STATE OF NEW HAMPSHIRE SITE EVALUATION COMMITTEE

June 2, 2017-1:10 p.m.
49 Donovan Street Concord, New Hampshire

DAY 12
Afternoon Session ONLY
\{Electronically filed with SEC on 06-18-17\}

IN RE: SEC DOCKET NO. 2015-06 Joint Application of Northern Pass Transmission, LLC, and Public Service Company of New Hampshire d/b/a Eversource Energy for a Certificate of Site and Facility.
(Hearing on the merits)
PRESENT FOR SUBCOMMITTEE/SITE EVALUATION COMMITTEE:
Chrmn. Martin P. Honigberg Public Utilities Comm. (Presiding as Presiding Officer)

Cmsr. Kathryn M. Bailey Dir. Craig Wright, Designee Dept of Environ Serv Christopher Way, Designee

Patricia Weathersby
Rachel Whitaker

Public Utilities Comm.
Dept. of Environ. Serv.
Dept. of Resources \& Economic Development
Public Member
Alternate Public Member

ALSO PRESENT FOR THE SEC:
Michael J. Iacopino, Esq., Counsel to the SEC (Brennan, Caron, Lenehan \& Iacopino) Pamela G. Monroe, SEC Administrator
(No Appearances Taken)
COURT REPORTER: Susan J. Robidas, NH LCR 44
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## AFTERNOON SESSION

(Hearing resumed at 1:32 p.m.)
CHAIRMAN HONIGBERG: Ms. Weathersby, you may continue.

MS. WEATHERSBY: Thank you.
INTERROGATORIES BY COMMITTEE MEMBERS
BY MS. WEATHERSBY (cont'd) :
Q. So I'm a bit of a news junky. In addition to reading things we just talked about concerning Bayroot and Wagner Forest, et cetera, through the miracle of Google Translator I've also been reading some articles concerning Hydro-Quebec and the lines going from the dams to connect to this project. And there seems, according to the articles that I've read, there seems to be some push to bury those lines as well. Could you provide any status concerning that section, the Hydro-Quebec portion of the route?
A. (Bowes) So I'm somewhat familiar with it. As well I try to translate myself to what they say. So I've been looking at some of the BAPE web site, which is equivalent to the SEC
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in Canada, and there are some documents up there. And we've had some conversations with HQ as well. They're a little bit of ahead of us in the siting process, and they expect to have at least the provincial approval in the June-July time frame and then final approval, similar to the U.S. DOE approval, sometime later in the year, possibly at year end for the Canadian Government approval.

As part of their siting process, they again have been challenged on routing and type of construction. And especially in one area near the New Hampshire border they've been asked to evaluate placing a portion of that underground, I believe. HQ's position, as far as $I$ understand it, is they're going forward with an all-overhead solution, and that's what they have filed or reaffirmed with their regulator because that's their plan to move forward.
Q. Is there a significant chance that the permitting will either get delayed or will not be granted?
A. (Bowes) Not to my knowledge. I don't -- I
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mean, that's speculative, I would say, for me to even comment. HQ seemed to be confident that they would get approval as proposed.
Q. Concerning the laydown and staging areas, I think it's been indicated that three of those -- three laydown areas have been specifically identified, but approximately 25 are needed. Is that correct?
A. (Bowes) I would say that's reasonable, yes.

I think that's what we said.
Q. And that Quanta/PAR's responsible for locating those additional areas?
A. (Bowes) Yes.
Q. So when those are identified, do those plans -- what is the process? I'm wondering how it integrates with the SEC process. Do they -- what's the review for -- you know, maybe DES permits are needed. Are they evaluated for historical or archeological significance? What happens when these additional parcels are added to the Project?
A. (Bowes) So we would propose we would do the same thing we did with the Merrimack Valley Reliability Project. We would ask the SEC to
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delegate that responsibility to the New Hampshire DES to evaluate the laydown areas as presented and provide a ruling on that. If it's a positive ruling, then we would go forward. If it's a negative ruling, we'd either work with the permitting agency to understand the complications or restrictions on that site or select another site to use.
Q. A day or two ago, I think perhaps when you were talking with Mr. Oldenburg, you indicated that probably sitting in your mailbox were the DOT waiver request results. Have you received those?
A. (Johnson) We did get the first batch back, if you will. Two were approved, and seven were requested to be refined. So they asked for additional information on the first set of seven.
Q. And are those results provided to the Committee?
A. (Johnson) They will be, yes. I don't have them with me at this time.
Q. Okay. Earlier today we were talking about using monopoles versus lattice towers, and
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there was a discussion about the changes in the site preparation that is needed for both. But is there a price difference just between the pole itself, a monopole tower and a lattice tower at the same height?
A. (Kayser) From a materials standpoint, a lattice tower is cheaper. Just the steel is cheaper from a materials standpoint; although, the labor to put up a lattice tower is more than a steel pole, and the biggest difference is the foundation. Typically the foundation for a steel monopole costs significantly more than the lattice tower because the lattice tower has four smaller foundations. A monopole has one large foundation, which typically is significantly more concrete and more expensive.
Q. So a monopole is more expensive because of the foundation and the pole itself.
A. (Kayser) Yes.
Q. The lattice tower is more expensive than the monopole in its erection.
A. (Kayser) Yeah, more labor in the erection of it. Sorry. So, overall, typically, and I
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know Derek talked about this, or Mr.
Bradstreet, if you look at just one single pole sometimes, a monopole may be more cost-effective. But overall, when you get a really long line with lattice towers, typically lattice towers are a more economic choice.
Q. And just ballpark, would you say it's half again as much to use monopoles or twice as much? Or what's kind of a ballpark figure?
A. (Bowes) I think Derek indicated around 10 percent, probably, if you looked at a large number or a large cross-examination. Again, each type of structure weighs into that as well. If it's an in-line structure, the prices tend to be closer. But if it's a tangent structure, or an angle structure, rather, the price tends to go up because of the foundation requirements, the tensions on the structures.
Q. How much of a factor, if any, has that price been in the selection of the towers for this project?
A. (Bowes) I would say one of the factors, but
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probably one of the less impactful criteria we used, was really more around getting a base design in place that was constructable, especially in areas that were more challenging to build roads into. And the terrain in the North Country and overall with a very long line, economics plays some role. But as the price of steel has gone down, that factor is more minimized now. So it's really about getting the material into the site and the type of equipment that would be necessary to erect those structures.
Q. Okay. That's all I have. Thank you.

CHAIRMAN HONIGBERG: Commissioner Bailey.

MR. IACOPINO: Can I jump in one second, Mr. Chairman? I just want to point out that the reference just before the lunch break to the Cape Horn State Forest in Applicant's Exhibit 3, which is the Application, Appendix 13, there is a filing with the Public Utilities Commission to cross over state lands, and the Cape Horn parcel is included in that. So I just want to make the Committee aware of
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[WITNESS PANEL: FARRINGTON|JOHNSON|BOWES|KAYSER]
that.
BY CMSR. BAILEY:
Q. Thank you. Good afternoon. Let's start where we left off yesterday about the consideration you gave to routing along I-93. Can you describe that for me? And I guess I'm interested in underground, which is what I think most people would prefer, but why you wouldn't look at overhead along that corridor.
A. (Bowes) So we'll start with overhead and then we'll go to the underground.

It was obviously a route that was looked at. We tend not to co-locate on transmission lines along highways except for short distances, really, because of the necessary right-of-way we would need to acquire in this case. There really aren't any rights-of-way, with the exception of existing X 178 line that's near the White Mountain National Forest. So in order to acquire 150- or 120-foot right-of-way for the entire length adjacent to the DOT corridor, it would be quite a large amount of land to acquire for
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that length. If we were to go inside the DOT right-of-way, again we'd still need that 120 feet. In some locations that would be obtainable, but other locations we'd still have to go off that DOT right-of-way. Our visual experts indicated that would be quite a visual impact as well if we were to co-locate along I-93 for its entire length. As $I$ said before, we do it in short segments, usually where the right-of-ways just happen to come together. So we have done that in other locations.

As far as the underground goes, we had that question a lot as we did the public outreach and public meetings, public hearings for this project. And Mr. Quinlan had made some statements about the approximate costs, which were not necessarily a detailed analysis. So I think about a year ago he asked me to commission a study. It was done under my direction with Burns \& McDonnell. We had some legal input as well around what we could do for various underground alternatives. We actually looked at three of
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those. Two were identified in the Department of Energy draft EIS as 4A and 4C, which included routes that co-located along I-93, and in some cases went all the way through Franconia Notch and others avoided Franconia Notch. And then we looked at what the Project considered was a viable alternative. And I'll get back to why we didn't think 4A and 4C were viable.

We looked at a third alternative that was all within state roads, including some of the roads we're using for this Application for the SEC. We've done that in other states. We've co-located within an existing state highway. We have never done that on a limited-access highway.

The reasons why we haven't done limited-access highways are similar to those we found in New Hampshire. First, the DOT Utility Accommodation Manual says you can't be in the travel lanes. Obviously, you can't be in the median. Can't be in the travel lanes, can't be in the breakdown lane, and really can't be in the shoulder either. You
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have to be all the way off to the right-hand side of the right-of-way. Now I'm talking about the DOT right-of-way. And that's done for many good reasons. First is the public safety aspect. Again, on state roads, and even town roads, the traffic control measures are very different than on a limited-access highway. Speeds are much different, and the expectations of people are much different as well. They expect to be on that unencumbered and travel the full length. From regular state roads or town roads, we can service our facilities and construct those facilities from that road. For a limited-access highway, that's not allowed. Basically have to build your own road next to the existing interstate in order to do the construction. And that's really whether it's overhead or underground because they don't want traffic coming off the limited-access highway, you know, onto the shoulder and, you know, into the right-hand side of the DOT right-of-way and then coming back on, for obvious reasons for public safety.
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So then we looked at what the environmental impacts would be of going along I-93. And over on that side of the shoulder there's lots of wetlands, lots of rock and ledge. And we had to build a 20- to 30-foot access road in order to get the vehicles in, same as we talked about on the rights-of-way, and then to do the trenching. So that posed many challenges. And then all of the on-ramps and off-ramps on the highway we would have to go under. So we have far more and far longer horizontal directional drills or other trenchless construction, so the environmental impacts and now constructability. We thought it would take us at least another year, possibly two years to do that construction just because of the length of time. And the constructability of that is challenging, especially where we have raised roads in many segments for water crossings. So now we're talking about fairly long directional drills or some other means to get across, and there's far more, many more of them.
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That ultimately leads to cost. And that's really how we built this. We looked at all the requirements and then ultimately did the cost. And it did come out to be approximately $\$ 2.6$ billion for each one of the three alternatives. They came up very close in cost, actually, even though the lengths were different, the construction methods would be somewhat different in state roads versus along the interstate highway. But they all added an amount of cost that, when we took it back to our senior management and the senior management at Hydro-Quebec, they said the Project would not be viable by adding approximately a billion dollars to the cost and an extra one or two years of construction.

So that's the analysis we went through and documented in the report. I attached it to my Prefiled Supplemental Testimony. And that's kind of the basis of what we came to. So, kind of to summarize, we don't do longitudinal, overhead transmission next to the interstate highways because of
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right-of-way needs. And then for the underground, it's really the four things: Public safety, environmental impacts, constructability and then ultimately the cost of underground.
Q. Thank you. I think, Mr. Johnson, you said in who were constructing the Project if they were late. Do you recall that?
A. (Johnson) Yes.
Q. And the reason was because you have or are
Q. And is that commitment the capacity supply
obligation that would be three years from the date of an auction that you were awarded, a capacity supply auction, or something else?
A. (Johnson) It could be both capacity obligation or just an energy obligation. So, for instance, if we have sold a contract to somebody for that supply, if we don't provide that supply that they're relying on, they

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have to go buy it somewhere else, and there's an obligation to pay for that difference.
Q. Is that an obligation to the person you sold it to or to ISO?
A. (Johnson) That would be the owner. So, whoever is supplying that. So in this case, Hydro-Quebec, who is supplying the electricity, if the transmission line isn't available for them to deliver that product, then the person who bought the product is going to come back to who's supplying the product, who will then come back to Northern Pass and say you owe us the money.
Q. I understand. But is the obligation to deliver it at the time you say it will be delivered? If it's under a PPA, for instance, would the obligation be to the EDCs in Massachusetts who --
A. (Johnson) Yes.
Q. -- have the -- so that's not an ISO obligation.
A. (Johnson) No. That's correct. So that's the energy side. Correct.
Q. Right. So when you were referring to an ISO
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obligation, that's in the event that you get a capacity supply obligation from the Forward Capacity Market?
A. (Johnson) That's correct.
Q. Okay. And so when do you expect the earliest you could have such an obligation would be in the capacity market?
A. (Johnson) Right. So our current in-service date is the end of 2019 , if we can construct this completely within two windows. I believe the Forward Capacity Market for that has already passed. So it would be whatever the next Forward Capacity Market is in three years beyond that.
Q. So three years from next February?
A. (Johnson) Yes, I believe that's correct.
Q. So that would be like 2021, in probably June of 2021?
A. (Johnson) Correct.
Q. The line that comes from Des Cantons to Franklin is all one DC line; correct?
A. (Johnson) That is correct.
Q. And is the Canadian segment of the DC line being built brand new like this is?
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[WITNESS PANEL: FARRINGTON|JOHNSON|BOWES|KAYSER]
A. (Johnson) Yes.
Q. Do you know how much that's expected to cost? Does anybody know that?
A. (Johnson) Around $\$ 200$ million U.S. dollars. But I'm hesitating on that because I'm not sure.
Q. Can you check on that and just --
A. (Johnson) That's just the transmission portion. They also have a substation on their side --
Q. Oh, that was my next question.
A. (Johnson) Sorry.
Q. That's okay.
A. (Johnson) A DC station --
Q. A converter station. Right.

CMSR. BAILEY: Sorry.
BY MS. BAILEY:
Q. They have a converter station they have to build as well in Des Cantons.
A. (Johnson) Correct.
Q. Okay. So you think it's $\$ 200$ million to build the transmission line. And you'll correct that later if that's not accurate.
A. (Johnson) Correct.
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[WITNESS PANEL: FARRINGTON|JOHNSON|BOWES|KAYSER]
Q. And do you have any idea how much it'll cost to build the converter station?
A. (Johnson) About another $\$ 200$ million.
Q. Okay. Has the I-93 study been completed?
A. (Johnson) It has.
Q. And do you know what the estimated capital cost for upgrades to the existing system that are required by that study?
A. (Johnson) It's approximately $\$ 100$ million. A little bit less.
Q. And is that hundred million included in the $\$ 1.6$ billion total estimate?
A. (Johnson) It is, yes.
Q. Okay. Is the $\$ 400$ million that they need to spend in Canada included in the $\$ 1.6$ billion estimate?
A. (Johnson) It is not. Hydro-Quebec will absorb that as part of their normal rates. And because they're the energy supplier, that will be part of that cost of energy that they would then sell into the market.
Q. Do you have any idea how much they're going to sell their energy for?
A. (Johnson) I have no idea, no. It's not part
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[WITNESS PANEL: FARRINGTON|JOHNSON|BOWES|KAYSER]
of my part of this.
Q. Okay. Are there any cost constraints on any of the contracts that you have for building it?
A. (Johnson) Can you be more specific? Sorry.
Q. Well, the estimate is $\$ 1.6$ billion to build the Project.
A. (Johnson) Correct.
Q. Is there any cap on that amount? Or if it costs 3.2 billion, is that "so be it"?
A. (Johnson) No. The prices that we've got from our contractors are firm, fixed prices for the scope of work that we put in front of them and put in front you guys. So it is basically, effectively a guaranty of a price, so that it will be $\$ 1.6$ billion at the end of the Project.
Q. Okay. Mr. Bowes, I think these are for you. But Mr. Johnson, you're free to answer if you have an answer.

I was just curious. When you
direct-bury the transmission line and it's 4 inches below grade, how is that protected?
A. (Bowes) Direct buried 4-inches below grade?
\{SEC 2015-06\} [Day 12 Afternoon Session ONLY]\{06-02-17\}our contractors are firm, fixed prices forthe scope of work that we put in front ofthem and put in front you guys. So it isbasically, effectively a guaranty of a price,so that it will be $\$ 1.6$ billion at the end ofthe Project.
Q. Oh, probably 4 feet.
A. (Bowes) So I don't know if we're proposing to do that in any locations on this project. I know there's some private property as we enter the transition stations. But I believe we're still using a duct bank in those cases, which means plastic conduits and then encased in some sort of concrete material, whether it's fluidized thermal backfill or just a concrete cap.
Q. So there's no direct buried --
A. (Bowes) So I don't believe we're proposing that. But how would you do that and how would you protect it?
Q. No, I -- thank you. I must have read something wrong or maybe -- that's fine. If you're not using direct bury on this project, then $I$ don't need to know, today.

Mr. Bowes, your most recent testimony from April, you say that Applicants are required to leave enough space between the existing transmission line to provide space for future expansion by the generator. Do you recall that?
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A. (Bowes) Yes. There's a section of line in Dummer --
A. (Johnson) Yes, Dummer.
A. (Bowes) -- from the existing wind farm down to where it interconnects with the PSNH right-of-way on the Coos Loop, where there's an existing 115 kV transmission line. And they have some requirements in that right-of-way to add more facilities.
Q. Who is "they"?
A. (Bowes) Granite State Renewable.
A. (Johnson) Granite State Reliable -- Granite State Renewable Energy.
Q. And they have rights to your right-of-way there?
A. (Bowes) No. It's their right-of-way on that portion. It goes from the Coos Loop north to the generators. That's the portion that we're adjacent to.
A. (Johnson) So they also have a deal with the Wagner Forest for a right-of-way. And part of their deal is that they are able to expand and potentially build another line if they build another set of turbines. So the
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requirement put upon us was you can't be right next to them, which we had first thought we would be, but to be offset so that there's room for them to build their facilities in between ours.
Q. And this issue is only in the Wagner Forest?
A. (Johnson) Yeah, that's correct.
Q. Okay. Mr. Bowes, somewhere in that same testimony you listed all the visual impact mitigation efforts that you considered. And it sounded like there wasn't a good solution for most of them. But there was one that was on North Side Road in Stark that seemed -that it seemed to me you were saying would reduce temporary wetland impacts and reduce the visual impact. Do you remember that?
A. (Bowes) Yes, I believe it's on Page 6 through 8 of my Supplemental Prefiled. And actually, I might characterize it a little differently.

What I tried to do is identify what other visual experts had indicated the potential changes we could make. And it wasn't to say they couldn't be done. It was just to offer that in each of the cases there
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may be some other impacts that should be considered. You could minimize the visual impact potentially, but it might create a temporary or permanent wetland impact. And that's the balance that we try to strike. And we're not saying we always get the balance right, but there's -- this would be the impact if we were to make that change, really the purpose of that part of the testimony.
Q. Okay. Thanks. And so on North Side Road in Stark, it looked like there were no offsetting impacts. It looked like the impact, the other impact was improving the impact on temporary wetlands. And so I wondered why you didn't decide that you could do that.
A. (Bowes) Yeah. Let us call it up and take a look.
Q. Okay.
(Witness reviews document.)
A. (Bowes) So I believe this is on Page 6, and it starts with Line 14 and goes into 15 and
16. "Two structures along North Road in
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Lancaster..." and then you jump down to -basically we concluded that monopoles at these locations would not provide significant benefits. And that's where -- I know we had some discussion the other day because our visual expert didn't consider them scenic resources. Again, that's not necessarily a constructability or even an engineering decision. We're not saying that you couldn't change those structures from lattice to monopoles. It's just that these are two locations that weren't identified as scenic resources. One of the consultants, I think it may have been Counsel for the Public's, suggested we do it anyway. So it's really just a description of trying to be complete in the record of saying we looked at those. They weren't considered scenic resources. Doesn't mean we couldn't be told you should do that in these locations. But there wasn't a criteria established for us to attack them.
Q. And that's specifically the one on North Side Road?
A. (Bowes) Yeah, the two structures along North
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Road. Maybe I'm looking at the wrong location.
Q. I'm pulling up your testimony because that doesn't sound like the one I was talking about. But it could be.

MS. WHITAKER: I'll just throw in that there's a North Road in Lancaster, but there's a North Side Road in Groveton.

CMSR. BAILEY: Thank you.
A. (Bowes) So I have the structure number being DC433 and 0154-82. It's actually in my testimony on Page 9 of 16 , beginning on Line 24.
Q. I think that's it because I have a note that says Page 9, Line 27 through Page 10, Line 2.
A. (Bowes) And it is right next to the North Road, Lancaster discussion. So that probably led to more confusion.

Yes, we could move those structures.
Looks approximately 40 feet would reduce potential visual impact and reduce temporary wetland impacts.
Q. So it looked like a win-win. And there was a reason in every other case why you wouldn't
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do it because the balancing test didn't favor moving it. But in that case, it looked to me like it would make sense to move it, and you didn't say you would. And I was just wondering why you wouldn't do that.
A. (Bowes) I think if requested we would.
Q. Okay. I don't know the area. It was strictly from an analytical point of view. Looked like a no-brainer, so I wondered why you didn't say you would do that.

Ms. Farrington, was the current traffic volume that you analyzed during the peak period?
A. (Farrington) So it was vehicles per day from the New Hampshire DOT web site. And they do sort of random counts on the roads once in a while. So we didn't have detailed per-hour information. So we had to use that $K$ factor of 10 or 12 percent of the vehicles per day to assume the vehicles during the peak hour.
Q. And does that take into account increased traffic in the summer?
A. (Farrington) It doesn't. It's an average over the course of the year. There are
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seasonal factors that we can apply. They're usually in the range of 1.1 to 1.2 percent.
Q. Okay. Did you add 1.2 percent to your traffic volumes?
A. (Farrington) No, because we were just doing it as a comparison. When we go into the detail of giving the exact work zone lanes, then we will certainly consider seasonal factors. Yeah.
Q. So did you identify any locations where demand exceeds capacity?
A. (Farrington) Not currently. During construction, it is my expectation that the one location that needs further analysis is the intersection of Route 18 and Route 116 in Franconia, and that's currently a traffic signal. So, for that location, we would actually need to go out and do the manual turning movement counts during the peak hours and do further analysis, which will be included in the Transportation Management Plan.
Q. And you would do that during the peak time of year or during the time of year that you
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would be anticipating construction activity?
A. (Farrington) Ideally, yes. If not, then again we'd use the seasonal adjustment factors to increase to that volume.
Q. Okay. I think this is my last area.

In Canada, $I$ understand that under the transmission lines the utilities sometimes create bike trails or snowmobile trails or ATV trails, and people in Canada like that. Is there a technical reason why you couldn't do that in New Hampshire?
A. (Bowes) No. In fact, many of our rights-of-way in New Hampshire are used by snowmobile clubs and ATV clubs. So there's no reason why we couldn't do that.

CMSR. BAILEY: Okay. Thank you. CHAIRMAN HONIGBERG: Mr. Wright. BY DIR. WRIGHT:
Q. Good afternoon. I'll try not to be repetitive here, but $I$ certainly have some areas that $I$ want to have clarified in my mind. And also, the good thing about going later in this process is $I$ don't have as many questions.
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Let me start with Mr. Bowes and Mr. Johnson, I believe, and talk a little bit about your field inspection teams.

You had mentioned you envisioned two sets of teams. There'd be one set of teams for your contractors, either ABB or PAR, and then there would also be a Northern Pass team. Is that accurate?
A. (Johnson) That is correct.
Q. And the purpose of these teams is to go out into the field and inspect the sites for environmental safety and community relations? Is that what $I$ heard described earlier as well?
A. (Johnson) So $I$ will add a fourth one, and that would be safety. And so while safety is able to be managed by any of those inspectors, clearly an unsafe activity needs to be stopped immediately. There will be specialty inspectors for environmental, specialty inspectors for quality control, then we'll have our community relations staff out there as well.
A. (Bowes) So it's actually different people in
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|  |  |  | 34 |
| :---: | :---: | :---: | :---: |
| 1 |  | most cases -- |  |
| 2 | 2. | That's what I was going to ask. |  |
| 3 | A. | -- not the same. |  |
| 4 |  | (Court Reporter interrupts.) |  |
| 5 |  | DIR. WRIGHT: Sorry. |  |
| 6 | Q. | Thank you. That helps me. It's not one |  |
| 7 |  | person doing all this. There are multiple |  |
| 8 |  | people within these teams with different |  |
| 9 |  | areas of expertise. |  |
| 10 | A. | (Johnson) Correct. |  |
| 11 | 2. | I think you mentioned there would be 25 or 30 |  |
| 12 |  | active construction sites at any given time. |  |
| 13 | A. | (Johnson) Approximately, yes. |  |
| 14 | Q. | And you envision these teams going out to |  |
| 15 |  | each site at least once a day? Is that what |  |
| 16 |  | I heard? |  |
| 17 | A. | (Johnson) Ideally, yes, you want to touch |  |
| 18 |  | each construction site once a day. I think |  |
| 19 |  | as we discussed earlier, sites like Franklin |  |
| 20 |  | or Deerfield will have a permanent resident |  |
| 21 |  | that is going to be monitoring because that's |  |
| 22 |  | such a large construction site. For |  |
| 23 |  | instance, if we had a work zone every |  |
|  |  |  |  |

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able to drive back and forth between three or four sites in a day and still have a meaningful inspection and meaningful validation of the work.
Q. Yeah, that's the key I'm look for is the term "meaningful inspection," because obviously you can't just walk onto a site and walk off a site. You need to spend some time there making sure things are being done properly.
A. (Johnson) Exactly.
Q. Obviously, PAR and ABB would be responsible for inspecting their sites. Now, the Northern Pass Team, I assume, would be inspecting all sites.
A. (Johnson) Correct.
Q. And these teams will have the ability to stop the work.
A. (Johnson) Absolutely.
Q. What's the mechanics of that? How does that occur in the field?
A. (Johnson) So, first and foremost, from a safety perspective, an immediate stop, where the person that was there would then -- or identified an issue would talk to the foreman
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and demand immediately that all work be stopped. The foreman would then inform his crew to cease activities, and then we'd probably have a meeting to discuss what's going on and whether we could form corrective action immediately, or why there was an issue that had to be brought back to the senior management of either PAR, ABB or Eversource, and then the teams would work together to rectify whatever that situation was.
Q. If there was $A$ situation found in either a PAR site or an ABB site by their teams, would that be reported back to you guys?
A. (Johnson) Yes. That's in their contract. They must do that.
Q. Are there internal protocols to report any environmental violations to DES?
A. (Johnson) Absolutely, yes. Also a requirement of our permit.
Q. Yes, it is.

I did notice in the DES final decision there's a requirement on Page 5, Condition 36, that requires the Company to have a certified wetlands scientist to monitor the
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Project during construction. I don't know if you're familiar with that.
A. (Johnson) I am, yes.
Q. Is that the same person as these inspection teams or a stand-alone person?
A. (Johnson) Typically that would be part of our environmental inspection team, that minimum qualifications would be a certified wetland scientist. Once you've identified the rare and threatened or endangered and archeological, those tend not to be the types of activities that you disturb or have a potential to disturb on a regular basis because you clearly identified them to the contractor in the field. It's more the impact of wetlands from, as we've seen earlier, driving in or accidentally impacting them in some way.
Q. So let's use that as an example then. Say your inspection team was out there. We've seen some pictures today that you guys I think accepted as being unacceptable practices from an environmental standpoint.
A. (Johnson) Correct.
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Q. What would have transpired in that situation had your inspection team come across that?
A. (Johnson) We would have shut the job site down immediately.
Q. Just to try to close the loop on laydown areas, Mr. Bowes, you mentioned that DES would delegate certain authorities under, I think you mentioned the Merrimack Valley certificate?
A. (Bowes) Yes, that's correct.
Q. I'm looking again at the DES final decision, Condition 22 on Page 4. I could put this up if necessary or just read it real quick. It just basically says DES shall be notified of any additional laydown areas that are needed for construction purposes. And then it goes on to say that DES shall evaluate those for whether it needs additional permitting requirements or not. Mr. Bowes, is that the level of authority you were talking about, or was there additional conditions in the certificate?
A. (Bowes) So I believe the SEC has to delegate that to you as well as a condition of the
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certificate, that you can review and approve laydown areas, to cover all of the aspects of that laydown area. You'd be the point agency to do that.
Q. There's been a number of discussions and commitments on your part to -- I think we've covered this, so I'm not going to beat this to death -- about moving either construction pads out of roadways or to make -- to move away from wetlands in some cases. But I do recall at least one case, I believe it was when Attorney Whitley was asking, in the Pembroke area and Flag Road. I think it was Map 318. I don't remember exactly. But it looked like, to me, if you were going to move that construction pad, the only way to move it would be into the wetland a little bit more. I assume you have to go back to DES and get approval for that situation?
A. (Johnson) Absolutely. If we did move it into a wetland, that would have to be recirculated back through the entire process, as it would be in any field condition that was come across where the contractor would suggest
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another way or anything. We have to come back to the agency first. I believe in this particular case we were going to sort of limit the contractor. We were going to truncate it at that road and not move it into a wetland. But, for example, yes, we would have to come back.
A. (Bowes) And, for example, the discussion we had yesterday around the vernal pool, we were able to see on our mapping that if we did relocate that to the right -- or I'm sorry -to the left, there was a wetland there, but we could avoid that by going further to the left. That's why I was able to commit to that. We still have to go back to DES for approval for the change in the work pad, but it would not impact the wetland. That's why, with the tool we had, we could see that. But in this case you were talking about with Mr. Johnson, I think we might have to go back to DES if we're going to change the work pad that's already in the wetland.
Q. Okay. That's what it looked like to me.

Shifting gears a little bit to blasting.
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I know we haven't spent too much time talking about that, but there have been some areas identified for blasting.

Mr. Kayser, in your Prefiled Testimony, I believe you indicated that the Company would be testing private wells or public drinking water wells that were within 500 feet of a blast zone; is that contract?
A. (Kayser) Yes, that's correct.
Q. Where does that 500-foot number come from?
A. (Kayser) I believe it comes -- I know there's some New Hampshire DES guidelines on testing. But that's a fairly standard distance that we've used before for blasting, to test within 500 feet.
Q. And when you blast in an area, how do you draw the center of that 500-foot circle? Do you put it in the center of the blasting, or do you go to the outside edges of the blasting zone?
A. (Kayser) It depends how big our blasting zone is. In the overhead, it's usually a pretty small area. Say for Transition Station No. 4, it's going to be a pretty big area, so
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you're going to have to go from the outside edges of that to 500 feet.
Q. Okay. If I were a private homeowner and I lived 600 feet away, could I request the Company to do the pre- and post-testing?
A. (Kayser) Have to ask Mr. Bowes.
A. (Bowes) Yes. And, for example, Mr. Kayser just mentioned we made some commitments to go much further than that for some wells near Transition Station No. 4. So, yes, it's not, okay, you're 510 feet and you're not going to get monitoring. We'll honor reasonable requests so far beyond the 500 feet.
Q. And also in the area of blasting, do you recall, I believe it was Mr. Thompson, when he was talking about DES recommendations on blasting.
A. (Bowes) Yes.
Q. And as I understand, I believe the document is an exhibit. It's the combined group of intervenors, Clarksville to Stewartstown, CS-5. This outlines a system where normally blasting regulations are adopted at a local level. Is that your understanding?
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A. (Bowes) Without reviewing the document, I'm not sure $I$ can say. $I$ just don't remember.
Q. Let me ask you this then: If I was to say that most blasting ordinances are at the local level, is the Company committed to following those local ordinances, or at a minimum, what's in the DES recommendations, or both?
A. (Bowes) So, certainly what's in the DES recommendations. And I don't know the differences between the local ordinances and DES. So on a case-by-case basis we would look at that. And that would be something we would include in the town MOUs as well, if there were differences between the DES blasting requirements and the local blasting requirements.
Q. Okay. I think I just have one more area, and that dealt with this morning there was some discussion about we know that when you enter a right-of-way and there are wetlands impacts that it could occur over two construction seasons.
A. (Kayser) Correct.
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Q. And there were some questions about whether the wetlands matting would be left in place over the winter and into the next season.
A. (Kayser) Correct. And that's -- I wasn't sure on the New Hampshire rules. Some states have different rules on how long the matting can be left. We feel that if we're going to be coming back there, it's better to leave that. There's less impact than taking it back up and putting it back down. But we would work with DES in those individuals areas.
Q. Okay. And I'm certain that's an area I'll follow up with the environmental panel. But I did look at the wetlands permit, and it does indicate that all -- this is Page 5, Condition 41, that all distribution mats shall be removed from the wetland as soon as practical, but no more than seven days from when the construction is completed.
A. (Kayser) Right.
Q. So, in theory, how would you interpret that condition then?
A. (Kayser) Yeah, and that's where we have to
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work with them: When is construction complete? You know, "construction complete" you would take to be done with all of the construction we're doing in the area for both of the lines. So then we would have to work with the DES: If we're going to have a long gap in there, is it better environmentally to remove the mats and then replace them again, or would we just leave them there and reuse them when we come back in the next season? And that would be in conjunction with our environmental people and the DES to see what is the least impactful way to do that.
Q. I lied. I do have one more question. I think this was mainly answered yesterday by Mr. Scott in response to Attorney Iacopino about the HDD drilling contingency plans. This is how you're going to respond to a breakout or a frack-out or some sort of leakage of the spill of the mud here. I think what was described is there would be, depending on the crossing, there would be a case-by-case contingency plan developed, in terms of what materials would be necessary to
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respond to a spill. Is that a fair summary?
A. (Kayser) Yeah, that's correct. We will have an overall Monitoring Operations Plan. There's a draft one in my testimony.
Q. Yup.
A. (Kayser) But then, as they develop each individual area, they will be able to get more detail on the risks of an inadvertent return at each of those individual HDD sites. And part of our permit is also that we have to submit the Monitoring Operations Plan at least 90 days prior to construction for DES approval.
Q. Okay. Is part of that contingency plan to ensure that you have the necessary manpower to deploy the equipment?
A. (Kayser) Yes, I believe manpower, materials that you would need based on, you know, where the risk is. Do you need a back truck in the area, divers? I think that would be part of that whole plan.

DIR. WRIGHT: I think I'm done.
BY CHAIRMAN HONIGBERG:
Q. I have a couple of things $I$ wanted to --
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first, there's been a lot of discussion about what utilities generally and what Northern Pass feels it could do within a right-of-way, that it has rights to. I'm not intending that as asking for any legal conclusions about what you own or what you don't own. I'm talking generally about utility rights-of-way, which in this state there are hundreds of miles of electric distribution companies' transmission rights-of-way crisscrossing the state.

When a utility needs to do something in the right-of-way -- it sees trees or other growth that needs to be dealt with -- what are its rights and obligations? And what generally is a utility like Eversource's practices with respect to working with a landowner? So, rights, obligations and practices.
A. (Bowes) So the rights in general, I'll say because each easement could be unique -- and in this case 1 think we have almost 1500 easements and permitted crossings for this project, so what we've done for the Project
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is develop a matrix of those and understand those would be passed on to the contractor as well. But in general, those allow us to construct, operate and maintain a line within that specific width of corridor, and it allows the maintenance activities to allow the electricity to flow in an unimpeded manner, which means vegetation management within the corridor and to the sides of the corridor. We don't always clear the entire corridor, so there may be some areas that vegetation grows over time.
Q. Right. That's a different question which $I$ was going to ask you about separately. But when you are in the corridor that you're using and see things that need to be dealt with or a utility sees things that need to dealt with, what are its rights? What obligations does it have to the landowner, and what practices does Eversource follow in dealing with landowners?
A. (Bowes) So, schedule-type work, we tend to notify the landowner that we're going to be there. The emergency work, we have to take
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actions as needed. But I would say that is more rare than the case for planned activities. Like vegetation management is probably the most common, as well as the most cyclical in nature. We would notify the landowners of the vegetation management activities that would occur. Foot patrols and things like that, there may not be as much notification. We may just be going along the right-of-way walking the line. For aerial patrols, because of concern after 9/11, we now do a more broadcast of indicating that we're going to be patrolling with helicopters at low altitudes or fixed-wing aircraft at low altitudes. We tend to send that to the media to give people an idea that you're going to see, you know, activity in this area over a certain period of days.
Q. As long as you're working within the right-of-way, do you need to seek permission from the landowner to do any of that work?
A. (Bowes) In most cases, no. There may be some special requirements in an easement --
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Q. Separate and apart from bilateral agreements or easement conditions. The general situation.
A. (Bowes) General? No, there is not.
Q. You mentioned rights-of-way that are wider that are actually being used. And that's a point that $I$ want to make sure people understand and that $I$ understand. When we drive by an area that's cleared and we see distribution lines or transmission lines, and we see a cleared area on either side of those lines, is that the extent of the right-of-way always?
A. (Bowes) In fact, I would say in most cases it's not the full extent of the right-of-way. There may be wetlands adjacent, for example, that we would not trim or do vegetation management in. We would try to avoid those and let the growth grow to a certain point, and then potentially even have to handcut that to avoid the impacts of a wetland. That's just one example. But typically we don't clear the entire width of the right-of-way. Usually a few feet of buffer
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on either side, sometimes only half of the right-of-way would be cleared.
Q. When we look at some of the aerials -actually, many of the aerial photos that have been -- that are exhibits here, the various maps where the right-of-way lines are drawn, there's often vegetation within those lines already that we can see; is there not?
A. (Bowes) That's true. Yes.
Q. And that's at this point just vegetation that the utility that owns that right-of-way hasn't felt it needs to deal with; right?
A. (Bowes) It doesn't pose an immediate safety risk. And the cycle for doing the side trimming is much longer than the cycle for doing the flora maintenance.
Q. In some instances that provides part of the buffer if it's close to buildings, occupied buildings; right?
A. (Bowes) Yes, it does.
Q. The other area I wanted to touch on, I think, Mr. Johnson, you brought something for show and tell. You have something that is a cross-section a few inches long of what might
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be underground; is that right?
A. (Johnson) So what I brought today is an example of an AC underground cable, very similar design and characteristics of our DC cable.
Q. How comfortable are you coming over to the ELMO, putting it on the ELMO, having the hand mic in your hand and pointing to the various elements of what you've brought?
A. (Johnson) No problem at all.

CHAIRMAN HONIGBERG: Let's go off the record and have Mr . Johnson set himself up to do that.
(Pause in proceedings)
Q. Mr. Johnson, you may proceed.
A. (Johnson) Thank you. So what I have on the ELMO here is a representation -- or is the actual cable that was installed on the Middletown-Norwalk Project, on the underground portion of the project. So this represents a 345 kV underground cable. And I'm going to describe basically the various components of what this is and then how it would differ to the DC cable that we will be
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installing.
This manufacturer happens to be Sila cable, I believe manufactured somewhere in Europe. Italy, I believe. But that's kind of irrelevant to this conversation.

So here is the copper core. This is the actual conductor where the electricity and the electrons are passed. This particular distance here happens to be 3,000 millimeters -- or I'm sorry -- 3,000 kcmil. Our conductor will be 2500 kcmil, or slightly smaller. It'll be sort of just inside of that ring. There is a protective jacket basically that holds the strands of the conductor together. And then this area around here is a cross-linked polyethylene insulation. So this is the proprietary design that $A B B$ has and each individual cable manufacturer has and is purely an insulator of the conductor itself.

Along the edges here, if you can just see these colored areas here, this design of this cable happened to have fiberoptic built into it. This is not the fiberoptic that
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we're using as communication or as
temperature-detecting devices. This just happens to be the manufacturer putting it in for their own use.

Surrounding that is a metal jacket.
This is again another layer of protection for the cable. It also adds weight to the cable to make sure that it stays where it is. And then the very outside is a hard, rubber-type compound. And what that compound does is allow the cable to be pulled through the conduit as we go from each end.

This particular cable here weighs about 20 pounds a foot. And the configuration of the insulator versus the fiberoptics versus the metal versus the jacket will slightly change from different manufacturers but basically is represented here.

The one thing we were discussing earlier is the temperature gradients across this cable. As Mr. Scott was discussing, the center of this core at its hottest place will be 70 degrees $C$. Once you get to the edge of this jacket just before the metal, the
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insulation is dropped back to about 50 degrees $C$, and then the remaining heat is dissipated as you get into the full fill of the concrete and then the natural surrounding ground.
Q. Thank you.
A. (Johnson) You're welcome.

MR. NEEDLEMAN: Mr. Chair.
CHAIRMAN HONIGBERG: Mr. Needleman.
MR. NEEDLEMAN: Do we want a picture of this that could be turned into an exhibit?

CHAIRMAN HONIGBERG: Yes. And what I was thinking is if you can do this angle and then on its end so you can see the two different aspects of it.

MR. NEEDLEMAN: We'll provide that.
CHAIRMAN HONIGBERG: All right. I have nothing else for the panel. I know some of the other Committee members do, and I know Mr. Iacopino has questions.

So, Commissioner Bailey, why don't we do you first since you had the recent questions. You wanted follow-up on something.
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BY CMSR. BAILEY (CONT'D):
Q. Okay. Well, now I want to follow up on that cable. Why would the manufacturer use fiber in the cable? What would they use it for?
A. (Johnson) Honestly, I don't know.
Q. So could you use it?
A. (Johnson) I believe they're using it to measure for their own purposes over time whether -- how the cable performance is, temperature variations, those kind of things. We as the designer would want our own temperature-sensing devices and communication devices independent of whatever the manufacturer has, and that's why we have a separate DTS system.
Q. So they have electronics hooked up to your cable to monitor the performance of it over time?
A. (Johnson) Yes.
Q. Oh, okay.

Mr. Bowes, this is the follow-up that $I$
had. Can you look at your February 26th testimony at the bottom of Page 7? This is where I got the direct-buried cable idea.
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(Witness reviews document.)
A. (Bowes) Yes. So originally, we had planned, I started to say, on private property as we enter and exit the transition stations. There was some initial thought of placing that conductor directly in the ground and then covering it over, probably with, again, either a concrete encasement or a concrete mattress for physical protection from above. But over time we realized that it's probably just as well to put all of those in duct banks and then create a trench and do the construction all in the same method; that way, we'd have more control over the temperature characteristics of the cable.
Q. Okay.
A. (Bowes) So that kind of changed over time as the design evolved.
Q. Okay. Thank you very much.

CHAIRMAN HONIGBERG: Mr. Way.
BY MR. WAY:
Q. Thank you. I just have a couple more
questions. Following up on my earlier
inquiries into the business directory and
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such, $I$ did look on the Northern Pass web site to see what sort of registration there was. I saw a business directory. Great. I saw a job sign-up as well, which is for the construction project. So if someone's interested, they can sign up as an individual. I also looked and saw a supplier sign up as well, so if someone has goods or services to sell to you. One thing I noticed on that, and just maybe get an explanation, a little different than the business directory or the job sign-up, you're looking at the business size and ownership classification on that: Minority-owned, woman-owned, small disadvantaged, certified, HUBZone. Great. And typically, though, that's what you would use for government contracting if you were a prime and then subbing out; correct?
A. (Johnson) Correct.
Q. And so $I$ guess my only concern would be that anybody could sign up for this. And so if you're prioritizing like a government contract would prioritize -- I don't know if that's the intent -- if you -- for example,
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if you add small disadvantaged, we only have seven or eight in the state. I don't think we have any up north. I want to make sure that our businesses aren't at a disadvantage for a classification system that you've put in place when you're not going for the -when this isn't involving a federal contract.
A. (Johnson) Correct. So I believe that kind of information is just kind of being brought forth on a general basis. I don't know. But there's no obligation to limit contracts as a government contract would in this case. I believe our commitment is to New Hampshire First. So it would be New Hampshire businesses first, and then, if not enough services or a specific service is not available in New Hampshire, we would then look to go outside of New Hampshire.
Q. All right. Very good. Thank you.

The other thing, too, is, Mr. Bowes, you mentioned this was -- the contract is a fixed contract; correct?
A. (Bowes) I think Mr. Johnson --
Q. Mr. Johnson. I'm sorry. A fixed contract.
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A. (Johnson) Correct.
Q. Well, over the last, you know, few days we've seen quite a few change orders coming down as a result of commitments and discussions. Is that going to impact things? I have to imagine that those are not going to necessarily come inexpensively. As we go along and you make those changes, is that already figured into the contract?
A. (Johnson) So the way we structured the contract is that these type of small moves -so, just the movement of a structure has no bearing on cost from the contractors' perspective; they still have to build the road, erect the structure. But within the contract itself, we have asked them to, if you will, build in a little bit extra for these types of changes. So there will be no increase in the project cost.
Q. All right. Thank you.

And Ms. Farrington, one last question for you. And I was listening to what Commissioner Bailey was asking a little bit about the traffic counts again. And the one
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that, you know, is tourism-related roads, how much value does that have for me to be able to assess the impact of that business, that tourism business?
A. (Farrington) So $I$ guess it's an admitted flaw in our industry that -- for example, traffic signal. We go out and do this count one day out of the year and we set up our traffic signaling timing and phasing and we expect it to last for a minimum of five years and work well. So we are coming up with ways around that. Surprisingly enough, the data, because they collect it every couple of years, it actually turns out to be quite consistent. The seasonal factors reported are fairly consistent year to year. And the seasonal fluctuations are fairly consistent. So while it seems fairly -- I've heard it described like "voodoo." There actually is a very repetitive nature to traffic on a daily, seasonal, yearly basis. So I have fairly strong confidence in it. We have done things like this previously, and it certainly has worked. If you would like, we can certainly
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do either a request for counts from DOT, if they have them available by hour, or do our own counts just to verify that data on that roadway.
Q. Well, I would request it. And I would think you would definitely want it. I'm just trying to get a sense as to whether, particularly on roads like that, you know, tourism season -- and, you know, for that area, tourism season could be Cannon Mountain snow. It could be the foliage. It varies throughout the year. And so I think, you know, going forward we would definitely want to see something more on that. Thank you. CHAIRMAN HONIGBERG: Mr. Iacopino. MR. IACOPINO: Thanks.

BY MR. IACOPINO:
Q. Mr. Bowes or Mr. Johnson, the first question

I think should be an easy one.
Of the entire proposed route, how many miles of it is co-located with the gas pipeline?
A. (Bowes) Twelve, I believe.
Q. Mr. Bowes, Commissioner Bailey asked you
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about the I-93 considerations that you used. And I was wondering if RSA $162-R$ that was passed in 2016 factored into your considerations in rejecting I-93.
A. (Bowes) I'm sorry?
Q. That's the utility corridor bill that was passed by the Legislature that requires the Department of Transportation to amend the Accommodation Manual.
A. (Bowes) So I think we were aware of it. I don't think it had any bearing on the analysis that we did. It may have had a bearing into Mr. Quinlan's request to have us study that. He never shared that specifically with me. But we did an analysis to look at what it would take to build an all-underground project. Two of the routes were what the DOT had suggested, 4A and 4C. And then we selected another route that we thought was more viable, and we came up with a cost estimate as requested and identified the concerns or risks to doing an all-underground project.
Q. Do either Mr. Johnson or Mr. Bowes or Mr.
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Kayser or Ms. Farrington, do any of you know if the Utility Accommodation Manual has been amended in response to RSA 162-R?
A. (Johnson) It is my understanding that we were still using the 2010 Utility Accommodation Manual. So $I$ would assume that, no, it is not.
Q. Okay. Thank you.

Mr. Johnson, I mentioned this yesterday and told you we would return to it today. Can you just tell us a little bit -- well, not a little bit. Please explain the nature of any proposed changes to Transition Station No. 5. You indicated that the whole parcel is only about 1500 feet long yesterday. Can you just tell us what's under discussion for any changes there?
A. (Johnson) So it would be the actual location of the transition station compared to where it is today, which is the intersection of the right-of-way in Route 302 to some location along the edge of the right-of-way, but further north on the developer's property.
Q. And are there any changes in elevation
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involved there, and would it affect the visual impact?
A. (Johnson) Absolutely. Yes.
Q. And are your visual impact experts involved in that discussion?
A. (Johnson) Yes.
Q. Ms. Farrington, I think it was back on May 1st you said you would not be doing an analysis of how many work trucks may use the access points to access roads. Do you recall that testimony?
A. (Farrington) Yes. Correct.
Q. Okay. You told us it was not a necessary parameter and that it is taken into consideration as part of the driveway permit side of things. You also told us that it was already assessed as part of the DEIS. Okay. First, with respect to the DEIS, where in the DEIS is that study?
A. (Farrington) So I'm sorry. It's not -- they didn't do an analysis. They created a number of vehicles expected due to each type of construction activity in an area.
Q. And who performed that?
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[WITNESS PANEL: FARRINGTON|JOHNSON|BOWES|KAYSER]
A. (Johnson) It's part of the --
Q. The contractor hired by the Department of Energy. But do you know who the contractor was? Usually the competitors know it right away.
A. (Johnson) EME is the environmental, but that's not the --
Q. All right. I don't want to waste too much time with it. But if you could just get that to us.
A. (Johnson) Yes.
Q. Okay. Did you agree with that study, Ms. Farrington?
A. (Farrington) Parts of it. There was a representation where they describe the increase of traffic on each roadway. And it showed, you know, 150 percent increase. But the initial traffic, you know, might have been three vehicles that hour. So it was very, I thought, misleading.
Q. So, like 150 percent of 3 is $1-1 / 2$. So it'd be $5-1 / 2$ vehicles? Is that what you're talking about?
A. (Farrington) Exactly, yes. And they didn't
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take into account the capacity of roadways per hour. So I thought it was a little misleading.
Q. You also said you didn't think it was a necessary parameter, and I didn't quite understand what you meant by that.
A. (Farrington) Sure. So, for the access roads in particular, a traffic impact analysis -to back up.

So there are two types of driveway permits, a minor and a major. So these access areas, if a driveway permit was required, would be minor. They're evaluated based on safety conditions, site distance adjacent to intersections, that sort of thing.
Q. Does the size of the equipment that's going to be going in there make a difference whether they're major or minor?
A. (Farrington) It does not. So the minor -- I recently learned that the minor driveway permit, DOT may not even want to consider that because it's such a temporary impact.

So what triggers the major driveway permit is
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a 100-vehicle-per-hour number. So you'll see 100 vehicles per hour in a peak hour at maybe a Dunkin' Donuts, Wal*Mart, something like that.
Q. I have.
A. (Farrington) So it's -- and they all go to the drive-thru.

So the intent of that is to not necessarily consider the traffic on Main Street, for instance, because you're not really -- traffic turning into and out of a Dunkin' Donuts is what is going to be delayed, especially coming out. So in those cases, like a right-turn lane or a signal installation or something like that would be considered, which actually generally slows down traffic on the main road. So, for something like this, it's not something we would want to consider. I don't think it would help anyone but the contractor, other than perhaps back to the safety conditions, making sure the truck turning movements are appropriate.
Q. Okay.
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A. (Farrington) Does that make sense?
Q. Yeah.

Mr. Johnson, I think you were asked this, but $I$ wasn't sure you answered it earlier in the testimony. But we understand from the testimony that town roads in the underground portion, when they're -- after you've done the construction will be restored to as good a condition as before or "to DOT standards" I think is what was testified to. I guess my question is: Do any of the towns that are going to have the underground work done, do any of them have standards beyond what DOT requires?
A. (Johnson) I don't believe so, no. But again, we coordinate with the road agents to make sure that whatever we're going to restore would be acceptable to them.
Q. So, sort of subsidiary to that was that a town could wind up with a better road than what previously existed I think somebody said during the course of this.
A. (Johnson) That's correct.
Q. Which led me to ask this question: As part
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of the road restoration, are you willing to pave a road that was previously unpaved?
A. (Johnson) I'll defer that one.
A. (Bowes) I'm not going to rule it out. I guess we'd say we'd certainly consider that. And oftentimes the rural nature of a road being dirt is what the people want. But we'd certainly consider it. I know there's a portion of one of the roads in the North Country that's partly paved now and partly dirt now. So there might be an opportunity there, or even some of the dirt roads.
Q. The road agent might want it paved; right?
A. (Bowes) They might, yeah.
Q. All right. During cross-examination by the City of Concord, we saw a couple of instances where there was a house, a garage, a shed right smack on the right-of-way and very close to where there's going to be construction and installation of the new facility. And my question which $I$ wanted to ask then is how does that happen, that somebody's garage is underneath the wires, basically?
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A. (Johnson) So in most cases it's because of an expansion of a building or the addition of a garage without seeking the appropriate authority from the utility. You may have it okay'd by the zoning in the town, but without having a Joint Use Agreement with the utility, it's illegal, if you will. It's an encroachment.
Q. Doesn't Eversource or the owner of the easement, doesn't that company have the obligation to enforce that, even if it's just for public safety?
A. (Johnson) So, mostly these don't actually cause public safety, meaning that the conductors are high enough that they don't cause a public safety issue. But certainly the Company -- and I'll speak for Ken at this point.

WITNESS JOHNSON: You can tell me if
I'm wrong.
A. (Johnson) But the Company would prefer that they not be there.
Q. Yeah, but there's lots of things I would prefer. But when there's something that
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impacts my assets and my ability maybe to run my business, I'm going to take action. Why wasn't there action taken, for instance, with respect to the Hoit Road property? I assume that garage was built after the easement was granted.
A. (Bowes) Yes, it was. And I believe we did ultimately arrange a Special Use Agreement with that customer to allow the continued use and to prevent further future growth onto the right-of-way. I will say that, you know, an annual inspection, or more frequently sometimes, isn't enough to catch especially temporary impacts underneath a right-of-way. Unfortunately, we have encroachments, especially on a temporary basis, where people store things underneath the conductors, maybe even use vehicles and cranes underneath conductors. And every year there's usually a story in the newspaper about something bad happening when the clearances are encroached upon. Typically the permanent-type sheds and things like that can be allowed. And most times the customers do contact us and request
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that. And we'll either note it on the drawings or create it. If it's going to be an expanded use, create a Special Use Agreement, as we did with Sabbow, for example. So in this case it probably should have never happened. And I think Public Service has the responsibility, as you said, to patrol that.
Q. Speaking of patrols, actually, this thought came to me before when you were asked questions by Mr. Wright, I think. You use unmanned aerial vehicles now?
A. (Bowes) We're starting to, yes.
Q. And do you have a policy in place, in terms of when and how you use those?
A. (Bowes) Yes, we do.
Q. Is that policy part of the Application as well?
A. (Bowes) I don't believe it is.
Q. Okay. Mr. Johnson, you've had several questions about the certified survey provided to DOT. We know that's been provided to them. We know that they've issued a condition that you provide it to them. Have
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they accepted those letters, or have they asked you to do more survey work? Or don't you know?
A. (Johnson) So I don't believe that the DOT is going to accept them, if you will, from a verification perspective. They are accepting the fact that our surveyors have certified them and that we believe that's where the boundaries lie. The DOT is not going to validate, if you will, that those are correct.
Q. Well, I guess my question is more they
A. (Johnson) That's correct.
Q. And is what you provided to them
satisfactory, or are they requiring you to provide more?
A. (Johnson) So in a couple discrete locations they are asking for more information, but that's actually part of the exception request process.
Q. That was going to be my next question then.

How many separate variances or exceptions are you seeking from those conditions in the --
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that the Department of Transportation has put on you?
A. (Johnson) So, over the 60-1/2 miles we're asking for approximately 2 a mile, on average. So $I$ believe the number is just around 140 in total. The vast majority of those have to do with constraints where the infrastructure needs to be under the roadway because we're either crossing from one side of the road to the other --
Q. Condition 12?
A. (Johnson) Correct.
Q. How many are Condition 15 requiring you to go under existing utilities?
A. (Johnson) That would be the second highest number. Off the top of my head, I want to say that's in the 20 to 30 range.
Q. And the other ones are all various conditions; is that correct?
A. (Johnson) Correct. So it would be an HDD entry or exit area that would be slightly in the shoulder or in a pavement lane type of thing. Temporary impacts.
Q. And if I understand the Application
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correctly, one of the things that you're requesting is that you be allowed to -- that the Committee grant you a certificate, but as a part of that certificate, that you be allowed to work out these variance requests with the Department of Transportation and that any authority the Committee has over them be delegated to the Department of Transportation; is that correct?
A. (Johnson) Yes, I believe so.
Q. In other words, because you don't expect -you expect these considerations and these exception requests to go on beyond obtaining a certificate, if one is granted; right?
A. (Johnson) Sorry. Yes. So the answer is yes, within the bounds that the DOT has prescribed in their April 3rd letter.
Q. We've had a lot of discussion during your panel about things like that, about conditions that might be set because of things that might happen beyond the granting of a certificate because of delegations that you have requested that the Committee make to state agencies. Just some examples, so you
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know what I'm talking about: The DOT variances is one example; the delegation to DES to approve laydown yards and access roads. You indicated that there will be an interference study with the co-located gas pipelines that will be sometime down the road. Mr. Bowes, you mentioned a number of MOUs with various towns that you're trying to negotiate. We know you have to test the fluidized thermal backfill and get back to DOT on that. There's a request for using local roads for detours, using I-93 for detours. There's the site-specific plans for inadvertent returns, the Concord overpass issue, approval of final construction plans the Traffic Management Plan. All of these things are the types of things I understand you to be asking the Committee to either delegate to a state agency or create a condition down the road that you have to comply with in order to maintain your certificate.
A. (Bowes) Yes, that is accurate.
Q. Can we get a list of all of those things that
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you are requesting that would go beyond the granting of a certificate, should one be granted?
A. (Bowes) Yes.
Q. Thank you. When do you think you could have that? And for you guys, I'm only talking about for the construction panel. I'm sure we'll have same of the issues when we get to the environmental panel.
A. (Bowes) By the end of June?
Q. Thank you.

MR. IACOPINO: All done. Thank you.
CHAIRMAN HONIGBERG: Does the
Committee have anything else for this panel?
[No verbal response]
CHAIRMAN HONIGBERG: All right. You gentlemen are excused. Thank you.

Oh, yeah, you want to ask questions, too, Barry?
[Laughter]
MR. IACOPINO: We already gave them an opportunity to do a show and tell.

CHAIRMAN HONIGBERG: Oh, man, I thought we were done.
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[WITNESS PANEL: FARRINGTON|JOHNSON|BOWES|KAYSER]

Do you need a break? I think some people probably do.

MR. NEEDLEMAN: Whatever you want.
CHAIRMAN HONIGBERG: Off the record.
(Discussion off the record.)
CHAIRMAN HONIGBERG: All right. Why don't you continue, Barry.

MR. NEEDLEMAN: Couple of quick housekeeping items. Before the break you asked me for timing on when we could get the list of business information that Mr. Way wanted. We will get that to you next week.

Yesterday, Commissioner Bailey, you asked about whether we were seeking approval for crossing of local roads. We are. That's in the Application at Pages 82 to 84 , and the permit drawings associated with that are in Appendices 9 and 10 of the Application.

Let me start by asking, Dawn, if you could pull up the first of the new exhibits. This will be Exhibit 144.
(Exhibit App 144 marked for identification.)

MR. NEEDLEMAN: This is speaking to
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the issue, Mr. Way, you raised about business outreach. I thought it would be helpful to put an example of one of the letters in the record. Exhibit 144 is an example.

If you could pull that up, Dawn. Oh, I'm sorry. There we go. Looking in the wrong place.

REDIRECT EXAMINATION
BY MR. NEEDLEMAN:
Q. Exhibit 144 is an example of a letter that went to overhead -- to overhead businesses. And then in Mr. Quinlan's Supplemental Testimony at Attachment $J$, that's an example of a letter that went to the underground businesses. Mr. Johnson, do you know how many of these letters have been sent out to date?
A. (Johnson) I believe the number is just under 350. And there was sort of 80 that went to the overhead and the remainder being to the underground.
Q. With respect to the business claim process, we've heard something about that. Ms.

Weathersby asked a little bit more about it
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today. In the Applicant's Exhibit 6, which is Mr. Quinlan's Supplemental Testimony, at Attachment J, I believe, Mr. Bowes, there's a further description of that claims process; is that correct?
A. (Bowes) Yes, there is.
Q. Is there other information provided there that would also be helpful?
A. (Bowes) There's a claim form as well with identification of the information needed.
Q. Mr. Bowes, earlier Commissioner Bailey asked about the use of the right-of-way for snowmobiles and ATVs. And I think her question was: Is there any technical reason that would restrict the use? And I think you said, no, there wasn't. I just want to make sure the record is clear. There may be other reasons why it couldn't be used for those purposes; is that correct?
A. (Bowes) That is correct. There could be, you know, sensitive areas, cultural, endangered species, wetlands, things like that.
Q. How about landowners' rights? These
easements are subject to other landowners who
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ultimately own the property. Could that be a restriction?
A. (Bowes) Yes, it could.
Q. Again, Mr. Bowes, earlier Commissioner Bailey, and later Mr. Iacopino, asked about the study related to I-93 and reasons why you didn't go there. During the public information sessions that the Committee held early on in this project, one of the issues that was raised about the potential use of I-93 were legal restrictions going through the Notch. I wonder if you could speak to that issue as well.
A. (Bowes) Sure. There were some other restrictions in a Memorandum of Agreement with various parties for -- actually, for DOT changing their roadways through the Notch. And it also has some limitations on what is done within the roadway and also outside of the roadway. That was a constraint that we looked at and actually dismissed as far as having a viable route of trying to build a transmission line either overhead, which would clearly not be practical, or
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underground, which again has some limitations as well through Franconia Notch. So we really never pursued that as a viable option for an underground route.

Mr. Johnson, let me turn to you. And I want to ask you some questions about town outreach. There have been multiple occasions during the course of the panel's testimony when questioners have asked about communications with particular towns. And I want to focus on some of those towns. And I want to start with Stewartstown and ask Dawn to bring up Exhibit 145.
(Exhibit App 145 marked for identification.)
Q. When Mr. Thompson was questioning the panel, he raised concerns about the Project not talking to Stewartstown now and instead waiting until it would be too late for the town to have meaningful input.

Exhibit 145 is a summary, I believe, of the outreach that the Project has engaged in with Stewartstown. Could you briefly
summarize that, Mr. Johnson?
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A. (Johnson) Sure. So what this is, is a list of the number and types of correspondence and/or meetings that have been held with the Town of Stewartstown's administrative body, whether it's selectmen or -- and I'm generalizing here -- or a conservation commission or an administrator of a town. So you can see we've had one public open house in Stewartstown; we've had four public information sessions and public hearings of which the entire route was invited to; we've had four outreach letters; we've had 12 municipal contacts and meetings, and we've had five other types of correspondence with town officials.
Q. Is it correct that there are existing exhibits in the record already that summarize the range of the outreach that the Project has engaged in?
A. (Johnson) Correct. I believe that is in Appendix 42 and was recently updated with my Supplemental Testimony.
Q. When you say that, you mean Appendix 42 to the Application?
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A. (Johnson) I'm sorry. Yes. That's correct.
Q. And also in your Supplemental Testimony -that's Applicant's Exhibit 86?
A. (Johnson) Correct.
Q. And was there also information in your Original Prefiled Testimony, which was Applicant's Exhibit 11?
A. (Johnson) Yes, there was.
Q. Is it correct that on March 15, 2017, the Project reached out to the Town of Stewartstown and asked if they would be interested in having discussions about an MOU?
A. (Johnson) Yes, it is.
Q. And what was the result of that outreach?
A. (Johnson) There's been no communication since then.
Q. Mr. Bowes, we've heard a lot about the MOUs and stipulations here. When Ms. Saffo was questioning you, she characterized NPT's offer as essentially "one-sided," and she said, quote, But if they say they don't want something, your answer is "tough," close quote. Is that an accurate description of
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the process that you have been engaging in to try to reach MOUs with towns?
A. (Bowes) No, I don't believe it is.

MR. NEEDLEMAN: I want to put
something up on the ELMO for a minute. This is going to be Exhibit 146.
(Exhibit App 146 marked for identification.)
Q. This is the second MOU that the Project has executed at this point, and this one is with Lancaster; is that correct?
A. (Bowes) Yes, it is.
Q. And before we began here, I asked you to star particular provisions of this MOU that you thought were particularly important. And so we're just going to flip. I don't want to go through the whole thing. But if we could flip a few pages and just have you explain why you starred particular provisions.
A. (Bowes) So the first one was to make sure everyone understood that the term of it wasn't just during construction, but the term of the MOU is actually for the entire operation of the Project, however long it
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continues in its operation.
Q. And could we flip the page, please. And you have several stars on the next page. Could you explain those, please.
A. (Bowes) So these are really some of the things that we've talked about in several of the hearings around the construction schedule, how traffic control would be handled, and one I think is very important to people is the work hours. In this case, Lancaster was agreeable to, you know, the 7 a.m. to 7 p.m. that we had proposed. But they did have a request of us around the Lancaster County Fair, which we will certainly accommodate, which comes in the fall of each year. The others, equipment, material and staging areas, again, they were interested in having some part in that discussion as well.
Q. And maybe flip one more page. Why did you star these?
A. (Bowes) So the first one is around the oversized vehicles and any special deliveries that we'd have to make. In this case, we
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wanted to give advanced notice to the town and also look at when we could avoid peak rush hours and coordinate that with the town.
Q. So is the Project requesting that this Exhibit 146 now be attached to the certificate as conditions if the Committee issues a certificate?
A. (Bowes) Yes, we are.
Q. And to the extent that the Project and other towns enter into executed MOUs, would it also be your intention that those be attached to any certificate, if issued?
A. (Bowes) Yes.
Q. Let me talk to you about Franconia for a minute. When Ms. Saffo was questioning you about outreach with Grafton County towns, and Franconia in particular, she raised some issues. I think Dr. McLaren also raised issues regarding interactions with Franconia. When you were going back and forth with Ms. Saffo, you said a good example of how you could work with the town would be with respect to the Gale River Crossing. Do you recall that?
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A. (Bowes) Yes, I do.
Q. You said it was a place where, if you had a good, cooperative relationship with the town, you could minimize impacts from the existing proposal. Do you recall that?
A. (Bowes) Yes.
Q. So I'd like to call up that crossing on OneTouch if we could. And while we're doing that, maybe let me go to Sam for a minute.

I think there was a question yesterday as to exactly what OneTouch is. Can you explain that briefly?
A. (Johnson) Sure. So, OneTouchPM is effectively a way that Burns \& McDonnell has developed that we can superimpose any of the project designs onto Google Earth. So we have the flexibility of moving around in the Google Earth environment, but still having our actual design, the actual wetlands and then other project information, such as landowners et cetera on here. Effectively, it's all the maps that we've given through the Application condensed onto one platform for ease of zooming back and forth.
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[WITNESS PANEL: FARRINGTON|JOHNSON|BOWES|KAYSER]

MR. NEEDLEMAN: Ovid, before we screenshot this as an exhibit, can you just zoom out a little bit so there's more context as to where we are? That's fine.

BY MR. NEEDLEMAN:
Q. So this is now coming down from, I believe it's coming from down from 302 toward Franconia; is that correct?
A. (Johnson) That is correct. Yes.

MR. NEEDLEMAN: Now, can you zoom in on the intersection, please.

BY MR. NEEDLEMAN:
Q. And I'm going to ask you, Mr. Bowes, to speak to this. Is that the appropriate size right there?
A. (Bowes) Yeah, that's fine.
Q. All right.

MR. NEEDLEMAN: Could you screenshot that, please, Ovid. And that will be Exhibit 147.
(Exhibit App 147 marked for
identification.)
Q. And so, Mr. Bowes, now speaking off of

Exhibit 147, could you explain what you meant
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when you were speaking to Ms. Saffo about this being a good opportunity here to reduce impacts?
A. (Bowes) So, many of the same things we talked about with Lancaster would apply here. And because it's a downtown area as well, the things we described earlier today about working with business owners in the Town of Plymouth would apply also to a MOU. This is also somewhat unique in the fact that Ms. Farrington said the traffic control at this location is probably the more complicated of any of the locations along the route dealing with this, you know, basically 90-degree sweep across the highway and then going underneath the Gale River. We talked about that at great length, and I'm not going to go through all the details again, other than to say that this would be a location -because there is town property right about where that 116 indicator is just over the Gale River, that's town property there. So either a temporary construction easement or even a permanent easement to place the shaft
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for the microtunnel would take all of the traffic impacts off this intersection. I realize it's a burden on the town to grant that to us, but that's one example where, if we had cooperation with the town, we could greatly improve the conditions for the residents of the town and anyone else traveling on 116.

MR. WAY: Excuse me. Where exactly is that again?

WITNESS BOWES: So you can see the soccer field. So it's between the soccer field goal and the roadway. We could put the shaft in that location and take the construction completely off the road.

MR. NEEDLEMAN: Dawn, would you bring up the next exhibit, please, which is the outreach history with Franconia. This will be Exhibit 148.
(Exhibit App 148 marked for
identification.)
Q. Mr. Johnson, similar to what we had with Stewartstown, can you briefly describe the Project's efforts to have outreach in
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[WITNESS PANEL: FARRINGTON|JOHNSON|BOWES|KAYSER]

Franconia?
A. (Johnson) Yes, as soon as it gets here. It always comes up last.

Okay. So, for the Town of Franconia, again, if you recall --
Q. Sam, let me interrupt.

MR. NEEDLEMAN: Can everyone read that, or do we need it larger?

MR. IACOPINO: I would like it larger.

MR. NEEDLEMAN: Larger, please, Dawn, if you could.
(Pause in proceedings)
BY MR. NEEDLEMAN:
Q. All right. Sam, please continue.
A. (Johnson) Yeah, so as people recall,

Franconia was not one of the original towns on the original route, so communications with them don't go back as far as some of the other towns. But we've had three public information sessions and public hearings;
we've had four sets of outreach letters;
we've had four meetings with town officials, and then we've had three other types of
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correspondence with the Town.
Q. Is it correct that on March 15th of this year, the Project reached out to Franconia to inquire about their interest in a stipulation?
A. (Johnson) That is correct.
Q. And what's the status of that?
A. (Johnson) We have not heard from the Town regarding this particular letter. In fact, we haven't heard from the Town since October of 2015.
Q. Mr. Bowes, when Mr. Lakes was asking the panel questions, he was discussing with you the use of bentonite for drilling mud and suggesting that it would be appropriate to provide material safety data sheets to towns like Easton. You responded that this would be a good topic for an MOU. And then he asked you, quote, what MOU do you have with Easton? And you said, "None." Is it correct that, like the other towns, you've reached out to the Town of Easton seeking an MOU?
A. (Bowes) That is correct. We started the initial discussions.
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MR. NEEDLEMAN: Could I, Dawn, have the next exhibit, please, which were minutes, $I$ believe, from the Easton Select Board Meeting on March 15th of this year. And this is Exhibit 149.
(Exhibit App 149 marked for
identification.)
Q. And Mr. Bowes, if you could just look at the paragraph on the bottom of the first page. And everybody can read it, but can you summarize your understanding of Easton's willingness to have discussions about an MOU with the Project?
A. (Bowes) It appears that, you know, a vote was taken and the opinion was raised not to cooperate with the Project for this construction phase.
Q. All right. Let me turn now to Plymouth. We've heard a lot about Plymouth. Let me first of all ask Mr. Johnson.

MR. NEEDLEMAN: Let's bring up exhibit, $I$ guess this will be 150. Again, outreach summary with Plymouth.
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(Exhibit App 150 marked for
identification.)
Q. And if you could summarize for us the Project's efforts at outreach with Plymouth, focusing on Plymouth and not saying anything about the sewer and water district, which we've already covered.
A. (Johnson) Okay. As a reminder, Plymouth was not one of the original overhead towns. So this town was added when the underground portion of the Project was put forth, so we don't have the old history of communication. But since basically mid-2015 there have been three public information sessions and public hearings; there have been three outreach letters to town officials; there have been eight meetings with town officials; and there have been four other types of correspondence with town officials.
Q. And is it correct that on March 15, 2017, the Project reached out to Plymouth inquiring about their interest in discussing stipulations?
A. (Johnson) I believe it's March 14th. But
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[WITNESS PANEL: FARRINGTON|JOHNSON|BOWES|KAYSER]
yes.
Q. Thank you. And what is the status of those discussions?
A. (Johnson) We've heard nothing from the Town.
Q. Okay. Earlier Mr. Way was asking you questions about construction on Main Street. And there was some discussion about the possibility of moving the Project off of Main Street, and I wanted to circle back to that for a minute.

Is it correct that the Project did engage in discussions with Plymouth at one point about moving the Project off of Main Street?
A. (Johnson) Yes, I believe that's the subject of those eight meetings, or some of the subjects of those eight meetings with town officials.

MR. NEEDLEMAN: Dawn, could you bring the map up that shows those alternative routes up. And that will be Exhibit 151.
(Exhibit App 151 marked for identification.)
Q. So, Mr. Johnson, if you could just --
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MR. NEEDLEMAN: And I want to make sure that's large enough. Can everyone see it? Tom, does that work?

BY MR. NEEDLEMAN:
Q. Okay. Can you briefly walk us through what we're looking at here?
A. (Johnson) Sure. So, starting from the north coming to the south, you can see that there's the green line or a light green line. And where it intersects with the orange line, that is the town circle, or the traffic circle that's there. So the original route is that orange line that effectively extends from the top of the page down through Main Street, right through the bottom of the page. So the Project evaluated, I believe eight or nine different types of routes that would get us off of Main Street, three that we thought were viable as we discussed earlier in the process. All of them start by exiting the traffic circle and going down towards Green Street. From there, there are basically three options: One, Green Street does kind of hook back up to Main Street
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about halfway down, and that's that darker green color, if you will. Another option is to hook up a little bit onto Depot Street; go down Depot Street and connect into where the skate park is today and then ultimately down to Route 3. And then the third option would be continuing down South Street -- or South Road to the water treatment facility, and from the parking lot of the water treatment facility doing directional drill all the way out to connect back into Route 3.
Q. And is it correct that the Project was willing to consider all three of these options?
A. (Johnson) Yes, we were. MR. NEEDLEMAN: Dawn, could you bring up Exhibit 152, please.
(Exhibit App 152 marked for identification.)
Q. This is a summary, I believe, of your course of dealings with Plymouth regarding this issue. Can you briefly walk us through it?
A. (Johnson) Sure. So we began meetings back in August of 2015. Effectively, we presented
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the Project. The Town articulated to us their concerns with impacts to the downtown Plymouth corridor. We then, in a subsequent meeting in February of 2016, were instructed to identify alternative underground routes, if you will. In March of 2016, we presented the eight or nine options and were directed to focus on the three options that we discussed according to the map. So we -Point $C$ is noted there. We started to work with the Town's engineering firm and town departments, including the water and sewer division, to focus on alternative route No. 1 .

In April of '18 [sic] we met with the Highway Department, the Town Planner and the Plymouth Village Water and Sewer Department as part of the land ownership assessment. One of the particular issues with this is that the Project did not have the land rights to perform a directional drill, one, where the city is; two, where the railroad is; and then three, where the directional drill would then come up over by the skate park. So we
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were working with the Town, first of all, to assess who owned the property, but then to work with them to come up with a solution as far as getting permission from them. In May of 2016, we continued and basically met with them. It was a meeting where the Town inquired about locating the route within the I-93 corridor and that they basically informed us that they would no longer be engaging in conversation. And then, basically by the end of that month, or early June, the town indicated that with the exception of $I-93$, it was not interested in further pursuit of any alternative routes.
Q. Having in mind the concerns that Ms. Fillmore and Mr. Pappas and others raised about the Project's location on Main Street, do you believe that if the Project were to have taken one of these other routes, it would have addressed many of those concerns?
A. (Johnson) Sure. Every route has its own issues, but $I$ believe that getting off of Main Street would have alleviated a lot of issues.
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Q. When Ms. Pacik was questioning you, she raised some concerns about the Project's consultations with the City of Concord and also about McKenna's Purchase.

MR. NEEDLEMAN: Could we have exhibit what will now be 153, Dawn.
(Exhibit App 153 marked for identification.)
Q. Can you briefly summarize the Project's outreach efforts with Concord?
A. (Johnson) Okay. So, Concord, there has been one public open house; there have been public informations and public hearings; there have been four outreach letters similar to the other towns; there have been 15 individual meetings with town officials, again whether it's the administrator, selectmen, conservation commission, et cetera; and there have been nine types of other correspondence with the deputy city manager and other folks.
Q. And is it correct that the Project reached out to the City of Concord about discussing a stipulation?
A. (Johnson) We did.
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Q. And is it correct that those discussions are underway at this point?
A. (Johnson) They are underway at this point, yes.

MR. NEEDLEMAN: Dawn, can you bring up Exhibit 154.
(Exhibit App 154 marked for identification.)
Q. We've also heard a lot about McKenna's Purchase. Could you briefly describe for us the Project's efforts to communicate with McKenna's Purchase.
A. (Johnson) Sure. So, again, there was one public open house in which the McKenna's Purchase folks were invited to. I know that I dealt with a couple of those folks personally. Correspondence with property owners. So there were two sets of mailings that went out to folks. There were other correspondence to McKenna's Purchase. There were five meetings with McKenna's Purchase representation, and there were two telephone calls that were held also with McKenna's Purchase representatives.
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Q. We've heard -- and I'm not going to go through every town. But we've heard other parties raise issues about towns like Clarksville, New Hampton, Bristol, Woodstock and others. Is it correct that the Project has reached out to every town along the route at this point to discuss stipulations?
A. (Johnson) We have, again, as we discussed a couple days ago, except for Dixville and Millsfield who are unincorporated. So, yes.

MR. NEEDLEMAN: Dawn, put up Exhibit 155, please.
(Exhibit App 155 marked for
identification.)
Q. This exhibit, as I understand, summarizes the status of those efforts to engage in stipulations with towns. Can you briefly walk the Committee through that?
A. (Johnson) Sure. So as the Committee recalls, there are 31 affected towns; 28 are the number of towns that received the MOU letter; 2 are the unincorporated, and 1 is Franklin, that we've already concluded our negotiations with. So, 14 towns have responded; 13 are in
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active negotiation; and 1 is completed, and that would be Lancaster; 10 additional towns -- sorry. Drop to the bottom. The number of towns that did not respond is 14 of the 28 that were initially mailed.
Q. Okay. Thank you.

Mr. Bowes, let me turn to you now. I want to follow up on some topics that Mr. Pappas raised when he was questioning the panel. We talked about laydown areas. And Mr. Pappas suggested that the Project can't know the impacts at laydown areas because you don't know the precise locations yet. Do you agree with that?
A. (Bowes) I would say no.
Q. Why?
A. (Bowes) Because we do know the characteristics of the laydown areas. We know the location; they're going to be within a few miles of the construction activities. We know the size, generally 5 to maybe a maximum of 50 acres. We know we're going to place them in disturbed areas, previously disturbed, not pristine areas. We know we
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have to have highway access. So, in general, it's going to be a commercial or industrial type of facility that the Project would use to store materials and store vehicles for the work that needs to be done.
Q. Ms. Farrington, how about the traffic aspects?
A. (Farrington) Very similar to the access roads that we discussed with Mr. Iacopino. We did do a calculation of the highest number of vehicles per hour we would expect to see going in or out during a peak hour, and it actually turned out to mostly be workers arriving in the morning or leaving in the afternoon. That number was 30 vehicles per hour, so it would not trigger a change of use, major driveway permitting need.
Q. Ms Farrington, continuing with you. Mr. Pappas asked you at one point if you had studied traffic impacts on tourism or on the orderly regional development. You said you didn't, but you didn't have a chance to elaborate, so I want to look at that right now.
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MR. NEEDLEMAN: Dawn, could you call up Applicant's Exhibit 91.
Q. And that, I believe, is your Supplemental Prefiled Testimony, Ms. Farrington?
A. (Farrington) Yes.
Q. And I want to focus on the bottom of Page 3 and over to the top of Page 4.
A. (Farrington) Okay.
Q. First of all, the question in the middle of Page 3 that is then addressing the information on the bottom of Page 3, what was that question?
A. (Farrington) "Please describe the expected impacts due to the planned lane closures."
Q. And so in your evaluation of lane closures, at the end you offer a concluding statement at bottom of 3 that begins with the word "however" and goes over to Page 4. Can you read that, please?
A. (Farrington) Yes. "However, it is my opinion that impacts to the traveling public will be limited and will be considered acceptable by New Hampshire DOT."
Q. And then in the middle of Page 4, Lines 14
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and 15, you also are offering conclusions with respect to the traveling public. Can you describe those?
A. (Farrington) Yes. "Based on this approach, the proposed detour routes and preferred routes are expected to have a minimal impact."
Q. So that "minimal impact" relates to detours; is that correct?
A. (Farrington) Yes. That was specific to the North Country --

MR. NEEDLEMAN: And then Dawn --
A. -- the three detours in the North Country.
(Exhibit App 156 marked for
identification.)
Q. And the Project also furnished a response to Counsel for the Public's data request which has relevant information. We're going to put that on the screen, call this Exhibit 155 [sic]. Am I correct, Ms. Farrington, that you participated in preparing this response?
A. (Farrington) Yes.
Q. And can you tell us what relevant information that has in there that relates to tourism?
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A. (Farrington) This is similar statements to my Prefiled Testimony, that delays will be intermittent, temporary and minimal to the traveling public, and therefore we concluded that it would also be temporary to visitors and vacationers. It also goes into detail about pedestrian routes and Americans With Disabilities Act for pedestrian detours and rerouting in downtown areas. And our Transportation Management Plan would also consider bicycle routes.
Q. So based on the work you've done in this case, do you feel you have helpful
information regarding traffic impacts on tourism?
A. (Farrington) Yes.
Q. And what is that information?
A. (Farrington) I would say that we, the Project, will work to minimize impacts not only on the traveling public, but in turn on vacationers and tourists.
Q. Another area that Mr. Pappas asked you about was detours. There were a number of questions about detours around the 7-1/2
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miles of underground construction in the North Country.

Have you been able to make any sorts of comparisons between the kinds of detours that the Project is proposing and the sorts of detours that people in the North Country might typically encounter with other types of highway construction projects?
A.
(Farrington) Yes. So we talked a little yesterday, or two days ago I think, about a similar project in the North Country, because it was brought up that if Route 116 had to be detoured, the detour would be -- I can't remember -- in the range of 25 miles because there aren't a lot of local and state routes within the North Country that's not densely populated. So the New Hampshire DOT currently, today, is detouring -- has put in place a detour for one of their bridge repairs, and it's over Bishop Brook Road on Route 145, and that detour route is around 25 miles. It is signed along state routes, so there are local roadways. But some of the locals, if they know the route, could find
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their way a bit shorter, but it would also likely be a lower speed limit. And just for comparison, Route 145 in that area has an expected number of vehicles per day of 520 , whereas Bare Rock Road, which we are detouring, has 140. So, significantly less.
Q. Mr. Johnson, when Mr. Pappas was questioning you, he asked you about Beecher Falls Road, and I think he pointed out an omission in the design drawings. And DOT subsequently identified a work area that they thought would lead to a road closure, and you said that it was the intent not to have a road closure. Can you clarify this issue?
A. (Johnson) Sure. So I believe what Mr. Pappas was referring to was during the phase where we'd be assembling the conduit along the side of the road and then having to pull it back through the directional drill. And the work zone that's shown on the plans shows that actually crossing right in front of Beecher Falls Road as it intersects with Route 3. We realized that and have had discussions with the DOT for a temporary sort of excavation
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where we will install a PVC pipe underneath the road, and then we'll repave the road to keep Beecher Falls Road open. And we will pull the conduit back through that larger culvert, if you will, into the HDD.

A second alternative, as we've discussed, would be extend the HDD past Beecher Falls Road, and then we could tie in the trench as it came around that corner at a later date. So we wouldn't impact Beecher Falls Road at all.
Q. Mr. Johnson, you were asked a lot of questions about road layouts and the proper right-of-way boundaries. For example, Ms. Pastoriza asked you about the road layout information that the Project had for Easton and Sugar Hill. Do you recall that?
A. (Johnson) I do recall that.
Q. And I think the implication in her questioning was that the Project lacked adequate information to be able to define the right-of-way and ensure that it stayed off private property.

Do you believe that the Project has
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adequate information to ensure that it will stay within the right-of-way when doing the underground work in Easton, Franconia and Sugar Hill?
A. (Johnson) I do.
Q. Why do you believe that?
A. (Johnson) Because I believe that our surveyors have done the appropriate research and field assessments to verify that.
Q. Ms. Pastoriza also implied that your surveyors missed relevant information in Easton and Sugar Hill. How do you respond to that?
A. (Johnson) So I believe Ms. Pastoriza's testimony was basically that a lot of these roads were laid out in the late 1700 s and early to mid-1800s. And she's correct that those are the original road layouts. I believe, as Mr . Oldenburg stated when he was questioning us, these are the unbuilt roads, if you will, that just evolved over time.

Over time, there have been -- sorry. The issue with some of those original layouts is that they're from Farmer Brown's tree to
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Farmer Smith's wall. They do identify a width, whether it's two rods, three rods or four rods, but they do not identify geographic or spatially where they are. So there's no GPS coordinates that would say it's from this edge to this edge.

So how do we sort of get around that? And it's sort of a multi-tiered answer, if you will. There have been a lot of betterment projects over the years, where either towns have put in sewers or water lines. The DOT has built I-93. There have been paving projects, bridge replacement projects. All of these projects have defined a boundary, if you will, of the right-of-way. So there are many instances up and down, all the way from, you know, I believe Woodstock right through the entire underground route. But specifically to Ms. Pastoriza, from Woodstock through Sugar Hill and ultimately up to Bethlehem, where the DOT has -- or the towns have prescribed where those edges of rights-of-way are.

So the Project survey teams went to the
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state archives, they went to the town archives, they went to the DOT archives, and they pulled those plans and found those boundaries and used them as the base of the project. They also went to municipalities and looked at landowner deeds and landowner plans, whether they were subdivision plans or individual lot plans, where the individual landowners have acquiesced, if you will, the boundaries of the DOT or the right-of-way. And we have further corroborated that with the iron pins and other boundary markers that we found during our field surveys. It showed them on the plans, and we went out and found them where we could, you know, on the actual field work. So that again sort of sets another set of boundaries.

And then the third set of boundaries would then be the prescriptive rights of the road -- meaning road surface, the shoulder, the ditch line -- a very small area outside of that, that would then be the prescriptive rights of the road. So we feel that our surveyors have taken all that into
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consideration in the preparation of our survey lines.
Q. Mr. Pappas was walking you through the highway right-of-way drawings and the quality of information that the surveyors had. And he walked you through three kinds of classifications. Do you recall that?
A. (Johnson) I do.
Q. Is it true that the surveyors here relied on New Hampshire DOT's own plans to establish the right-of-way limits?
A. (Johnson) Absolutely. Yes.
Q. So if that's the case, why didn't the surveyors -- why did they use the highest classification so sparingly?
A. (Johnson) Basically the surveyors in general are conservative, and they are not going to validate, if you will, somebody else's work unless they've redone the work of going out and doing their own research and effectively redoing what the DOT did previously.
Q. The plans that you're relying on, are these the same plans that New Hampshire DOT uses for its own construction projects?
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A. (Johnson) It is.
Q. And how familiar is Eversource with those DOT right-of-way plans?
A. (Johnson) For the Eversource projects that I've worked on, very, very familiar.
Q. And how reliable have you found those DOT plans to be in your personal experience?
A. (Johnson) Extremely reliable.
Q. We were shown an e-mail at one point. It was Joint Muni Exhibit 198, and it contained -it was an e-mail from DOT that contained a general disclaimer about the use of these plans. Why would that disclaimer be in there?
A. (Johnson) So I believe that that disclaimer is used whenever the DOT provides information to other parties, that effectively they're not going to certify or be responsible for or liable for work done by others.
Q. In locations where the right-of-way lines are marked as "undetermined," what has the Project done to address uncertainties in those locations?
A. (Johnson) So, from a design perspective, what \{SEC 2015-06\}[Day 12 Afternoon Session ONLY]\{06-02-17\}
we've tried to be is very conservative and make sure that our designs are either within the disturbed roadway or exactly right off of the disturbed roadway.
Q. Overall, then, what's your level of confidence that for all the underground sections the Project will be able to stay within the right-of-way and off private property?
A. (Johnson) Very high.
Q. Going back to when Ms. Pacik was questioning you, she went through a list of properties in Concord that were adjacent to the line. And she asked you in a number of cases about the Project's contacts with property owners, and you didn't have that information available. Have you had a chance to go back and check?
A. (Johnson) I have, yes.
Q. So I want to just ask you quickly about those properties. There were six in particular:

12 Brookwood, 10/8 Brookwood, 41 Hoit,
516 Mountain Road, 37 Snow Pond Road and 5/7
Old Loudon Road. Can you tell us briefly what outreach the Project has engaged in with
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those properties?
A. (Johnson) Sure. So I went back to the Contract Manager, which is our data base of all contacts that we've had with folks. For 8 Brookwood Drive, we had a meeting with the landowner at an August 18th open house in 2013. We also had a site visit with them in late August of 2016, where we discussed the Project. We walked out into their yard and, you know, basically discussed what would be happening.

For 12 Brookwood Drive, in September of 2015 we had a meeting with the current landowner at that time, and we again talked about the Project and potential clearing. It was actually noted in the notes that there was a discussion regarding tree-clearing.

For 41 Hoit Road, there have been two meetings, one in May of 2013 and one in July of 2014, again, discussing both the encroachment of the garage, or the living quarters now, that are in the right-of-way, as well as the Project and the plans to span over the top of them.
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On 516 Mountain Road, in January of 2017 we received an inquiry from the project owner, and we responded by mailing them a certified letter with some general information regarding the Project and the construction process, as well as the design in that area.

For 37 Snow Pond Road, we have no direct contact with them, although we've had a mailing and contact with both neighbors.

And on Old Loudon Road, 5 and 7 Old Loudon Road, if you recall, that's across the street from the Starbucks and the Joseph A. Banks residence, and we've had no direct correspondence with them or site visits with them.
Q. When Ms. Pacik was questioning the panel, she also pointed out that there were four properties along the right-of-way in Concord that were not actually included on the original Project maps that were submitted to the Committee. Do you recall that?
A. (Johnson) I do.
Q. Those four properties were: 61 Sanborn,
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67 Sanborn, 87 Oak Hill Road and 83 Appleton Road. Can you explain why they were not included on the maps?
A. (Johnson) The maps were of an older vintage before those houses were actually constructed.
Q. And has there been any outreach to any of those properties?
A. (Johnson) There has, yes.
Q. Can you explain that, please?
A. (Johnson) So, 61 and 67 Sanborn Road, if you recall, they were the houses that were built on both sides of the right-of-way. Actually, the land developer or the real estate agent contacted us to inquire about project information as they were building. That was in April of 2011. So any project knowledge would have to be disclosed within the sale of that property.

87 Oak hill Road I believe is a little farther down the right-of-way. There were two individual contacts with that landowner in 2012 and -- sorry -- April of 2012 and December of 2013, and in both cases an
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inquiry came in, phone calls were sent, and then further correspondence on project information was delivered to the landowner. And 83 Appleton Street, which is that nice house with the view of the pond there, there's been no direct contact with them, so no individual meetings or individual phone calls.

MR. PAPPAS: Mr. Chairman, a point of clarification. It appears to me that Mr . Johnson is reading as opposed to testifying from his memory. I don't know if he's reading prepared or just his notes, but he seems to be reading these answers rather than testifying about his answer. And I'm just --

CHAIRMAN HONIGBERG: Your
impression's a little different from mine.
But Mr. Johnson, I assume you're not doing that one hundred percent from memory. You have some notes in front of you.

WITNESS JOHNSON: I have some written notes, yes.

MR. PAPPAS: That's fine. I
understand it's okay for the witnesses to have
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their material up there. I just wanted to know that it was his material and not prepared notes or prepared testimony, because it looked like to me he was reading.

CHAIRMAN HONIGBERG: Yeah, as I said, I have a different impression. But I think we've clarified what he has in front of him. MR. PAPPAS: That's fine.

BY MR. NEEDLEMAN:
Q. Mr. Bowes, there have been several discussions about the Sabbow Concrete property. Mr. Way was asking you about that earlier.

MR. NEEDLEMAN: Dawn, can you put up Exhibit 156 [sic], please.
(Exhibit App 157 marked for
identification.)
Q. What is this document, Mr. Bowes?
A. (Bowes) So we call it a Special Use and Consent Agreement, or Joint Use Agreement.
Q. And this is the Joint Use Agreement between, I guess it was Public Service of New Hampshire and Sabbow Concrete?
A. (Bowes) Yes.
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Q. What's the purpose of these agreements?
A. (Bowes) So, most often it's either when a new customer wants to use an eased area of their property or -- in this case, I believe we identified that a customer was using it, and we wanted to put in place an agreement that clearly defines how you will use the eased area for Public Service of New Hampshire.
Q. So in this case, the PSNH easement was there long before Sabbow was there?
A. (Bowes) Yes.
Q. And then Sabbow located there?
A. (Bowes) Yes.
Q. And then the two companies entered into this Joint Use Agreement?
A. (Bowes) Yes.
Q. And this is for the purpose of defining how each company will relate to each other so that you do your best to avoid interfering with each other; is that correct?
A. (Bowes) Yeah, so both uses can continue undisturbed.
Q. Mr. Johnson, when Mr. Reimers was questioning you, he went through in his cross-examination
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a very detailed description of all the conservation areas in and around the overhead line. Do you recall that?
A. (Johnson) I do.
Q. So, focusing for a moment on the 32 miles of new overhead line in the North Country from Coos -- in Coos County, is there any place in that new 32 miles of line that sits on conservation land?
A. (Johnson) No.
Q. So the Project made a deliberate effort to avoid locating on conservation land there; is that correct?
A. (Johnson) That is correct, yes.
Q. And then focusing on the remainder of the overhead line, which I think is approximately 100 miles, is it correct that all of that 100 miles of line, if it goes through a conservation area, the easement predated all of those conservation areas?
A. (Johnson) That is correct.
Q. Is there any conservation area in that 98-mile segment that did not predate the line?
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A. (Johnson) No, there is not.
Q. So, okay, let me turn now back to you, Mr. Bowes. Actually, let's go to Ms. Farrington. When Mr. Oldenburg was asking you questions the other day, he mentioned the DOT Traffic Control Committee. He noted that he ordinarily chaired that committee, and I think that he urged you and the Project to appear before that committee as soon as possible. Do you recall that?
A. (Farrington) I do.
Q. Can you just tell us briefly what that committee does?
A. (Farrington) Sure. So they're made up of representatives that review each roadway project and give it a level of significance, and depending on that level of significance, request either a memo or a full
transportation management plan which studied the impact, the expected impacts of the proposed construction, as well as there's actually a list of options for mitigation that you can pick from and put into your report or into your memorandum. And then the
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TCC reviews and approves that report or gives suggestions to improve it.
Q. What have the Project's dealings to date been with the Traffic Control Committee?
A. (Farrington) So we have not yet gone before the Traffic Control Committee. We actually had a meeting with New Hampshire DOT I think a few weeks ago, and the representative there said she would like to go before the committee ahead of us and kind of introduce the Project. So we are waiting for New Hampshire DOT's okay before we fill out the form and have our official presentation.
Q. Does the Project consider it to be important to appear before that committee and interact with them?
A. (Farrington) Absolutely.
Q. Mr. Oldenburg asked you also about transportation management plans that were described in your Prefiled Testimony, which is Applicant's Exhibit 15. And I thought there was some confusion in one of your answers about how the plan was going to be prepared and approved. Can you clarify that?
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A. (Farrington) Sure. So we, being PAR, is responsible for preparing the plan. They have signed a contract with Louis Berger for us to prepare their transportation management plan which will then be put before, first, New Hampshire DOT, and then, after New Hampshire DOT and us come to agreement, then it goes before the Traffic Control Committee for official approval.
Q. And Condition 22, A-B of the DOT letter actually requires you to submit it to the Traffic Control Committee; is that correct?
A. (Farrington) That is correct.
Q. Mr. Bowes, Mr. Oldenburg was asking you about the issue of differential frost. Do you recall that?
A. (Bowes) Yes, I do.
Q. Is it correct that this issue has been one of DOT's concerns from the beginning regarding the Project's dealings with them?
A. (Bowes) Yes. It's the first, you know, long, linear project that they've had in state roads.
Q. And have you been working with DOT on this
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issue since you first began interactions with them?
A. (Bowes) Yes.
Q. Is it your understanding that in order to get ultimate approval, you're going to have to satisfy DOT's concerns about this issue?
A. (Bowes) Yes. And they've placed three conditions that $I$ think are probably the most important for the differential frost issues: Condition 12, which deals with being as far off to the right or off the roadway as possible; Condition 14, which deals with the depth, and then Condition 38, which deals with the warranty period that they're imposing. He also showed a diagram that had a depth of the trench that has since been revised. So as part of the latest conditions with the DOT, we are now 1 to 2 feet lower than the diagram that he was using. He also drew kind of a red semicircle above the trench line and indicated that that would be where frost would be less likely to occur. If you look at that diagram now, and also the information that Mr . Scott presented in the
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ABB report, it's clear to me, at least, that there will be potential for frost underneath the duct bank -- I'm sorry -- above the duct bank will still occur, or there will still be frost there, and it'll be basically to the level of the concrete cap. So there'll still be maybe not 4 feet of frost under the duct bank, but clearly not the same situation that was displayed with that red semicircle. Probably be at least 3 feet of frost in those roadways.
Q. Continuing with you, Mr. Bowes. Mr.

Oldenburg also raised concerns about the manner in which the Project was designed in relation to the requirements of the New Hampshire Utility Accommodation Manual. He pointed out that utilities use roads as a privilege, not a right, and that there was a preference for utilities to be located at the edge of the right-of-way. Do you recall that?
A. (Bowes) Yes, I do.
Q. So can you explain what the Project's
thinking was regarding its design in light of
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[WITNESS PANEL: FARRINGTON|JOHNSON|BOWES|KAYSER]
your understanding of the Utility Accommodation Manual?
A. (Bowes) So, first, we're very aware and fully understand what was in the Utility Accommodation Manual. Early in the process we also verified, for example, the use of the interstate highways. So where we didn't have a full understanding or just wanted to verify what our understanding was, we did that with the DOT. We've had, you know, monthly meetings with the DOT now for well over a year. So we have described what we wanted to do and got interaction with the DOT for this entire process. We understood that they wanted it off the roadway where possible, but we also were trying to balance both the customer impacts of being, you know, in people's front yards and into the ditch line, for example, and the environmental impacts with the New Hampshire DES of being off the road and into a wetland. So what we tried to do was balance all three of those concerns and present a plan to the DOT that they have since asked us, especially with Condition 12,
to move to the right or move to the side of the travel lane as much as possible.
Q. Can you explain what the traffic impacts would be of being in the road versus off the road?
A. (Bowes) So there's probably -- we're still going to take a full lane, whether we're off to the shoulder or still within the roadway. What it may do, though, is it may prolong the length of construction by being off-road.
Q. Why is that?
A. (Bowes) So the progress will be potentially a little bit slower, will be under or off to the shoulder, so there may be guardrails we have to deal with. In some cases there may be some embankments. We may have to be a little bit deeper in the ditch line than we would if we were just under the road. So, real slow progress when we're off to the side of the road versus being within the road, and thus duration of the traffic impact would be longer.
Q. What's the experience of the panel in terms of transmission lines being located in roads?
A. (Bowes) So in my case, we've always had, when we've done underground transmission construction, a portion has always been in the roadway.
A. (Kayser) That's my experience also.
A. (Johnson) Similar.
Q. Before the December 2016 Project submittal to DOT, is it correct that you had had discussions with DOT about what your rationale was going to be for your proposal?
A. (Bowes) Yes, we did.
Q. And then you submitted the proposal in December. And did you continue to have dialogue with DOT?
A. (Bowes) Yes, we have a monthly meeting, and then obviously correspondence in between those meetings.
Q. So now you've received this April letter which we've heard a lot about, and we've also heard a lot about the requested exceptions that you're making. Is it correct that the letter actually contemplated that you could request exceptions?
A. (Bowes) Yes. And the discussions we had,
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they actually encouraged us to provide exceptions, for example, especially for some of the abutter concerns. And we have asked for some of those exceptions as well. So, some examples would be, you know, when a house was very close to the edge of the roadway, clearly within the right-of-way, there's a location on 12 -- I'm sorry -17 Lost River Road in Woodstock is an example of that. An example in the North Country, near the cemetery that we've talked a lot about, just to the south of that there's a rock wall. And we wanted to be more into the roadway to avoid stone walls and rock walls. And where there's a splice pit that goes into an embankment, we talked about one of those on Route 116. That's an area where we would ask for an exception to be within the roadway, or it was going to cause an impact to either an abutter or other impacts -- in that case, a retaining wall -- where we think it makes sense to go within the roadway and maintain the flow of traffic and speed the construction.
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Q. When you were answering Mr. Oldenburg's questions the other day, you gave the example of being in the road versus being in a wetland and trying to balance those competing impacts. Are these other examples of efforts to try to balance competing impacts?
A. (Bowes) Yeah, those are three examples that would impact customers' property.
Q. Ms. Farrington, Mr. Oldenburg provided the example of traveling the 52 miles of the underground route and walked through his calculations about what the expected delays might be. And yesterday, I think it was, you talked about a calculation you had made traveling from the Rocks Estate in Bethlehem to the intersection of 112 and 116. Do you recall that?
A. (Farrington) Yes.
Q. Why did you undertake this calculation? What was the point of that?
A. (Farrington) So it was our thinking that it would be unlikely for someone to travel the entire 52-1/2-mile route without using other roads, such as 93 or other roads.
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Q. And so you chose this section to try to get a sense of what a local traveler might encounter during construction?
A. (Farrington) Yes.
Q. And when you did your calculations, I understand that you used Mr. Oldenburg's numbers to do those calculations?
A. (Farrington) Yes. So, number of construction zones, one minute of delay at each.
Q. All right. And so what was the length, the mileage from the Rocks Estate to the 112/116 intersection?
A. (Farrington) $I$ measured it as $16-1 / 2$ miles.
Q. And you assumed how many construction zones in that 16-1/2 miles?
A. (Farrington) Six.
Q. And so what delay did you calculate?
A. (Farrington) So, again, assuming a full minute delay at each construction zone approached, that would add six minutes worth of delay to that route.
Q. Did you do a Google Map search to figure out what the typical travel would be between those two points without any construction?
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A. (Farrington) Of course. It was 25 minutes. Q. And so adding the delay that you calculated would be 31 minutes?
A. (Farrington) Yes.
Q. Let me just ask you about some of the assumptions. When you say six minutes of delay, are you assuming that somebody traveling and encountering each of those six construction zones would have to wait the full one minute at each zone?
A. (Farrington) So, yes, they would either need to come to a complete stop, and that would include the slow-down due to a reduced speed limit. So, one full minute of delay at each site encountered.
Q. Is it possible somebody could pass through all six zones with little or no delay?
A. (Farrington) Yes, it is possible.
Q. Not a very likely outcome, though; right?
A. (Farrington) No, not that good.
Q. So is there some average between waiting the full amount at each place and passing through each one of them unencumbered?
A. (Farrington) Yeah, I think 30 seconds at each
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would be reasonable.
Q. So what would you calculate the delay to be in that circumstance?
A. (Farrington) That would make a three-minute delay.
Q. Did you factor in -- well, let me ask you this: What is your experience in situations like this with people finding alternate routes if they're available?
A. (Farrington) So, again, with the Bishop Brook Road, which is a New Hampshire DOT bridge-replacement job, there was actually a newspaper article where the locals described the routes they were planning to take that were not the planned detour route. So I found especially the local community will usually find their way around, whether we sign it or not.
Q. And is it correct to assume that in this day and age with people having navigation systems and navigation systems on their phones, that that's another opportunity for people to find alternatives if they exist?
A. (Farrington) Yes.
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Q. And is it reasonable to assume in these circumstances that at least some people would take advantage of alternatives if they were available?
A. (Farrington) Sure.
Q. Mr. Bowes, when Mr. Van Houten was questioning you, I think it was yesterday, he asked you about the transition station in Bethlehem and the proposed hotel next to that station. Do you recall that?
A. (Bowes) Yes.
Q. In one of his questions he made the assertion that the hotel developer was "horrified" -and I think that was his word -- when he learned about the transition station. Do you recall that?
A. (Bowes) I do.

MR. NEEDLEMAN: Dawn, do you have Applicant's No. Exhibit 6? Can you pull that up?
Q. Mr. Quinlan, in his Prefiled Testimony at Attachment K, I believe attached a letter from that hotel developer; is that correct?
A. (Bowes) Yes, he did.
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Q. Is it your understanding that that hotel developer is horrified about the transition station?
A. (Bowes) No.
Q. What's your understanding?
A. He's happy that we're working with him. He's actually using some of the properties that we have adjacent to do his construction activities today.
Q. Ms. Farrington, when Dr. McLaren was questioning you, he was asking you about emergency vehicles passing the construction sites, and he was expressing concern about ensuring that there would be no delays. And he offered the view, quote, There's a pretty strong possibility of human collateral damage, close quote. Do you agree with that?
A. (Farrington) Absolutely not.
Q. Why?
A. (Farrington) Because flaggers, pre-emption systems, we are going to put all of the standard traffic control devices into effect, as well as obviously common sense, to expedite emergency vehicles through this
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travel zone in the best manner possible.
Q. And last topic, Mr. Bowes. Dr. McLaren was questioning you about the use of fly ash and fluidized thermal backfill. And we've heard more about that. He was suggesting that these environmental concerns here could be substantial and that the Project's use of this was experimental. Do you remember that?
A. (Bowes) Yes, I do.
Q. You said at one point that concrete or fly ash had been used in concrete for decades. Do you recall that?
A. (Bowes) Yes.
Q. You didn't get a chance to elaborate. So I want to get a couple of exhibits --

MR. NEEDLEMAN: What number are we on, Dawn?

MS . GAGNON: 158.
MR. NEEDLEMAN: All right. So pull
up 158.
(Exhibit App 158 marked for
identification.)
BY MR. NEEDLEMAN:
Q. So, Dr. McLaren showed you a couple of
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articles. My recollection is they were from around the 2010 time period. This exhibit is EPA's December 2014 determination about fly ash. And is it correct that EPA made the determination that it was not going to treat fly ash as hazardous?
A. (Bowes) Yes.
Q. If you look at the highlighting on the bottom of the page, what does EPA say about the use of fly ash?
A. (Bowes) Basically they're supporting it's reuse for other activities.

MR. NEEDLEMAN: And then, Dawn, can we call up Exhibit 159.
(Exhibit App 159 marked for identification.)
Q. And let's start with the cover page. Ms. Farrington, there is an acronym on that cover page. Can you tell us who this organization is?
A. (Farrington) Yes. The American Association of State and Highway Transportation Officials.
Q. Okay. And can we go to the next page,
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please. And Ms. Farrington, just in the yellow highlighting, what does this organization say about the use of fly ash?
A. (Farrington) The survey had 52 respondents: 46 state DOTs, DC DOT, Illinois Tollway, Western Federal Lands, Ontario, and the FAA and DOD, and I believe they all said they have used fly ash.
Q. And I guess I should have asked that question to Mr. Bowes.

So is this what you had in mind when you were saying that it's used in a widespread manner?
A. (Bowes) Yes, it is.
Q. Or at least illustrative of that. I'm sure you didn't have this document in mind.

And then just the next page, please. And Mr. Bowes, that last point, what was the other -- what was the concern expressed in this document about the availability of the fly ash?
A. (Bowes) Just that there's a growing shortage of it for highway use.

MR. NEEDLEMAN: Dawn, can you call up
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Exhibit 160.
(Exhibit App 160 marked for
identification.)
Q. So these are going to be two pages. These are screenshots we took last night I think from the New Hampshire DOT web page. And this is talking about various New Hampshire DOT environmental goals and then the way in which they implement those goals.

What is one of the objectives or implementation goals that DOT highlighted there in yellow, Mr. Bowes?
A. (Bowes) So one of their construction initiatives is for use of fly ash from power plants.
Q. And then finally Exhibit 161.
(Exhibit App 161 marked for
identification.)
Q. When Mr. Wright was questioning you yesterday, he asked whether any of you knew about whether the Department of Environmental Services had spoken on this issue. We were able to locate this document last night. I don't think we're going to represent this as
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definitive because we had a limited amount of time to look. But am I correct that this is a 1997 request of DES to use fly ash as a certified waste-derived product?
A. (Bowes) Yes, it is.

MR. NEEDLEMAN: And Dawn, could you flip over to I think the third page.
Q. And could you just read No. 1, please, Mr. Bowes .
A. (Bowes) "Coal ash generated at Merrimack and/or Schiller Station may be reused to produce Controlled Low Strength Material, AKA flowable fill, under the terms of this certificate."

MR. NEEDLEMAN: Okay. And I think that's it.

CHAIRMAN HONIGBERG: All right. Looking at the hour, I'm not sure it makes sense to try to do anything else today.

MR. PAPPAS: Agreed.
MR. NEEDLEMAN: Ms. Frayer is here.
We could --
CHAIRMAN HONIGBERG: We're going to have to take a break, anyway. I apologize to
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Ms. Frayer, who I know has been here earlier. Off the record.
(Brief recess was taken at 4:06 p.m., and the hearing resumed at 4:18 p.m.) CHAIRMAN HONIGBERG: We're going to pick back up now and get started with the next witness, Ms. Frayer. Mr. Needleman.

MR. NEEDLEMAN: Thank you. Shall we swear her in?
(WHEREUPON, JULIA FRAYER was duly sworn and cautioned by the Court Reporter.) DIRECT EXAMINATION

BY MR. NEEDLEMAN :
Q. Please state your name and where you work.
A. My name is Julia Frayer, and I'm a managing director at London Economics International, LLC.
Q. And just generally, what's the purpose of your testimony in this matter?
A. I will be presenting the analysis that $I$ was responsible for that speaks to the electricity market impacts of the Northern Pass Project, the state economic impacts of the construction operations of the Northern
[WITNESS: FRAYER]

Pass Project, and the emissions-related impacts of the Project.
Q. And you have a series of documents in front of you. Some of them are your reports which have been filed in this case and then some is your Prefiled Testimony. And I wanted to focus on your Prefiled Testimony.

There are three pieces: Applicant's Exhibit 28, which is your October 16, 2015 Prefiled Testimony; Applicant's 82, which is your March 17th, 2017 updated Prefiled Testimony; and then Applicant's Exhibit 101, which is your Supplemental Testimony of April 17th, 2017. Do you have all those?
A. Yes, I do.
Q. And do you have any changes or corrections to any of those three pieces of testimony?
A. No, I do not.
Q. Do you then adopt those testimonies and swear to them today?
A. Yes, I do.
Q. Great. Thank you.

CHAIRMAN HONIGBERG: Mr. Needleman, I know there was a motion regarding the original
testimony, and the motion -- it was a Motion to Strike. Can you or the witness briefly explain how the updated testimony and the Supplemental Testimony affect the original testimony? MR. NEEDLEMAN: I think I'll let Julia do that.

WITNESS FRAYER: The updated analysis that I believe is Exhibit 82 -- and please correct me if I get the wrong numbers -- the testimony associated with that updated analysis was actually in response to data requests we received from -- that we were asked to complete. But it is using the same methodology, the same approach that we used in our original report. We were simply updating certain assumptions and inputs. And then our Supplemental Testimony and the associated, what we labeled as our "Rebuttal Report," was responding to the reports that we reviewed in January of 2017. They were filed in December of 2016 from some of the other parties. We were essentially responding to and creating some additional foundation and context for the Committee to consider in consideration of our
[WITNESS: FRAYER]
analysis and in consideration of other analyses that the Committee is going to hear about or read about.

CHAIRMAN HONIGBERG: But the original
testimony that was filed with the Application and the update, from your perspective, the original testimony still has viability and is still relevant to what we're considering.

WITNESS FRAYER: Of course, yes.
CHAIRMAN HONIGBERG: All right.
Mr. Boldt.
MR. BOLDT: Thank you, Mr. Chairman. CROSS-EXAMINATION

BY MR. BOLDT:
Q. Ms. Frayer, I'm over here. And I represent the City of Berlin, and I have just a couple questions that $I$ believe are "Yes" or "No," but I could be wrong in the way of the answers that you need to give me.

I wanted to simply confirm that in your Prefiled Testimony and in your reports there is no separate analysis of the impacts of the improvements to the Coos Loop in northern New Hampshire; is that correct?the City of Berlin, and $I$ have just a couple
questions that $I$ believe are "Yes" or "No,"but $I$ could be wrong in the way of theanswers that you need to give me.
A. Yes, that is correct.
Q. And I believe, also, your reports do not reflect your expectation of any retirements of the existing generating facilities in the North Country of New Hampshire, primarily in Berlin and Gorham, New Hampshire, as a result of Northern Pass coming in; correct?
A. That's correct as well.
Q. And finally, it's my understanding that you did no independent analysis of the tax benefits, the property tax benefits generated by Northern Pass, or the improvements to the Coos Loop, that you instead relied only on Dr. Shapiro's analysis, who's a later witness; correct?
A. It is correct that $I$ have relied on Dr. Shapiro's calculations and estimates of the property taxes. And in the Rebuttal Report that was filed in April, we did incorporate Dr. Shapiro's analysis into the Local

Economic Impact Analysis that I then presented.
Q. But you didn't do an analysis of the tax benefits separate from her report; correct?
[WITNESS: FRAYER]
A. That's correct.

MR. BOLDT: No further questions, Your Honor.

CHAIRMAN HONIGBERG: Mr. Boldt, that didn't even take five minutes.

MR. BOLDT: I strive to be brief, sir.

CHAIRMAN HONIGBERG: Well, I believe everybody thanks you.

All right. If there's nothing else that we can accomplish today, and I think there probably isn't, we'll adjourn for the day. And the next time we're together is a week from yesterday, right, next Thursday.

MS. MONROE: June 8th.
CHAIRMAN HONIGBERG: June 8th, 9:00.
Thank you all.
(Whereupon the hearing was adjourned at 4:24 p.m.)

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| 1 | CERTIT I C A T E |  |
| 2 | I, Susan J. Robidas, a Licensed |  |
| 3 | Shorthand Court Reporter and Notary Public |  |
| 4 | of the State of New Hampshire, do hereby |  |
| 5 | certify that the foregoing is a true and |  |
| 6 | accurate transcript of my stenographic |  |
| 7 | notes of these proceedings taken at the |  |
| 8 | place and on the date hereinbefore set |  |
| 9 | forth, to the best of my skill and ability |  |
| 10 | under the conditions present at the time. |  |
| 11 | I further certify that I am neither |  |
| 12 | attorney or counsel for, nor related to or |  |
| 13 | employed by any of the parties to the |  |
| 14 | action; and further, that I am not a |  |
| 15 | relative or employee of any attorney or |  |
| 16 | counsel employed in this case, nor am I |  |
| 17 | financially interested in this action. |  |
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