STATE OF NORTH DAKOTA

PUBLIC SERVICE COMMISSION

Burke Wind, LLC Case No: PU-18-302

Burke Wind Transmission Line - Burke & Mountrail

Siting Application

Burke Wind, LLC Case No: PU-18-344

Burke County Wind Energy Center - Burke County

Siting Application

T R A N S C R I P T

OF

P R O C E E D I N G S

Witness Testimony Part 2

March 8, 2019

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LOCATION: Memorial Hall

100 Main Street Northwest

Bowbells, North Dakota 58721

REPORTER: KAYLA A. RICHMOND

A P P E A R A N C E S

ADMINISTRATIVE LAW JUDGE - TIMOTHY DAWSON

PUBLIC SERVICE COMMISSION:
Commissioner Julie Fedorchak
Commissioner Brian Kroshus

CASEY FUREY
Crowley Fleck PLLP
100 West Broadway Avenue, Suite 250
Bismarck, North Dakota 58502
701-224-7554
Cfurey@crowleyfleck.com
Attorney for NextEra Energy Resources - Burke Wind, LLC

Wade Mann
Crowley Fleck PLLP
100 West Broadway Avenue, Suite 250
Bismarck, North Dakota 58502
701-224-7554
Wmann@crowleyfleck.com
Attorney for NextEra Energy Resources - Burke Wind, LLC

A P P E A R A N C E S (CONT'D)

BRIAN SCHMIDT
Smith, Porsborg, Schweigert, Armstrong, Moldenberg & Smith
122 East Broadway Avenue
Bismarck, North Dakota 58501
701-258-0630
Bschmidt@smithporsborg.com
Attorney for Public Service Commission

I N D E X

MR. DAWSON: We are back on the record. Ms. Wells is providing testimony and we're at the point where she is subject to cross examination by Mr. Schmidt. Mr. Schmidt?

BY MR. SCHMIDT CROSS EXAMINATION

Q. Thank you, Your Honor. Good afternoon, Ms. Wells.

A. Good afternoon.

Q. During your direct testimony, you talked a lot about native prairie and how this project area encompasses some native prairie land; is that correct?

A. That's correct.

Q. You also described native prairie land as essentially (inaudible) land?

A. Correct.

Q. Fair to say?

A. I would say that the focus is more on the mechanical tillings common with turning over a cop so you could have a shovel in one single location and that wouldn't necessarily penetrate the sod, so I think working in a similar line, just more mechanized.

Q. Are native prairie and roaming grasslands novice with each other?

A. Yes.

Q. Can we agree that native prairie is a habitat

for the Dakota skipper?

A. That is certainly one of the habitat types for them, yes.

Q. And the Dakota skipper is a federally threatened butterfly; is that correct?

A. Correct.

Q. What does it mean to be federally threatened?

A. Federally threatened means you're on the Federal Endangered Species Act and so you're a listed species, which means if you want to impact that species, there are a couple of ways you can go about that. There's a public and a private permitting process. The public process that would be a NEPA trigger. It doesn't apply to us. We don't have any NEPA triggers and we're also not having any impact. So there would be no need to go down that route.

Q. Now, it's NextEra's position that native prairie area will be avoided by this project where possible, correct?

A. Correct.

Q. You're aware of North Dakota Game and Fish, they have expressed concerns with the disturbance of native prairie lands to you?

A. Yes.

Q. Do you agree with North Dakota Game and Fish's

contention that native prairie is vital to many declining bird or pollinated species?

A. Yes. That's an important habitat to many animals and pollinated species.

Q. Now, I want you to turn to exhibit number four which is the amended application and if you look at page 80, halfway down the second paragraph, it states that approximately 3.0 acres of native prairie will be permanently impacted by the project.

A. I'm sorry, could you repeat that?

Q. Sure. So I'm on page 80 of exhibit number four, the second paragraph about halfway down the paragraph it states, based on the current design, approximately 3.0 acres of native prairie will be permanently impacted by the project. Can we agree that's what it says?

A. Could you repeat that? I'm in the right paragraph but I just want to check what you said.

Q. It's about halfway down. It says based on the current design, approximately 3.0 acres of prairie will be permanently impacted by the project?

A. Yes, I see that.

Q. Can I have you turn to exhibit number seven and page three. Looking at table two of page three of exhibit number seven three.

A. Okay. So I am looking at page three, table two.

Q. And in this table it says unbroken grassland and then we move over to the third column, acres permanently impacted by project, 5.8. So why did the amount of native prairie disturbance double, almost double, between November of 2018 when the application was submitted and January 31, 2019?

A. Engineering continues to refine the design and often we're working through road and collection changes. So that is the most likely source of that tiny change. I would say that although it is a doubling, I think you would have to characterize that in context of the whole project or that six percent is still a pretty small, or excuse me, six acres is still a pretty small percentage of the overall project.

Q. So I guess I'm not exactly following how we ended up with twice as much native prairie disturbance in that short period of time. Was it a calculation error or did something subsequently change?

A. So something changed. It wasn't substantive. As Mr. Hart testified, there have been minor changes to road and collections since the amended 200 megawatt application was filed in November versus the timing of these exhibits, which were the part of the 30 day pre hearing filed in February, I believe, so that is the difference in the timeline. It reflects the advancement

of design.

Q. So it is 5.8 acres?

A. That is accurate.

Q. Okay. If I could actually just have you turn back one page on exhibit number seven to page two. I'm looking at table one which is the land use classification for turbine and if we look at the third column where it says unbroken grassland turbine Id, we see these turbine 54, 52, 55, 65, 67 and 71. You see where it says that?

A. I do.

Q. And do we agree that that indicates there are seven planned turbine locations that are classified as unbroken grassland?

A. We do agree.

Q. Now, I want you to look at exhibit number 46.

A. I'm looking at it.

Q. Now, I believe on your direct testimony you indicated this was a letter that you had drafted; is that correct?

A. That is correct. Our team drafted it.

Q. Okay. Have you look at the bottom paragraph on the first page of exhibit number 46?

A. Yes.

Q. And I'm looking at the third line where it says

those efforts have resulted in only five of the 76 planned turbines being located on unbroken grassland. How do you pair your statement in exhibit number 46 to what's reported on exhibit number 7 page two?

A. That exhibit shows seven turbines total. The exhibit 46 specifies there are also a total of seven turbines. Five of those are on unbroken grassland and additional total two are on hay land also considered unbroken. So that would be the five plus two is the seven.

Q. So there's a typo in the letter, is that what you're saying?

A. No, the letter describes the total of seven. So it says there are five of the planned turbines located on unbroken grasslands and additional two that are located on hay lands also considered -- oh, I see what you're asking. Yes. I'm sorry, that is a typo. That should say unbroken. My apologies.

Q. Okay. So that's where the seven comes from. It's five --

A. That's correct.

Q. Five on unbroken grassland and two on hay land?

A. My apologies. You're correct. That should say unbroken. That is a typo.

Q. Can I have you turn to figure one, exhibit

number seven, which is the project area map and it has the broken grassland, unbroken grassland and crop land in the project area?

A. I think we're looking at the same figure.

Q. Okay. The figure you're looking at, does it have yellow and then a dark green, light green and then white within the project area?

A. Yes.

Q. What's the white? I don't see it in the key.

A. The white areas are neither classified as cropland or broken grassland. Those are developed areas or other lands or classes. The purpose of this exhibit was to show crop land and grassland so those were the focuses of the plain cover classes.

Q. Well, with the exception of turbine number 52, do we agree that the remaining turbines are located on unbroken grasslands are all located on the east side of the project?

A. I would need a minute to look at that. I can come back to that later though for you.

Q. Sure. Well, let's focus on turbines number 54, 55, 56 and 57 towards the north part of the east side project.

A. I see those.

Q. Okay. It's figure one of exhibit seven. So

getting back to the question, looking at turbines 54, 55, 56 and 57, now do we agree that those are all located on unbroken native prairie land?

A. That is correct as indicated by the dark green on the map.

Q. Now, do we agree that there's cropland straight to the south of those four turbines?

A. That does appear to be correct. Turbine 53 is shown in yellow as cropland as is 59, 60, 61.

Q. Now, if we look at turbine number 52 which appears to be right in the middle of the project area, do you use see where it's at?

A. I do.

Q. Do we agree that there's crop land and undisclosed land right to the west of that turbine location?

A. That is correct. It looks like there is some white space between the two, but the parcel immediately to the west does have yellow, which indicates cropland, you're correct, yes.

Q. And then if we go look at turbine number 65 which is in the southeast little, little jot in the southeast corner of the project?

A. Yes. I see.

Q. Okay. Do we agree that there is unbroken

grassland directly to the east of turbine number 65?

A. We do. Looks like there's some white space in between there but, in general, yes I believe that's accurate.

Q. And if we look at turbine number 71, which is on the east side of the project and kind of in the middle of the project area, do you see that?

A. I do.

Q. Do we agree that it has unbroken grassland that appears to be on the west?

A. I'm sorry you were asking me about 71?

Q. 71.

A. Yes, that is correct.

Q. Okay. Now, do we agree that the transmission line will also have an impact on native prairie as well?

A. I would have to look at a few things to examine that. That isn't -- I can answer that in a few ways. First of all, (inaudible) So that was also for skippers but also for other non-listed wildlife.

Q. Well, we'll go -- we'll go through a map and you can maybe get some stuff clarified as we go.

A. Sure.

Q. I guess, just to kind of paint a little picture and I know Mr. Hart testified about this earlier, but the transmission line is held up by single poles,

correct?

A. Poles or structures, yes.

Q. And those poles are not spaced equally distant from each other all the way throughout the transmission line. Is that correct?

A. Correct.

Q. In fact, they can be placed anywhere from 400 feet and 1200 feet apart pursuant to the application. You agree with that?

A. Yes. That sounds generally correct.

Q. So do we agree there can be some flexibility where these poles can be located along the transmission line?

A. Yes, absolutely. Pole setting is a key part in our setting process.

Q. Can I have you turn to exhibit number one, which is the consolidated application and then figure six.

A. What section are you in or what tab are you in?

Q. Okay. So exhibit number one is the map that shows the -- wait a minute, I have figure six written done here but that might not be --

A. I see a figure of six that has sharp-tailed grouse habitat and native prairie, is that perhaps --

Q. Yeah, I believe it is. I'm wondering what happened to my figure six. Something must have fallen

out. But anyway, as long as you got it, if you can turn to page two, this map 2 and figure 6. You have that?

A. Yes. Map 2, figure 6B.

Q. And am I correct in concluding that there is native prairie habitat depicted by green coding on the map in this figure 6?

A. You are correct.

Q. And the circles along the map, they actually represent where the poles will be installed for the transmission line; is that correct?

A. No, this is the application from August of last year. So it was the original -- this is, I'm sorry, the transmission line application. So this did not show specific pole locations. Since then, we've been working to refine siting, so this does not necessarily show where those poles will go currently.

Q. Okay. So what are those --

A. Those were the pole location and structures at the time, but there have been shifts since then to accommodate for siting such as avoiding native prairie.

Q. Do you have an updated map of that anywhere in the application?

A. I believe we do. The updated transmission map books.

MS. FUREY: Yeah. And that is exhibit 2.

Q. I guess what I'm looking for is a updated map showing pole locations of how the transmission line will impact native prairie because the way it was originally presented to the commission, there were multiple poles that were replaced right in the middle of native prairie land looking at figure six. So has that been remedied through additional micrositing?

A. That has. And my testimony today is based on the status of current design. This application was submitted in August of last year. So, you know, approximately a six month duration. There's a lot of design refinement that goes on. So my testimony as of today is current that we will have no impact, no surface impacts to Dakota skipper habitat.

Q. So there's not going to be a single transmission pole located in native prairie land?

A. No. So native prairie and Dakota skipper habitat or not always one in the same. You could have some native prairie that is not also Dakota skipper habitat.

Q. Okay. So my question is since you're saying that that figure six is not a current document and, I guess, is obsolete, how does -- how does the placement of those poles differ from then until now with respect to the placement of the transmission line poles on native prairie land?

A. So as I testified, there was no impact to Dakota skipper. I'd have to check with my team about non-suitable Dakota skipper native prairie impacts. But we could have that for you in a few minutes.

Q. Well, I guess we'll deal with the the transmission line thing and get some more clarity on that, but with respect to the seven turbines that are located on native prairie land, is it possible to move those?

A. So I'd like to outline the process we used that I testified about to move turbines off of native prairie to begin with. So in light of our project learnings on other projects in past cases for the hearing, as I testified, we moved 55 turbines off of native prairie in early 2018 so that was a very strategic decision. We moved all of the highest performing turbines that most significantly affected our financial model, so at the time those turbines were not able to be moved and the application before you is what we have presented now.

Q. So it's not possible to them because of the highest producing wind turbines. Is that what I'm understanding?

A. That was our decision making process. It's always possible to move something but the application before you now is how we have balanced land acre

preferences, all avoiding all environmental constraints as well as land factors.

Q. So you just said it's always possible to move turbines, so I guess my question is, how does the placement of seven turbines on native prairie land comport with your goal of avoiding impacts to native prairie land when possible?

A. So a couple of things going on there. It seems like one of your apprentices maybe that there are no stakeholders, have a counter view to that. And I would suggest that that's not been our experience. Many of our landowners have gotten frustrated at us trying to move turns off of prairie into their crops and have asked us to do the opposite. So we try to balance environmental constraints and normal preferences as we've testified, and I've had no shortage of landowner concerns saying, hey, why did you move the turbine into my crop out of prairie? I want you to move it back. So that's been a fair amount of landowner feedback we've received. So I think it's important for the commission to understand both of those perspectives.

Q. Now, you referenced a letter that the United States Fish and Wildlife Service sent in November of 2018 in your testimony, do you recall that?

A. I did.

Q. Now, in that letter it indicated that NextEra is committed to formulating a voluntary litigation plan by January 31, 2019. Are you aware of that?

A. Yes.

Q. Did NextEra actually commit to formulating a voluntary mitigation plan?

A. We did commit to formulating the plan and as I had testified, we actually delivered.

Q. When was that done?

A. The offset plan is provided in, I believe, exhibit, let's see here. First provided on February 15, 2019 and is exhibit 46.

Q. Now, is that offset plan you're referencing the same as a voluntary mitigation plan?

A. Yes. It's one in the same.

Q. Okay. Now, let's move on to talk about wetlands a little bit. We agree that the project area is covering a fairly substantial amount of wetlands?

A. We differentiate here between a couple of different kinds of water bodies. There are water bodies that are core or jurisdictional meaning those are under jurisdiction of the federal authority, the US Army Corps of Engineers from prairie potholes that are isolated, that are not under the core's jurisdiction. And then there are two subcategories in that. One are water

bodies that we determined were suitable wetland stopover habitat, and then the others were those that were not modeled as suitable stopover habitat. So we make that distinction in this application.

Q. Okay. Ms. Wells, can you please turn to figure 14 of exhibit number four?

A. I'm sorry, what -- where in exhibit 4?

Q. Figure 14 of exhibit number four. Figure 14 of exhibit number four. It's the wetlands and surface water.

A. Yes, I believe we're looking at the same figure.

Q. Okay. So you just indicated to me that there are jurisdictional wetlands and isolated wetlands; is that correct?

A. That is correct.

Q. And are all of the isolated wetlands and jurisdictional wetlands in the project area depicted in this figure number 14?

A. They are. The green shows the isolated wetlands and the pink shows the jurisdictional wetlands.

Q. Do you know what percentage of the project area is covered by either isolated wetlands or jurisdictional wildlands?

A. I believe we have that table in the application that sums up -- give me a minute. I'm gonna go find that

if you'd like to know what it is. So on page 50 and table seven dash two, we have a table of all of the land cover types. So wetlands can be different kinds. Here you see there are open water, emergent, there's woody wetlands, all of those cover classes appear here. So you would have to sum the various types. So if I did that quickly, the percent -- okay. So the second -- the third column, percent of project area open water is 4.7 percent, conversion or basis wetlands is 4.10. Woody wetlands is point two so that would look to be between eight and nine percent of the total project area.

Q. So it's your testimony that on figure 14, the red and green portions of that map constituent eight or nine percent of the project area?

A. So these are done using slightly different classifications. So the table we just talked about is based on broad land cover classes so that's a different classifications scheme. To get wetlands, you would roughly add all those up. This is based on the US Army Corps of Engineers' jurisdiction, which is different. So those are roughly comparable, but they are slightly different criteria.

Q. Okay. Are you aware that North Dakota Game and Fish indicated that the proposed project area is some of the best of the best prairie habitat in North America?

A. I am. And Mr. Derby will address that directly in his testimony.

Q. Do you have any reason to dispute that statement by North Dakota Game and Fish?

A. I prefer to let Mr. Derby tackle that in his testimony.

Q. Is that a no?

A. I'm sorry. Could you repeat --

Q. Is that a no?

A. Could you repeat the question?

Q. I said do you have any reason to dispute that statement by North Dakota Game and Fish?

A. I do.

Q. And why is that?

A. I think the basis of our disagreement comes down to a characterization of the site. The correspondence that we've received often characterizes the site in a very different way than the agencies own data does. Mr. Derby will dive into that in a little bit more detail in his testimony, but we believe that it's important that when two different entities look at the data, we're not getting radically different conclusions, especially when it's the agencies own data.

Q. Okay. Well, in any event, we can agree that wetlands serve as a habitat for various types of bird;

right?

A. Yes.

Q. And a breeding bird survey was conducted for the wind project; correct?

A. Correct.

Q. And that assessment was conducted from June 22nd to June 26th and July 1st to July 5, 2017; is that correct?

A. I'd have to look at my testimony and the application. Would you like me to do that now?

Q. It's exhibit number 29 section 2.2.

A. On page --

Q. There's no page numbers. Section 2.2.

A. That's correct.

Q. And the third paragraph.

A. Correct. The final paragraph of that indicates that the surveys were conducted from June 22nd to June 26th and from July 1st to July 5, 2017.

Q. So we agree that's 10 days of surveying; correct?

A. I believe that's accurate.

Q. Were there any other on the ground surveys that were conducted for breeding birds and the wind project area?

A. Yes. They were several surveys. There were aid

and use surveys, there were echo use surveys conducted for a year, they were raptor nests surveys, sharp-tailed grouse lek surveys, numerous other surveys. So this was one specific example that was conducted specifically at the request of the Fish and Wildlife service at the time.

Q. Okay. Are all of those surveys you just discussed through, I guess, in your testimony, were all of those done with boots on the ground on the site?

A. Yes. There's -- there's no other way to count those birds without being on the site.

Q. So it's not a table top or a desktop type of --

A. No. Those are all sites specific counting birds on the site.

Q. And were they -- was each survey done for a different specific type of bird or, I guess, why were there so many different types of studies?

A. So we do surveys based on species of interest as expressed by agencies or concerned for other reasons. So, for example, in the case of sharp-tailed grouse leks, that was a very different kind of survey because the birds are concentrated in one area so you look in habitats where they would be likely to be, so you're not going to find sharp-tailed grouse in forests or woodlands. So the surveys are tailored to habitat type.

When you're looking for eagle surveys, you're looking at things like visibility to make sure you detect all eagles. So there are numerous different protocols that were used and I should add all of those protocols were run by both agencies when we were drafting our study.

Q. When you say both agencies, who are you referring to?

A. The North Dakota Department of Game and Fish and and the Fish and Wildlife Service.

Q. Do we agree that the project area is a pretty ideal breeding ground for ducks?

A. It is an established area in prairie potholes where ducks are produced, yes.

Q. Okay. Are you familiar with the local setting decision by North Dakota Game and Fish indicating that the used estimate number of duck areas that would be displaced as a result of this wind project?

A. Could you reference me to a specific letter or section of the letter you're referring?

Q. Sure. I'm looking at exhibit number, four C and it's the North Dakota Game and Fish letter and it's on page three.

A. Could you reference the specific letter date so I can find where you're referring to?

Q. Yeah. It's November 16, 2017.

A. And you're looking at a letter on letterhead?

Q. Yeah. From North Dakota Game and Fish number -- oh, excuse me. It is May 22, 2018.

A. All right. I have the right appendix C. Say that for me one more time, please?

Q. Sure. It's exhibit number four, appendix C and then it's in -- on page three.

A. Are you asking about the letter dated November 16, 2017?

Q. I'm asking you about the letter dated May 22, 2018 so turn the page and then it would be on the back of the first page. You see at the top where it says project area?

A. Yes, I do.

Q. Okay. So then if we go down to paragraph that's numbered, paragraph two. It talks about the local siting decisions support tool. Are you familiar with that tool?

A. I believe that's the same tool that service and offer of this research that Chuck Lesh with the habitat team actually provided an excerpt, so, yes, I'm familiar with that.

Q. Now, using this tool, North Dakota Game and Fish and the project would result in a reduction of nearly 3,300 breeding duck pairs. And it also appears that these ducks are territorial and a number of defined

breeding ground is a suitable for what's in the project area. Do you have any reason to dispute that statement from North Dakota Game and Fish?

A. There are a couple of things we use to evaluate our impacts on wetlands. One of them was the sources of best available science that both wildlife agencies referred us to. So part of that involves looking at what are called indirect impacts, meaning if you don't have an impact directly to the wetland but a duck moves away from the wetland, that's an example of an indirect impact as opposed to a direct impact. A direct impact was a direct and immediate physical impact on a duck. So based on the agency's recommendations, we incorporated all of the papers that they have sited and their letters to us to address what happens with indirect impacts. What that translates to is part of our offset package calculations and how that was calculated to address impacts to waterfowl because there may be some indirect impacts with ducks.

Q. So just -- there's a lot there so I just want to unpack it. With respect to an indirect impact, are you saying that, let's just use a wind turbine for an example, is put in the ground and a duck is -- or I guess anything, any type of animal is moved to another location, that's indirect impact?

A. That's an example. So behavior away from something would be an example of an indirect impact. A direct impact would be a direct impact to habitat meaning something affected that habitat or the bird or the animal itself. That's the different between indirect and direct impact. So this is referencing indirect impacts that have a fair amount of uncertainty. We factored that in into our offset calculations using the two citations that both agencies recommend because when you have an indirect impact, it's not that the animal dies necessarily. The animal may move away, but the bottom line is we don't know what happened to those birds. We don't know where they went. We don't know if they went to the pond next door. We don't know if they moved for a day, a week, a year. There's uncertainty. So we have addressed that in our offset calculations and that's what I outlined in my methods that are exhibit 46 and 47.

MS. FUREY: Mr. Schmidt, our witness, Mr. Clayton Derby, can provide additional information regarding this specific line of questioning.

Q. Okay, let's move on to the sharp-tailed grouse. I just have a couple of basic questions. You did talk about it a little bit so I want to ask you a few things about it. There was a study that was conducted for

sharp-tailed grouse leks in April 2017, is that accurate?

A. That sounds accurate.

Q. What's a lek?

A. As one of my favorite biologist says, think of it like a singles bar. So a lek is an area where sharp-tailed grouse or prairie grouse gather. It's usually an elevated mound, the males have air sacs in their neck that typically inflate to attract females. So females show up to the singles bar, if you will, decide who has the best looking air sac and concentrate their breeding that way. So it's sort of sexual selection. A lek is a singles bar basically.

Q. So it's my understanding that within a half mile of the proposed wind project, there are 20 singles bars for these leks?

A. I would have to look at the actual exhibit. I believe that number is high for the 200 megawatt project. I can look here at the amended.

Q. I believe it was exhibit number 25. Exhibit number 25, page four is the results of the sharp-tailed grouse lek survey.

A. So I'm sorry, repeat your question?

Q. Sure. The question was there were 20 grouse leks within the half mile buffer project area?

A. If you're looking at a particular point in the document, could you reference the page so I don't have to hunt?

Q. Exhibit number 25, again, there's no page numbers on there.

A. Or maybe the section or the header?

Q. There's no section numbers in there. It's the fourth page under results and then sharp-tailed grouse lek survey result summary.

A. So in this paragraph I see reference to the six -- I see reference to the reduced 200 megawatt project area only containing six confirmed leks. I believe you were asking me about 20 so that would be incorrect.

Q. Okay. My question was how many are in the half mile lek buffer?

A. Let's see. There were six additional leks that were caused -- that were between the 200 and 300 megawatt project. Let's see, 14 leks were located outside the 200 megawatt project boundary but within a half mile lek buffer. So there'd be 20 in the 200 megawatt area plus the 0.5 mile buffer if that's what you're asking.

A. Yes, that's what I'm asking. So if I'm understanding this correctly, there'd be 12.8 grouse per lek on average; is that correct?

A. I believe that sounds accurate, again, if you could point me to the specific place you're looking at.

Q. The next sentence.

A. Yes, I do see that. You're correct.

Q. Okay. Now, North Dakota Game and Fish indicated that the population of the grouse will increase substantially in the fall of the year. Now, we already talked about the study being done in the spring of the year. Do you have any reason to dispute North Dakota Game and Fish's conclusion that the grouse population would be higher in the fall than in the spring?

A. I'm not personally familiar with that literature, but Mr. Derby will address that as I previously testified.

Q. Are you aware of any studies or any studies indicating that grouse will avoid tall structures and humans?

A. I am aware of a few studies that attempted to make that inference, so there is a particular citation that attempted to infer that tall structures included things from transmission towers to foals and other things could be extrapolated to wind turbines but didn't actually study the wind turbines. I'm also aware of several studies by Brett Sandercock out of Kent State that looked at some related prairie grouse and it showed

that there is no consistent avoidance or impact of turbines as a subset of potential tall structures on grouse, so I believe that data is as rather inconclusive. However, as I mentioned, Mr. Derby is more of an expert in that area and he will testify to that.

Q. There was an eagle survey that was done for this project as well; correct?

A. That is correct.

Q. And has NextEra prepared an eagle conservation plan to submit to U.S. Fish and Wildlife Service?

A. No, an eagle conservation plan is the vehicle by which you submit to the Fish and Wildlife Service if you're pursuing an eagle take permit. As I've testified today, our eagle risk is low. There's no eagle nest in the project or within 10 miles, so there's no reason to believe that that's a needed measure with our low risk.

Q. You also performed a survey on sprigs pipet, is that correct?

A. So there was a cross line breeding birds. It wasn't specifically for the sprigs pipet. That is an example of a breed or a kind of species of concern.

Q. So this survey encompasses sprigs pipet?

A. That would be more accurate, yes.

Q. And you said a bird of conservation concern, what does that mean?

A. So a bird of conservation concern can mean a few things. To the North Dakota Department of Game and Fish it's generally a species that's on their State Wildlife Action Plan, which is a planning document that all state wildlife agencies have that highlights species they believe are rare or declining. So that's -- that's the general use of that term.

Q. And did the study show that there were any sprig pipets found within the wind project area?

A. I would have to open the specific report if you want to talk about individual detections but as I testified, the highest frequency of current of all the grassland species of concern which includes that as well as sparrow were actually found outside of the project area, so, for example, looking at this project map to my right, the area outside of the 200 megawatt project in black, but in the southeastern corner, that's in the 300 megawatt project in yellow, the highest concentration of any of the grassland pieces of concern was in that area that's now avoided by the project and no longer within the 200 megawatt project area.

MR. DAWSON: What is exhibit number of that, ma'am? It's right on the bottom corner.

A. 37.

MR. DAWSON: 37. Thank you.

Q. Was a study for the sprigs pipet conducted for the transmission line as well?

A. No, we don't typically conduct avian use surveys for transmission lines. The focus there is on siting and adding bird numbers.

Q. So North Dakota Game and Fish indicated that the transmission line was one of the few places in North Dakota where this sprigs pipet still exists. Do you have any reason to dispute that statement?

A. I'm not sure the specific source of that data but they are known to occur in this general area of the state.

Q. Okay. And North Dakota Game and Fish also stated concern with this project will increase the risk of mortality in the sprigs pipet. Do you have any reason to disagree or contest that statement from Game and Fish?

A. Yes. I believe Mr. Derby will address this in more detail, but my knowledge of the peer reviewed literature of the effects of wind on a population level effects on grasslands sound birds was generally not shown with a a detectable effect. So we would not expect a population level impact. And Mr. Derby will address that further as I testified.

Q. Can I have you turn to exhibit number four, figure 17 for my next line of questions.

A. Are we looking at the map of the whooping cranes, figure 17?

Q. We are.

A. Okay.

Q. So I think looking at figure 17, it's pretty clear that this project is in the middle of the whooping crane corridor, is that fair to say?

A. That's correct.

Q. Can you just explain how one should really read this map because it looks like we have 75 percent in the middle and then use 80 percent, 85, 90, 95 percent as we work our way out but how how should we interpret that?

A. Sure. I'd be happy to tackle that. So what this map represents is the percentage of detections from the U.S. Fish and Wildlife Service's efforts to radio track birds that have tabs on them so they can be relocated. So the core part is in the middle. So you have the highest probability of having all of the detections in the middle. As you move out to the edges, the probability of detecting birds get smaller. So the majority of them are in the core and then it's less concentrated as you get out to the edges. So we are in the middle in the 75 percent probability of the corridor.

Q. And whooping cranes are an endangered species,

is that correct?

A. That is correct. They are federally listed.

Q. And the whooping crane is known to use wetland habitats within an agricultural landscape during the migrations stopover, is that an accurate statement?

A. Yes, I would agree with that.

Q. So is it fair to say that wetlands are generally considered to be suitable stopover habitat for a whooping crane?

A. That is one of several criteria, but not all of them. So, in general, cranes like wetlands that have some of the field division, if you can imagine, if you've ever seen a whooping crane, they're fairly large birds and they're not such great flyers when they take off. So they need to be able to have a field of view to see an approaching predator. They also don't typically seem to be found as much in wetlands that have thick vegetation, so picture cattails or other things that are very thick so it obscures that view. So all wetlands are not equal for suitability for whooping cranes. That was part of the purpose of our habitat suitability assessment was to look at literature derived values for figuring out which wetlands might have suitable stopover habitat, which is definitely a subset of all wetlands.

Q. Can I have you turn exhibit number 27 and figure

six of that exhibit.

A. So I'm looking at a report addendum, exhibit 27?

Q. Yep. It's exhibit number 27 and then it's figure 6. Should be the Desktop Whooping Crane Habitat Assessment and it's the identified wetland habitats map.

A. Did you say figure 6?

Q. Figure number six.

A. Okay.

Q. Okay. So this is -- this map, I guess, the title of it is identified wetland habitat and it's the desktop whooping crane habitat assessment. We look at the actual map and looks like, at least from my viewpoint, the entire project area is a wetland habitat, is that correct?

A. No, it isn't. What I think you have done is pick out a snapshot of the maps but not the whole process. So if you actually flip to the next page, which is figure seven, the assessed wetland habitat maps, these maps are depicting a stage of stages of processes that go through and eliminate habitats that don't meet criteria. So if you look at figure six, you see okay, first, that's where the wetlands intersects figures seven --

Q. Hold on, what do you mean that's where the wetlands intersect?

A. I was going to explain that. Can I finish

explaining it so you might understand it better.

Q. Go ahead.

A. So there's a process when you're looking at what habitats are suitable for greens as described, so this is step one. It's figured out desktop basis where all the wetlands are. That's what the yellow is. That's not the result though. That's step one. So step two, you flip through to seven. It's taking out areas that are near development or other areas where cranes are known to avoid, so it's -- these are interim steps. If you flip to step eight or step three, figure eight, the results or what's left are the habitats so the graphics are to help you step through and see the visual representation of that decision making process.

Q. So figure eight is the one that has what you consider to be suitable habitat for a whooping crane; is that correct?

A. Yes. Figure 8 is titled potential suitable habitats. Now that is not the result that I think you should focus on.

Q. So figure six and figure seven, in your opinion, don't tell us much; is that correct?

A. No. As I've testified, they are steps to the result. It's a multistep process. They show different layers in the GIS exercise, which is a calculated

exercise.

Q. Now, I understand that the research is pretty clear that the wind turbines have not been found to be a cause of death to the whooping crane; is that generally correct?

A. It's generally correct that there are no documented instances of whooping cranes dying or being injured that I'm aware of for cladding with wind turbines, yes.

Q. What about overhead transmission lines?

A. That is a known threat to whooping cranes, which is why we put bid convertors on our entire transmission line.

Q. And I understand these bird convertors are called aviation flight diverter, is that the term that's used?

A. You might be thinking of aviation marker balls which are not the same. So if you're ever driving by a transmission line, you may look up and see round -- they're literally like -- they look like giant plastic balls on the line. Often, those are for aviation safety. They have nothing to do with birds. So the two criteria we use when looking for a bird convertor are motion and visibility. So the idea is a whooping crane or any bird is most at risk of collision with the line when the

weather is poor, visibility is poor and they're either descending or ascending. So the idea with motion and flight is if the diverter is moving and it has reflective stripes, you have a maximum chance of the bird seeing that and then changing course, which is, in fact, what the literature has shown that whooping cranes do sometimes avoid transmission lines. So bird diverters are an effective measures.

Q. So the bird diverters essentially make the transmission line more visible to the bird; is that --

A. That is correct.

Q. Now, as part of your mitigation plan with respect to birds, the application indicates that NextEra will conduct one year post construction monitoring to better understand bird and bat impacts that are attributable to the Burke Wind Operation. I guess what are you going to do with the findings when you're studying?

A. As we've committed to in all the last hearings, we will share them with the agencies.

Q. And any other potential steps?

A. The purpose of doing post construction mortality monitoring is to make sure that our assumptions of risks going into the project are accurate. Based on our operating portfolio in North Dakota, we would expect

that to be the case and we expect that to be within the range of patterns we've observed. If that's not the case, then obviously we want to look at that and do something about it.

Q. I have no further questions.

MR. DAWSON: Mr. Lien?

MR. LIEN: I have no questions, Your Honor.

MR. DAWSON: Commissioner Fedorchak.

MS. FEDORCHAK: Thank you, Dr. Wells and Casey, if I might ask what -- remind me again what the next witness is going to cover so that I don't delay things by asking Dr. Wells questions that you want to address with the next witness.

MS. FUREY: Thank you for the question. Mr. Clayton Derby will speak to the assessment and kind of interpretation of results of the wildlife studies and as far as forests to wildlife and interpretations to that. So a lot of these questions would be better directed to Mr. Derby.

MS. FEDORCHAK: Okay. Dr. Wells talked quite a lot about the various letters, so I have a lot of questions about that.

MS. FUREY: Yes, that would be appropriate for Dr. Wells to comment on.

BY MS. FEDORCHAK CROSS EXAMINATION

Q. Okay. So I'll attempt to direct my questions and please bear with me. I'm not a biologist, I've never even played one one TV. Just a service commissioner trying to get to the facts in the case with some very technical competing facts for us. Okay. I'm kind of focusing on the bigger picture in the process. So going -- you didn't dispute the fact that what the -- both U.S. Fish and Wildlife and Game and Fish outlined that they raised serious concerns about this project back in 2016 that in their read of the -- what are those -- what is it called?

A. The wind energy guidelines?

Q. Yes. WEG, the according to those could have easily triggered you guys to say this isn't the right spot. Can you talk about the company's response to those concerns raised three years ago when you were in the early stages of development?

A. Sure. So I think one of the things that happens is often people who aren't familiar with wind energy guidelines, as I've already testified, Game and Fish has told us that that's sort of their view, they're not used to working with it. And sometimes the Fish and Wildlife Service themselves is often, there's this impression that there is a decision tree with the wind energy

guidelines where you get to a decision point and there's only one outcome. That's actually not what the wind energy guidelines written by the service outline. There are three pre construction tiers and in each tier you can get to a point where the decision is abandoned or consider further studies, abandon or mitigate. So, for example, the first step is are species of concern known to be present? Yes. We answered yes. The outcome choices after tat are abandon or evaluate site specific data. So what often happens is if there is uncertainty, which in this case we have uncertainties, you proceed to additional site specific detailed studies to evaluate that risk.

Q. So back to my question was when they raised those concerns, what was the company's response? You're saying you guys studied it more? Is that what you decided?

A. Our response at tier one was that we were going to proceed to gather site specific data, which is one of the decision points in tier one at that very early stage. So we disagree with the characterization that Game and Fish has painted and suggest that better their, perhaps, lack of familiarity with the process may have contributed to what they unfortunately included in their letter that we don't feel is accurate.

Q. Okay. Well putting Game and Fish aside and U.S. Fish and Wildlife, is tier one what you would characterize as your meetings with them in 2016, is that tier one?

A. Yes. Tier one is landscape level. You're only doing desktop studies. So only things that you can get from a computer that are publicly available, you generally have no site specific data, so large regional desktop kinds of things.

Q. Okay. So their concerns that they outlined early on in the process, which we've gone through this process a number of times and often the problem is the companies didn't engage early enough and get -- or the agencies don't let the companies know early enough that there's a problem with the site and so we waste all this time and money in developing a site and then at the last minute the agencies come in and say this is a bad site. Well too late, but it doesn't seem like that happened here. So what -- when they said this is a -- this site is a concern, you guys then went and did more studies and decided that it wasn't a concern or, I guess, I'm curious why there wasn't more, why -- what am I missing in terms of the company's response to those early, early concerns that were expressed?

A. So I think the key thing that's missing here is

understanding the first step is really desktop data as of course. So maybe I could draw an analogy. If you are looking to sell your house and you wanted to figure out the value you should list it for, would you go to zillow.com or perhaps any website and would you look in your whole town or your whole county or where would you look? If I were going to go look, I would want to make sure it's as close to my physical neighborhood as possible that I had the best available street specific information. So, for example, I live in a new neighborhood. Neighborhoods around me are very different. So I'd want a house in my neighborhood that was comparable to my house. You don't have that information available at tier one because by definition it is desktop only.

Q. Okay. So the company decided they've got concerns, we're going to study it more??

A. We did go on to study it more. I think the other key place we differ on our interpretation of the wind energy guidelines is the wind energy guidelines offer you two outcome choices. It's abandoned or mitigate if you feel like you have potential for adverse impacts. We did feel that there was potential for adverse impacts; however, as I've testified, we believe we have avoided, minimized and mitigated. That is a pathway under the

wind energy guidelines. It is not a single path. It has both options and I don't believe that that's accurately represented in the North Dakota Department of Game and Fish's letter.

Q. Okay. So when you were consulting with agencies early on, it seems like one of the biggest responses and it's significant that the company took to address the concerns was to try and get from 300 to 200 and increased above that wildlife area. Forget the name of it now --

A. Lostwood.

Q. Lostwood. When they were -- would you agree that that's one of the most significant steps the company to took to address the concerns? I believe you testified to that effect?

A. It was; however, it wasn't the first step we took. The first step we took in early 2018 is we removed 55 turbines, which is most of the project off of native prairie. We left only five of our highest performing turbines tied to our financial performance in that area. So we view that as the most significant avoidance minimization mitigation measure we took. Following that, we also reduced the project size from 300 megawatts to 200 megawatts.

Q. Okay.

A. So those are the two main things.

Q. All right. And those were addressing the two big concerns that they outlined in your opinion?

A. Yes.

Q. Of the early, early consultation was that Lostwood area and native prairie?

A. Correct. The offsets were sort of the third prong more recently.

Q. Now, again, so the impacts to native prairie when you put a tower in the native prairie, it impacts the actual physical space where you construct, right? You're digging up the ground.

A. Yes. You call that a direct impact, yes.

Q. Okay. When it comes to birds though, does it -- can you -- it seems like the impact on the birds isn't just the ground, it's everywhere in the air. So how does moving the 55 turbines off of that -- it's a big impact for that native prairie and the ecosystem in that prairie and I understand that and appreciate that a lot, but how does it reduce the impact on the birds?

A. So the biggest impact would have just been moving it out of native prairie so the two types of impacts you're asking about are direct, meaning, you have native prairie and are going through and actually digging up that soil. That's a direct impact. Indirect

impacts is perhaps moving away, a behavioral shift that's indirect. So biggest way to avoid that is by moving out of that habitat, which is what we did with all the 55 turbines that we moved initially, so that was the first big step. I think what I'm also hearing from your question is a little bit about understanding direct versus indirect compacts.

Q. Well, yeah, especially as it relates to birds.

A. So think of the main type of indirect bid behavior as a movement away. So think about the analogy I have, this happened on my way here on another airline that might be the most likely to make you unhappy. If you have a neighbor sitting next to you on the plane who either is insisting on not using their headphones or is blaring their music so loudly you can hear their music over your headphones and their headphones, you know, that's, you know, that's a near proximate, that's a very near proximate effect. That's more certain. With indirect impacts, things are a little bit more uncertain. So the behavior, birds may move away from something, but we don't know. And the uncertainty is where do they go? How long do they go away and what does that do? If the bird just moves next door for a day, a week, a year, those are very different outcomes. If the bird moves to the area next door, but there's no change

in whether it can breed or survive, it may have no impact. So there are some very good studies from North Dakota that have been cited, but there's still a significant amount of uncertainty on how strong those indirect impacts on birds in particular are. There is no doubt and we have no issue with, yes, there are direct impacts to habitat, but indirect impacts that's much more uncertain.

Q. When you -- earlier in talking with Brian you disputed the Game and Fish's and Fish and Wildlife's characterization of this area as some of the best of the best breeding area for these certain types of wildlife, did you --- have you in any of your consultations with Game and Fish or did you early on, again, when this consultation first started outline to these agencies, okay, we disagree with that characterization of this area as a best of the best and outline and point to them like here's what you guys say be cause you said it's some of their very own data doesn't support that characterization. So did -- have you gone through all that with them and and had those discussions?

A. So most of that specific data is what you do in tier three. So we have recently finalized all that data, shared all the reports with them and recently had that specific discussion and Mr. Derby will testify about

that as part of his testimony.

Q. Okay. This might be repetitive, I'm sorry, but how -- how would you define the impact of wind turbines on wildlife as it relates to a pot, is it just you eliminate the impact and you don't put the turbine in the pothole? Does that eliminate the impact to the bird, to the wildlife for the birds in particular?

A. So I think you could have more of a direct or an indirect impact there. Sort of as we've been talking about.

Q. But all direct impacts would be eliminated if you didn't physically impact the pothole with the turbine?

A. I think that's probably much more uncertain in the absence of a direct impact. I think an indirect impact is probably exceedingly rare compliment. I suppose it's possible. I don't really think there's any solid literature on that, but I imagine Mr. Derby will address that more in his testimony as well, and we'd be happy to answer your questions with his own eyes.

Q. So, again, this is kind of I'm trying to better understand some of the terminology that's being used and how it really matters in the end. So you got jurisdictional and non-jurisdictional wetlands, I'm assuming wildlife doesn't make those distinctions?

A. Correct. Just like state boundaries don't matter to birds. It's all geopolitical boundaries --

Q. We can all agree that no duck knows that they're in the U.S. Corps of Engineers jurisdiction.

A. Right. Ducks don't care.

Q. So how do we use those distinctions to determine the impact of this project on wildlife when it seems like we're being asked by the company to say, okay, we don't impact any jurisdictional wetland, so it's not as big of a deal or I mean I'm just kind of generalizing, but you're not impacting the jurisdictional wetlands. And so that mitigate -- that avoids a bunch of concerns?

A. So I think my answer there relates to your siting criteria. So the way we always sited is using jurisdictional wetlands as your exclusion and avoidance criteria. So we focused on that because those are -- that's our interpretation of your siting requirements. Now even above and beyond that and avoided all additional wetlands regardless of jurisdictional status, if they had any stopover value for whooping cranes. So avoided all of those. What's left is a very small amount of non-jurisdictional wetlands that don't have model value for whooping cranes that I testified about. So we view that as a very small and negligible amount of the whole project.

Q. Okay. So just a second ago you said you've avoided impacting those spots. How have you avoided that?

A. Through -- for all direct impacts, through siting, so when I say direct impact, that means there's no structure, there's no road, there's no impact, direct impact that's going to occur in those areas.

Q. And so here is where I think I'm having the biggest challenge in determining, so does that remove the wildlife concern then just by virtue of not putting a tower in that spot, then have we eliminated the concerns for the whooping cranes, for the ducks, for the sprigs pipet, for the western meadowlark. I mean, does that -- is that concern over then?

A. In our view, the whole package of avoidance minimization and mitigation measures we've summarized do address the concerns, yes, that is our position.

Q. That by not putting them in those places, then we've avoided the impact?

A. That's avoidance, so there's -- it's called a mitigation hierarchy. So the first option is avoidance. So physically you can, instead of putting a pole or a structure in the wetland, avoid putting something there. So that's preference one. So, yes, that's an example. So the next step is minimization. Okay. If you can't

completely avoid that, minimize those circumstances to the maximum degree possible. After that, if you have residual, that's when you mitigate. And in this case, that's what we've done with a lot of the measures we've described, including the voluntary offsets to address some of those residual impacts, so we believe those package -- that package of materials that we've described does address those wildlife concerns pursuant to your criteria.

Q. Okay. And so how do you minimize?

A. An example of minimization would be, say, you're looking to site transmission line poles and you first tried to avoid putting poles in wetlands. Let's say you could do that for eight out of the ten poles. So then you minimize the impact of pole and the wetland so two of the 10 you couldn't avoid. One of the scenarios we have happen a lot is we have a lot of agricultural landowners. They don't want poles in the middle of their field. They want on them on the edge of the field. They want it to interfere with our operations the least amount. And so we may get in a situation where due to a conflict between landowner preferences to minimize their operations and minimize impacts, we have to be in the wetland, but we're minimizing how far in the wetland we have to go. We may add crane matting or things which are

put underneath construction equipment to minimize impacts on that wetland when the impacts are occurring and we keep those impacts temporary so they're not permanent. So those are examples of minimization.

Q. Okay. And then similarly on the wetlands with the transmission line, I think I heard, I could be wrong but I thought I heard you say that by spanning the wetland and not putting the poles in it, you've avoided the impact or the eliminated the impact of that infrastructure for the whooping crane?

A. So that's a couple folds. That's a direct impact to the wetland by -- so the transmission line could still run over the wetland. We add the bird diverter. The bird diverter is the mitigation to reduce the risk of injury or collision with the bird.

Q. Okay.

A. So that's a key part of that for whooping cranes specifically.

Q. All right. So then I -- I want to speak -- I don't have a lot left. I want to speak -- go back to the criteria, our siting criteria and, ultimately, that's what this all comes down to. So you testified that -- and the application also provides this that you don't impact any exclusion areas or it's minimal. So like the farmland is at such a minimum level that it's

negligible. So are areas critical to the stages threatened or endangered animal plant species, how do you rectify that with the whooping cranes, again, considering you're right in the middle of the fly way and they're an endangered species?

A. So consistent with how we've always sited projects or how we interpret that to mean is there a federally designated critical habitat present and the answer is no as we've included in our application.

Q. Okay. And I -- can you help me understand the -- there's a definition that Game and Fish uses, what is it called? Conservation -- species of conservation priority or something like that. Is that the right term?

A. I think I know what you're referring to and I think it may be similar to --

Q. Yeah, species of conservation priority. That's the -- this guideline or manual or something that lists all of these. Is that the same as an animal, rare or unique to the state?

A. No, we do not interpret that to be the same. So I believe the phrase you were just asking you about is very similar to what Mr. Schmidt was talking to me about earlier when I responded that the state has the state wildlife action plan. That is a broad list of all species. So it is a much larger subset than, say, those

species that are on the federal endangered species list. So you can include species that are not rare by definition. So, no, we don't view those as the same.

Q. Okay. So where is the definition for species that are rare or unique to the state? Where do the -- where does the company find that list? Is that -- does that exist some place?

A. I'm not aware of anywhere in your regs where you've codified that means this, the other, or another species. Is that what you're asking me?

Q. Yeah. Well, it's -- it's an exclusion area so you can't impact an area where animals and plants species that are unique or rare to the state would be irreversibly damaged. So how does the company say you don't have that? What -- how do you know that? What list did you use to determine what species fall into that category, unique or rare to the state.

A. We used the species that are either -- that are federally listed, so federally listed on the Endangered Species Act, and those are the species that we have outlined in our application.

Q. Okay. Have you any reason to think that the Game and Fish would define that as these conservation species of conservation priority, that they would view this term in our exclusion area as species that are unique or rare

to the state being the same as these species of conservation priority?

A. I believe there is some overlap. However, I think that would result in a significant expansion and broadening of your scope based on discussions with local counsel, that's never been our interpretation of your citing regulations.

Q. Okay. And they never suggested that in your consultations with them either?

A. No, they have directly suggested they would like a different definition of what the PSC's regulations allow and require to be used and that's I think a fundamental, perhaps, source of disagreement between yourselves and some of these state agencies that you work with.

Q. They would like a different definition than unique or rare to the state?

A. They would like a more broadly defined or inclusive meaning many more species to be included than I understand to be how the commission has previously interpreted that by either precedent or citing regulations.

Q. Well, this -- I mean, I've -- if we just start talking about threatened or endangered species, then why do we list it again, it's two categories. That's what

that one already covered right above. I mean, so it seems like there is some distinction here in the law for what is it that the species that are unique or rare to the state are different than the threatened and endangered species. Otherwise, we wouldn't list that separately in our exclusion areas.

A. That's really something we've worked through with local counsel based on precedent and our interpretation of your siting regulations. I'm aware that that's a source of disagreement. We've just never seen you interpret it in a different way than that and we've never done that in front of you either.

Q. Okay. I'll visit with our staff about that.

MS. FUREY: Commissioner Fedorchak, Mr. Derby can speak to species of conservation priorities in more detail.

Q. Okay. Why not, right? Okay. Then that's exclusion areas. Avoidance areas, this gets into the wetlands. So woodlands and wetlands, the avoidance area, is it state that it's just jurisdictional wetlands that are impacted in the avoidance area category of woodlands and wetlands?

A. No, but it doesn't state the opposite either, so my response would be the same as based on conversations with local counsel and interpretation of how we've

appeared before you in the past and your precedent, that seems consistent with how you've interpreted it for past cases.

Q. Okay. So that's why you avoided the impact to the jurisdictional wetlands and believe that you've addressed this avoidance area?

A. Correct.

Q. Okay. If you're asked further to clarify in the record that there's no reasonable alternative to impacting, could you do that?

A. I believe we could. We'd have to take a look and I don't know the answer to that off the top of my head, but we'd have to look at that.

Q. Okay. Okay. I -- just one final question. Are you the highest environmental expert in NextEra, are you kind of the top dog?

A. No, I work at a corporate environmental services group. My team handles this state, but no, I'm not. My Vice President, Mr. Mike Soul is the top environmental representative of our corporate group.

Q. Okay. And has he been involved in any of these conversations with Fish and Wildlife and Game and Fish on this project?

A. He has, particularly with Director Steinwand of Game and Fish.

Q. Okay. And early on, was he involved from like back in 2016 when things were just getting rolling?

A. He wasn't with us yet at the time in the current role, but he's certainly been involved over the last year, year and a half. When I'd say from an applicant's perspective, the agency interacting has gotten increasingly frustrating.

Q. And has the person that was in his role prior to -- previous, was that person involved early on in those initial interactions with you and Fish and Wildlife and Game and Fish on this project?

A. No, he was not. Those interactions would typically occur at the project manager or one of those levels. They would not typically involve our vice president.

Q. Is there -- would there -- would you have the authority to recommend to your company that this is not a good location from an environmental standpoint and they should go elsewhere and look elsewhere?

A. I can recommend things. I just don't have the authority to make the decision. Our commercial development team makes those decisions. So Mr. Hart.

Q. Mr. Hart makes -- he would make that decision but you can recommend like this is -- this is -- like we have serious environmental concerns here and and we

think that this might not be the best location?

A. Yes. I can only make recommendations. Mr. Hart and the commercial team are the development and the decision makers in terms of that outcome.

Q. Do you -- are you aware of you or anybody else in the environmental group ever making that recommendation on this site?

A. We have expressed concerns. In fact, those concerns were one of the primary reasons we reduced the project from 300 megawatts to 200 megawatts. It was partly at my urging that I thought it was important that we do that and it was something that I felt strongly.

Q. Okay. And so with your experience, you've been doing this a long time and you've got a lot of education in this area, do you believe that this project is now going to have impacts to this really amazing wildlife resource that has been described to us by both U.S. Fish and Wildlife and Game and Fish, is that going to have negative impacts on that resource?

A. My answer to that would be there is potential for impacts, which is why we have mitigated and outlined all the measures that we contributed to avoid, minimize and mitigate. So we believe with those mitigations our effect has been appropriately minimized consistent with your sitting regulations, so that is our -- our

position. Mr. Derby will testify specifically to the characterization of this site as unique compared to other sites that the commission is permitted in the past and will address that more directly.

Q. Okay. But more simply, as a wildlife expert, do you believe that the impact of this project is going to have on this site are not of concern?

A. I believe there's a big space between a potential for an impact and the potential -- the potential for an impact and whether one occurs. The space between that is where avoidance, minimization and mitigation occurs. So in the absence of all the mitigation, sure, there is the potential; however, we have avoided, minimized and mitigated and so that subsequently influences my opinion that we have minimized and address those concerns.

Q. So your position as a wildlife expert is that after all the minimization and mitigation, this project doesn't have wildlife concerns for this area, does it pose a concern or risk to the wildlife in this area?

A. I wouldn't say it doesn't have a concern, which is why we've mitigated. We believe we've addressed those concerns as I testified through the measures we've outlined.

Q. Right. So after the minimization and all the

mitigation, et cetera, it doesn't anymore have a concern then?

A. I think those have been addressed. Every development has impact. So I think if the commission starts to view the development as needing to mitigate all impacts to zero, that's a very different regulatory environment that we've ever interpreted your siting regulations to be.

Q. Right. No, I wouldn't say that it's -- but it's a minimal impact. It will have a minimal impact to this wildlife resource?

A. I do believe that. We've worked very carefully with our consulting team to understand the data, the risk and the minimization as I testified, I believe we've addressed those concerns.

Q. Okay. Thank you very much.

MR. DAWSON: Commissioner Kroshus?

BY MR. KROSHUS CROSS EXAMINATION

Q. Okay. I'm gonna try and move really quickly through this because a lot of great questions have been asked already and a broad range of material to consider when we continue to work on the case. You had mentioned earlier that you have, is it three stages or three times, there's an abandoned or -- and/or or not and/or, either abandoned or proceed, is there like three stages

to that? Did I understand that correctly?

A. You did. So there are three pre construction tiers to the wind energy guidelines that happen before construction. So there's tier one which is sort of the landscape scale, maybe desktop data. Stage two is generally you're on the site for the first time and site reconnaissance. Stage three is site specific studies, so generally you're counting birds in a location over and over and over again. You're looking for grouse singles bars or you're looking for eagles. So those are the three pre construction tiers.

Q. Okay. Is the public, the community, so to speak, the rural population, people that live in a proposed area, when do they get involved? Is it usually the third tier or can be the second tier. It doesn't seem like it'd be the first tier. That seems more behind the scenes strategy, strategy room type proceedings.

A. No, I would actually say they are involved in the first tier. So our iterative process of leasing land is happening concurrently with looking at environmental constraint so it's a standard tier one product. It's called a critical issues analysis and that did occur here before we signed a power purchase agreement. It's where you're taking a big box in an area and you're typically looking at publicly available data and saying,

okay, what are the constraints here? Is there a lake, is there a known endangered species, is there a known critical habitat? So that's what's happening at that first stage. As our land team is talking to landowners, they already began gathering preferences. So if someone says in their first meet and greet, I will only entertain a turbine on this side of my property, or I won't allow you to put a road near my house. But I'm fine if you put it on this side of my field, the landowner feedback starts immediately at tier one and precedes iteratively through all the tiers.

Q. Would the Game and Fish and U.S. Fish and Wildlife be involved at that point in time or even aware of the project?

A. So tier one is a highly competitively sensitive phase so we're all prospecting. We're all competing. And so we may go in at that stage and provide a much bigger area where we're looking until we decide on what we would fine and talk to them. So there's the tier one discussions are what both Game and Fish and I referenced happening in the fall of 2016 and those were generally at the time of service asked me to come in and say tell me about your pipeline in North Dakota. Show me big bubbles of everywhere you're thinking of developing and let's talk about that. And we did that. That's a very

standard tier one interaction for us.

Q. Okay. Were landowners aware -- at what point were landowners aware that Game and Fish had an issue and U.S. Fish and Wildlife with the site or the project area?

A. I would say there have been some cases before in the past where these issues came up and have subsequently affected all cases after that. Most of our landowners are very aware of those issues and the sensitivity from the landowner and the agriculture community, excuse me, of being included. So I feel a lot of phone calls from landowners who have been angry with us at my recommendations to take turbines off of native prairie to put in their crop field and they want me to put it back.

Q. I'll get to that part. Because, you know, this cuts both ways to be perfectly honest. Just in terms of process, I think it's one of the things that I think is problematic with just how the process works. But we'll get to that here pretty quickly. How many times has a North Dakota site been abandoned or any site for that matter. I mean, what's the -- is it half the time of a proposed project is abandoned or is it maybe one out of 10 or is rare?

A. It really depends on what the constraint is. So

if you're following wind energy guidelines, the first tier, basically, you would -- the first point to clearly abandon is if the development is precluded by law in the site. So if I were to be foolish enough to come to you and say, I'm going to put a turbine in the badlands, you know, that's not -- that's going to be precluded by law. That's not allowed. So those kind of circumstances would be examples.

Q. Yeah. I apologize. I should narrow it just a little bit and you're along the lines I was thinking of, just so I'm clear on what I'm looking at or asking for. Abandoned environmental concerns, not because of economics, not because you don't think you're going to get the easements or it's just not, you know, there's opposition from landowners or whatever it might be just due to environmental and/or wildlife concerns?

A. That's one of many processes. So it's -- it's probably not too common that for environmental reasons only something's abandoned. Often we find there's multiple issues in projects that we may either decided to shrink, move or abandon and it's not just environmental, so I don't -- I don't know off hand. That's not a very -- it's not a very common scenario that something is abandoned just for environmental reasons. Often multiple things are going on in an area,

so we -- we need community support. That's gotta be there. If there aren't willing landowners, there's no place for us to lease land, so we can't get anywhere with community support. We've got to have transmission and there's gotta to be actual space to a build project.

Q. Okay. So then as a result of the concerns of the project that arise, Game and Fish, U.S. Fish and Wildlife, the project went from 300 megawatts down to 200 megawatts and let's just call it two thirds of the area. The area got smaller?

A. Yes.

Q. That's easy. Did you ever have -- do you know if the company have interconnect with 300 megawatts? Was an interconnect agreement placed that was then adjusted down 200 or was that not in the plan yet?

A. Mr. Hart would be better able to speak to that. That's more of a commercial question that's a little out of my scope, unfortunately.

Q. I just want to know because it's been sited several times. I just want to verify that that was, in fact --

A. My understanding is that was the status of the initial negotiations with our customer, but Mr. Hart could provide you more specifics should you like them.

Q. All right. Now, I'm gonna switch -- well, one

other thing that's -- help me with this because when it comes to whooping cranes, you have -- if you look at North Dakota, a map of the state and you look at where all the facilities are and there's never a problem. Now, it's a low percentage thing or it's, no, it's -- it's not a migration corridor. So I'm wondering and I don't mean to be snarky about this or sarcastic about it but it looks like your migration pattern must go like this across the state to get through where all the wind turbines are located. I'll be honest, it doesn't make any sense to me. How do you reconcile that and make me feel better about the fact that nobody has a problem. So apparently they never set foot in a state but you said three somewhere in the project footprint or I think that's what you said?

A. So we have whooping cranes fly over but they never descended in our project area. So using the airspace overhead versus landing in the area of our project, are different indicators of risk. So Mr. Derby will talk about the context for understanding how whooping crane risk is assessed and what that means in more detail.

Q. Okay. Now, I think we can go really fast through the landowner part. Not that it isn't incredibly important because it is. Just to verify, turbines moved

from grasslands onto to crop land?

A. That is a common action because it reduces risk on a number of fronts.

Q. Landowners are not happy about that?

A. Not all of them, but I did hear a significant amount of feedback over the reduction from 300 to 200 megawatts as well as the removal of the 55 turbines.

Q. (Inaudible) pleasing Game and Fish or what we feel compelled to do on it, you know, in terms of an offset package and when I say compelled, because it's not a requirement for the Public Service Commission to come up with an offset package. Also it's not chiseled in stone in terms of the formula that Game and Fish is using with these offset regulations. This is the first time I've seen the offset acreage of 200 and it's just came down a few days ago. So the of 247.13 acres of offset acreage, but that's moving turbines to try and get that number as low as possible I would imagine?

A. Yes. So the challenging thing about siting winds is you're balancing a number of strengths. So this may answer one of your earlier questions you were asking about setbacks and why wind turbines take up different amounts of area. I live in the state of Texas where there's very few requirements. Some refer to Texas as the wild, wild west and south parts of Texas are the

wild, wild west. There are far fewer requirements in the state of Texas to site wind farms, so the process we use to site turbines is one where we start from an area on the map and we derive what is called the available land. The available land looks like a spiderweb, basically, when you get done. You take out all the setbacks from codes, from landowners, from residences, you throw in all the environmental constraints and what is left or sort of little points in the spiderweb that is the limited space available to actually put a turbine. Then and only then do we actually start putting turbines on the landscape. So setbacks and all constraints really drive how close turbines can be from an environmental perspective. Of course then there are the commercial reasons that Mr. Hart testified about you can't have your turbines too close together or they wake each other. That is outside of my zone of expertise, but that is an important factor we consider with our other functional groups and we're trying to figure out how to keep landowners happy, how to minimize environmental constraints and ultimately how to appear before you all and be able to say that we've minimized the impacts and try to have done as good a job as possible in siting our projects.

Q. Has Game and Fish ever provided a -- well, you

said you've gone in -- or you go in and visit with them in terms of what might be the pipeline. Have they ever given you, well, here's a map on, you know, worst area imaginable, best area imaginable to place a facility. Have they ever given you any guidance other -- or do you typically find out once the project has been proposed or you're starting to think about it, is that the point? There's no previous or prior guidance?

A. So I would address that by saying an example map that was low, medium and high risk was produced as part of the one life collaborative (inaudible) wildlife guidelines that were issued and since withdrawn. They did have zones of low, medium and high risk and part of our concern as a developer is that they only consider the environmental perspective. There was no feasibility analysis done on landowners. There was no analysis of the policy implications for you all as a state body making decisions on behalf of landowners. Environmental concerns are certainly important, but so are landowner preferences. And so we really had a problem with the way those maps were developed. Not with the maps themselves but with the process in which they were developed. Should some more transparent process be used to incorporate facts, I think a lot of applicants that appear here before you would say having a predictable

rules of the road with the wildlife agencies would be a dramatic improvement on the current situation as I don't think either applicants for the wildlife agencies sort of enjoy the situation we find ourselves in now where the -- the rules are pretty unpredictable and that leads to a pretty frustrating business climate for development.

Q. That's a perfect segway then for my next question. Do you believe or do you think you're enabling and it's not about Game and Fish because we coordinate with 27 different agencies. If you think about 27 different agencies and this isn't -- and I'm not saying just you but to anyone in the room, just think about the fact that now we're an energy producing state and you're trying to balance this all out and we're talking about future pipelines, we're talking about gas processing plants, we're talking about a lot of different things, so I don't know where this ends in terms of, hey, here's a package here and then another entity has another concern, well, here's an offset, et cetera, et cetera, you know, where does it end? Do you have a concern that you're enabling this type of behavior because here's -- here's the part that bugs me is I think landowners that were going to get a project or maybe a turbine or something else, no longer get because it's just easier

to go somewhere else and feel you have to go somewhere else so how do you respond to that? I think I predict but do you think you're enabling more of that to occur?

A. I would say as an applicant, we're trying to facilitate a path forward. I know there's been a lot of discussion in your legislature in the past year or two as well as this body about what is the proper way to balance those was very legitimate landowner concerns, community concerns and environmental concerns, how you balance all of that. We believe that needs to happen. What happens as an applicant is often going through the permitting process, you may or may not have equal opportunity to respond to things that they come as surprises. So, for example, receiving letters at 5:00 AM this morning. That doesn't give an applicant fair flooding to address it in a very public permitting process. That leads to a surprise. That leads to frustration and unpredictability on all parts. I don't think that's ideal. So I think as applicants, we try to find ways to work through the situation. There was an act of us, provide an offset package. We believe we have some impacts that as I testified, so we volunteer to provide that offset package because regardless of your siting criteria, we still believe we have some impacts. We believe when we offered that offset package, we

mitigated them. So we're trying to navigate what at times often feels like a minefield where there are many competing interests and stakeholders and at the end of the day, we're still trying to figure out how to get through that process, satisfy your siting criteria, keep landowners happy and maintain relationships with the agencies, so it's -- it's not easy, but I would say that we are trying to facilitate a path rather than enabling.

Q. No and I couldn't agree more. It is about creating the right type of balance between the landowner rights, between criteria you have to look at in the siting process and impact to wildlife. I think the other questions I have I think are --

A. Mr. Derby.

Q. You have a lot of questions coming your way. Thank you.

MR. DAWSON: Commissioner Fedorchak.

BY MS. FEDORCHAK RECROSS EXAMINATION

Q. We've talked a lot about Game and Fish and U.S. Fish and Wildlife. Are there other agencies that you guys consult with gave input to where the project's gonna be located?

A. Sure. One of those other important agencies is the State Historic Preservation Office. I testified about our pretty extensive work with tribes and cultural

resources. As you know, tribal resources are very sensitive in this state and there's probably a lot higher density here than some state. So we go through a very involved process to understand where they are, how to avoid them with both the tribes and the state historic preservation office. Another example, there's also a very clear thumbs up, thumbs down and there was also a very clear standard what you have to do to get thumbs up and thumbs down. So I think the rules there are much more clear.

Q. But they identify avoidance areas and would be able to say, no, we don't want you to put it there for this reason?

A. They have criteria that they go through. And so there's a strict set of criteria that things have to be evaluated against and I think that's the piece that's missing and perhaps fuzzy here. As often, I feel like the commission may have different criteria than some of your other consulting agencies wish you to have. And so that shows up in these permitting processes and unfortunately I think leads to a lot of confusion, representation of information as it's different when, in fact, it's not different. It's just perhaps competing interests and objectives.

Q. Okay. But just as it relates to say, Shippo, can

they say, or the tribal historic preservation offices or whatever they in previous projects outlined areas where they'd prefer you not to put turbines?

A. Not before the fact. Because that's not --

Q. I mean, as a process do they -- I guess what I'm getting at, there is not -- it's not just Game and Fish that is out there saying we don't like this spot. There's other agencies that have this input as well that could impact where turbines are located?

A. Oh, that is definitely the case.

Q. Okay.

A. So with the state historic preservation office, it's basically about if you have an impact that you've mitigated it, you can still get a thumbs up.

Q. Right.

A. That's how you get the thumbs up is you avoid it. That's what our record shows here. We avoided all of those impacts. That's how we got the thumbs up. It's not saying that it's not there, but we've avoided the impact meaning we mitigated it. So they're good. Very clear.

Q. And this is where I think you get -- it's -- it's a challenge because the landowners have the right to determine what happens on their land and having other agencies out there saying this can't go there or this can't go there is just like offensive to people who own

the land. But that's what -- that's kind of what the siting process does. It's looking at this from a big, long-term view for the state as a whole and saying we want to make sure that, you know, cumulatively we're trying to minimize impacts so that we're protecting our cultural resources, we're protecting our environmental resources, we're, you know, not destroying the soil and we're leaving this place in good shape for the next generation. So it is -- I'm only bringing this up because I -- I know how hard it is to have and you've expressed that landowners don't like being told that things you would be better in the cultivated versus the native prairie. And that's just an example of one agency saying this is our preference and you guys saying we can accommodate that and it's a balance. Some of the landowners say forget it and so you've got some impacts and some of the landowners said, you know, worked out an agreement with them. So Shippo is a little, probably less flexible when it comes to some of the historical resources that might exist that you just simply have to avoid, period. You cannot dig up a teepee ring or some things like that even though it's pretty hard to avoid those sorts of things. So it's -- it is tricky. You guys have a lot to take into consideration. That's it for me. Thank you.

MR. DAWSON: The time is 3:09 and before we go any further, we're going to take a 15 minute break.

(Recess taken.)

MR. DAWSON: We're back on the record. Ms. Wells is testifying. Any redirect by Ms. Furey, do you have any questions for this witness?

MS. FUREY: No, Your Honor, not at this time.

MR. DAWSON: Mr. Schmidt?

MR. SCHMIDT: No, Your Honor.

MR. DAWSON: Commissioners? If there are no further questions, you may step down. You may call your next witness.

MS. FUREY: Your Honor, we now call Mr. Clayton Derby.

MR. DAWSON: You were here for my previous admonitions on perjury?

MR. DERBY: Yes, sir.

MR. DAWSON: So you understand what perjury is and the penalties for it?

MR. DERBY: Yes, sir.

MR. DAWSON: Understanding so, do you promise or swear that the testimony that you're about to

give will be the truth, the whole truth and nothing but the truth?

MR. DERBY: Yes.

MR. DAWSON: You may begin.

BY MS. FUREY DIRECT EXAMINATION

Q. Please state your name, by who you are employed and your business address?

A. My name is Clayton Derby. I work for Western Ecosystems Technology, Inc. Or WEST. My Office address is 4007 State Street, Suite 109, Bismarck, North Dakota.

Q. What is your position with WEST?

A. I am our chief services officer and senior wildlife biologist.

Q. What is your educational background?

A. I received a bachelor's degree in biology from Moorhead State University and a master's degree in zoology and physiology from the University of Wyoming.

Q. What is your professional experience?

A. I've worked for WEST as a wildlife biologist and been involved in wind-wildlife related projects for 24 years. During this time, I have been involved in approximately 30 wind energy projects in North Dakota and hundreds across the United States.

Q. What has your role been in the Burke projects?

A. I've been responsible for drafting the wildlife

conservation strategy for WCS, advising on wildlife and habitat studies and assisting with wildlife agency coordination. I've also reviewed all the wildlife and native habitat technical reports and pertinent portions of the applications.

Q. Please briefly summarize the purpose of your testimony today?

A. I'll provide context for the wildlife and habitat studies, summarize potential wildlife impacts and how they relate to the literature and provide information on potential impacts of the project in light of my experience over the last approximately 15 years working in wildlife projects in North Dakota.

Q. You indicated your involvement in drafting a wildlife conservation strategy or the WCS. Can you please describe the purpose of the WCS?

A. The WCS is analogous to a bird and bat conservation strategy outlined in the U.S. Fish and Wildlife Service wind energy guidelines. The WSC is used to help Burke Wind fully evaluate risks to wildlife, document efforts taken to reduce risk through avoidance and minimization efforts, establish post-construction efforts and outline any planned offsetting measures.

Q. Based on your review, what did Burke Wind's

Wildlife studies show with respect to the likelihood of threatened or endangered species or critical habitat occurring in the projects?

A. No critical habitat is located within the projects. No threatened or endangered species were observed on the ground within the project during wildlife surveys; however, one group of whooping cranes was observed flying overhead. As I will discuss in more detail, the projects are within the migratory corridor for whooping cranes and observing individuals is not unanticipated. Surveys for Dakota skipper habitat identified potential habitat; however, all potential habitat areas will be avoided by construction.

Q. Did Burke Wind's assessment of the projects include an evaluation of native prairie?

A. Yes. Grassland assessments were completed at several times, including desktop and field surveys as the project area changed and turbine locations were modified.

Q. Can you please explain why is the evaluation of native prairie included as part of the project's assessment?

A. Native prairie, as an ecosystem, has been greatly reduced in North Dakota through any number of human impacts. Understanding that native prairie occurs

within the project and minimizing further impacts to this ecosystem were driving reasons to include native prairie in the assessment. Further, input from the U.S Fish and Wildlife Service and North Dakota Game and Fish Department highlighted the importance of evaluating native prairie as part of the assessment.

Q. In a May 2018 letter from North Dakota Game and Fish, the department characterized the Burke Wind project area as some of the "best of the best prairie-wetland habitat in North America." And in the department's most recent letter -- or excuse me, I believe in the services most recent letter dated March 7 it expressed similar concerns. Do you agree with this assessment?

A. The Burke Wind project is similar to several other existing wind energy projects in North Dakota and thus it is unclear how the project should be deemed the best of the best. In interpreting the term best of the best, it was assumed this meant an area unique compared to other areas in North Dakota or the region. For instance, an area predominantly composed of unfragmented native grasslands, wetlands and other native landscapes would be best of the best. Based upon desktop and field verification of mapped habitat types within the Burke Wind project, the project area is

comprised of 31 percent tilled agriculture lands, 18 percent lands previously tilled and now planted to grass or hay, 21 percent native grasslands and approximately 10 percent wetlands. It is currently and previously tilled lands comprise approximately 50 percent of the landscape within the project, the project area has been previously fragmented and would not be the best of the best using the definition from above.

We compared the Burke Wind project to several other wind projects in North Dakota that are similarly located within the Missouri Coteau landscape. This comparison was done using the North Dakota Game and Fish Department's untilled grassland data layer and the US Fish and Wildlife Service National Wetland Inventory or NWI data layer and indicated that the Burke Wind project has similar grassland and wetland coverage percentages as these other projects. Most of these projects are approximately 40 percent combined wetland and grassland coverage. Using these same existing datasets from the North Dakota Game and Fish and U.S. Fish and Wildlife Service, the Burke Wind project is approximately 42 percent grassland and wetland areas. Again, it is unclear how the project should be deemed the best of the best.

Q. How has Burke Wind addressed impacts to native

prairie?

A. As others have described, Burke Wind made significant efforts to reduce the project size, move the project away from larger tracts of native prairie, move the project away from Lostwood National Wildlife Refuge, relocated most turbines off of native prairie and volunteered an offset package to help address remaining impacts. The US Fish and Wildlife Service has acknowledged in their March 6, 2019 letter that Burke Wind has reduced the project size and contracted from the eastern side of the project that harbors more grasslands and applauded Burke Wind for their efforts in reducing the level of impact that the wind project would have on wildlife by moving turbines out of grasslands. In combination, these efforts have addressed impacts to native prairie within the project.

Q. Did Burke Wind evaluate the project's potential impact to whooping cranes?

A. Yes.

Q. How was risk to whooping cranes assessed?

A. Risk to whooping cranes is generally assessed through a review of potential whooping crane roosting habitat within the project area, position within the migratory corridor, availability of roosting and foraging habitat, historic use of the project and

evidence of significant historic concentration areas. Further, inference is made from existing information on the lack of direct whooping crane and lack of sandhill crane impacts within the migratory corridor.

As outlined in the whooping crane habitat review, marked exhibit 27 and as described by Dr. Wells, the projects are within the 75 percent migration corridor and potential habitat exists within the project area. Review of a report from the USGS that analyzed data from an extensive sample of telemetry data from whooping cranes revealed that the projects are within an area as they state low use intensity. The US Fish and Wildlife Service whooping crane habitat suitability model showed varying levels of potential use based on habitat conditions and historic use locations. The model largely shows similar results of other efforts in that the project contains potential whooping crane habitat. The habitat suitability is similar to other areas within Burke County and contains less areas of the highest habitat suitability compared to other areas in the region. Occurrence of whooping cranes during the spring and fall migration within the entire corridor from Texas through North Dakota including the project is possible and numerous projects currently exist within this corridor.

To date, no whooping cranes have been found as fatalities at any wind facility. While there are only 500 whooping cranes it could be argued that the lack of finding one is simply coincidental; however, there are 600,000 or more sandhill cranes that migrate the same general corridor. Like whooping cranes, no sandhill cranes have been found as fatalities at any wind facility within the migratory corridor. A detailed study that extended several years and across several wind projects in North Dakota and South Dakota was done that corroborated these overall flyway results. No whooping or sandhill cranes were found as fatalities at these wind projects.

Q. Do you believe that sightings of whooping cranes flying over the project area change the impact analysis?

A. No. The incidental sighting of whooping cranes flying over the project area is not unexpected given, as stated above, the project is within the migratory corridor, the potential habitat exists within the area and uses possible during migration. Sightings could be expected within the entire swath of central North Dakota as this area is within the migratory corridor and most areas have some amount of wetland habitat.

Q. In your opinion, has Burke Wind avoided and minimized impacts to whooping cranes?

A. Based on the existing information, the project is within the overall whooping crane migration corridor and potential habitat exists within the project similar to numerous other projects in North and South Dakota. Given lack of any whooping crane or sandhill crane mortalities at wind projects in the migratory corridor, impacts from any projects are not anticipated. To further mitigate potential risk, Burke Wind has indicated it will develop and implement a voluntary whooping crane identification training and curtailment procedure to shut-down turbines when whooping cranes are found to be within one mile of turbines. Additionally, Burke Wind has indicated it will mark the entire above ground transmission line following avian power line interaction committee guidelines. Taken together, impacts to whooping cranes from the Burke projects are not anticipated.

Q. What does the scientific literature show regarding the potential impact of wind development on waterfowl?

A. Impacts to waterfowl could include direct mortality, change in the use during migration or change in use during breeding season.

Most historic studies have shown very limited direct impacts to waterfowl from wind projects. This

includes work done and published from North Dakota. Overall, waterfowl comprise less than three percent of all fatalities, even though they often are one of the most common bird groups observed during pre construction surveys.

Similarly, most research to date has shown limited to no displacement or impacts to migratory waterfowl from wind project, but there are limited studies in this arena. Work conducted in Iowa showed no impacts to duck and goose use days at wildlife areas immediately adjacent to a wind project after construction as compared as before construction.

Based on research from North Dakota, and one of the only studies to investigate this, some displacement of duck pairs within proximity to operating wind turbines has been documented during the breeding season. This research showed that overall, 20 to 21 percent of duck pairs were displaced within half a mile of turbines.

Q. Are these impacts expected to be significant for Burke Wind?

A. Direct impacts due to mortality of waterfowl at Burke Wind is expected to be low and similar to other wind projects within North Dakota and other locations. Likewise, significant changes to migrating waterfowl use are not expected given information from other areas.

Based on the North Dakota study, displacement impacts of approximately 20 or 21 percent of breeding duck pairs within one half mile of turbines could be expected, but it is not known if these ducks simply move to another wetland and successfully breed or what happens to them upon moving away from turbines.

Overall, given waterfowl are above long-term population averages, and Burke Wind will be providing voluntary offsets that consider impacts to waterfowl, significant impacts to waterfowl are not anticipated.

Q. Did your assessment evaluate the likelihood of potential impacts to bald or golden eagles from the projects?

A. Yes.

Q. How is risk to eagles assessed?

A. Risk was assessed by using eagle use rates measured throughout a 12 month period, location of the use, timing of use and results of nest surveys.

Q. What did your assessment indicate with respect to potential impacts to bald or golden eagles from the wind projects?

A. Both bald and golden eagles were observed during surveys. For bald eagles, use observed during standardized surveys was limited to the spring and fall migration periods with incidental observations during

the winter and none observed during the summer. Looking at the total survey effort for the original project boundary, most use was east of the current 200 megawatt project. For golden eagles, use was observed during standardized surveys only during the spring migration with incidental observations during the fall and winter and no birds observed during the summer. No nests for either species were located within the projects or survey buffers around the projects. Based on use data and lack of eagle nests within the projects and vicinity, overall eagle use appears to be limited to migration periods and winter. Most eagle use was east of and outside the current project area.

Q. In your opinion, is Burke Wind expected to have a significant adverse impact in eagles?

A. No, impacts to eagles would be expected to be low and similar to other projects in North Dakota.

Q. In the letter dated May 2018, North Dakota Game and Fish suggested that Burke Wind project may have population level impacts on sharp-tailed grouse. Do you agree with this assessment?

A. Based on the timing of the letter, this statement was before the reduction in overall project size and shifting of the project to the west, away from several larger grassland areas and the national wildlife

refuge. Additional turbine shifts have resulted in all turbines being now located more than one half mile away from all leks identified during surveys, which are appropriate measures per a recent letter from the U.S. Fish and Wildlife Service. Reduction of the project and buffering all leks by one half mile have reduced potential impacts on grouse and their leks.

Q. In general, do you think the reduction in size and increased distance from Lostwood National Wildlife Refuge are effective ways to avoid and minimize potential impacts to the refuge?

A. Yes, the modifications resulted in the closest turbine being over seven miles away from Lostwood Refuge boundary. There are no known defined setbacks from refuge boundaries to turbines. However, in evaluating the sufficiency of the current distance form the nearest turbine to Lostwood, we considered U.S. Fish and Wildlife Service and other recommendations regarding setbacks from whooping crane critical habitat as a maximum example of a recommended distance to avoid and minimize impacts. To be clear, Lostwood is not a designated critical habitat but we used this designation as a maximum consideration for wildlife related issues. In the U.S. Fish and Wildlife Service and Western Area Power Administrations Programmatic EIS, it is stated

that projects should be sited more than five miles from designated critical whooping crane habitat to sufficiently avoid and minimize impacts to the critical habitat and whooping cranes. Given the size and habitat usage of whooping cranes, it is assumed this setback distance will also sufficiently avoid and minimize impacts to other birds and wildlife. In summary, the reduction in project size and increased distance have effectively avoided and minimized reduction in project size and increased distance have effectively avoided and minimized potential impacts to Lostwood National Wildlife Refuge and the March 6, 2019 U.S. Fish and Wildlife Service letter applauded Burke Wind for their actions to reduce the level of impact on Wildlife by reducing the project from 300 to 200 megawatts and moving the wind project boundary further from Lostwood.

Q. Thank you. I am going to draw your attention to the North Dakota Game and Fish letter dated May 22nd and these are just some follow-up questions in response to some of the topics that were previously addressed. This letter is located appendix c to the amended wind application which is marked as exhibit four. If you could please reference the second page?

A. Yes.

Q. Okay. There is a statement in this letter that

the project would result in a reduction of nearly 3,300 breeding ducks pairs. In your opinion, is this a accurate assessments based on the date of the letter?

A. Yeah. The date as you noted was May 22, 2018 that would have been prior to the reduction from 300 megawatts to 200 megawatts so that number would be incorrect.

Q. Has the department reassessed the analysis in this respect?

A. Yes. It's actually the U.S. Fish and Wildlife Service updated this number in their March 6, 2019 which is exhibit 45.

Q. Okay. So the prior statement was made by --

A. North Dakota Game and Fish.

Q. On May 22, 2018 and then the U.S. Fish and Wildlife Service updated this statement and is dated --

A. March 6, 2019 and that number that they report is 1,000 breeding pairs.

Q. So what does that number reflect?

A. That number reflects the estimate following a study conducted by others that I referenced and others reference where 20 to 21 percent of those waterfowl -- breeding waterfowl are displaced within one half mile of turbines. So that 1,000ish is that 20 percent.

Q. So is that expected fatalities?

A. No. As I mentioned in my testimony, that means that ducks moved away from turbines and where those ducks -- the ducks were not marked. It is not known if they went to different wetland, if they successfully bred when they arrived there or what happened. The study indicates they moved.

Q. Thank you. I'm gonna draw your attention to the same binder to figure 17. This was the figure that Mr. Schmidt had previously referenced. This is the whooping crane migration corridor map.

A. Which appendix?

Q. It's figure 17 in that binder.

A. Oh, okay. Yes.

Q. So looking at this map is the project boundary at the -- at the top of the map shaded in black. Okay. Can you please put into context this map and what this means? Is there a 75 percent chance that if you could expect whooping cranes to stopover or more, I guess, more specifically, there is green slashes that are marked over the project boundary. These green slashes show that there is a low intensity. What does that mean? Can you kind of just put that into context for us within the scope of this map?

A. Sure. There's several things going on in this map that were discussed earlier. As you noted, the 75%,

80%, and 85, 90 and 95%. What that means is within the 75% swath, which extends from Canada down through Texas to the Gulf coast, this is not limited to just North Dakota. It's an area that is approximately a hundred miles wide from the Canadian border to the Texas Gulf Coast. That 75 percent of historic occurrences that have occurred and cumulatively, if you go up to the next band, you have 75 and you add another 5%, so you get 80% and you go up to the next band, you have the 75, 80 and and 85% up to the 95th percent band, which means 95% of historic observations have occurred within this whole area of North Dakota, which goes through central Dicky County, over Central Adams County, so it's a wide area through North Dakota. Now, the green box and the pink box and the orange box, according to my eyesight anyway, the project is located within an area of green shading, which is identified as low intensity. These blocks are from a telemetry study that was conducted by the USC over a number of years where they had at one time or another approximately a quarter of the population of whooping cranes marked and they followed them for several migrations of the telemetry units remote downloads so really precise locations during the migratory periods. So low intensity means that one of those marked birds landed in these squares are 16 square

kilometer area, 16 by 16 kilometers. One -- a whooping crane landed somewhere inside of that lot, one to four times per location was retrieved, extended or core intensity, extended core use, core intensity just means more and more were there. So this area means somewhere within this 16 mile, 16 square kilometer area a whooping crane landed or it was there for a few times, you know, multiple days, low intensity compared to some of the others where there's multiple use days by multiple cranes which are shown by the different colors.

Q. So it wouldn't be an appropriate conclusion then based on your testimony to look at this map and then infer that the likelihood of whooping cranes occurring in this area would be high?

A. Not compared to other areas within the 75% corridor according to this map, no.

Q. Thank you. I'm actually gonna follow up on a point of clarification from Dr. Wells' testimony previously and have you provide some comment. There was discussion regarding North Dakota species of conservation priority.

A. Yes.

Q. And in the context of how those seasons apply to the commission's siting criteria. So specifically, the criteria kind of designated certain exclusion areas, one

of the exclusion areas is designated as areas where an animal or plant species that are unique or rare to this state would be irreversibly damaged. So breaking that down, our species that are included on the North Dakota Game and Fish list of conservation priority, first of all, rare or unique?

A. Some certainly are. They have listed species on that same list, but that list is over a hundred individual species in length with some species being actually quite common on the list. For instance, sharp-tailed grouse are included on the list. The state of North Dakota harvests between 75 and a hundred thousand sharp-tailed grouse annually, so one could argue they're not rare. The next question is, are they unique? The occurrence, well, North Dakota has a healthy population of sharp-tailed grouse. They're not unique to North Dakota. They occur in Canada. They occur in the surrounding states. They occur in a broad geographic swath. So including the full list, maybe overly inclusive for the species as you identified them.

Q. What would be the result if all over a hundred species were to be, I guess, labeled as unique or rare?

A. Yeah. Essentially the entire state would fall within an exclusion zone because you could find at least one of those species anywhere in North Dakota.

Q. Does North Dakota have any state designated threatened or endangered species?

A. Not state designation, no.

Q. And even for argument's sake, even assuming that North Dakota species of conservation priority were unique or rare, would impacts to these species, do you believe impact from the projects would result in irreversible damage?

A. Yeah, that'd be another term that would, perhaps, be definition attitude in my opinion and one way to define that is population level effects, irreversibly damaged and I don't believe the project has potential to resolve the population level effects for grass numbers or the state's -- the species that are on the list.

Q. Thank you. Do you believe that Burke Wind has appropriately avoided, minimized and mitigated potential impacts to wildlife and native habitats associated with the projects?

A. Yes. Through project changes and siting of turbines, the overall impacts have been appropriately avoided, minimized and mitigated.

Q. Thank you.

MR. DAWSON: Mr. Schmidt.

BY MR. SCHMIDT CROSS EXAMINATION

Q. Good afternoon. I have a couple questions for you. I'll keep it very short and sweet though. You did indicate that there was going to be a whooping crane identification plan put in place, is that correct?

A. Yes, sir.

Q. Okay, so how is that going to work?

A. It will further reduce the risk to the whooping cranes, so you know, you start at a point of low potential risk to whooping cranes period, so the actual plan then is, my understanding is proprietary. It's not my document. My understanding is is that there's a training that's conducted for all contractors and operation personnel on site.

Q. Okay. And I guess the reason I'm asking is because you put me in front of four birds and say pick out the whooping crane, I'm probably not going to be able to do it and I'm assuming people who are constructing these turbines might not know that either. So I'm just kinda curious as to how the company's going to educate people to say, okay, if you see this, do something and what is that something?

A. Right. Yeah. So there is a short identification training, certainly not to make one a technologists, but whooping cranes are five feet tall, white birds. So

they're fairly conspicuous when on the landscape, but they do get confused with other white birds like pelicans, or swans, those kinds of things, so there is some amount of identification training that goes on and then also what to do with that information. So if the contractor sees or the operations personnel sees what they believe is a whooping crane, a reporting process, and then the operations manager responds by shutting down turbines within one mile of whooping crane until the crane departs.

Q. There's been a lot of discussion about mitigating risk that's happened today. Well, my question is what -- what risk level did we start at with respect to this project and I'm talking about wildlife, what risk level were we at when this project was initially constructed?

A. It hasn't been constructed.

Q. Right, excuse me, proposed?

A. I was not involved until late last year. So I don't know the official, you know, I can tell you what I do is I look at all projects. You need to look at the actual onsite information and get over the optical and the emotional reaction. I mean, I've been involved in projects outside of North Dakota that optically and emotionally were very, I would have said, very high

risk. And when we started looking at them and working with the state and wildlife agencies, we all agreed, wow, this -- this isn't a high risk site because we actually started looking at it. So, yeah, how it was identified in 2016 or '17, I was not part of those discussions. So I cannot comment on for this project.

Q. Okay. So were you involved in this project prior to it becoming a 200 megawatt project?

A. About that time I think I became involved in about October of last year and I think that's when it changed.

Q. Okay. So I guess the purpose of my initial question is we're mitigating risks but what are we mitigating from? What's our starting point? You can have a huge problem and mitigate it down to a big problem and that doesn't do us a lot of good or we could have a big problem and mitigate it down to a small problem or no problem at all. So I'm looking for a baseline?

A. Right. You know, I think the mitigation and I think Dr. Wells did a nice job of explaining this. It's not just starting with mitigation. That's kind of the -- that's the end. That's the last piece that's done, you know, through moving turbines off of grass, working with landowners to find appropriate siting locations, reducing the project size. All those things come first

and should be considered in the overall risk reduction or the assessment for any project. And if there are still residual impacts, that was the term that Dr. Wells you used, one thing you can consider is doing some sort of habitat offsets, you know, through an offset plan to ameliorate those as well.

Q. Can you just explain a little bit on this direct versus indirect impact thing? This seems to have become this abstract concept of high talking about it.

A. It is a little bit abstract. You're right. So direct is pretty clear. Probably a couple of types of direct impacts. One could be a dead animal or a dead bird and this isn't just a bird, it could be anything. A dead deer on a road is a direct impact. It could also be done in the landscape where you take and turn a sunflower -- a piece of a sunflower field or a wheat field or a native prairie from that habitat type to a paved or grounded ditch road or in this case, you know, capped road where there is a fiber layer with aggregate over the top of it. So that's a direct impact, very measurable. You go out there and it's 18 feet wide or 20 feet wide and this long, very quantitative, measurable or dead birds, there's one, there's one so you can quantify very, very easily and get your hands on. Indirect is -- are those things that are not as easily

measured. And that's what we really don't have a lot of studies on it. I've actually been involved in a lot of studies trying to measure indirect impacts and it's very difficult. You're -- but that's where an animal can be (inaudible) telemetry units and, you know, but in this case it's been done on ducks and grassland birds where we look at did they move and that's what really gets -- that's what gets investigated. Did they move? Are they here as we expect them to be here? This area, all things being equal, remove the oil well, remove the turbine, we expected a hundred of this species in this area. There's 80, that's the 20 percent reduction. So that's kind of that -- that's the essence of it. We don't -- the study never == studies done to date do not identify what happened to those 20. We just know there's 80 there now.

Q. Okay. So you told me that a direct impact is something that's quantifiable?

A. Largely.

Q. But an indirect impact could be a reduction in number of birds in one place to another. Wouldn't that be quantifiable?

A. Yeah, that's true. I mean, you could put a number on it, but it isn't physical. Right. You can't go up and touch it. You know, I just -- it's getting late in the afternoon so I'm getting a little surly, you

know, I always think it's explain it to grandma test, can I explain it to my grandmother so she understands it and if I take my grandmother out and we stand next to a turbine and it's was like, wow, there's -- there's four bottles but if that turbine wasn't there, there'd be five bottles. Well, you know, she, you know, there's four there. What happened? You know, so that's why it gets a little squishy. Okay.

Q. Okay. I was just looking for a little more clarification. I appreciate that and I don't have anymore questions. Thank you.

MR. DAWSON: Mr. Lien?

MR. LIEN: I have no questions.

MR. DAWSON: Commissioner Fedorchak.

BY MS. FEDORCHAK CROSS EXAMINATION

Q. Since you were talking about impacts, from the standpoint of assessing the long-term impacts, does it -- does it really matter? I mean, they're looking at the long term impacts of resources?

A. Again, the issue comes in to what happens to those birds? Do they -- and I do think there needs to be some address to the long-term impacts in North Dakota from everything, not just and. That's where I would start. And wind is part of that landscape but so is everything else out there. And as a biologist, I think

we can have those discussions, but part of this is if you're looking at what happened, what are the indirect impacts of wind on wildlife and birds, wee need to ask the question, birds that move, where did they go and what do they do when they get there? In other words, did they fly over a hill and successfully best. So we know we have some very nice studies, design and implement studies in North Dakota did indicate 50, 55% of grassland birds move way from turbines up to 300 meters. Not disputing that. The question I have is where did those birds go? Did they move over half a mile and successfully nest? We don't know that as a group, no one's been able to investigate that and there can be conjecture that goes -- within the study, there is indication that the control areas -- areas away from turbines have been reduced overall. Not due to turbines, but 30 to 60 percent of that area is 30 to 60% less birds in those control areas, so it wasn't just turbines reducing birds on the landscape. There was no turbines near those spots, but they still went down 30 to 60% in bird use so yes, you know, that's another example of an impact. But you could say, well there's plenty of room then for these extra birds to go nest half a mile away. Do they do that? I don't know. No one's looked at that. These birds are not marked, so --

Q. When it comes to the mitigation payments, how do mitigation payments offset the impacts?

A. Great question. Typically, and I'm going to talk in general, not here, you know, what -- this is my understanding that NextEra is still working through this with folks, but in general, what is done is any sort of offset payments, mitigation payments are contributed or to qualifying and the group needs to meet the needs of Many parties, needs to work with landowners, needs to work within the community, needs to help wildlife in this instance. So you could take the -- the dollars and add value to land, restore land that is now marginal crop land back to maybe higher functioning pasture land that is grazed or you take pasture land now and you can cross it and increase standing grass cover and get more birds nesting there. So those things all take, and, you know, people are trying to make a living out there. So it is a way to bring dollars to farmers, ranchers as well as benefiting wildlife appropriately.

Q. And are you aware that those payments go to projects in this area?

A. (Inaudible.)

Q. When you were talking about the whooping cranes, you said that this area doesn't provide any greater risk to whooping cranes than any other area within that 75

percent and that's somehow then, what the conclusion to sew this project is there isn't a problem with the whooping cranes?

A. Right. But, again, using the sandhill cranes as a surrogate, given their numbers -- I actually just read a paper from the Fish and Wildlife service where they said sandhill cranes are in effect in this area, but because there's -- there's about 500 whooping cranes in the population right now. So could one of them nest somewhere in Oklahoma or in South Dakota, North Dakota? Potentially. But there's been extensive studies done. My company, we did an extensive study in North Dakota and South Dakota where we looked at five wind farms within the migratory corridor for three years. We had over a hundred thousands turbine searches done during the migration period, about 14,000 hours of survey completed and we didn't find a single sandhill crane of which there are 600,000. Meaning, flocks of sandhill cranes. We even documented whooping crane use in those project areas and we were also doing -- doing curtailments and we would curtail turbines during that time. So I've taken together, along with the other general fatality studies done throughout the corridor and the lack of sandhill crane mortality in the migratory corridor, assuming they're an effective surrogate for whooping

cranes, risks to cranes as a whole is very low.

Q. What you're saying is, despite the fact that this is the main place they fly, it doesn't appear to be a problem anywhere in the corridor?

A. Not to date, correct.

Q. So back to the mitigation and the letters from Game and Fish and Fish and Wildlife, you know, they've been consultation for a number of years on this and it doesn't really seem like they've changed their position a whole lot. The letter of March 6th from U.S. Fish and Wildlife says our primary recommendation has been to avoid developing of the project at the current proposed location and then it goes into its secondary recommendation which is to, you know, do more mitigation and Game and Fish says, as we relayed from the start, the department believe that this project was ill planned in its site selection relative to natural resources and consequently will have substantial impacts in native, wildlife and their habitats. These are the most recent letters just from March 7th. So why aren't the efforts of the company to mitigate, offer payments, et cetera addressing these agencies' concerns and changing their opinion on this?

A. Right. That is a bit of a conundrum and part of the reason they don't use the terms I believe in the

letter I read this morning at 5:00 AM so I don't have it committed to memory and the other one yesterday, but there was a term being used the best of the best and I think that's still implied a lot in these letter. And trying to investigate what that really means. What does that mean and how do we put that into context for this project area, for this geographic area? A lot of in discussions over the years, and I've been working with the agencies for 15 years and one of their main concerns has been minimize fragmentation of unfragmented grassland. Move off of native grasslands. And I think the original project boundary included a lot more grasslands was really close to Lostwood National Wildlife Refuge and if you look in the larger geographic area around here, there's some areas that I think the Game and Fish in one of the letters talks about large areas of four square miles with no roads. Four sections that don't have roads and you can consider that unfragmented. Inside this project, so I started to look at that. What does -- what is this project? So I said I want to remove my emotions, look at the issue, look at the project, look at the optics. And 50% of tilled or previously tilled the entire project area, so does that mean this project is unfragmented? Probably not. You know, if the mirror is 50% broken, it's been fragmented.

Where are the turbines? Off of the grasslands for the most part. There's five or seven depending on how you want to slice it. Seven on untilled grassland slash untilled native hay land of the entire 76. So to me, I think there's some -- there's some hangover from the original project, the original location near Lostwood and I think that's where I tried to just really cut down things that were existing, not to use data from the siting because I wanted to compare it to others sites that are on the Coteau in similar landscapes and there's six or eight of them and they all have about 40 percent grass wetland combination. One has much higher, 85 percent grass, native grass wetland combination. So is it different? I don't know.

Q. Which one -- what projects are those?

A. I don't even know if these names are correct because we use the USG -- there's a data layer out there from the USGS that has all the turbines in the entire country on it. So we just went to that site, these aren't necessarily our projects but the Minot Wind Site, there's one next to Minot, the Tonka, Dakota Wind, I think Rugby is also, that's not a Coteau but it's in a similar wetland grassland mix. I don't have the list in front of me but there were seven or eight. And, again, that's existing data, wasn't our data.

Q. Right. And those that you listed are some of the earliest sites so Game and Fish are just seeing like -- (inaudible.)

A. Potentially. Just speculating.

Q. Which would make some sense as to why these -- their input is a little different now than it probably was. But, let's see. I think that's it for me. I'll let you talk to Brian. Thank you.

MR. DAWSON: Commissioner Kroshus.

BY MR. KROSHUS CROSS EXAMINATION

Q. Did you say earlier you've worked on 30 projects in North Dakota?

A. Approximately right around there. 32, 31, but not all of them built.

Q. That was my next question. What percentage were not built or ballpark number?

A. 15 or 20 percent.

Q. Okay. So the majority of them were built. Okay. And then you came on board, you work for NextEra. You came on board October, 2018?

A. It was last fall. I don't know the date. I'd have to look it.

Q. Was that to help address some direct --

A. My Primary focus was to help the WCS to compile the field data, tier one, two, three data and file it.

Q. I should have prefaced you're in luck, I've got my second wind, so I don't have any grouchy questions.

A. I thought you were deleting all your grouchy questions.

Q. That was this morning, so we're good. But you had said one thing and you were saying, I think it was U.S. Fish and Wildlife applies NextEra, but really I think that's misleading when -- I already went down this path, but basically, as well as Brian brought this up as well, and they're saying, okay, it's a little bit better, but it's still not good. I don't think you should build the facility. Do you agree with that?

A. I think overall, yes. I mean, I think they recognize significant efforts taken by NextEra but they still have concerns based on overall data.

Q. Okay. Help me out the what happens when -- okay, so peak migration period for waterfowl is fall through --

A. Spring and fall.

Q. Okay. Right. So what happens when it's fall, how do the birds readjusted? And because I hunted waterfowl a few times and (inaudible) does that create more of a problem?

A. I think it probably does, yes.

Q. Date in terms of what --

A. No, because quite frankly, there's such a low sample size, like I said, less than three percent of all fatalities have been recorded have been waterfowl so to study causation or the timing was such a small sample size. It's pretty difficult to say, you know, when did that bird actually die.

Q. And I think that goes back to -- I think a lot of times in these cases I've been asked after the fact, I hear people asking, well, why did you ask about whooping cranes, why aren't you asking about grouse leks and things like that. And the short answer is we have to. It's part of the siting process. So we leave no stone unturned obviously in the questioning. How often are bird mortality counts done?

A. During like the year of post construction like how frequent is the sampling done? It's very variable. Not the sentence in the world, but it's quite variable depending on the topic. Whenever we're designing studies, we ask the question or the what is the objective? So if I'm doing a study in North Dakota for general birds and bats, our sampling frequency might be once a week or once every two weeks. If we're doing a study that the focus is only large birds like waterfowl, I might actually space that out more to two or four weeks because they remain on the landscape longer. If

I'm doing a bat study in Iowa, it may be every day or every other day or every third day. So really it's driven by the purpose of the -- of your post construction monitoring plan. So in North Dakota every week or every two weeks is pretty standard.

Q. It seems like a lot of this and not so much the mortality count, but just it seems like a lot of this is really is an exact science? In terms of impact and going back to the impact that determines whether to place the project overall --

A. Yes.

Q. So how do we know if your recommendations are -- okay. I'm trying to think of the best way to phrase this stuff. (Inaudible.) It seems like there are a lot of variables.

A. I believe that there are.

Q. Okay. Last question on the hundred or right around hundred species, you considered species of conservation priority?

A. Correct.

Q. Do you know over the course of time has that list grown exponentially? Has it been at a hundred for a long time? Have any species have been added as of recently?

A. Right. It was established, I kind of forget the

year, approximately, I believe, it was in the mid 90s, and the first list that came out was a hundred of the -- state 100 species. Some species have gone off and some have gone on so I think we're up to 105. So obviously some of them have been added to go beyond the original 100 but it hasn't varied wildly with species coming off and coming on.

Q. And sharp-tailed grouse are on the list?

A. Yes.

Q. Is that geographically -- is it by geography or statewide? That one was lost -- I'll admit that.

A. Are you a conservationist or --

Q. We'll just leave it at that. No other questions.

MR. DAWSON: Ms. Furey?

MS. FUREY: Nothing additional, Your Honor.

MR. DAWSON: Mr. Schmidt?

MR. SCHMIDT: I have no further questions.

MR. DAWSON: Well if there are no further questions, you may step down. Ms. Furey, do you have any further witnesses or any witnesses to recall?

MS. FUREY: Your Honor, can we just have a brief five minute break?

MR. DAWSON: Certainly.

(Recess taken.)

MR. DAWSON: The time is 4:40 and we're back on the record. Ms. Furey, do you have any further witnesses?

MS. FUREY: No, Your Honor. We don't.

MR. DAWSON: Do you have anyone to call, Mr. Schmidt?

MR. SCHMIDT: No, Your Honor.

MR. DAWSON: It was brought to my attention that there may be a telephone witness?

MR. SCHMIDT: He's not going to testify.

(This concludes the witness testimony.)

REPORTER'S CERTIFICATE

I, Kayla A. Richmond, a general shorthand reporter, 51 Broadway, Fargo, North Dakota, do hereby certify that the foregoing one hundred nineteen (119) pages of typewritten material constitute a full, true and correct transcript of my original stenotype notes, as they purport to contain, of the hearing reported by me at the time and place hereinbefore mentioned?

_____

Kayla A. Richmond
51 Broadway, Suite 130
Fargo, North Dakota 58102

Dated this 23rd day of April, 2019.

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