 Q. Can the Applicant and the contractor overrule?

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Carbonneau) I don't know. It's not intended
2 to be something that is decided without input
3 from the Natural Heritage Bureau. In fact, it
4 states that the Natural Heritage Bureau must be
5 consulted if these avoidance measures -- if
6 there's any difficulty in implementing them.

7 Q. Well, as I understand it, these best management
8 practices are what we're relying upon, so that
9 the impact upon the wild lupine is temporary,
10 as opposed to permanent. And I'm trying to get
11 an answer as to how we can guarantee that these
12 best management practices are actually applied?

13 A. (Carbonneau) Well, we can guarantee that we
14 need to follow the steps that are outlined in
15 this best management practices.

16 Q. Unless it's not practicable?

17 A. (Carbonneau) And, then, at that point, the
18 Natural Heritage Bureau is consulted, and the
19 best least-damaging method of moving forward is
20 identified.

21 Q. But, ultimately, isn't it true that the
22 contractor and the Applicant can decide what
23 measures are to be followed, based upon what
24 they deem to be practicable?

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Carbonneau) With input from the Natural
2 Heritage Bureau.

3 Q. But not ultimate control from the Heritage?

4 A. (Carbonneau) All I can tell you is, the way
5 this is planned out is that Natural Heritage
6 Bureau will may have major input into how this
7 happens. They are the stewards of -- the
8 ultimate stewards of the resource.

9 Q. This document also indicates that, with respect
10 to construction work around the wild lupine,
11 that it is "preferred" that the work be done
12 under -- while the ground is frozen, correct?

13 A. (Carbonneau) Yes.

14 Q. Can you explain why it is preferred that the
15 construction at the Concord wild lupine site be
16 done while the ground is frozen?

17 A. (Magee) Well, if the ground is frozen, there's
18 going to be less impact to underground
19 structures.

20 Q. Correct. And "preferred" doesn't -- is not the
21 same as saying that construction at the site
22 "shall" be done under winter conditions,
23 correct?

24 A. (Magee) Correct.

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. And would you agree that "preferred" has a lot
2 more leeway?

3 A. (Magee) It can have some leeway, yes.

4 Q. And, in fact, doesn't the BMP recognize that,
5 because it goes on to outlined a condition of
6 what might happen if it's deemed that winter
7 construction is not practicable?

8 A. (Magee) If it's not practicable, then matting
9 and other AMMs would be used.

10 Q. And you just indicated that winter construction
11 is preferred, because it will have less impact.
12 So, if the Applicant decides that that's not
13 preferred or not practicable, we're going to
14 see a greater impact on the wild lupine
15 population, correct?

16 A. (Magee) That I can't say. I'm not as familiar
17 with engineering practice. But I know that the
18 matting, when properly applied and of the right
19 kind and thick enough, can reduce the impacts.

20 Q. It can reduce it. But the very reason we're
21 talking about a BMP with winter preference, in
22 terms of -- is to reduce the impact on the wild
23 lupine, correct?

24 A. (Magee) Correct.

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. Okay. If winter construction reduces the
2 adverse impact upon the wild lupine, shouldn't
3 this document be rewritten to require that the
4 condition be undertaken only when the ground is
5 frozen and snow-covered?

6 A. (Magee) I think there has to be leeway to allow
7 for other considerations. Impacts to rare
8 plants aren't the only consideration. There's
9 other factors. Seasonality, weather, all of
10 these factors have to be taken into account.

11 Q. I understand that. But, with regard to this
12 particular project, there is no other rare
13 plant that is going to be as impacted to the
14 degree as the wild lupine at the Concord site,
15 is there?

16 A. (Magee) No.

17 Q. And, yet, even when we're talking about
18 potentially having an adverse impact on
19 50 percent of that site, there is no firm
20 commitment to require construction in the
21 winter, is there?

22 A. (Magee) Not at this point.

23 CHAIRMAN HONIGBERG: Ms. Connor,
24 sometime in the next five or ten minutes, we're

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 going to need to take a break.

2 MS. CONNOR: We can take it now, if
3 that's all right, or I can keep going?

4 CHAIRMAN HONIGBERG: If now is a good
5 time for you, then we'll take our break.

6 MS. CONNOR: That's fine.

7 CHAIRMAN HONIGBERG: We'll be back in
8 ten to fifteen minutes.

9 *(Recess taken at 10:57 a.m. and*
10 *the hearing resumed at 11:14*
11 *a.m.)*

12 CMSR. BAILEY: Ms. Connor, you may
13 resume.

14 MS. CONNOR: Thank you.

15 BY MS. CONNOR:

16 Q. Before we took our break, we were talking about
17 the impact this Project might have on the wild
18 lupine population at Concord. And, Dr. Magee,
19 I understood that you had indicated that,
20 hypothetically, an impact, even as much as
21 100 percent on the lupine population, would not
22 be unreasonable, so long as it was temporary,
23 correct?

24 A. (Magee) Correct. And I need to correct you,

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 I'm not "Dr. Magee". I don't have a Ph.D.

2 Q. Okay. My apologies. I want to pull up
3 Mr. Kayser's testimony, was prefiled. Do we
4 have the exhibit number on that?

5 *[Court reporter interruption.]*

6 MS. MERRIGAN: That's Applicant's
7 Exhibit 14.

8 BY MS. CONNOR:

9 Q. And, we're at Page 22. And, in particular,
10 Line 9, and I'm going to read that into the
11 record. He was talking about what's involved
12 to put in a crane pad site, "removing
13 six inches of topsoil", "removing vegetation",
14 a fairly detailed project.

15 Mr. Magee, would you agree that, in fact,
16 any plant that is in the vicinity of the tower
17 structure is going to be permanently impacted,
18 not temporarily impacted, when it's removed in
19 this fashion?

20 A. (Magee) Well, this is true. But it's important
21 to remember that a crane pad or a tower is
22 typically occupying a footprint of about 8 feet
23 by 8 feet. So, the combined impacts within
24 that area of these tower footprints are going

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1 to be very, very small. I think we indicated
2 around three or four percent, and it's going to
3 be even less than that with the new
4 calculations.

5 Q. But the suggestion that the impact to the wild
6 lupine is "temporary", doesn't hold true when
7 the fragile root system is destroyed, is that
8 correct?

9 A. (Magee) Well, for one thing, it's a perennial
10 rooting structure. It's got a well-developed
11 taproot, and it's got a short rhizome. And
12 these things prefer disturbed, open conditions.
13 Moreover, they develop a buildup of a seed bank
14 in the soil. So, as long as the soil isn't
15 regraded, then the perennating structures in
16 the soil and the seed bank will give rise to
17 repopulation.

18 Q. Can we bring back 341? You just indicated
19 that, so long as the soil is not regraded,
20 there is a possibility or probability that the
21 wild lupine will come back. In fact, your best
22 management practices anticipate regrading in
23 the wild lupine sites, does it not?

24 A. (Magee) Yes. But the regrading, the way we've

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 specified regrading is to not do a cut, to do a
2 fill with geotextile, then remove the fill when
3 finished. Doesn't refer to a "cut", which
4 would remove seed bank and rooting structure.

5 Q. You haven't provided any studies in conjunction
6 with your prefiled testimony that talk about
7 the survival rate of the wild lupine after they
8 undergo a project like this, have you?

9 A. (Magee) No.

10 Q. Would you recommend that this panel impose a
11 seasonal construction requirement as a
12 condition?

13 A. (Magee) Again, I have to defer. No, I can't
14 answer that, because there are so many other
15 factors that need to be considered.

16 Q. Well, as a specialist with regard to training
17 in the area of rare plants, including wild
18 lupine, would you agree that the best
19 probability of reducing the adverse impact on
20 the wild lupine would be to impose a seasonal
21 construction requirement?

22 A. (Magee) It's one of the AMMs that, as much as
23 possible, the Project consider the reproductive
24 cycle of the plants that are being impacted.

{SEC 2015-06} [Day 16/Morning Session ONLY] {06-14-17}

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. I understand it's a best management practice to
2 the extent practical. I'm trying to get a
3 commitment as to whether, in fact, requiring
4 that only -- that construction only take place
5 in winter would reduce the impact?

6 A. (Magee) Given the narrow confines of that
7 question, I'd have to say "yes".

8 Q. It's my understanding that the Applicant has
9 proposed a mitigation parcel, is that correct?

10 A. (Magee) Yes.

11 Q. What length of time would it take to establish
12 a lupine population on this new site that's
13 similar in size to that which is going to be
14 adversely impacted at the Concord Pine Barrens?

15 A. (Magee) I guess it would depend upon what the
16 nature of that mitigation site is, whether it
17 has any lupine population there now that might
18 have over wintering structures and seed banks
19 in the soil at present.

20 A. (Carbonneau) I'd like to jump in. If you're
21 speaking specifically about the mitigation site
22 that has been proposed for the Project, there's
23 currently no lupine there. Part of the
24 mitigation proposal is that New Hampshire Fish

{SEC 2015-06} [Day 16/Morning Session ONLY] {06-14-17}

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 & Game would manage this property and would
2 have lupine establish there.

3 Q. Do we know what length of time it would take to
4 establish a lupine population on the adjacent
5 site that is similar in size to the Concord
6 site?

7 A. (Magee) It would depend upon whether we use
8 seeding or whether we actually planted root
9 structures.

10 Q. Can you tell me the difference in time? Let's
11 start first with seeds. If we seed it, how
12 long will it take?

13 A. (Magee) It depends upon a host of factors.
14 What type of weather patterns we're in, whether
15 we're in droughty conditions, or whether
16 rainfall is ideal under the best conditions, I
17 would say, within about two years.

18 Q. And what about under the worst conditions, how
19 long might it take?

20 A. (Magee) I can't speculate. That's
21 hypothetical.

22 Q. Well, you gave me a number with regard to the
23 best conditions. What makes it different to
24 estimate for the worst conditions?

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Magee) Well, how worst? Do we have a drought
2 for five years? Do we have a drought for ten
3 years? I can't speculate.

4 Q. If we have a drought for ten years, sir, are
5 you implying that it would take longer than
6 that to get a lupine site --

7 A. (Magee) No.

8 Q. -- the same size as Concord?

9 A. (Magee) No. No.

10 Q. Okay.

11 A. (Magee) It wouldn't take longer.

12 Q. Would it take five years, sir?

13 A. (Magee) I'm not a horticultural expert. I
14 can't speak to how long it would take.

15 Q. But your testimony implies that, certainly,
16 wild lupine are susceptible to drought, --

17 A. (Magee) Yes.

18 Q. -- and they don't do well in drought?

19 A. (Magee) That's true. Well, drought stresses
20 all plants.

21 Q. So, in terms of timing, the best we can do is
22 is to understand that, on this mitigation site
23 that currently has no wild lupine, that it
24 would take somewhere between two and five years

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 to establish a population similar in size to
2 that at the Concord site?

3 A. (Magee) That is correct.

4 Q. Before you introduce lupine to the mitigation
5 site, am I correct that site work has to be
6 done there?

7 A. (Carbonneau) I can speak to that, please.
8 There is an old foundation on the parcel that
9 will need to be removed.

10 And I would like to point out that the
11 site wasn't identified specifically as a "wild
12 lupine mitigation site". It was identified to
13 mitigate impacts to the Karner blue butterfly
14 primarily. To the extent that the Karner blue
15 butterfly is dependent upon wild lupine, we
16 expect that lupine will be planted. But
17 there's been no requirement to establish an
18 exactly similarly sized lupine population on
19 the mitigation site as would be temporarily
20 impacted by the Project.

21 Q. Do we have any estimate as to the amount of
22 time involved to make this mitigation site
23 susceptible for planting? In other words, how
24 long will it take to remove the foundation and

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 whatever else is on it?

2 A. (Carbonneau) The Project has committed to
3 removing that foundation prior to lodging the
4 conservation easement on the land, which must
5 occur I believe it's within 120 days of the SEC
6 approval of the Project. So, it would be
7 presumably ready for further management
8 activities by Fish & Game, presumably, in 2018,
9 I would estimate.

10 Q. And you've indicated that the entity that would
11 be responsible for propagating the new lupine
12 population on this mitigation parcel is New
13 Hampshire Fish & Game?

14 A. (Carbonneau) That's our expectation. We don't
15 have a formal agreement in place with them at
16 this time.

17 Q. What would the cost of that project be?

18 A. (Carbonneau) I don't know.

19 Q. Who would fund the cost of that project?

20 A. (Carbonneau) We are expecting that the Project
21 will make some type of contribution to the
22 management of the parcel, as well as
23 potentially a stewardship donation. But the
24 details of that have not been worked out.

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. So, the details, as I understand it, of the
2 mitigation parcel, the purchase, have they been
3 worked out?

4 A. (Carbonneau) The land has been purchased by the
5 Project. So, it is in the ownership of the
6 Project. The details of who will own the
7 parcel in the future, or if there would be a
8 conservation easement on it or a donation in
9 fee, has not yet been worked out.

10 Q. And all of the details with regard to the
11 establishment of lupine and the cost of that
12 have not been worked out either, is that
13 correct?

14 A. (Carbonneau) That's correct.

15 Q. Mr. Magee, we were talking a little bit earlier
16 about the size of the structures that would be
17 located in the Concord site. And you had
18 indicated that Mr. Kayser's description was
19 with regard to one of the larger towers, is
20 that correct?

21 A. (Magee) As far as I know.

22 Q. Do you know what size the towers will need to
23 be to cross over the lupine project in Concord?

24 A. (Magee) Height, I don't know. I understand

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 that the footprint is around 8-foot by 8-foot.

2 Q. And, obviously, if you were mistaken in that
3 regard and the footprint was larger, it would
4 have a more significant impact on the lupine,
5 correct?

6 A. (Magee) Correct.

7 Q. I want to switch topics now and talk a little
8 bit about the Karner blue, because, obviously,
9 that is tied to the same location. Can we see
10 Exhibit 316? Perfect. I understand that, Dr.
11 Barnum, you are the butterfly expert?

12 A. (Barnum) Yes.

13 Q. Can you identify for the panel what Exhibit 316
14 is?

15 A. (Barnum) It looks like a male and female Karner
16 blue butterfly.

17 Q. Okay. And can you describe for the panel the
18 protected nature of the Karner blue?

19 A. (Barnum) The Karner blue butterfly is listed as
20 "endangered" in the State of New Hampshire, and
21 federally endangered as well.

22 Q. And can you confirm which Project site has
23 impact on the Karner blue?

24 A. (Barnum) The location in Concord.

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. The same one we were just talking about with
2 the wild lupine?

3 A. (Barnum) Correct.

4 Q. In your report, Ms. Barnum, you talked about
5 the fact that the Karner blue project at the
6 Concord site, that prior to that project being
7 undertaken, in 2000, the Karner blue were
8 nearly extinct in Concord, is that correct?

9 A. (Barnum) The Karner blue was extirpated in
10 Concord.

11 Q. Can you explain what you mean by "extirpated"?

12 A. (Barnum) "Extirpated" means that subpopulation
13 was completely gone.

14 Q. Completely gone.

15 A. (Barnum) Right. However, other populations
16 still existed.

17 Q. And am I correct that, since 2001, New
18 Hampshire Fish & Game partnered with a number
19 of other entities to reintroduce not only the
20 wild lupine, but also the Karner blues to this
21 site?

22 A. (Barnum) I can't speak to the wild lupine, but
23 the butterfly was reintroduced.

24 Q. And Fish & Game has been responsible for

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1 reintroducing how many Karner blues to this
2 site?

3 A. (Barnum) They have a propagation project in
4 place, and they have been releasing numbers of
5 butterflies each year. I don't know exactly
6 how many. I do know, for the last few years
7 though, they haven't been doing any releases,
8 because the population is self-sustaining at
9 the moment.

10 Q. So, if the Karner blues went from being
11 extirpated to being self-sustaining, is it fair
12 to say that the Concord site is a success
13 story, in terms of the Karner blue?

14 A. (Barnum) It is.

15 Q. In your prefiled testimony, you concede that
16 the one endangered insect upon which this
17 Project could have a long-term adverse impact
18 is the Karner blue, correct?

19 A. (Barnum) That is correct.

20 Q. And that adverse impact from this Project
21 includes direct mortality during construction?

22 A. (Barnum) Yes. That's correct.

23 Q. And does it also include -- or, include
24 mortality due to the habitat loss?

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Barnum) If there's less habitat, it will
2 support fewer butterflies. But the direct
3 mortality occurs as a result of the
4 construction activity.

5 Q. And you heard the earlier testimony with regard
6 to the number of lupine plants that may be
7 temporarily and/or permanently impacted. If
8 it's as high as 50 percent, that would have a
9 pretty dramatic impact on the Karner blues,
10 correct?

11 A. (Barnum) The quality of lupine plants dictates
12 the number of butterflies it can support. The
13 larva is what need the plant, they eat the
14 leaves. And the quality of those leaves varies
15 with where the plant is growing, how much shade
16 it receives, how much sun it receives,
17 *etcetera*. So, determining exactly what impact
18 loss of plants would have on the number of
19 butterflies would also require then doing some
20 kind of analysis of the quality of the plants
21 that were available -- still available for the
22 butterflies to lay their eggs on for the larva
23 to eat.

24 Q. I understand that you did an egg count, which

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 we'll get to in a minute. But you did not do
2 any type of study to determine the impact of a
3 50 percent loss of the wild lupine on the
4 numbers of Karner blues, did you?

5 A. (Barnum) The agency did request us to do that.
6 They simply requested the egg count, and that's
7 what we did.

8 Q. So, if, in fact, there is a 50 percent even
9 temporary loss of lupine at the Concord site,
10 we don't know what impact that's going to have
11 on the currently self-sustaining Karner blue
12 population, do we?

13 A. (Barnum) That's correct.

14 CMSR. BAILEY: Excuse me. Off the
15 record for one second.

16 *[Brief off-the-record discussion*
17 *ensued.]*

18 BY MS. CONNOR:

19 Q. Dr. Barnum, you talked a little bit about the
20 Karner cycle. Can you take us through it, and,
21 in particular, the interaction between the
22 Karners and the lupine?

23 A. (Barnum) Yes. So, Karner blue butterflies,
24 their larva are dependent on wild lupine. It's

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1 the only species of plant that they eat. So,
2 they don't even eat the domesticated variety.
3 Wild lupine is the only thing they eat. So, in
4 the springtime, eggs that have been over
5 wintering in the leaves and the duff below the
6 plant -- where the plants were. Springtime the
7 plants start growing. And, then, once the
8 plants are there, conditions are right, the
9 eggs that have over wintered hatch. And the
10 larva crawl up the stems, and they feed on the
11 lupine for some amount of time, a week or so.
12 They pupate. The pupa metamorphose into
13 butterflies. The butterflies have their first
14 flight. They lay another set of eggs. Those
15 hatch almost immediately, because they are
16 being laid right onto the lupine leaves. Those
17 set of larva do their thing. They eat, they
18 pupate, butterflies emerge. And, then, they
19 lay their eggs again onto the lupine, but at
20 this point lupine senescens late in the summer,
21 and it dies back. And, so, those eggs that got
22 laid onto those leaves, those will fall to the
23 ground, become part of the duff, the layer of
24 the dead stuff there on the ground. And, then,

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1 those things -- those eggs will go into sort of
2 suspended animation, they won't hatch. They
3 will spend the winter on the ground. And,
4 then, in the springtime, once the next -- the
5 next year, the following year when the plants
6 are growing again, then those eggs -- that set
7 of eggs hatches and the cycle begins again.

8 So, it's a butterfly with two flights per
9 year, and then over wintering eggs to give rise
10 to the next year's population.

11 Q. Thank you. So, based on that description, as I
12 understand it, there is no time during the
13 calendar year when a Karner blue, in some
14 fashion, whether we're talking eggs,
15 caterpillars, pupae, are not present?

16 A. (Barnum) That is correct. There are always
17 going to be some life stage of the butterfly
18 present in appropriate habitat.

19 Q. And, because of that cycle, there is no time
20 during the year within which construction could
21 take place at this site and not at least have
22 some impact upon the Karner blue, is that
23 correct?

24 A. (Barnum) Yes. That is also correct.

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. It's my understanding that you were tasked with
2 trying to determine how many eggs were present
3 at the Concord site back in July of 2015, is
4 that correct?

5 A. (Barnum) Yes. That's correct.

6 Q. Am I correct that the size of these eggs is
7 like the size of a dot of a pen?

8 A. (Barnum) Yes. That's about right. So, --

9 Q. Pretty tiny?

10 A. (Barnum) Yes.

11 Q. Pretty hard to locate?

12 A. (Barnum) Well, before we went out and did our
13 count, we worked with Fish & Game's Karner blue
14 butterfly specialist. And we went to the place
15 where they're running their propagation
16 operation. And she has captive butterflies,
17 and they're laying eggs. And, so, we went
18 through a training with her to learn exactly
19 what the eggs look like and the best way to
20 search for them.

21 Q. Okay. And you did this egg count on a single
22 day, is that correct?

23 A. (Barnum) Upon Fish & Game's recommendation, we
24 followed her recommendation for the -- she

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1 recommended a single day, and she also helped
2 us identify the best day, in terms of when she
3 thought the maximum number of butterflies had
4 been available to lay eggs. So, we actually
5 shifted the date a few times to get just the
6 right day.

7 Q. It's my understanding you did an egg count in
8 July of 2015, so that would have been the
9 second laying of eggs?

10 A. (Barnum) The second, yes. Yes.

11 Q. Would you agree that insect populations are
12 know to fluctuate due to the vagaries of
13 weather, disease, etcetera?

14 A. (Barnum) Yes.

15 Q. And that a multiple sampling of eggs would
16 provide the most reliable egg count?

17 A. (Barnum) Again, we followed Fish & Game's
18 recommendation. They said a single day would
19 be sufficient.

20 Q. I understand that you followed their
21 recommendations. My question was a little bit
22 different. My question was asked, first of
23 all, do you agree that the number -- that the
24 egg count could be affected by the vagaries of

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 weather, disease, and whatnot?

2 A. (Barnum) It could.

3 Q. And would you agree that multiple sampling days
4 would, in fact, provide the most reliable
5 evidence as to egg count?

6 A. (Barnum) That would depend on the conditions,
7 potentially.

8 Q. Well, let's do this a different way. If you
9 went out to the egg site -- right, "egg site"
10 -- out to the lupine site next month, is it
11 fair to say that there's no probability that
12 you would come up with the same egg count?

13 A. (Barnum) It would not be the same.

14 Q. Okay. And it could vary wildly, could it not?

15 A. (Barnum) It would depend on the conditions.

16 Q. Could it be as high as 408, instead of 208?

17 A. (Barnum) It would -- that would depend on how
18 many adult butterflies were available.

19 Q. So, as we sit here today, you're not able to
20 give this panel information about what the July
21 egg count might be, if we went out in July of
22 2017?

23 A. (Barnum) I would have to consult with Fish &
24 Game to figure -- to learn about how the adult

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 flight is this year.

2 Q. If you had done an egg count over several
3 years, you would be able to average and have a
4 more accurate predictor, would you not?

5 A. (Barnum) Yes. I agree with that.

6 Q. Do you have an estimate, as we sit here today,
7 on the current number of Karner blues at the
8 Concord site?

9 A. (Barnum) I do not.

10 Q. We just know that they are self-sustaining?

11 A. (Barnum) Yes.

12 Q. Other than the fact that you have estimated,
13 based on a one-day count, that 208 winter eggs
14 might be destroyed as a result of construction,
15 have you calculated what this Project will
16 mean, in terms of a impact to the overall
17 population?

18 A. (Barnum) I have not.

19 Q. Do you have an opinion as to whether the Karner
20 blues will still be self-sustaining if this
21 Project goes through?

22 A. (Barnum) The population of butterflies that the
23 Project will impact is just one of a sub -- one
24 of many subpopulations in the Concord area

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1 surrounding in the airport. The Concord
2 Airport supports multiple subpopulations. The
3 population that will be impacted by the
4 Northern Pass is one of those associated
5 populations.

6 One of the ways that populations remain
7 sustaining is for there to be exchange of
8 individuals between the subpopulations. So,
9 trying to determine whether you've got a --
10 what the factors are that will make the
11 population self-sustaining is -- there's more
12 to it than just looking at what's happening to
13 a single population.

14 Q. Is it fair to assume that the loss of
15 50 percent of the wild lupine and at least 208
16 eggs will not increase the number of Karner
17 blues?

18 A. (Barnum) Not for that subpopulation, no.

19 Q. Right. Could it decrease the Karner blue
20 population by as much as 25 percent?

21 A. (Barnum) I don't know enough about the dynamics
22 of the entire population in the Concord area to
23 speculate on that.

24 Q. Wouldn't we need to know what's going to happen

1 to the Karner blue population at this site, in
2 order to determine whether this Project is
3 going to have an unreasonable impact upon an
4 endangered species?

5 A. (Barnum) Because the project will have an
6 impact on the species, we were required to come
7 up with a mitigation plan that would compensate
8 for that.

9 Q. Why not avoid the Karner blue population?

10 A. (Barnum) There are multiple considerations for
11 constructing the Project. Avoidance of impacts
12 to endangered species is one of those
13 considerations. There are other
14 considerations. And, as Lee alluded to, we've
15 got the corner structure there that can't be
16 moved, so --

17 Q. But that doesn't answer the question about
18 drilling, and putting this line underground for
19 a mere quarter to a half a mile?

20 A. (Barnum) And, as a -- I'm a wildlife biologist,
21 not a construction specialist, I can't address
22 that.

23 Q. I understand. But will you agree, to what I
24 think is the obvious, that, if that was done,

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 there wouldn't be an adverse impact upon the
2 Karner blues at the Concord site?

3 A. (Barnum) I don't know. I mean, there's
4 existing -- there's the existing line there.
5 So, I don't know how that plays into what they
6 would have to do when they're constructing.
7 So, I can't answer that.

8 Q. In addition to having an adverse impact on the
9 Karner blue, am I correct that putting this
10 Project through the Concord wild lupine site
11 will also impact the frosted elfin?

12 A. (Barnum) The frosted elfin also depends on wild
13 lupine for its larval food plant.

14 Q. Can we see Exhibit Number 315? Dr. Barnum, am
15 I correct that that is a photograph of a
16 frosted elfin?

17 A. (Barnum) Yes.

18 Q. Can you describe for me the protected nature of
19 that particular butterfly?

20 A. (Barnum) I believe it is listed as "threatened"
21 by the state.

22 Q. And, in your summary of impact risk, in
23 addition to indicating that the habitat loss
24 for the Karner blue is high, you indicated that

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 this Project will result in a high habitat loss
2 for the frosted elfin, is that correct?

3 A. (Barnum) Correct.

4 Q. Did you do any inventory as to the number of
5 frosted elfins that call the Concord wild
6 lupine site home?

7 A. (Barnum) We did not. There are not established
8 methodologies for doing that, like there are
9 counting eggs for the Karner blue butterfly.
10 And the Fish & Game didn't request that we do
11 any inventorying of the species itself. That
12 the Karner would provide a proxy for them.

13 Q. So, if we don't know how many frosted elfins
14 are presently located at the Concord wild
15 lupine site, is there any way to estimate the
16 impact this Project is going to have upon their
17 population?

18 A. (Barnum) No, there is not.

19 Q. Assume hypothetically that there's a small
20 number of frosted elfins at the Concord site.
21 Is it possible that this Project could end up
22 in destroying the entire population?

23 A. (Barnum) I don't know. I have no basis to make
24 that judgment on.

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. How is it that we can conclude this Project
2 will not have an unreasonable impact upon the
3 frosted elfin, when we don't know the impact
4 that this Project is going to have on them?

5 A. (Barnum) We assume that they will benefit from
6 all the avoidance and mitigation measures being
7 offered for the Karner blue butterfly.

8 Q. Well, as I understand it, the Karner blue we
9 hope is going to be reintroduced at the
10 mitigation parcel by New Hampshire Fish & Game.
11 Does New Hampshire Fish & Game have a breeding
12 program for frosted elfin?

13 A. (Barnum) They do not. And, to my knowledge,
14 they haven't decided whether they're going to
15 do any releases at the mitigation parcel, or if
16 they're simply going to manage it to create
17 habitat that's appropriate, and let existing
18 populations find it.

19 Q. Is there, to your knowledge, any entity that
20 has been successful in having a breeding
21 program to develop and release frosted elfin?

22 A. (Barnum) Not to my knowledge.

23 Q. So, if the frosted elfin then are eliminated by
24 virtue of this Project at the Concord site,

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1 they're gone forever?

2 A. (Barnum) Well, we assume, and Fish & Game
3 assumes, that frosted elfin are present
4 wherever the Karner blues are present. And,
5 since the Karner blue is present throughout
6 areas around the airport where there is
7 suitable habitat, the presumption is that
8 frosted elfin are also there.

9 Q. I understand that. But the Karner blues are
10 being reintroduced or we hope they're going to
11 be reintroduced by Fish & Game through a
12 breeding proposal, and I understand there is no
13 similar proposal or protocol for the frosted
14 elfin?

15 A. (Barnum) Fish & Game, like I said, to my
16 knowledge, hasn't decided what kind of -- what
17 steps they're going to take in terms of
18 propagation and release of Karner blues. There
19 are Karner blue butterflies around the airport
20 in many other locations. Those subpopulations
21 can repopulate the main site, which is the site
22 we're impacting, as well as the mitigation
23 parcel.

24 The continued persistence of the Karner

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 blue butterfly is not dependent upon their
2 reintroduction efforts at this time. The
3 population is self-sustaining in the wild.

4 Q. I understand. But it's self-sustaining before
5 this Project, correct?

6 A. (Barnum) That's correct.

7 Q. And you haven't been able to give me an
8 estimate as to what this Project is going to do
9 to those numbers, other than it's certainly not
10 going to increase them?

11 A. (Barnum) At the location where we're having an
12 impact. The other subpopulations in the
13 surrounding areas are not being impacted by
14 Northern Pass.

15 Q. I understand that. Can we also bring up
16 Exhibit Number 317? Dr. Barnum, can you
17 identify Exhibit 317?

18 A. (Barnum) A Persius Duskywing Skipper.

19 Q. And can you describe the protected nature of
20 this particular butterfly?

21 A. (Barnum) I believe this one is also threatened
22 by the state -- listed as "threatened" by the
23 state.

24 Q. And am I correct that you concluded that the

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 proposed Project at the Concord wild lupine
2 site will have a high habitat loss with regard
3 to the Duskywing Skipper?

4 A. (Barnum) Yes. This species also is dependent
5 on wild lupine. Uses some other species as
6 well, but wild lupine is one of its main larval
7 plants.

8 Q. And was any type of inventory done to determine
9 how many Duskywing Skippers might be present at
10 the Concord wild lupine site?

11 A. (Barnum) No.

12 Q. So, if we don't know what number we're starting
13 with, fair to say we don't know what number
14 we're going to end up with after construction?

15 A. (Barnum) Correct.

16 Q. Other than the construction is going to have an
17 adverse impact on the Duskywing Skipper?

18 A. (Barnum) It will, yes, adversely impact their
19 habitat.

20 Q. Does Fish & Game have a breeding program to
21 reintroduce the Duskywing Skipper?

22 A. (Barnum) No.

23 Q. Are you aware of any organization that has a
24 breeding program to reintroduce the Duskywing

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Skipper?

2 A. (Barnum) No.

3 Q. So, once the Duskywing Skippers that are
4 adversely impacted at the Concord wild lupine
5 site are gone, there's no way to bring them
6 back through human means?

7 A. (Barnum) That is correct.

8 Q. We would simply be relying upon the hope that
9 there are -- that there is another colony out
10 there?

11 A. (Barnum) Yes.

12 Q. I asked Mr. Magee to give us a best estimate as
13 to the number of years it would take for the
14 wild lupine to be reintroduced onto this
15 mitigation parcel, and his -- I believe we came
16 up with two to five years. With that
17 understanding, can you give -- do you have an
18 opinion as to the number of years it would take
19 for a self-sustaining Karner blue population to
20 be present on the mitigation parcel?

21 A. (Barnum) I do not know how long it would take.
22 There is a self-sustaining population directly
23 adjacent to that parcel, however. So,
24 presumably, there's a good source to provide.

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. Would you agree that the Karner blues could not
2 be reintroduced to this mitigation parcel until
3 at least two years into the future, when the
4 wild lupine is established?

5 A. (Barnum) Yes. The Karner blues do require the
6 presence of the lupine.

7 Q. And, if there's no wild lupine for the
8 caterpillars to eat, they're not going to be
9 successful, correct?

10 A. (Barnum) Adults could go use other species to
11 nectar on, but they would have to return to the
12 parcel where they currently are present to lay
13 their eggs.

14 Q. So, we are talking at least a two-year time
15 frame before this mitigation parcel is suitable
16 for introduction of Karner blues, is that
17 correct?

18 A. (Barnum) Correct.

19 Q. And, then, two years -- how many years after
20 the lupine are established would it take to
21 have a population similar to that that
22 currently exists on the parcel that's going to
23 be affected by this Project?

24 A. (Barnum) I can't offer an opinion on that.

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. Do you have any knowledge as to the cost that
2 Fish & Game has incurred over the last two
3 decades, in terms of breeding and reintroducing
4 Karner blues to the site?

5 A. (Barnum) No, I do not.

6 Q. So, if we don't know how much money they have
7 spent over the last 20 years to get to a
8 self-sustaining population, fair to say we
9 don't know how much money to set aside for the
10 mitigation parcel?

11 A. (Barnum) There have been previous projects
12 which impacted Karner blue butterflies. And
13 Fish & Game and U.S. Fish & Wildlife have
14 negotiated with the proponents of those
15 projects to arrive at a agreeable dollar amount
16 contribution. Using those projects as a
17 guidepost, I'm confident that the agencies and
18 the Applicant can come to an agreement of what
19 an agreeable amount of contribution would be
20 for this Project.

21 Q. But, thus far, apparently those negotiations
22 have not been taken place, and we don't have a
23 representation about how much money is going to
24 be set aside for this project, do we?

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Barnum) We do not.

2 Q. Would it be required that any sum of money be
3 set aside for this project?

4 A. (Barnum) I believe that the agreement is that
5 there will be the parcel, and then the
6 management of the parcel, and funds to support
7 that management.

8 Q. We just don't know how much?

9 A. (Barnum) Correct.

10 Q. And we don't know how much it would actually
11 take?

12 A. (Barnum) I do not.

13 Q. Dr. Barnum, do you agree that the least impact
14 on the Karner blues, if construction has to
15 take place at the wild lupine site in Concord,
16 would be have construction occur during the
17 winter?

18 A. (Barnum) Yes. That's correct.

19 Q. And that would be why?

20 A. (Barnum) Because, if construction takes place
21 during the winter, and then construction is
22 done by the time the growing season rolls
23 around, the lupine would get a chance to start
24 regenerating at that point, and we would have

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 suitable habitat, again, sooner. If the
2 construction takes place during the summer,
3 then you've got to wait the whole winter before
4 lupine has a chance to start regenerating. So,
5 it just minimizes the amount of time that the
6 habitat is unsuitable.

7 Q. Did you have any input in the recommendations
8 with regard to the best management practice as
9 it regards the Karner blue?

10 A. (Barnum) "Best management practice" in terms of
11 what?

12 Q. The recommendations?

13 A. (Barnum) Best management for construction or --

14 Q. Let's pull up Exhibit 336 please. If you could
15 zoom in on the "Karner blue" section, which is
16 the third column. Great.

17 A. (Barnum) Yes. I contributed to that
18 recommendation.

19 Q. You'll note that, in bullet number two, it
20 indicates that "clearing and site preparation
21 should take place in winter...to the extent
22 practicable". Do you agree with me that that
23 means that, if somebody, the Applicant and the
24 contractors decided it's not practicable, that,

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1 in fact, construction can take place during
2 summer?

3 A. (Barnum) This is a very similar conversation to
4 the one regarding wild lupine. And I would
5 agree, wild lupine is actually a proxy for
6 impacts to Karner blue butterflies. So, the
7 situation would be the same. It is preferable
8 to do the construction in winter. It may not
9 be practicable.

10 But I would also like to point out that
11 these wildlife avoidance and minimization
12 measures, we're calling them "AMMs", as opposed
13 to "BMPs" at this time, are still in discussion
14 with New Hampshire Fish & Game.

15 Q. Dr. Barnum, would you agree that the least
16 impact on the Karner blue would be if this was
17 rewritten to require that "construction shall
18 take place during the winter months"?

19 A. (Barnum) Yes.

20 Q. Would you recommend that this be rewritten so
21 that it requires only winter construction?

22 A. (Barnum) When we have finished our discussions
23 with Fish & Game, then, at that point, there
24 will be a final determination.

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. Let's assume for the moment that Fish & Game
2 doesn't require that. If we are concerned
3 solely with having the least adverse impact on
4 the Karner blues, shouldn't this be rewritten
5 to require that construction only take place
6 during the winter months?

7 A. (Barnum) If that were the sole consideration,
8 that would be correct.

9 Q. Thank you. Dr. Barnum, I had asked you about
10 whether you had done an inventory on the number
11 of Duskywing and frosted elfins at the Concord
12 site, and I believe you indicated you had not.
13 Do you have any information about the overall
14 populations of those species in the greater
15 Concord/Pembroke population in general?

16 A. (Barnum) I do not.

17 Q. So, since we have no information about the
18 greater population, we don't know if those
19 particular species are robust enough to
20 repopulate?

21 A. (Barnum) When I said "I had no information", I
22 think I misspoke. Natural Heritage does have
23 records of those species from throughout the
24 Concord area. I can't recall how many

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1 locations. However, based on the Natural
2 Heritage records, there are multiple locations
3 where the specie is present. The robustness of
4 those populations is information that's not
5 available from Natural Heritage. So, I can't
6 speak to that. But I do know that there are
7 other populations around the Concord area.

8 Q. So, we know that there are other populations,
9 but we don't know whether those populations
10 will allow the insects to overcome the adverse
11 impact, should this Project go through the
12 Concord wild lupine site?

13 A. (Barnum) Correct. But, likewise, we don't know
14 that this will be a truly devastating impact to
15 the population, because we don't have that
16 information either. So, --

17 Q. Don't you think that would be critical, in
18 order to determine whether this Project is
19 going to have an unreasonable impact upon these
20 endangered species?

21 A. (Barnum) I was following the guidance given to
22 me by the agencies. They requested that I
23 evaluate the Karner blue butterfly, but they
24 made no request for the other species.

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Therefore, I can only assume that their
2 concerns did not rise to the level that they
3 would want me to do that.

4 Q. But that particular inventory and that
5 particular study could have been done?

6 A. (Barnum) It could have, yes.

7 Q. And, similarly, with regard to the Karner
8 blues, a specific study to determine the
9 percentage to which the population will be
10 impacted by this Project could have been
11 determined, too?

12 A. (Barnum) Had it been requested, it could have
13 been done.

14 Q. But it wasn't requested. So, we are being
15 asked to vote on this proposal without that
16 information?

17 A. (Barnum) That is correct.

18 Q. We've talked extensively now about the Concord
19 site. Are there Karner blues located at the
20 Pembroke wild lupine site?

21 A. (Barnum) There are no existing records of
22 butterflies from that site.

23 Q. I want to turn then to another plant, licorice
24 goldenrod. And I would ask for Exhibit 320?

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Mr. Magee, am I correct that this is a
2 photograph of the licorice goldenrod?

3 A. (Magee) Yes. It's one of only four that have
4 the entire leaves, uh-huh. The rest of --

5 *[Court reporter interruption.]*

6 **BY THE WITNESS:**

7 A. (Magee) It's one of four species of goldenrod
8 that have entire leaves. Based on this photo,
9 I see that these leaves are entire. All the
10 other goldenrods have serrated or toothed
11 leaves.

12 BY MS. CONNOR:

13 Q. And am I correct that the licorice goldenrod is
14 also a -- is a state endangered plant?

15 A. (Magee) Correct.

16 Q. And am I correct that there are 21 known sites
17 of this in New Hampshire?

18 A. (Magee) Correct. Known presently. They're
19 always discovering new sites. Also, the amount
20 of fieldwork these days is becoming less and
21 less. So, our knowledge of how many other
22 populations there are is pretty limited.

23 Q. Am I correct, sir, that one of the largest
24 populations of the licorice goldenrod is

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 located in the Project's path in the Town of
2 Pembroke?

3 A. (Magee) Correct.

4 Q. It's my understanding that seven of the fifteen
5 patches in Pembroke will be impacted by this
6 Project?

7 A. (Magee) Again, these are temporary impacts.

8 Q. Am I correct that seven of the fifteen patches
9 will be impacted in some degree?

10 A. (Magee) Yes.

11 Q. Did you make any recommendations to avoid the
12 licorice goldenrod impacts?

13 A. (Magee) We did, and those recommendations are
14 ongoing, to see whether or not more avoidance
15 is possible.

16 Q. But, in terms of your current prefiled
17 testimony, you have concluded -- you have not
18 identified any avoidance of the Pembroke's
19 licorice goldenrod?

20 A. (Magee) Measures to avoid licorice goldenrod
21 were made known, to the extent that they could
22 be made known, based on the design phase of the
23 Project. As the design phase becomes more
24 refined, we're looking for ways to further

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1 reduce impacts. But, based on where the
2 Project was at in its design at that point in
3 time, they avoided as much as they could.

4 Q. And I appreciate the fact that you are
5 continuing to look at ways to avoid it. But,
6 at the moment, our understanding, in terms of
7 acting on the proposal as we sit here today, is
8 that seven of fifteen patches in Pembroke will
9 be affected?

10 A. (Magee) Right.

11 Q. Can we have Exhibit 341 please? Mr. Magee,
12 we're back to 341, which I understand is the
13 Applicant's proposal in terms of how to avoid
14 and/or minimize the impact upon the rare,
15 endangered, and threatened plants. This
16 exhibit, also with regard to the licorice
17 goldenrod, like the wild lupine, contains an
18 exception for the Applicant not to follow these
19 minimization efforts whenever it is not
20 practicable to do so, correct?

21 A. (Magee) Correct.

22 Q. With regard to the licorice goldenrod, like the
23 wild lupine, it's my understanding that it is
24 preferred that any construction at the site

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 involving this plant be undertaken in winter?

2 A. (Magee) Correct.

3 Q. And why is that?

4 A. (Magee) Again, the ground is frozen, and the
5 impacts of heavy equipment on frozen ground
6 would be less than if the ground was not
7 frozen.

8 Q. And, although that makes perfect sense, if
9 we're talking about digging into the ground,
10 that's going to have an adverse impact on the
11 plant, whether we do it in winter or summer,
12 correct?

13 A. (Magee) Correct.

14 Q. Similar to the wild lupine, would it make sense
15 to have Exhibit 341 redrafted to mandate a
16 seasonal restriction, so the construction would
17 only take place during the winter months to
18 have the least impact on the licorice
19 goldenrod?

20 A. (Magee) If there were no other considerations
21 that the construction team had to think about,
22 yes.

23 Q. So, purely from the standpoint of protecting
24 the plant, that's what should happen?

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Magee) To have the least possible impact,
2 again, other measures are provided for when
3 frozen ground construction is impossible.

4 Q. Have you made any recommendations about a
5 transplantation plan with regard to the
6 licorice goldenrod, which, as I understand it,
7 50 percent is going to be impacted at the
8 Pembroke site?

9 A. (Magee) We had discussions with NHB. And their
10 favored approach was to allow a reseedling
11 on-site to take place naturally. The plant
12 does disseminate abundant seeds by wind
13 dissemination. And, so, that's its most
14 prolific means of repopulating.

15 Q. So, I take it from that answer, there is no
16 transplantation?

17 A. (Magee) That was not the NHB recommendation.
18 We had discussions about that, but they said
19 "No. Let natural reseedling take place at the
20 site."

21 Q. In your opinion, would a transplanting plan
22 work?

23 A. (Magee) It would -- certainly, it could. But
24 it's unnecessary, given that the plant is

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1 wind-disseminated, and it seeds in naturally
2 quite well. It's not done. I've never seen
3 this done in all the years I've been doing it.
4 We allow, especially with wind-disseminated
5 propagules, to allow the reseeding to take
6 place naturally.

7 Q. If we're relying on the natural repopulation
8 from seeds, and 50 percent of the plants had
9 been impacted, whether it's temporary or
10 permanent, it's going to take some time, is it
11 not?

12 A. (Magee) Again, there's a tremendous production
13 of seeds. And, even with a partial population,
14 there's certainly going to more seed than is
15 needed to repopulate.

16 Q. How many years do you anticipate it will take,
17 if 50 percent of the licorice goldenrod at the
18 Pembroke site are impacted by this Project,
19 before it rebounds to the level it exists
20 today?

21 A. (Magee) To the level that it exists today?
22 Probably a couple of years, two or three years.

23 Q. And that estimate of "two to three years", I'm
24 going to assume is based, in part, upon good

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 conditions, as opposed to bad conditions?

2 A. (Magee) Average conditions.

3 Q. Average conditions. And, if we have bad
4 conditions, I'm assuming one of the things
5 might be a drought, which we had a few years
6 back, would that increase the length of time?

7 A. (Magee) Yes. Well, I need to modify that.
8 Some reproduction would occur anyway, because
9 some seeds have genetics that make them a
10 little more tolerant of drought than others
11 might. And, so, some reproduction is going to
12 take place, but may not be as full as it would
13 be if there were not a drought.

14 Q. Mr. Magee, your reliance that the remaining
15 50 percent of the population will reseed -- let
16 me rephrase that. Two to three years, your
17 opinion, in terms of how long it will take to
18 get back to the current potential size, which
19 we know is fifteen patches, what happens if
20 more than seven of the fifteen patches is
21 destroyed during construction?

22 A. (Magee) We have seed bank recruitment also.
23 There are seeds that have built up over the
24 years in the soil.

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. And the seeds that are built up in the soil,
2 are they not impacted by the digging and the
3 regrading process?

4 A. (Magee) If the soil were regraded, yes. If
5 regraded to a sufficient depth, yes.

6 Q. And, at the moment, we don't know anything
7 about the extent to which regrading is going to
8 take place at the Pembroke site, do we?

9 A. (Magee) If we think that -- no, we don't. But,
10 if we think that it could be an issue, we can
11 recommend that regrading not include cuts, it
12 would only include fill with geotextile.

13 Q. But, as the mitigation sheet currently reads,
14 Exhibit 341, there is no indication or no
15 requirement, as there is with the lupine, to
16 avoid that, is there?

17 A. (Magee) Right.

18 Q. And, even if there was, if it was deemed not to
19 be practicable, it doesn't need to be followed,
20 does it?

21 A. (Magee) Well, again, the NHB is going to have
22 an interactive role throughout this process.

23 Q. I understand that they have to be notified.
24 But they don't have veto power, do they?

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Magee) No.

2 A. (Carbonneau) And, if I might add, it's a little
3 bit different to have an impact to a seed bank
4 than it is to have an impact to the actual root
5 system of a plant. If it were necessary to
6 excavate in the area of a plant, the topsoil
7 would be set aside, and then it would be
8 reapplied once the construction is done. And
9 the seed bank would still be in that topsoil
10 that gets redistributed. So, it's a slightly
11 different situation than impacting existing
12 roots of a plant. It would have less of an
13 impact on a seed bank.

14 Q. Am I correct that the degree to which that seed
15 bank could potentially repropagate depends in
16 large part in how the topsoil is handled and
17 how long it sits in a pile before it is put
18 back on site?

19 A. (Magee) The seeds can remain viable in the soil
20 for a long time, even if it's stockpiled and
21 then respread.

22 Q. Can the seeds also be destroyed during that
23 process?

24 A. (Magee) I'd have to say not widespread

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1 reduction, because they're going to be at
2 different levels in the topsoil. Some near the
3 surface of the topsoil could be subject to
4 desiccation; others that are further buried in
5 the topsoil wouldn't be.

6 Q. And, as we sit here today, we have no empirical
7 evidence one way or another about the impact of
8 the survivability of these seeds, when the
9 topsoil is stripped off the Pembroke site, do
10 we?

11 A. (Magee) I can say that seeds survive, in my
12 experience, a very long time in the soil.

13 Q. I want to turn now to the spiked needle grass.
14 Can we pull up Exhibit 324? Mr. Magee, is this
15 a photo depicting a spiked needle grass plant?

16 A. (Magee) Well, you know, it's difficult to tell,
17 because you need the spikelets. And the
18 spikelet and spiked needle grass has three
19 distinct awn, as the central one is not
20 twisted. And I can't tell from this whether
21 even if it's an *aristida*.

22 Q. Okay. Am I correct that the spiked needle
23 grass is also known as "red three-awn"?

24 A. (Magee) Three-awn. Yes.

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 in Concord?

2 A. (Magee) Yes.

3 Q. And I understand that all 498 plants in the
4 main Concord population are going to be
5 impacted?

6 A. (Magee) I believe so.

7 Q. And a second population in Concord is going to
8 lose approximately 8 percent of its population?

9 A. (Magee) Yes.

10 Q. And, then, the Pembroke siting is going to
11 suffer a 28 percent loss?

12 A. (Magee) Right.

13 Q. So, we have 100 percent, 8 percent, and
14 28 percent?

15 A. (Magee) Right.

16 Q. Did you make any recommendations to avoid the
17 100 percent impact at the Concord site?

18 A. (Magee) The recommendations we made is it would
19 be that, to the extent practicable, allow the
20 construction to take place during the
21 non-reproductive period, which is between
22 August 1 and October 15.

23 Q. So, no recommendations about rerouting or
24 drilling under the Concord site?

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Magee) No. Again, it's a wind-disseminated
2 plant, and it recolonizes and repopulates from
3 wind-dispersed seed. And the plant requires
4 and does very well in disturbed soil
5 conditions.

6 Q. So, you're not concerned by 100 percent impact
7 on this endangered species at the Concord site?

8 A. (Magee) Again, there's a big seed bank. And,
9 once the topsoil is respread, the plants will
10 grow, and they will wind-disseminate to other
11 areas.

12 Q. And, once again, in terms of the minimization
13 and best management practices with regard to
14 this plant, just like the lupine and just like
15 the licorice goldenrod, winter construction is
16 preferred because it has the least impact,
17 correct?

18 A. (Magee) Yes, I'd say so.

19 Q. And, even with winter impact, you have
20 estimated that all of the Concord plants are
21 going to be impacted?

22 A. (Magee) The above-ground parts, yes.

23 Q. And, as with all of the other plants, although
24 winter construction is preferred, if the

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Applicant deems it not practicable, they don't
2 have to follow that, do they?

3 A. (Magee) Correct.

4 Q. So, in terms of Concord and Pembroke, it
5 appears that those two locations are going to
6 have an impact on three rare or endangered
7 plants: The wild lupine, the licorice
8 goldenrod and the spiked needle grass. Is that
9 correct?

10 A. (Magee) Correct.

11 Q. And, along that route, we're also going to
12 impact four rare or endangered insects: The
13 Karner blue, the pine minion [pinion?], the
14 frosted elfin, and the Duskywing Skipper?

15 A. (Barnum) Yes. That's correct.

16 Q. That's all right. And, although this panel has
17 told me that the preferred order of sequence is
18 first avoidance, and second minimization, these
19 three plants and these four insects aren't
20 being avoided, are they?

21 A. (Magee) Avoided to the extent practicable, and
22 we're continuing to work with the Project
23 proponents and developers and engineers to try
24 to further minimize it.

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. And, in terms of minimization, we're relying
2 upon Exhibit 341, which contains an exception
3 of allowing, basically, a work-out when it's
4 not practicable, correct?

5 A. (Magee) Correct.

6 Q. And, in terms of mitigation, which is supposed
7 to be the third step, not the first or the
8 second, we have a replacement parcel for the
9 lupine on which the Karner blues can be
10 introduced, but we have no mitigation plan for
11 the other plant species or the other insects,
12 do we?

13 A. (Carbonneau) I can actually speak to that.
14 There's an actual Pine Barrens Right-of-Way
15 Management Plan that has been proposed. And it
16 will dictate the way that the right-of-way, in
17 the Northern Pass right-of-way through Concord
18 and Pembroke, and outside of the right-of-way,
19 in other rights-of-way in Concord and Pembroke,
20 in the Pine Barrens region, are managed going
21 forward. And many of the plants and the
22 wildlife that we're talking about today are --
23 actually thrive in the right-of-way, because it
24 is managed as open habitat within the Pine

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1 Barrens.

2 This Right-of-Way Management Plan actually
3 refines what's already occurring, and tweaks it
4 a little bit to make it even more valuable to
5 those species that we're discussing here today.
6 And it was developed in conjunction with both
7 the Fish & Wildlife Service, the New Hampshire
8 Fish & Game, and the Natural Heritage Bureau,
9 and they have agreed that this will benefit
10 these rare plants and rare lepidopterans in the
11 right-of-way.

12 Q. So, certainly having a mitigation parcel and/or
13 a mitigation plan is a good thing. But would
14 you agree that simply having a mitigation plan
15 doesn't avoid the adverse impact upon these
16 insects and these plants, when no study has
17 been undertaken to determine the exact decrease
18 in the populations that are caused by this
19 Project?

20 A. (Carbonneau) The quantification of exactly how
21 many of these individuals will be impacted was
22 not considered necessary to address the impacts
23 generally. It's a habitat approach. The
24 habitat will be restored. It will return after

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 construction. The mitigation site will also be
2 suitable habitat. And it's used as a way of
3 addressing the impacts to those species, whose
4 specific reductions were not quantified.

5 Q. The Pine Barren plan that you just talked
6 about, its not complete, correct?

7 A. (Carbonneau) The Right-of-Way Management Plan?
8 It has been fully developed and submitted.

9 Q. To this panel?

10 A. (Carbonneau) Yes. It's included in the
11 Mitigation Plan, the most recent version of the
12 Mitigation Plan. It is an appendix to the Pine
13 Barrens mitigation site portion of that Plan.

14 MS. CONNOR: I'd like to move on to
15 Exhibit 321, unless this is an appropriate time
16 for you to break for lunch?

17 CHAIRMAN HONIGBERG: It would be an
18 appropriate time. Although, there also might
19 be an appropriate time in five minutes or ten
20 minutes. I'll leave that to you.

21 MS. CONNOR: I might actually be able
22 to finish plants in three -- in five minutes.

23 CHAIRMAN HONIGBERG: Sounds like a
24 plan.

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1 MS. CONNOR: All right.

2 BY MS. CONNOR:

3 Q. 321 please. Mr. Magee, do you recognize,
4 hopefully, Exhibit 321?

5 A. (Magee) That is *pogonia verticillata*.

6 Q. Great. Can you describe the protected status
7 of this particular plant?

8 A. (Magee) It's federally listed.

9 Q. And am I correct that this is sometimes
10 described as an "orchid"?

11 A. (Magee) Yes.

12 Q. And am I correct that it is a globally
13 threatened plant?

14 A. (Magee) Correct.

15 Q. And, unbelievably, it's been documented to
16 exist in almost all of the New Hampshire
17 counties, except Coos, Sullivan, and Cheshire?

18 A. (Magee) Correct.

19 Q. Okay. This particular plant, as I understand
20 it, is found where there's leaf litter, often
21 near streams?

22 A. (Magee) According to the Sperduto Congalton
23 model, there are several habitat parameters
24 that serve as predictors for the occurrence of

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 the species. These are slopes 10 to 17
2 percent, mixed deciduous/coniferous, and
3 deciduous hardwood forests, and soils with a
4 pan layer.

5 Q. And am I correct that that habitat is found
6 along the path of the Project that brings us
7 all here today?

8 A. (Magee) It is found -- there are four element
9 occurrences in four different towns within
10 five miles of the right-of-way.

11 Q. Before we get to that particular aspect of your
12 testimony, am I correct that initially your
13 plant report indicated that areas of route
14 within 200 meters of a documented small whorled
15 pogonia would be searched?

16 A. (Magee) Yes.

17 Q. You didn't end up searching within 200 meters
18 of each documented small whorled pogonia
19 population, did you?

20 A. (Magee) No. No. We had permission only to
21 search within the right-of-way.

22 Q. You actually extended your search from
23 200 meters from known populations to 5 miles?

24 A. (Magee) Right.

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 Q. So, if there are additional pogonias within
2 200 -- between 5 miles and 200 meters of the
3 known population, they haven't been looked at,
4 have they?

5 A. (Magee) Well, let me clarify. The 5 miles, if
6 there's an element occurrence within 200
7 meters, then we searched areas that had two out
8 of the three habitat parameters present, the
9 slope and the pan soil. If you have slope and
10 pan soil, and an element occurrence within
11 200 meters, then we searched. For an element
12 occurrence within 5 miles, we had to have three
13 habitat parameters present to consider there to
14 be a likelihood -- enough of a likelihood to
15 search. So, it's adjacent right-of-way
16 segments to an element occurrence. We weren't
17 searching between the right-of-way and the
18 5 miles. We only had permission to search
19 within the right-of-way.

20 Q. When I was asking you about the licorice
21 goldenrod, you told me that, although there
22 were only 21 known sites of that particular
23 plant, that we're always discovering new ones,
24 is that correct?

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 A. (Magee) Right.

2 Q. And that's because you don't know and you can't
3 inventory a plant unless somebody goes out and
4 finds it?

5 A. (Magee) Correct.

6 Q. And, in this particular instance, as I
7 understand it, you had found very few,
8 actually, you found no pogonias?

9 A. (Magee) Right.

10 Q. That doesn't mean, does it, that there are no
11 pogonias that are going to be impacted by this
12 Project, it simply means you didn't find them?

13 A. (Magee) Correct.

14 Q. And, as I understand it, despite the fact that
15 this is a globally threatened, very rare plant,
16 because you didn't find any on your search
17 parameters, nothing more is going to be done to
18 look for them before this Project goes down the
19 path?

20 A. (Magee) The process that we follow is to, first
21 of all, if there's an element occurrence within
22 5 miles, we think there's a reasonable
23 probability, of enough of a probability of the
24 plant occurring within the adjacent

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[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 right-of-way segment, we searched. And, on top
2 of that, we looked for the habitats that have
3 the three parameters listed in the model. And
4 there were 18 such areas that we searched,
5 covering a total of almost 13 miles. And this
6 is how it's done. In 40 years of doing this
7 type of work, this is how we do it. And that
8 protocol was approved by the agencies.

9 Q. And, in terms of best management practices
10 going forward under plants, I take it that
11 there are going to be no further searches for
12 the pogonia?

13 A. (Magee) Correct.

14 Q. And the contractors aren't going to be trained
15 to be on the lookout for this globally
16 threatened plant when they start construction
17 activities, are they?

18 A. No, they will. Two of the AMMs call for -- one
19 of them calls for a training program for
20 contractor field personnel to be able to
21 recognize these plants.

22 Q. So, if they recognize that a pogonia is going
23 to be impacted, what happens?

24 A. (Magee) If they identify what they think is a

[WITNESS PANEL: Barnum~Carbonneau~Magee~Tinus~Varney]

1 pogonia *verticillata*, they'll call us, we'll
2 come out and we'll confirm the identification,
3 and then we will put protective fencing around
4 it.

5 Q. Without any inventory as to whether there are
6 pogonias located in the Project path, are you
7 able to offer an opinion as to the impact of
8 this Project upon this very rare and endangered
9 plant?

10 A. (Magee) I'll say that using the protocols that
11 are done in the business, we searched every
12 location that had any reasonable probability of
13 provided habitat for such species.

14 MS. CONNOR: I have nothing further.
15 So, I think we can break for lunch maybe.

16 CHAIRMAN HONIGBERG: Sounds like a
17 plan again, Ms. Connor. I appreciate it. So,
18 we'll break now, and we will return in an hour.

19 (Lunch recess taken at 12:32
20 p.m. and concludes the **Day 16**
21 **Morning Session.** The hearing
22 continues under separate cover
23 in the transcript noted as
24 **Day 16 Afternoon Session ONLY.**)

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C E R T I F I C A T E

I, **Steven. E. Patnaude**, a Licensed Shorthand Court Reporter, do hereby certify that the foregoing is a true and accurate transcript of my stenographic notes of these proceedings taken at the place and on the date hereinbefore set forth, to the best of my skill and ability under the conditions present at the time.

I further certify that I am neither attorney or counsel for, nor related to or employed by any of the parties to the action; 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.

Steven E. Patnaude, LCR
Licensed Court Reporter
N.H. LCR No. 52
(RSA 310-A:173)