STATE OF ILLINOIS
PIATT COUNTY ZONING BOARD

GOOSE CREEK WIND, LLC
APPLICATION FOR A SPECIAL USE PERMIT
December 6, 2022
6:09 p.m. to 9:50 p.m.
Held at the Community Building, Monticello, IL

PIATT COUNTY ZONING OFFICER:
Ms. Keri Nusbaum

HEARING FACILITATOR:
Mr. Scott Kains, Esq.

PIATT COUNTY ZONING BOARD MEMBERS:
Mr. Loyd Wax, Chairman
Mr. Jim Harrington, Vice Chairman
Mr. William Chambers
Mr. Kyle Lovin
Mr. Paul Foran, Alternate

PIATT COUNTY BOARD MEMBERS:
Todd Henricks
Kathleen Piatt
Michael Beem

COUNSEL FOR THE PIATT COUNTY BOARD:
Mr. Andrew J. Keyt, Esq.

COUNSEL FOR THE APPLICANT:
Mr. Mark A. Gerson, Esq.

APPLICANT - Apex Clean Energy:
Mr. Alan Moore, Senior Project Manager

COUNSEL FOR THE OBJECTORS:
Mr. Philip A. Luetkehans, Esq.

COURT REPORTER:
Ms. Jamie J. Mumm, CSR, Official Court Reporter
Piatt County Courthouse
101 W. Washington
Monticello, IL 61856
(217)762-5861/jmummreports@gmail.com

I N D E X

MR. WAX: Let's call the meeting to order, please. First, would you join us in the Pledge of Allegiance.

(PLEDGE OF ALLEGIANCE.)

MR. WAX: Thank you. Could we have a roll call for the Zoning Board, please?

MS. NUSBAUM: Sure. Mr. Larson? Mr. Harrington?

MR. HARRINGTON: Here.

MS. NUSBAUM: Mr. Lovin?

MR. LOVIN: Here.

MS. NUSBAUM: Mr. Wax?

MR. WAX: Here.

MS. NUSBAUM: Mr. Chambers?

MR. CHAMBERS: Here.

MS. NUSBAUM: Mr. Foran?

MR. FORAN: Here.

MS. NUSBAUM: State's Attorney Perry?

MR. WAX: How about the County Board roll call?

MS. NUSBAUM: Mr. Henricks? He's here.

MR. HENRICKS: Here.

MS. NUSBAUM: Mr. Edwards? Miss Jones? Miss Piatt?

MS. PIATT: Yes.

MS. NUSBAUM: Mr. Beem?

MR. BEEM: Present.

MS. NUSBAUM: Mr. Shumard? Thank you.

MR. KAINS: All right. Thank you, Keri. Ladies and Gentlemen, this is night seven of the public hearing regarding the Special Use Permit Application filed by Goose Creek Wind. Before we begin with testimony, Mr. Gershon, any preliminary matters?

MR. GERSHON: Yes, thank you. Can you hear me okay in the mike?

MR. KAINS: Uh-huh.

MR. GERSHON: Just a few exhibits for this evening we've submitted. One was just an addition to prior Exhibit 17, which we're now calling a group exhibit, and now there's a request that we provide a large -- a full-size three-foot by four-foot copy of the site plan that we were reviewing here. We have now got that along with ten copies of it in an eight-and-a-half by eleven. The new exhibits, Exhibit 19 is Dr. John Rogers' resume'. Exhibit 20 is Dr. John Roger's powerpoint, which is currently on the screen, and Exhibit 21 is the press release announcing the power purchase agreement between Rivian and Apex Clean Energy, and we'll be talking about that tomorrow. As the Zoning

Board knows, we'll have -- at the end of the meeting today, we'll identify who will be here tomorrow to discuss that.

MR. KAINS: Very good. Thank you, Mr. Gershon. Mr. Luetkehans, have you received those exhibits?

MR. LUETKEHANS: No. I've received 21, but I have not received any others.

MR. GERSHON: Andy, you should have those. We tendered Andy ten of each of them because he wants one for -- I could probably make Andy's life much easier if I just started handing them to Phillip.

MR. LUETKEHANS: It makes my life much easier too. Andy, when you get a chance, could I have 17 and 19?

MR. KEYT: Yes.

MR. LUETKEHANS: I don't need them this moment, just before tonight's over.

MR. KEYT: Yes.

MR. LUETKEHANS: Thank you.

MR. KAINS: Anything further from Mr. Gershon?

MR. GERSHON: Nothing further. Thank you.

MR. KAINS: Any preliminary matters for you, Mr. Luetkehans?

MR. LUETKEHANS: No.

MR. KAINS: Mr. Gerson, you may call your next witness.

MR. GERSON: Thank you. Dr. John Rogers.

MR. KAINS: Could you please be sworn by the Court Reporter.

(Witness sworn.)

J O N A T H A N   R O G E R S

called as a witness on behalf of the Applicant in the above-entitled cause, was previously sworn and examined as follows:

MR. KAINS: All right sir, please state your name, spelling your first and last names for the record.

MR. ROGERS: Jonathan Rogers, J-o-n-a-t-h-a-n, R-o-g-e-r-s.

MR. KAINS: Very good. You may proceed.

MR. ROGERS: Good evening. Like I say, my name is Jonathan Rogers, and I'm going to talk to you guys tonight about the analysis I did on ice shed and blade failure risk for Goose Creek.

So if we could go to the next slide, and I can kind of introduce myself and our company. So I'm a Co-Founder of Persimia which is a consulting firm out of

Atlanta, Georgia, and my Co-Founder and I are shown up there. Both of us are Professors at Georgia Tech in Aerospace Engineering and between us we have over thirty years of experience at different Aerospace modeling applications, and our goal at Persimia is to develop modeling and simulation analysis tools for energy projects, and look at optimization techniques, and most of all provide what we call IE services, Independent Engineering services where we examine, you know, different technical topics and provide our assessment. So, that's kind of our role. And if we go to the next slide I can talk more in detail about myself as kind of the analyst for this project.

So, at I'm a Lockheed Martin Associate Professor of Aerospace Engineering at Georgia Tech. I have a PhD and MS degrees in Aerospace Engineering and a Bachelor's Degree in Physics.

So my research at Georgia Tech is very much focused on flight dynamics, ballistics modeling. Hypersonic missiles is one area that we're looking at right now in depth, as well as developing autopilot systems. So I essentially run a laboratory, fill it with drones and aircraft and all kinds of things that fly.

One of the things that I have worked on for over ten years now, is developing modeling and simulation tools, specifically for ice shedding from wind turbines and blade throw from wind turbines, and that's related to the other work I do in a sense that you can model projectiles in the same way that you can model, you know, things falling from something like a wind turbine.

I've served as a consultant on many different wind projects across the United States. So, I've worked for developers. I've also worked for municipalities as an independent analyst working to assess risks for wind farms that are being proposed be built in their area.

I'm also working right now at the International Electric Technical Commission, so that's the IEC which is an international regulatory body drafting standards for safety setbacks analysis. So I'm one of the authors on that international standard which should be coming out here in about six months to a year.

You can see also on the slide my research is funded by NASA, Department of Defense, Department of Energy, and so on. So I have a lot of funded research by many many different government agencies. So that's a little bit about myself.

Let's now talk about the topic at hand. So wind turbines, just like any objects outside, if there's certain precipitation and temperature conditions, will accumulate ice. So it's no secret. It happens and there's many pictures of it. So when the temperature rises, ice can thaw and fall off the turbine. Now, one of the things that about icing is that it's fairly easy to detect with standard sensors that are out there at the wind farm. So anemometers, temperature sensors and icing detection systems are all used to monitor build-up of ice on wind turbines. And given that that ice build-up can be detected, it's the standard practice to shut the turbines down when icing is detected. So that's kind of the standard practice and something that, you know, Apex has told me that they are committed to implementing. Their wind plant operation staff are specifically trained to recognize icing conditions and thawing conditions and implement this operational practice of shutting turbines down. We can go to the next slide.

One of the safety systems that Vesta's developed, I think it was around 2013, that this was released, was the ice detection system which is a pretty cool product. Essentially it does this whole process automatically where it uses vibration sensors on the blade to detect small differences in vibration that are caused by the build-up of ice on the blades, and once that ice build-up is detected, it automatically shuts down the turbines. So strictly speaking, there's no -- the operational staff doesn't even have to do this manually. So there's, you know, kind of a tiered system in place where these ice detection systems on the turbines at Goose Creek will shut them down automatically, and the back-up if that's not, you know, somehow functional, is that the operation staff will manually shut them down. So this system was specifically designed to minimize risk of ice being thrown from a wind turbine blade. Basically it's going to stop the blade so that when the ice gets shed, it gets shed from a shed from a stationary blade and just falls straight down. There's a little blurb there about the ice detection system, and that's information that you can get just from the internet. Let's go to the next slide.

So there's always a question about well what happens if the system fails, what happens if nobody catches the ice build-up and the turbine's still running, what happens then? Well, in 2017, a group in Sweden, so this obviously comes up a lot in Scandinavian countries that have a lot of wind turbines and it's cold a there is ice build-up on a fairly regular basis. So they ran a controlled experiment where they left the turbine on while it was iced. So they purposely didn't shut it off just to see how far those pieces would go, and so that was a purposeful kind of experiment that they ran and then they recorded data. So after it shed all of its ice, they had people go out there and record where the ice pieces were and how big they were, and they made a big a graph, a big chart over here shown on the right, and recorded every ice piece. The average ice piece size was about one point three pounds. You can see how far they go here, and this was not for the same turbine that's used at Goose Creek, but I show this to you because I'm going to reference it in a minute here. So I just want to make you aware that these experiments have been done, and we have data that we can -- with which we can calibrate our models. Let's go to the next slide.

The other concern around safety is sometimes blade failure. So what happens if, you know, a blade potentially comes off a turbine while it's running. We sometimes call that blade throwing. That kind of failure is exceptionally rare. There's really -- it's so rare that there's not statistical data out there, unlike the ice shed risk where, you know, we can go out and run these cases and we have pretty good numbers for how many of these ice pieces will come off of a turbine. There's not really much data out there on, you know, how often a blade fragment might come off of an operating turbine. The data that we have available is from the Dutch National Institute for Public Health and the Environment, and this is an independent body in Europe that has tried to use all available data to come up with a risk value, and the number that they have come up with is one in ten thousand turbines per year could have a blade failure. And so what has happened is, over the years, turbine technology has progressed, and now we have on-board health monitoring systems on wind turbines which are advanced collections of sensors and processing algorithms that detect imbalances, over speed, and other fault conditions, and shut down the turbine immediately. So we can detect remotely components not working, or anomalies in the blade, you know, issues that have come up, and these on-board health monitoring systems are really designed purposefully to avoid this type of failure, and so that's one of the technologies that has come out over the past, you know, fifteen years that has really improved the reliability of these systems, and I will say that there's a little box on the right where I called this out specifically, but you know, blade throw is by the industry and by most communities that I have talked to, seem more concerned with ice because we know that ice will accumulate on a turbine blade, but blade throwing is a type of failure so rare that it's usually not considered a factor in many permitting processes. So let's go to the next slide.

What I showed up to this point was basically some background, and so what I want to talk about now is the analysis process that we use to assess risk, and this analysis process, like I said, is actually basically going to be written into an international standard that should come out in the next six months. So it's something that is, I believe, going to be adopted internationally. So what we're trying to do with our risk analysis process is perform simulations to see how far an ice piece or a piece of a blade could potentially get thrown, and what risk that poses to homes, people and vehicles. Okay? So what we do is we model a piece coming off of a blade. So you can see the little diagram with this red line, sort of coming off the blade as it's rotating, and we use the equations from ballistics and essentially the same tools that we used to model wings and helicopter blades and projectiles. We use those tools and those equations to model the flight of this thing that gets thrown, and we took the site specific wind data for Goose Creek, the turbine layout in terms of, you know, distances from roads and homes and so, and the particular turbine make and model, all the site-specific data, and we also took the icing frequency, so how often ice is observed in this climate in northern Piatt County as well as the blade failure probability that I mentioned earlier. So we take all of these things into account in trying to build a risk assessment. Next slide.

You can't just run one simulation. That is not really a valid way to assess risk. We can't just look at one simulation. There's many different factors that can change between, you know, different possibilities, right, that can arise. So we need to simulate lots of different cases where we're looking at all the possibilities. So we simulate thousands of different trials where we randomize, for instance, the rotational position of the blade when something's released, how heavy the piece is, the wind conditions, and so on and so forth. In the report I think I list all of those different things that I've landed on. It's about a page long or so. And we do those simulations, and we take the nearest distance to a participating and non-participating home, the nearest distance to a public road, and the nearest distance to non-participating properties. Those are the four kind of values we're interested in assessing. We look at each of those four kind of what we call receptors. We look at those four different types, and we calculate the frequency of a blade fragment hitting that, whether it's a home, a vehicle, or a person on a property. So that's the analysis process, and in the report, it will go through more detail, it'll have the equations and all the ways that we randomize things in nitty gritty detail.

Now one of the things, if you go to the next slide, that comes up is, you know, whenever we have a model, the question is well how good is your model, what if it's wrong. So this is something that we kind of -- I do for a living, and I know models, and I fit them to data that we have for actual air vehicles, right? And so we have this standard, what we call a parameter estimation process, where we look at our models and we say okay, what numbers are we uncertain about, and how do we understand what these values should be tuned to. So this is what I bring in in that experiment, right? We have this experiment that has been done in Sweden, and we run our model on the same turbine, on the same conditions that this experiment happened, right? So we simulate the experiment basically, and we show that our simulation model gives us back exactly what we saw on the experiments. Kind of amazing actually. If you look at these values on the top right, there's the mean throw distance of an ice fragment. There's like different percentiles, and we get a very good match between our simulation of ice throw, okay, with the turbine running how far can ice pieces go. Our simulation seems to match very well with what was observed in the experiment. So we have a lot of confidence that the model is calibrated and tuned properly. It's an important step when you're building these models, because if you're using the wrong inputs you could get the wrong outputs from the model. So we need to make sure we go through that calibration process before producing any results. Let's go to the next slide.

So bottom line from the assessment. The first is on ice shed. So basically when turbines get iced, they're going to be shut down. Okay? They're either going to be shut down automatically from the ice detention system, or manually from personnel that are monitoring the wind farm. So, you know, assuming they're shut down and the risk is zero, I mean the ice pieces fall straight under the turbine. Even if the wind is blowing, those ice pieces, won't go more than tens of meters away from the wind turbine. So the assessment really is that the risk is zero, just due to the operational practice. Go to the next slide.

Now even if all of those mitigation measures fail and the turbines are just left running all of the time so you literally have zero, so if a hundred percent failure of all mitigation measures, and you just leave the turbine on, we have a worst-case risk to non-participating homes of one ice fragment impacting in over sixty-four thousand years. Okay? So if you live -- if you live near the turbine, you're at that set-back, your risk is one in sixty-four thousand years, and you can see on the right, you know, how far these ice fragments fly versus the participating and non-participating resident setbacks, and the ice fragments just don't go that far. Let's go to the next slide.

If you look at worst-case risks of personnel on non-participating property lines, we're at one in two hundred eighty-one thousand years. Again, just because the ice pieces just don't go very far and, you know, of all the places that they could land, and the icing frequency build all of those probabilities up, and you're at a tiny risk. Let's go to the next slide.

And then finally we have worst-case risk to vehicles on public roads is one fragment in thirteen thousand years. And again, I would consider all of these risks, even though they're small, just to still be an over estimate, because they assume a hundred percent of failure of mitigation measures, but recently in my discussions with the IEC, there was talk of conservative estimates being, assuming that the mitigation fails, ten percent. We should make that our worst-case scenario. Well, I'm talking about assuming it fails a hundred percent. So, this is like an extra extra worst-case scenario.

The other thing I forgot to mention on the vehicle assessment is, we have a recent paper where we have developed a unique methodology to assess risks to public roads, and that paper was peer reviewed, and it's documented in the report. Let's go to the next slide.

It's also important to point these risks out in context of other risks. This is an important exercise in understanding kind of what is a high risk versus what is not. I put here, you know, the risks that we're talking about, risks to vehicles, participating homes, non-participating homes, and personnel. I would consider this, because we're using these icing mitigation systems, both automatic and manual, these would be -- I would consider them zero risks. Let's go to the next slide.

But again, if you consider worst-case risk, even if Goose Creek did use any mitigation measures, in the complete absence of mitigation, the risk from ice throw is still less than the risk from driving a car, just doing household activities, and flying on a commercial jet. So these are all published risks for doing these activities. You can die in a commercial airplane crash one in fifteen thousand years, but your risk of getting hit by an ice piece is even lower than that. Again, worst-case, assuming no mitigation. So next slide.

The take-away here is that there's going to be operational management over the icing conditions, so that there is no risk in the surrounding community, and even if those mitigations are not properly conducted, the risks are still below the risks of -- common risks occurring in everyday life.

All right. So the last topic is blade throw. So let's talk briefly about that. I think we're on the right slide. So here, we get the bottom line risks as shown on these slides. They're even smaller, and the reason they're smaller -- well, there's two major reasons. So they're smaller because the blade pieces just don't go very far, and the sheer, you know, infrequent nature of these types of failures. We find that the risks to participating and non-participating homes is less than one fragment in ten million years. Risk to personnel is less than one in ten million years, and the risk to vehicles on public roads is less than one in a million years. To put that into perspective, these risks are on the order of being struck by lightning. So again, from an engineering standpoint we would consider those risks very minimal.

The next slide shows a chart that you can find in the report about all the five thousand simulations we ran. Every one of those dots is a simulated blade fragment trajectory, and you can see that none of them go past the property set-back of one thousand feet. So they're fairly well contained. Okay.

So conclusions here. Next slide. We talk about the operational practices that we reduce the chances of ice throw to nearly zero. And we've also talked about -- one thing I forgot to mention is, we talked about the worst-case scenario, the risks still being lower than those in current everyday life. Next slide.

We talked about blade failure, and again, you know, the real crux of the issue is that's why we have on-board health monitoring and regular blade inspections. Both of these things are critical to safety at a wind farm, and, you know, Apex will of course being carrying out using these on-board health monitoring systems and conducting regular blade inspections so that small imperfections are caught early, and this can be dealt with properly. And then of course, even in the worst-case scenario, if that blade throw does occur, we found the risks to be on the order of being struck by lightning. I would still consider these risks to be fairly -- our analysis to be conservative and overstate the risks, because of many of the assumptions that we made which are documented in the report. So, next slide.

So with that being said, there's plenty more detail if you want to take a look at it in our report and the analysis, methods, and the results.

MR. KAINS: Thank you, Dr. Rogers. Mr. Gershon, do you have any additional questions for Mr. Rogers?

MR. GERSON: Just one clarification in the report identifying the last slide is the report submitted as Exhibit 18. Otherwise, no questions. Thank you.

MR. KAINS: Very good. Thank you.

MR. LUETKEHANS: Can I get a copy of Exhibit 18? I don't think I've seen it.

MR. KAINS: While we're looking for Exhibit 18 for Mr. Luetkehans, the Board is going to take a five-minute recess to review the presentation of Dr. Rogers before we open it up for questions. So, the Board will be in a brief recess. It is 6:28. We'll come back at 6:33. Thank you.

(RECESS TAKEN.)

MR. KAINS: All right, let's re-convene. Dr. Rogers, you remain on the stand, and do you understand that you are still under oath?

MR. ROGERS: Yes.

MR. KAINS: Very good. Thank you. It's time for questions from members of the Zoning Board of Appeals for Dr. Rogers regarding his direct testimony. Any questions from members of the Zoning Board of Appeals? Mr. Harrington?

EXAMINATION BY
MR. HARRINGTON:

Q. So your study there in Sweden, correct, that you're referencing?

A. Yeah.

Q. What would that be in relation to tower height? Maybe do you know the tower height? I don't know.

A. I don't know off the top of my head, but it was lower.

Q. All right.

A. I think it was a slightly smaller turbine than what's being used here now.
Q. Do you feel that that dramatically affects the results of this study then?
A. No. It's a great question. When we calibrate the model, what we're actually doing, and I didn't know how much detail we wanted to go into, but I'll talk about it a little bit here. We calibrate the aerodynamic drag of the ice pieces. Right? Because that affects how far we go. Right? So you don't really know -- there's something called a drag coefficient. You don't know what you should be setting that to. It's different for every object, a baseball, a leaf. We don't know what to set that value to. If you just go in there and use the wrong value, an ice piece still could go farther -- could go too far or too short compared to what it would go in real life. So what we do is we kind of calibrate everything to this example study. It doesn't matter that a turbine was of a different size. It just matters that they were ice pieces coming off the turbine. The ice pieces coming off of that turbine would be the same size and everything as coming off of any turbine. It doesn't matter what size, because it's just the phenomena of how ice pieces break off. Does that make sense?
Q. I get what you're saying. You're saying the ice

is going to collet regardless, and then apparently the atmospheric conditions are going to affect when it sheds?

A. Right. So we calibrate the drag coefficient to that study. Now we can use that same drag coefficient for a bigger turbine. So our ice pieces for this bigger turbine went farther than what was shown in that experiment for sure, just because the turbine was bigger, but we're confident that the model is right. So we can use it on any size turbine, you know, and it will give you the right answer.

MR. HARRINGTON: Okay. Good to know.

MR. KAINS: Any other questions from members of the Board? Mr. Chambers?

EXAMINATION BY

MR. CHAMBERS:

Q. So, along the same lines of that question, in the report, the ice fragments, the model using flat plain aerodynamics, since most of the modeling here is for, you know, worst-case scenario, do you also model like for this kind of a solid chunk, like say something roughly equivalent to a brick, and model the throw on that without the flat plain aerodynamics?

A. Yeah, so there's really only like a few models you can choose from. Like there's an air foil wing shape. We call it a wing shape model. There's a flat plate, and then there's like a ball basically. The brick would basically be a flat plate in the sense that the brick kind of has a flat surface that pushes against the air. We think about an ice piece, you know, it's some sort of irregularly-shaped object that, you know, it's definitely not a perfect flat plate, but we kind of calibrate, you know, the aerodynamics so that -- and we have like -- we vary that drag coefficient a little bit to sort of simulate the irregularities.

Q. Okay. That's along the lines of my thinking. There is a model for, say if you're still using that flat plain model, but you use something that's got a lot more density, a lot less of the drag co efficiency, and has just more of a solid mass, in model with, based upon that purpose, is a flake shaped --

A. Yeah. So in the report there's a discussion about something called and area-to-mass ratio to get super technical. The area-to-mass-ratio is really what dictates how far something flies. It's kind of the area of the ice piece divided by the mass. If you think about a rock versus a piece of paper. That's why when you throw them they will go very different distances, because if you take the area and divide them by the weight or mass, you get a much different number. We randomly vary that area-to-mass ratio in our simulations to simulate a broad range of what ice pieces can look like, and the way we know how to vary that, was taken from these experiments where they went out and measured ice pieces to show the variation in that parameter.

Q. On the same page here on the report as that area-to-mass ratio, there's the wind speed. So everything else on here has pretty cut and dry numbers to it, but the wind speed just says -- the wind speed distribution was created to match the measured wind speed distribution for a nearby mid-western wind farm. What is that?

A. So there's a wind farm at Fork Ridge that we have data for, Ford County. So, not that far from here, tens of miles away, as far as I remember. That was the wind data we used for this study. Now we have wind data for a wide variety of mid-western locations, and I usually choose one that's very close. The wind distribution here in Piatt County is going to be very very similar to what that one at Ford County is, and if, you know, there's -- there will be miniscule changes and results as a response to using different wind distributions there.

Q. Okay. So the modeling doesn't assume any wind speeds outside of that range?

A. Well it uses what we call a Weibull distribution, so it randomly draws on wind speeds from what was recorded, and it can draw some like one in a million wind speeds. I've seen it draw some unusually high wind speeds, like you'll see like twenty meters per second come out of that, where the wind turbine would actually be -- it could be like beyond the cut-outs with the wind turbine, where the wind turbine won't even be operating any more. It will be too high. We'll see wind speeds come out of that randomization process. Yeah, you'll get some random draws.

Q. One question just on some terminology here. So like the example you gave of the one in ten thousand number for blade. Is that for blade throw, or just for blade failure, because I've seen blade failures before.

A. Right.

Q. At what I assume would be more common than one in ten thousand, if I've seen one in person that's broken. But is that one in ten thousand number, is that for an actual throw of a blade?

A. So, I don't believe that all of those one in ten thousand are blade throws. A lot of those could be blades that, for instance like, you know, are stopped like, that they already knew that the turbine -- that the turbine health monitoring system shut the turbine down, and at some point after that the blade or piece kind of fell off of it would still be recorded as that kind of event. So the actual frequency of a blade being thrown while the wind turbine is still operating would be less than that one in ten thousand number. But as far as the data sets are so imprecise that I can't give you a specific number for, you know, how frequently a piece comes off while the turbine is operating.

Q. Okay. I think you may have already kind of answered the last question I have. The last question I had would have been that that max rotor speed being exceeded, the wind cut-out was listed, and I would have to find the page here, but twenty-four meters per second. So there is, from what you're telling me, the way it's drawing numbers for that model, it is including the possibility of speeds that aren't actually possible in terms of that max rotor speed?

A. We model the actual rotor rpm like curve during, you know, the actual -- the way the control system will actually control a turbine. So if you get a wind speed at thirty meters per second, which is extremely fast, then it will assume -- the model will assume that the turbine's not spinning. Now there are overspeed situations where, you know, a bunch of things can break, a bunch of safety mechanisms can break, but those probabilities are down in the area of like one in, you know, five hundred thousand or one in a million, and those don't make their way into this type of analysis because we're suppose to be looking at the normal course of operations, and even in a worst-case scenario, and I talk about this in some of the papers that I've listed, but over-speed scenarios you don't want to bring those in with, you know, typical risk assessments.

MR. CHAMBERS: Thank you.

MR. KAINS: Any other questions for Dr. Rogers? Yes, Mr. Harrington?

FURTHER EXAMINATION BY

MR. HARRINGTON:

Q. So just wondering, in the unlikely event, I grant you your statistics say not very likely, but just on the chance that something would develop, whether it be ice shed, some other piece of the turbine, turbine blade, I don't know what, it's detected and found, what other mitigation process do you have other than completely shutting that location down?

A. Sorry. Can you elaborate on that?

Q. Let's hypothetically say it's shed, let's say it's been identified that you have shed above and beyond your current math. Outside of shutting it down, is there anything techniques or control devices or, I don't know, is there anything of use?

A. Well, you're saying so if potentially the wind farm is operating, and something happens --

Q. Right?

A. -- you're saying are there additional safety mitigations that --

Q. What I'm getting at, is there any in use in these other wind farms, you know, do you know of any?

A. That's not something I can speak to. I'm not really sure.

Q. That's understandable.

A. Yeah.

Q. That's understandable. I guess what I'm driving at is, if that were the case, if there were, who would be making that decision? Do we know that?

A. Well, it certainly wouldn't be me. That might be a good question for Apex.

Q. I understand. I just wanted clarification.

A. Yeah.

MR. HARRINGTON: Thank you.

MR. KAINS: Thank you, Mr. Harrington. Any other questions from the Board? All right. Questions from members of units of local government including school districts? Questions from interested parties represented by licensed attorneys? Mr. Luetkehans?

MR. LUETKEHANS: Thank you. First of all, I have to object. It's one thing to get power points during or after the presentation, but to get a 24 -- 23-page report this detailed is clearly inappropriate, and actually getting it after the testimony. Under, *Klaeren* that's clearly not appropriate. I will do my best, and I'm going to reserve the right to ask this Court to call Mr. Rogers back at some point after I've had the opportunity to review this. I'm not going to do it lightly, but this is just not how these hearings should occur.

MR. GERSON: For clarification, that report was submitted ten days -- seven days ago at our last public hearing --

MR. LUETKEHANS: Mr. Gershon, you have my e-mail.

MR. KAINS: Guys, here's what we're going to do. Any exhibits that you're planning on using, get it to each other and get it to Mr. Keyt at least two days before the hearing, because that way we have a chance to look at it, copy it. Mr. Luetkehans needs the opportunity to review the documents so he can perform his job. What I'm going to do is allow Mr. Luetkehans the opportunity to cross-examine this witness with respect to his powerpoint presentation. Should we get to a point where it seems as if Mr. Rogers needs to -- Dr. Rogers, I'm sorry, sir, Dr. Rogers needs to testify additionally to what he does tonight, then perhaps we can do it via, if it's okay with both parties, I think we're okay with it, via some kind of zoom conference type of thing. So, you know, Dr. Rogers doesn't need to come back to central Illinois from beautiful Georgia, but the thing is, Mr. Luetkehans needs to be able to adequately cross-examine him. So if we can, in the future, counsel, have exhibits that are going to be proposed two days before you're going to be using them. So that way everybody has a chance to be on the same page. Mr. Gershon?

MR. GERSHON: No objection, but we were directed originally and Mr. Luetkehans was here, to turn all of over exhibits including a copy for Mr. Luetkehans to Andy which we did a week ago, and you know, I recognize that Mr. Luetkehans wasn't here, but I feel that he would do the same thing I would do, which is to check in with Moore to find out what had occurred at the meeting, but we're happy to provide them directly to Mr. Luetkehans in advance, and would ask him to do the same with us.

MR. KAINS: Yes, giving them to Mr. Keyt isn't giving them to Mr. Luetkehans. So I want you to provide him with exhibits. Mr. Luetkehans, I want you to provide Mr. Gershon and his office with exhibits, but also get them to Mr. Keyt, and I think two days in advance is plenty.

MR. GERSHON: Scott, if Mr. Luetkehans has additional questions, then we will certainly have Dr. Rogers come back here in person to address those questions. We would ask if we're going to do that, that he come back solely for the purpose of responding to those questions, and --

MR. KAINS: Absolutely. We're not going to re-open it for everybody to ask questions. This is the time for everybody to ask Dr. Rogers questions. All right. I think we're in agreement and we understand. So, Mr. Luetkehans?

MR. LUETKEHANS: Yes.

MR. KAINS: Your question.

EXAMINATION BY

MR. LUETKEHANS:

Q. Dr. Rogers, you said plant operation staff are well trained to recognize ice thawing conditions and curtail turbines. You said that in your powerpoint?

A. Yes.

Q. Were you provided those well-trained procedures?

A. Was I provided with the actual procedures?

Q. Yeah.

A. No, but I did have discussions with Apex personnel.

Q. Okay. So they told you they were going to train them. Is that pretty much what you said, what you're saying?

A. Yeah. So I'm aware of the standard ice, you know, mitigation operating procedures at wind farms, and I asked if they would adhere to those ice operating procedures which includes monitoring for ice build-up and shutting the turbines down if ice build-up is observed, and they confirmed that they would be doing so.

Q. So that's the total of your understanding about the training in this regard?

A. Yes.

Q. You said, if you go -- and again, these aren't numbered, so I'm going to try to get to it the best I can. If you go to Assessed Risk: Ice Shed. It starts about halfway through. There's three or four charts -- three or four things with that title.

A. Yeah, I'm on there.

Q. Go to the second one, if you would.

A. Yeah.

Q. With the two. This is the one that has the chart on the right that talks about closest non-participating residence, correct?

A. This is the one you're referencing, right? I'm sorry for not numbering them.

Q. That's okay.

A. Yeah.

Q. Okay. When you talk about number three on the next one, that's where you add the issue of property lines, correct?

A. Right.

Q. Okay, but the chart on the right is not property lines, is it?

A. No. The chart on the right I have dash lines for residences.

Q. Okay. So that's the same chart you talked about on the page before, correct?

A. Right. Right, they have -- yeah, the property line set-back is a thousand, so there could be another line there for a thousand, yes.

Q. In fact, you include that blade throw of a thousand.

A. Okay.

Q. So there are -- there is ice shed that's gone, under your model, past the thousand-foot property line, correct?

A. There is a very very small number of cases that could go that distance. That's true.

Q. Okay. Thank you. No further questions.

MR. KAINS: Thank you, Mr. Luetkehans. Any other attorneys in the room with questions for Dr. Rogers? Very good. Now questions from other interested parties? Members of the public opposed to the application or neutral on the application? And just again, a reminder, a gentle reminder, it's not time to testify. It's time to ask questions of the doctor. You, of course, will have your opportunity to testify later on in this hearing. With that said, questions from the public for Dr. Rogers? Seeing none. Questions from Piatt County Staff and Consultants? Mr. Gershon, anything on re-direct to clarify?

MR. GERSHON: Just a couple of items.

RE-DIRECT EXAMINATION BY

MR. GERSHON:

Q. Just to clarify, all of the examples you identified showing any risk whatsoever, assume a hundred percent failure of all monitoring and safety procedures?

A. Right. So the risks that we were just talking about, where you have a very very small number going, you know, towards a thousand feet, yes that assumes that you're running the turbine a hundred percent of the time when there's ice. So literally nobody's monitoring it. There is no, you know, any detection system operation at all. So this, you know, and this is where I get back to assessing risk. It's not enough to just run one trajectory or look at one number and say something's physically possible. We don't really assess risk that way. If we did, we would all drive our cars five miles an hour and where a helmet in case a meteor strikes, right? I mean so, you know, we have to assess the risk by looking at all the probabilities, it sort of matches what we had, a single worst-case fragment, if everything else is stable, right?

Q. Based on your studies, how often does one hundred percent failure of all the safety systems and monitoring systems occur?

A. Well, I mean -- that, I don't have a number for how often a hundred percent failure occurs, but I can't believe that Vestas would charge anyone for a system that doesn't work a hundred percent of the time. So like I said, in the work that I've done with the IEC and that's with a group of twenty other international experts, the discussion was that we should consider worst-case scenarios to be ten percent failure of those systems. So the systems only operating ninety percent of the time should be considered worst-case. I'm looking at -- I'm considering worst-case to be like what happens if they are never operating. So there's a big difference there.

Q. And while those systems are operating, what is the risk of ice throw?

A. Zero. I mean the blades will be shut down, you know. The systems, the ice detection systems are going to be operational from day one, and you know, if they are not working then they're repaired so that they are operational. If the turbine rotor is stopped, the blades and the ice pieces fall straight down, and we're talking about tens of meters lateral distance to the wind.

Q. Would you clarify the thousand-foot set-back risk you were discussing?

A. Yeah, this is what I was saying before is that, you know, reducing something down to like how far one thing could potentially travel is not the right way to assess risk, right? We have to look at the probability of that incident occurring, the probability of something being there for it to hit, and then the probability of like, you know, all the failure mitigation measures failing before that event even happens. That's where my risk numbers come from. Even though you see this chart and you see a thousand, oh my gosh, there was a case that went a thousand, well if you look at the assessed risk you see that, you know, we're talking about, you know, one in two hundred eighty-one thousand years is the actual risk to a person, even knowing that, you know, a piece could go that far, and again, that's assuming a hundred percent failure of all the other mitigation measures that are in place.

MR. GERSHON: Thank you. No further questions.

MR. KAINS: Thank you, Mr. Gershon. Mr. Luetkehans?

MR. LUETKEHANS: Real quick.

FURTHER EXAMINATION BY
MR. LUETKEHANS:

Q. When we a drive a car we assume a risk; is that correct?
A. Right.
Q. We all assume certain risks?
A. Right. I mean just by --
Q. This risk we're talking about here, is not one that you assume by walking in your back yard that something or someone else is causing that risk, however small it mail be, is something being caused by someone else, not -- you can't decide not to walk in your back yard?
MR. GERSHON: Could we have a chance for you -- you were trying to answer the question when counsel was speaking.
MR. KAINS: There's a question pending. Answer that question please, Doctor.
A. So whenever we build things in the community, whatever, if your neighbor builds something on their property or, you know, any community or anything we live in, there's going to be associated risks, right, whether you are driving under a bridge, you know, whether your neighbor builds a silo on your part of the property, and

an ice piece comes off and goes onto your part of the property, right, and so we have to look at these risks in terms of everyday risks that we take, right, and so the risks that I've shown here are risks that are both, that are smaller than both everyday activities and just ex-essential risks light lightning strikes, but then also smaller than, you know, possibly driving across a bridge or having your neighbor put up a silo, you know, on their farm.

Q. Okay. I understand, and I'm not trying say -- what I'm trying to understand is, you're comparing this risk to me driving a car, and those are not the same kind of risks. Ones's an implied risk that I take when I get in my car every day, correct?

A. Sure.

MR. LUETKEHANS: No further questions.

MR. KAINS: Mr. Gershon?

MR. GERSHON: Just to clarify.

FURTHER EXAMINATION BY

MR. GERSHON:

Q. You've identified the incredibly limited, if no risk, within a thousand feet of the property. Correct?

MR. LUETKEHANS: Is that a question or -- I mean --

MR. KAINS: It's a question. It's a statement with correct at the end. So, that's cross-examination.

MR. LUETKEHANS: Well it's not actually cross.

MR. KAINS: Actually, since it is re-direct, ask another question.

MR. GERSHON: I would be happy to do so.

Q. In looking at assumption of risk. The property owners who are subject to any risk within a thousand feet are property owners that are a part of our project, since it has to be on their property or the property line, is there any risk that's assumed by anyone who's outside of that thousand-foot line?

A. Not according to the results I've shown here. I mean the risk that we assess is zero risk from ice shed, because of all the mitigation measures that we're talking about, and the blade failure, you know, cases we show don't go that far. The worst-case, when we're talking about, you know, ice pieces actually being shed, we show those mostly to answer questions about what happens if all the mitigation failures, mitigation measures fail, but the assessed risk is essentially that there is no risk beyond, you know, a very small radius surrounding the turbine.

MR. GERSHON: Thank you.

MR. KAINS: Mr. Luetkehans?

FURTHER EXAMINATION BY

MR. LUETKEHANS:

Q. I hate to do this, but just so I'm clear, the closest non-participating property line in your report is a thousand feet, correct?

A. Yes.

MR. LUETKEHANS: Okay. Nothing further.

MR. KAINS: Thank you. The final questions come from members of the Zoning Board. Any questions from members of the Piatt County Zoning Board of Appeals? Very good. Thank you, Doctor. You may step down. You are excused unless you are recalled later in this hearing, and we will let you know.

Mr. Gershon, your next witness?

MR. GERSHON: Thank you. Let's call Jason Conley with Apex.

MR. KAINS: Sir can you please raise your right hand and be sworn?

(WITNESS SWORN.)

MR. KAINS: Before we have him testify, are there any exhibits here that need to go to Phil?

MR. GERSHON: As well as to the ZBA.

MR. KAINS: Absolutely.

MR. GERSHON: One moment. We are submitting as our Exhibit 22 the safety and security powerpoint.

MR. KAINS: Very good. All right, sir, if you could please state your name and spell your first and last names for the record.

J A S O N   C O N L E Y

called as a witness on behalf of the Applicant, having been first duly sworn, was examined and testified as follows:

MR. CONLEY: My name's Jason Conley, J-a-s-o-n, C-o-n-l-e-y.

MR. KAINS: You may proceed.

MR. CONLEY: All right. My name's Jason Conley. I'm the Health and Safety Manager for Apex Clean Energy. A little bit about myself: I've got a Bachelor's in Occupational Safety and Health from Southeastern Oklahoma State University; two certifications I hold from the Board of Certified Safety Professionals. I hold an ASP certification and a CSP certification. I'm a member of ASSP, which is the

American Society of Safety Professional, I have been since 2006. I'm also a member of American Clean Power, which is ACP, and have been since 2017.

My background, I have fifteen years as a Safety Professional. Nine of that is in the Oil & Gas Industry. I have supported operations drilling and well completions all over the central United States, Oklahoma, Texas, Louisiana and Wyoming. I spent a couple of years working in Alaska in Prudhoe Bay, supporting drilling operations, where I was an active member of the Prudhoe Bay response team; spent two years on an offshore production platform in the Gulf of Mexico where I received an offshore major emergency management certification from the Offshore Petroleum & Industry Training Organization.

I've been in the renewable energy industry for six years. I have supported operations -- wind farm operations in Kansas, Texas, Idaho, South Dakota, Indiana and Pennsylvania, and construction operations in Texas, Oklahoma, Arizona, New Mexico and New York. Next live slide, please.

So safety is the core value of Apex Clean Energy. It's not just a part of the business, it's how we do business. We work hard to cultivate a culture for safety throughout the company and employ a proactive and collaborative approach to prioritizing safety in every initiative that we do. Apex is a member of American Clean Power, where we're engaged in hundreds of other safety professionals in the Environmental, Health and Safety committees. ACP works diligently to improve safety programs and enhance those already in place with the individual companies. They're also an ANSI certified accredited standards organization where we have a collaborative approach with federal agencies to improve worker health and safety, organizations like OSHA, NIOSH, CDC and the Bureau of Safety & Environmental Enforcement.

MR. KAINS: Mr. Conley, could you just slow down just a bit?

A. Yes, sir.

MR. KAINS: I know it's nerve racking to be a witness; however, it appears that you're reading your powerpoint, and if you could read it a little more slowly that would be very helpful. Thank you, sir.

A. You bet. As far as the operations and maintenance goes and safety support, the project's expected to have eight full-time operations and maintenance staff. That contact information will be provided to Piatt County, to the road districts, and to the participating land owners.

The responsibilities of the operations and maintenance staff are to conduct visual inspections on equipment across the project, conduct turbine maintenance within the turbine manufacturer recommendations which is typically twice a year; and investigate complaints and abnormalities as warranted with the operations.

The entire operation will be monitored by the remote operations control center located in Charlottesville, Virginia known as the ROCC. The ROCC has twenty-four hours a day, seven days a week, three hundred sixty-five days a year monitoring on all the wind turbines. They will also monitor the O & M and the substation as well, and we try to work with veterans in this space to have them in those roles.

Some of the information that will be shared with the public will be available would be visible signage, the 911 addressing on the O & M and the substation. Known voltages for the substation will be posted. There will be twenty-four hours a day, seven days a week emergency contact information which will include the ROCC, and then the access road for each turbine will be labeled. So emergency services will know where the turbines are located, and we also provide a GIS file for 911 addressing to locations within the wind farm itself, O & M substation.

As far as safety training goes, all employees are expected to have formal training in advance tower rescue as well as self rescue. They have electrical safety training, and they will have first aid, CPR, and AED training.

We work with the development of the emergency response plans with local authorities, building out the evacuation maps. We work for helicopter-evacuation locations, emergency call trees in the event of emergency, and once again GPS on all the towers.

Site-specific training with local, emergency responders before and during operations is carried out. We usually conduct drills annually, whether it's tower rescue, medical or fire emergencies, and we try to get Medi-vac involved at least once every three years, and then conduct site walk-through with local emergency personnel as well.

Coordination with local fire departments. So today we've met or reached out to Northern Piatt, Cornbelt, Mid-Piatt, Deland, and Farmer City. We have provided draft emergency action plans and sought feedback from those agencies on how they participate. Prior to any building permits, a final site plan --

MR. GERSHON: If I could, for the record, that emergency action plan he's discussing is Exhibit 1, supplement to the application F3.

MR. KAINS: Appendix 3?

MR. GERSHON: Appendix F3.

MR. KAINS: F3. Thank you.

A. And that is a draft emergency reaction plan. As the project becomes, you know, more operational, it will be updated accordingly.

Prior to building permits, a final site plan to local departments will be provided, and then once again emergency operation plan would be submitted to the county emergency management agency.

As far as operations go, as I mentioned earlier, annual training with emergency response personnel will be carried out conducting collaborative emergency response buildings drills.

There will be no equipment needs. No specialized equipment is needed to support the emergency response efforts at a wind farm; and community support for local fire departments.

Material handling, storage and disposal. So within the WECS ordinance any solid waste will be removed properly and disposed of in accordance to federal, state, and local laws. Hazardous waste is not anticipated during construction operations or maintenance of the wind farm. If it's produced, it's handled according to federal, state, and local laws. The sites are required to have plans that meet and/or exceed EPA requirements, or an SPCC plan, that's Spill, Prevention, Control & Countermeasures, and waste management plan.

There will be safety data sheets on any chemicals in the O & M building, and they will be provided to local fire departments as needed.

As far as waste at the wind farm, it's typically primary lubricants, gear oils and grease. And once again, the spill response plans and the waste management plan is put in place to help control that.

As far as safety and wind energy, we talk about turbine fires. Incidents of turbine fires catching -- turbines catching fire are extremely rare. Turbines that have caught fire typically burn for less than six hours and very rarely do they fall. If a turbine is burning, operations crew will immediately separate it from the rest of the strand electrically, and we work with local emergency management to establish a perimeter so there is no spread of the fire. One of the mitigations that's also in place is, as Dr. Rogers mentioned, turbines are equipped with numerous sensors that are designed to shut down and prevent any fire-related events associated with the turbines themselves.

Up-tour incidents or injuries. As previously stated, all up-tower rescues are handled by trained operation staff. Local emergency responders are engaged in treating any injuries.

Other industry hazards. Many common to any industry that works with large equipment, you know, driving, working with electrical components and communications infrastructure, falls, pinch points.

Just as a quick recap. From the operations standpoint, the turbines are safe to operate. We utilize the latest technologies associated with those turbines to make them safe. They are monitored, once again, twenty-four hours a day, seven days a week, three hundred and sixty-five days a year, and we have well-trained personnel.

Safety at Apex. That's how we do business. It's involved in the inception of the project, and vigilant on all fronts.

As far as community involvement, once again we work with local fire departments, emergency management personnel, and creating land-owner relationships.

MR. KAINS: Very good. Thank you, Mr. Conley. Any questions, Mr. Gershon?

MR. GERSHON: No questions.

MR. KAINS: Very good. Thank you. Would the Zoning Board of Appeals like to take a brief recess to review the testimony and the powerpoint from Mr. Conley, or do we want to just start with questions?

MR. CHAMBERS: I'm good to start.

MR. KAINS: If there's no need for a recess, we're not going to take one right now. Mr. Chambers?

EXAMINATION BY

MR. CHAMBERS:

Q. The first question I would have is on fire. So in the event of a fire, obviously the response would be to contain anything that could spread, but say, so worst-case scenario here, say it's late fall, dry corn field, and you've got a field fire on your hands. What, besides local fire departments, there's no uh, the local fire departments are the response in that scenario, correct?

A. So any time there's issues with the wind turbine, the monitoring system would identify that something was wrong. The OEMs, in this case they're Vestas turbines, so a Vestas technician would be called to go put eyes on and see what's going on, and you would probably be able to see it from a distance that there was a fire, and again if local emergency hadn't already been notified, then they would be notified as soon as possible to address that and, you know, once again, isolate the turbine from the rest of the strand, create a perimeter so that there is no spread. But the monitoring systems within the turbines themselves would detect something, that something was wrong.

Q. They're supposed to detect fire --

A. That is correct.

Q. -- before it is actually burning up?

A. They're supposed to.

Q. -- well burning down?

A. -- they are supposed to detect any anomalies or if the turbine's not operating properly.

Q. But if there were a field fire situation like that where, things like that get out of control pretty quickly, does liability for that fall on Apex for the crop?

A. I don't know the answer to that.

Q. Okay. Another question I had, so you talked a little bit about the air Medi-vac participating in some training and stuff there?

A. Correct.

Q. Do you have any coordination with them, so say they have a response for something unrelated to the wind farm, but within the footprint of the project, do they have any coordination with the wind farm as far as getting in and out to be able to do that safely?

A. Yeah, all the GPS coordinates for the turbines would be provided to all local emergency management, that including Medi-vac. We would typically have one, probably two, Medi-vac companies on the hook in the event that they needed to support the wind farm. If it's something outside the wind farm, once again, all the information for emergency response is provided to the local authorities.

Q. All right. My thought there was, say there's a farm accident or something within the foot print?

A. Yeah.

Q. If there was any coordination between, you know, Medi-vac saying hey, we need to go in to airlift somebody out, if the operators at the wind farm would be able to say shut turbines down to allow for that?

A. Yes. Absolutely.

MR. CHAMBERS: All right. That's all I've got.

MR. KAINS: Very good. Thank you, Mr. Chambers. Mr. Wax?

MR. WAX: Yes.

EXAMINATION BY

MR. WAX:

Q. Amongst your list of safety items was an ADLS system. Could you explain exactly how that's going to work?

A. So the aircraft detection lighting system was already discussed by Mr. Moore in his presentation. It just detects the aircraft is in the area, and it's associated with the lights on the turbines.

MR. WAX: Okay.

MR. GERSHON: Andy Carlson is our next witness and can address that in more detail if have more questions.

MR. KAINS: Very good. Thank you, Mr. Gershon. Any other questions from the Board? Mr. Harrington?

EXAMINATION BY

MR. HARRINGTON:

Q. So maybe to piggyback on Will's question here, you're talking about in the event of an accident or fire, you're going to be notified by your on-site sensoring system, right, which I believe you referred to as Vestas?

A. No. So the turbine is a Vestas turbine.
Q. Okay.
A. And then it is equipped with numerous sensors and monitoring throughout the components of the turbine itself.
Q. Correct. I get it. You've got a lot of electronics to monitor certain functionality.
A. Sure.
Q. But correct me if I'm wrong, you made reference to this, the ROCC somewhere in Virginia?
A. Right.
Q. So I assume that's like your head shed where you're monitoring these electronic programs?
A. So, there's actually two ROCCS. One of them is operated by Apex. We monitor all the wind turbines that we own and operate.
Q. Okay.
A. And the other would be monitored by Vestas. So they have their own monitoring system.
Q. Okay. I get that. So I guess the heart of my question lies within what type of response time are we talking about here with all of these different monitoring systems? So, if Will over here calls in and says hey, we need you to shut turbine three down, how quick's that happen?

A. I don't have an exact time frame, but it's fairly quick.

Q. So fairly quick, like ten minutes or an hour and a half?

A. I don't have an exact time frame. It depends on the ROCC operator pulling up that specific turbine, looking at it, and being able to shut it off. So what that time frame is I don't have, but I do know it's fairly fast.

Q. Could you get us that?

A. I can take that information back and find out.

Q. So another item would come to mind in that situation, is there any on-site contact in case of an emergency?

A. There is. The on-site contact would be provided for the facility manager that's going to be operating the wind farm as well as the technicians that are there. So that information is in the emergency response plan that will be provided to the local authorities as well as posted the substation, and at the O & M building.

Q. And this is information that you will share with all the local agencies?

A. That's correct.

Q. The County itself?

A. That is correct.

Q. Probably going to be changes. So you'll take it upon yourself to notify of those changes, right?
A. That's correct.
Q. Good. So, another item I noticed, you reference hazmat and/or lubricants, what not. Driving Route 47, I can't help but notice there's been turbines that apparently hydraulic reservoirs leaked, or I don't know what other mechanical failures. What is the protocol if that is called in and somebody says hey, you've got a turbine that's leaking whatever. What do you do?
A. So the turbine -- if the turbine's leaking anything, typically the turbine is not operating. Right?
Q. True.
A. Because there's something that's not operating correctly.
Q. Correct.
A. The technician's notified. They go and inspect the turbine to see what the source is and then, you know, put the mitigations in place; one, to clean anything up that needs to be cleaned up; and then correct said, you know, non-working equipment.
Q. So like can you tell us how big of a gear case or reservoir this thing holds?
A. I don't know the exact quantities of the

lubricants that are inside this gear box.

Q. Is there any mitigation for ground water in this regard?

A. Mitigation for ground water. So, when the turbines are built, they'll have the concrete structure underneath them. There's also an area around the base of the turbine that's essentially like a driveway or gravel pad that will be -- it'll be packed in. So the potential for contamination, for ground water is almost nil.

Q. So I guess I'm visualizing this, you have a gear case up here and, you know, unfortunately it leaks and it comes down, and goes to the base of your footing, and then goes to the gravel, I guess. That's why I asked how big the reservoir was. Are we talking about a thirty-gallon drum of oil or a three hundred-gallon drum of oil?

A. I don't know the specific quantity of this gear box. In my past, typically seventy to eighty gallons, but the potential for the seventy or eighty gallons to get to the ground is slim to none because of the design of the wind turbines and the way that they're designed. Essentially if there's a leak in the gear box, the majority of that stays contained within the turbine itself. The likelihood of it getting to the ground is very small.

Q. Right. But to your knowledge, there's no, what would you call it, containment around the bottom of the turbine. It's just concrete to rock, right?

A. That's correct.

Q. Okay. That's good to know. Could one of you maybe tell us at some point what the size of your gear box is? Liquid containment? I think Will brought up a great question about liability, God forbid a fire is ignited. Does that end you Apex's lap, or does that end up on the land owner? Can you answer that?

A. I can't answer that.

Q. Can you guys answer it? Okay. I guess -- know these are unlikely events, but that's part of our due diligence. So a wind tower catches fire, for whatever reason, are our local fire departments able to do anything about that? These are six hundred plus foot wind towers?

A. Unfortunately, retain the perimeter, and there's -- no.

Q. Right. So play this out for me in the case that this happens. What does a local fire department -- what do you do? What does anybody do at that height?

A. Nothing.

Q. Nothing? You just let it burn out basically?

A. Yeah, absolutely.
Q. Okay. Okay. Good to know.
A. Yeah.
MR. HARRINGTON: I think that's it for now.
MR. KAINS: Very good. Thank you, Mr. Harrington. Any other questions for Mr. Conley from the Zoning Board of Appeals?
MR. CHAMBERS: I have just one follow-up.

FURTHER EXAMINATION BY
MR. CHAMBERS:

Q. You talked about there's the local operation staff at the operation building, and then there's the guys at the ROCC. Is there someone in the local operations building 24/7?
A. There is not. Those guys will be on call. So they'll have, just like you would have, they usually come in at six or seven in the morning and leave at five, six in the evening, and they'll have a technician or a lead technician that's on call. So in the event that something were to happen after hours, the ROCC should see it as well as somebody would be able to contact, like I was explaining to Mr. Harrington, there will be emergency contact information provided that we

would get in touch with, whoever that personnel is.

Q. So after hours, say there was a fire that has shut down, the responsibility falls on the ROCC?

A. That's correct.

Q. If there is staff in the local operations building during an event like this, do they have any ability to initiate the shutdown themselves?

A. Yes.

Q. Or does that still fall on --

A. No. They can do it from the O & M building or they could do it from the ROCC. There's two ways to shut turbines down. They could either do it from the operations building, via the ROCC, or the ROCC can do it.

MR. CHAMBERS: Okay. Thank you.

A. You bet.

MR. KAINS: Any other questions from the Board? Very good. Questions from members of units of local government including school districts? Questions from interested parties represented by licensed attorneys. Mr. Luetkehans?

MR. LUETKEHANS: Thank you.

EXAMINATION BY

MR. LUETKEHANS:

Q. Mr. Conley, you said that you would notify -- a Vestas technician would be notified when the monitoring system sees something, correct? Something to that?

A. Somebody would see something, yes.

Q. Okay, and then the Vestas technician would come out to the site?

A. He would be -- um, he could be dispatched to that location; that's correct.

Q. And how far away is the Vestas technician?

A. I'd have to look at the site plan to see where the O & M building is and it would depend on which turbine's in question.

Q. So there's a Vestas technician in the building from eight to five, or something like that?

A. There will be Vestas technicians on-site within the perimeter of the -- within the bounds of the wind farm. I don't know if they would be the at the O & M building. They could be doing maintenances, they could be working on other turbines.

Q. Okay. So they're your technicians, they don't work for Vestas, I guess is the question.

A. No. They would be Vestas technicians.

Q. Okay.

A. However, we would have a facility manager there.

Q. Do you oversee the training for all of the Apex wind farms?

A. I help support the training for Apex wind farms.

Q. Okay. Do you help support the training throughout the country, the area? What's your responsibility? I haven't seen that in your powerpoint.

A. Yeah. I support the asset management operations. So, the wind farms that Apex currently owns and/or operates, I support the safety for those facilities.

Q. Throughout the country then?

A. That's correct.

Q. Okay. And you've talked about Apex's safety program, correct?

A. Yes.

Q. You're familiar with the Ford County wind farm that was built in the last several years?

A. Vaguely.

Q. Okay. You oversaw it? That was part of the your responsibilities?

A. It was not. Ford County was built before my time with Apex.

Q. When did you start with Apex?

A. I started with Apex in March of this year.

Q. Oh, okay. Are you familiar with the fact that -- when was Ford County built approximately? Most recent?

A. Um, last year, I believe.

Q. Okay. And do you still own Ford County? Does Apex still own the Ford County wind farm?

A. Not that I'm aware of.

Q. Okay. So in fact, within a year after purchasing or building the Ford County wind farm, Apex sold it, correct?

A. I -- I -- -

Q. Give or take?

A. To the best of my knowledge.

Q. Okay. Do you recall who they sold it to?

A. I do not.

Q. So you wouldn't know the details of their safety program, would you?

A. I would not.

MR. LUETKEHANS: Okay. Nothing further. Thank you.

MR. KAINS: Thank you, Mr. Luetkehans. Questions for Mr. Conley from other interested parties, members of the public opposed to or neutral on the application? Questions from the public? Yes, sir. Please come forward to the podium, please. Good evening, sir. If you could please state your name spelling first and last names for the record?

A. James Reed. J-A-M-E-S, R-E-E-D.

Q. All right, Mr. Read, questions for Mr. Conley please.

EXAMINATION BY

JAMES REED:

Q. Mr. Conley, I take it from your testimony, there is no on-board fire suppression system built into these generators?

A. To the best of my knowledge, there is not.

Q. You have a long list of qualifications, and so I presume that you've been active in whatever association there is for these groups. So what would be the cost of putting an on-board fire suppression system into an item that's six hundred some feet into the air?

A. That I do not know the answer to.

Q. Your group has never studied that or investigated what it might take to really make these safe?

A. Not that I'm aware of. As far as a fire suppression, I do not know.

Q. So the only answer is just to let them burn out?

A. Apparently, yes.

MR. REED: All right. Thank you.

MR. KAINS: Thank you, Mr. Read. Any other questions from members of the public? Mr. Gallagher? Sir, could you please state your name, spelling your last name for the record please.

BILL GALLAGHER: Bill Gallagher, B-I-L-L, G-A-L-L-A-G-H-E-R.

MR. KAINS: Go ahead, Mr. Gallagher, with questions for Mr. Conley.

EXAMINATION BY
BILL GALLAGHER:

Q. Mr. Conley, are you familiar with Twin Groves wind farm just north of here?
A. I am not.
Q. You mentioned in your testimony it takes approximately six hours for a wind tower to burn out; is that correct?
A. It could, yeah. On average.
Q. Why does it take so long?
A. That, I don't know. From the information that's been provided, that's all I know.
Q. You understand -- is it Apex's understanding that we have local fire department around here, volunteers?
A. Yes.

Q. And you also admitted they would not have any of the equipment that would be needed to put that fire out, so you would just stand by and let 'er go?

A. It's actually safer to let it burn than it is to do anything with it.

Q. Do towers burn at night when no one's around?

A. They can.

Q. Do they burn more often at night?

A. That I don't know the answer to, but the likelihood of one catching on fire because of the redundant safety systems that are built into the turbines is very low.

Q. So we stand by for six hours and let it burn; is that correct?

A. It could be less than six hours. It's safer to not -- to respond, to create a perimeter, and to not damage any equipment any further for a proper investigation to be conducted, than it is to do anything with it at this point.

Q. How big would that perimeter be?

A. A minimum of two hundred meters away from the turbine is typically three to five hundred meters, so that there is no spread.

Q. Would the perimeter be based on what might be around the tower that's on fire?

A. I don't think I'm getting what you're asking.

Q. Such as a corn field?

A. I mean, we would create a safe perimeter around the turbine. What that exact distance is going to be, is going to based off of communications and collaboration with the local fire department. Typically it's about two hundred feet -- two hundred meters, sorry, from the turbine, but it could be further out. Now if there's a crop there, then that would be a discussion with the local authorities on the need to be further out or where you need to be.

Q. Would the perimeter be based off of wind speed?

A. That, I don't know.

BILL GALLAGHER: Okay. Thank you.

MR. KAINS: Thank you, Mr. Gallagher. Any other questions from members of the public? Miss Coil.

MS. COIL: Claudia Coil.

MR. KAINS: Could you spell your last name, Claudia?

MS. COIL: C-O-I-L.

MR. KAINS: Thank you.

EXAMINATION BY

CLAUDIA COIL:

Q. What happens when lightning hits one of the turbines?

A. The turbines are equipped with a lightning grounding system. So if they are struck by lightning they are designed to ground out without creating any issues.

Q. They will not start a fire?

A. They're not supposed to.

Q. But it's not impossible?

A. They're -- if the lightning detection system and the lightning grounding system's operating the way that it's supposed to, there should not be a fire from a lightning strike.

Q. Does the system shut down right away when lightning hits?

A. It can.

Q. Okay. And then one other question. I had asked this of the biologists, and they weren't sure, the turbines are constantly eroding; is that correct? Is that --

A. Um --

Q. -- from wind, hail, rain, snow?

A. I'm sure there would be some erosion to the blades, but I don't know what that is.

Q. Okay. So are you aware of any effects when that happens?

A. I'm not.

MS. COIL: Thank you.

MR. KAINS: Thank you, Miss Coil. Any other questions for Mr. Conley from members of the public? Seeing none. Questions from Piatt County staff and consultants? Redirect, Mr. Gershon? Clarification, if you will.

MR. GERSHON: If we could, we would like a five-minute break. There were a number of questions that Mr. Harrington asked that we've now got answers to. I want to make sure to go over them with him so he has an opportunity to respond to those questions.

MR. KAINS: Okay. It's 7:30. It's time to take a break anyway. We have to keep Jamie's fingers in line. So, let's take -- how long do you think Mr. Carlson is going to go?

MR. GERSHON: His presentation will take twenty to thirty minutes.

MR. KAINS: Let's just take a ten-minute recess so we can get done on time. Let's re-convene at

7:41. Thank you.

(RECESS TAKEN.)

MR. KAINS: Okay, folks, let's re-convene. All right, Mr. Gershon, your witness on re-direct. Mr. Conley, just a reminder that you are still under oath; is that correct?

A. Yes.

MR. KAINS: Very good. Thank you. Mr. Gershon.

RE-DIRECT EXAMINATION BY
MR. GERSHON:

Q. Thank you. Jason, in the risk of fire, what do you do to eliminate the risk of spread?

A. We isolate the turbine. We monitor the turbine. We work with local authorities to set up the perimeter, and prevent spread.

Q. Who is responsible if there is crop damage as a result of a fire?

A. In the event there's a fire that causes crop damage, Apex would be responsible just like any other owner of equipment. We would be responsible for those damages.

Q. Why do we let the fires burn themselves out?

A. Because it's actually safer to let the -- to isolate the turbine and to let the fire -- let the fire burn. Once again, we monitor, we work with local authorities, set up a safe perimeter so that people aren't exposed, or the damage to the surrounding area is minimal.

Q. There appear to be three different methods, potentially more, for shutting down the turbine. I want to ask you a question about that. How long does it take for the ROCC, the national method is 24/7, three sixty-five, to shut down a turbine?

A. Two to three minutes, and that includes one notification to the ROCC, to the ROCC operator him to find that turbine, to go into the system and shut it down. So, time to make a phone call, for him to find it in the system, for him to shut it down, yeah, two to three minutes.

Q. You discussed the fact that the O & M -- the on-site O & M staff, can you confirm that they have the ability to shut this down from their building?

A. They can shut it down from the building. They can also make a phone call. So if a Vestas technician or an Apex facility manager is out in the field, they can make a phone call to the ROCC. They don't have to be at the O & M building. They could make a phone call and shut that turbine down.

Q. Are the property owners also given contact information to also call in the event of a fire, and what would occur if they called?

A. Yes, they are provided -- land owners are provided that information. The turbines are also labeled at the road, so in the event that a member of the public was to identify a fire that, you know, was picked up before the monitoring system within the ROCC picked it up, then they can make a phone call to local authorities, who would also be provided a copy, once again, of the fire emergency response plan so they could respond accordingly.

Q. Have you gone through all of these procedures with the local fire departments that you met with?

A. The ones that I've met with I have. We have provided them copies of the emergency response plan -- the --

Q. I'm sorry. I thought you were done.

A. The emergency action plan.

Q. You were asked previously how many gallons of lubricant are provided per tower. Have you confirmed what that amount is?

A. Yes. The amount that's located inside those gear boxes is approximately a hundred gallons.

Q. And is that lubricant -- are there provisions for that lubricant to be contained?

A. There are. The way that the nacelle and the on-deck on the turbines are designed, in the event that there is a leak of gearbox -- of lubricants from the gearbox, should stay contained with the turbine itself and not be exposed to the outside.

MR. GERSHON: Thank you very much.

MR. KAINS: Thank you, very much, Mr. Gershon. Mr. Luetkehans?

MR. LUETKEHANS: No questions.

MR. KAINS: All right. Very good. Now questions for Mr. Conley from the Zoning Board of Appeals? Mr. Harrington.

EXAMINATION BY
MR. HARRINGTON:

Q. Thank you for those answers.

A. Yes.

Q. So we've identified, I guess, through your presentation anyway, there's a lot of electronic monitoring, surveillance, et cetera, et cetera. I guess this may not be your spot to answer, but I'm going to ask it, because it sort of pertains to your department.

A. Sure.
Q. In the unlikely or unknowing scenario that this wind farm changes hands from your current owner and goes to whoever, does any of this monitoring, safety, or otherwise transition, or does that even occur, or how has that worked in the past? I do think there was reference of some other farms changing hands?
A. Yeah, so in the event of a hand-over, whoever takes operations is expected to pick up those operations including the ROCC themselves unless there's an agreement.
Q. So that's what I'm driving at. Is the ROCC even involved at that point, because that would be your -- isn't that Apex or Vestas, one of the two's actual asset or --
A. The ROCC?
Q. Yes.
A. So we have our own ROCC independent from Vestas. The two systems tie together so we can monitor and they can monitor.
Q. Correct.
A. Um, and so in the event that the wind farm goes to another operator, then they would take over those responsibilities.
Q. So they would have to have their own monitoring

system at that point?

A. They're supposed to.

MR. HARRINGTON: Gotcha. That's what I was looking for.

MR. KAINS: Very good. Any other questions from members of the Board? Very good. Thank you, Mr. Conley for your testimony. You may step down. You are released from any further testimony unless you are recalled by your counsel or by members of the Zoning Board of Appeals.

MR. CONLEY: Thank you.

MR. KAINS: Your next witness?

MR. GERSHON: I would like to call Adam Carlson.

(WITNESS SWORN.)

MR. KAINS: Sir, can you please state your name, spelling your first and last for the record.

MR. CARLSON: Adam Carlson, A-D-A-M, C-A-R-L-S-O-N.

MR. KAINS: Mr. Carlson, you may proceed.

A D A M   C A R L S O N

called as a witness on behalf of the Applicant, having been first duly sworn, was examined and testified as follows:

MR. CARLSON: Good evening every one. I'm Adam Carlson. I'm the Project Manager for the construction phase of the project. I'm employed by Apex Clean Energy. I'm going to talk a little bit more about my background maybe than other presenters.

It's a small world. I grew up in Paxton, went to PBL High School. I've farmed just east of Paxton and the wind farm facility around that farm. Not a land owner that has turbines. I'm going to show a little bit about that on the next slide here.

I live in Virginia now. What brought me there was the Navy. So after high school I went to the U.S. Naval Academy, got a degree in mathematics, and was commissioned as a submarine officer in the Navy. I spent many years out at sea, did western Pacific deployments, and learned nuclear engineering through the submarine program.

When I first got out of the Navy, after being stationed in Virginia, I worked at a nuclear power plant, Dominion Energy Nuclear Power Plant. That's where I learned a lot about switchyard operations and transmission by design. During that time, very interested in the renewable energy sector and set eyes on Apex Clean Energy, and ironically the first project I ended up completing as project manager was Ford County Wind Farm. So back home.

I do want to say I have family here in Monticello as well, that's where my mom's side of the family is. So just like Paxton, this area's also near and dear to my heart, and it's definitely a great opportunity to be back here and to manage the project through the construction phase.

I have a picture here of the Carlson Centennial Farm. That was taken last year. Unfortunate set of family circumstances, no longer have this farm. I do own land just beyond that nearest turbine on the left, and one of the primary land owners and recently farm manager for that ground. But as you see, I wanted to highlight this, this is a wind farm in eastern Ford County. This one's approximately ten years old. This was built -- it was completed around 2012. So I don't want to mislead the group that I lived here full time at the farm and was around the wind turbines the entire time that it was in operation, but definitely the times that I had come back home on leave from the Navy, or time in college, and summer vacations I'd be there. So approximately anywhere from two weeks to one month a year that I'd be at this place, at the farm house that's no longer there, from 2012 to 2019 when my family moved to town.

Can we go back to that slide, please? I did want to draw a comparison between this wind facility in Ford County, and the one that we're proposing to construct in Piatt County. So I looked up some information here recently. This project, a little over ten years old, ninety-four turbines, 150 MW. Goose Creek, fifty turbines, 300 MW. So you see, half the turbines, double the output just over a ten-year period. So a significance change in technological advancement. So what you see here, just generally speaking, you see half the turbines on the horizon. I just wanted to bring light to that. I think -- yeah, that's it. Next slide please.

On to construction. I do want to start off by talking about what we do on a daily basis on the construction site. We conduct daily plan-of-the-day meetings, and that's all done internally with our contractors, our site team. We end up giving that information out to the public, to the landowners, show which roads would be closed during different phases of construction. There's e-mails that are sent out daily. I make it a point that the local school bus garages know which roads are closed, because there is an impact there, and I really really stress communication. I think it's extremely important that we're letting the landowners, the farmers, the schools, the traveling public know what we're doing, and then they somewhat are involved in that whole process too. We always have an open door policy on site. We have our set of trailers staged at the laydown yard, and anyone can come in and ask questions throughout the construction phase. We have a site team that starts with a site manager. Then you have different levels of responsibility for electrical, mechanical, civil groups, and engineers on site. So that's just for Apex, and then we employ the contractors and sub-contractors, which I'll get to.

What we've been working on here recently, the last several months, is all the engineering to prepare ourselves for the construction phase, and I've laid that out here. Public roads, which I'll speak to in more detail on a later slide. Same for drainage. Civil and site works, electrical design, and foundations. Those are all in progress, on track to be completed in January, and all requirements to be submitted as part of the building permits.

Then the next piece here, and I'm not going to read it word-for-word, but it just lays out the proposed order of construction and the time line. Typically speaking, we would start out with the public road improvements to get the roads in a state, a stabilized state and widened so we can get the turbine components out to each site.

Then we branch off from there and build out our access roads, commence foundation work shortly thereafter. That would be the first several months in mid spring.

Also we'd be starting substation, collection system, and transmission line work. That's when we start having a lot more parallel activities while the foundation work would be finishing up.

Turbine deliveries. Those would be on track to be delivered from July all the way through October, and have a one to two-week lag for then installation of all the turbine components.

The tail end of the year you would have the mechanical completion and then commissioning of all the wind turbines. For mechanical completion, for commissioning the check list, it's not just the Apex team that's signing on off each turbine. It's the Vestas team as well. That's an important distinction I wanted to bring to the Board.

Then demobilization follows, and then I have a few times that show the restoration process.

So to improve the site, get all the components to each turbine site, we would need to construct temporary road radii, turning improvements at various intersections of participating landowners, and after construction -- those are just temporary, so those are coming out. All that rock's coming out. Everything's put back to the state that it was in before construction. Any excess rock from access roads from the turbine sites, that will all be reclaimed as well, taken back to the contractor. And then anywhere the crane -- we have a crane walk along the collection system path, that would be -- that soil would be de-compacted. All of these activities would take place approximately one to two months near the end of construction.

Next slide, please. Construction Practices. In a few of these we do get a lot of questions, so I want to make sure that I talk about it here. The first one I have is topsoil preservation. So laydown yards, substation, operations and maintenance building, and turbine sites, those are the main areas where we have to strip the topsoil, re-grade the area, put rock down. Any of these areas where we're removing topsoil, it's maintained on the parcel and staged on the parcel and it's preserved throughout the construction. So at the end of the construction, that topsoil gets feathered back out within the general vicinity of the site. I just want to say that we're not taking it off site. We're not moving into another turbine site or a different area of the project or to another project. Those were questions that we've received before.

Next item. Public drain tile location, protection, and repair. So I have listed here, we will locate and mark all public drain tile along the collection system path, and this is per the WECS ordinance. We have seven drainage districts identified in the project boundary. We've reached out to all seven drainage districts, received maps from all drainage districts, and what I've done is taken the locations where our facilities are crossing district drain tile, and I feed that to -- with permission of the district drainage facilities or district commissioners, feed that information into our collection system design. That's Aquila Engineering that's preparing that engineering design. We're at the sixty percent mile stone now, and it's something that we can start sharing with the group, shows exactly where we would be crossing these facilities, shows exactly how we would be constructing in and around the vicinity of these district drains. The very first meeting I had with our general contractor, I made it very very clear how important drainage is here in Piatt County. It's very obvious to me like how important it is, how many decades honestly people have worked to make maps and to improve their fields and get them in the state they're in now. So I really want to stress how important it is for me and how important it will be for our general contractor conducting the work on site, um, as part of the development agreements, showing good faith in meeting with all the different drainage districts. We have done that and we've received information from the two largest districts, Deland Special and Trenkle Slough. Those are development agreements that we're working on filling out, and then we would be providing our exhibits which is the collection system design showing where our collection system would be crossing those district facilities. There's also Dewitt Special, we have one crossing. Lotus and Newcomb, no crossings, and then the Goose Creek Drainage Districts, met with those drainage commissioners this morning and received their maps which we'd be marking in a similar matter and putting that into our collection system design and entering agreements with those commissioners as well.

Next item. Storm Water Fun Off. Requirement for any construction project, have a storm water pollution prevention plan, and all site team members are required to have that training, updated annually.

Dust Control. So, we'll have it in the contract to maintain public roads throughout construction and minimize any dust. That would be the use of water trucks around the site, to have those running daily, and I bring this one up because we also received questions about this, and how many water trucks, and how often are we going to be getting out there to minimize dust. So it would be every day throughout construction, road graders as well available. I just wanted to say here, for the use of water trucks we understand there has been some questions on the Mahomet Aquifer. I'm just going to answer a few quick ones from previous discussions. So one question that's come up is about the water usage, and us drilling wells to construct the project.
So there would be a well at that operations and maintenance building. That facility wouldn't use any more water than any other restaurant in town, and it would be any given day, four to eight people at that facility, day in and day out. That would be a permanent well. Further construction of the wind farm you need water for concrete, you need water for the dust control, and so we'd need a batch plant, and you would have a laydown yard as well. From what I've researched here

recently, I've seen the Mahomet Valley water aquifer uses roughly -- the general public and different agricultural practices use roughly two hundred million gallons of water a day from that aquifer. Our construction practices would yield roughly point zero five percent of that daily usage, and that's for a temporary period of time. So maybe three to six months max that we would have that point zero five percent or less daily usage, and that's a temporary impact. It's temporary wells, and we have an application that we would be filling out as part of our construction activities for the water well permits.

Also questions about the weight of the concrete, the weight of the infra-structure on top of the aquifer. We've also done research with our GIS team and looking at other companies' web sites around central Illinois. There's five hundred twenty-one total wind turbines in operation over the aquifer, and that stretches all through central Illinois. The weight of this -- I just want to draw a distinction here then. The weight's going to be negligible compared to say Champaign, the City of Champaign and all the infra-structure, the buildings and weight of the concrete there on top of the aquifer, say compared to also thinking about this, Monticello, compared to all the infra-structure here compared to what we'd be building, fifty turbines on site inside the project boundary.

I hope that helps to answer some of those questions that have been brought up, but I'm going to switch gears here to the next slide.

Road Use Agreements. Per the WECS ordinance, and we're working through this now, road use agreements. That would be with the county and also with the township, so Blue Ridge, Sangamon and Goose Creek Townships. I'm describing here where we're at each stage of this with the road use agreements. We don't have a signed road use agreement, but we are working through it. We're required to identify all of the roads to be used, so that's part of our transportation plan. We do know which roads we're going to be using. That will be required to submitted as an exhibit to the RUA, and something I'm going to talk with the Piatt County Engineer about as well.

Weight and Size Limits. This is in progress. We had a meeting last week with the County engineer and their engineer that they selected, and that's Cummins Engineering. Who we selected to do this inventory of all the bridges and box culverts is HLR Engineering. They're out of Springfield. Um, so they do structural analysis, bridges and box culverts. We just had a few questions, make sure that our report is in a final state. That'll be completed here this month and submitted over to the County as well, another exhibit.

Engineer-Certified Pre-construction Baseline Survey. That was completed by the Westwood Civil Design Team.

Then the last three items, this will all be detailed into the RUA. So method of post-construction survey, remediation or compensation if any bridges or roads are damages, and any financial assurance. I do want to highlight, all of these road improvements that are not paid by the taxpayers, is paid by Apex, so by the developer of the project. Another question that we normally get.

Other engineering and analysis that's in progress. We have a drainage study that will be complete this month. This is for -- it's showing the impact of public road improvements, so most of the roads existing out there are about sixteen feet wide. We'd have to widen these roads; therefore, we'd have to extend a lot of the crossroad culverts. The intention is to be replacing all crossroad culverts, and then we'll be looking at bridges and box culverts, avoiding ones that are in a state of disrepair, and if we can't be, we would be repairing and replacing those.

Township and County road pouring. This feeds into the design for the road cross-sections. So that is -- that just wrapped up today. So it'll be a few more weeks, we'll send that information over to HLR, and they'll complete their cross-sections. There will be different once for township roads and different ones for county roads . So like County Road 2 is going to be different than a one thousand north road, for example, or a one thousand east road.

We also have traffic impact analysis that HR is completing and a transportation route survey. That's conducted by several different groups. So Vestas will need to do that as well as the transportation provider that they select. I have a lot of influence over this right now with how the transportation would be routed by working with Vestas, by working with the County. One of the main things we're doing is, we'll be avoiding Mansfield entirely with the transportation vehicles. We're heading north off of I-74 up to Blue Ridge, not going through Mansfield on US 154, or south through town over the railroad tracks. That's another question a lot of people have been asking, some of the site team members. Next side please.

This slide shows who we've selected through a competitive bid process as our general contractor. It's

White Construction. They have built 26 wind farms in Illinois. They're currently building the Sapphire Sky project north of here, and they have -- I mean if you're interested in seeing it. They have all the turbines up now, and it's a very similar turbine to what would be here. It's also a Vestas turbine, it would be a 150. So just, if you are interested in knowing or seeing like okay, comparatively what would a turbine look like in Piatt County. That's a good indication. Recently went up that way, and just drove around their site, and they have a very clean site, and I'm very happy about their professionalism throughout our initial discussions as we're working through the contract. They've been very vested and very -- um, they have a very good open line of communication and are willing to come and talk to anybody about the project. As I've talked to their executives, they said that most people, if not the vast majority, are from Illinois that would be doing the work, and then a lot of the work that would be coming out of the union halls would be very close to this county, and I know we had questions about that a few meetings ago.

Let's see. They also have -- I highlighted that they're experienced in Illinois, but they also have a lot of experience constructing this specific turbine. I went up to a job site in Michigan and was able to, at another site, walk through and watch them actually install a nacelle and install blades. I think it's a great choice. They're going to be a great group to be here in your community. I think I already covered everything else on this slide.

Any others? Okay. I do want to conclude in saying I'm definitely going to give it my all. I already have been. I'm going to give it a hundred and ten percent, and want to show you guys that I'm very vested in Piatt County, and I always have an open-door policy. Anybody can call me any time and I can give you out my information, and always willing to talk and answer questions. I work with a fantastic group of very dedicated and smart professionals all the way down. I look forward to working with everybody here, and building a state-of-the-art project in Piatt County.

MR. KAINS: Thank you, Mr. Carlson. Mr. Gershon, any additional questions on direct?

MR. GERSHON: I do.

DIRECT EXAMINATION BY

MR. GERSHON:

Q. Are you familiar with the Mahomet Aquifer

Protection Tax Force as far as any recommendations, the report?
   A. Yes.
   Q. Can you tell us just in general what that report is about?
   A. So, generally that report is trying to determine what can negatively impact the aquifer and the water supply to the aquifer. It has a list and tables of recommendations of -- they're really listing like what the main sources of contamination of the aquifer are.
   Q. You mentioned the number of wind turbines which are already built on the Mahomet aquifer. Can you identify the wind farms that are already on that aquifer to make up those wind turbines?
   A. Yes. California Ridge, Hoopeston Wind, that was an Apex project, Rail Splitter Winds, Pioneer Trail. That's the one I showed, White Oak Wind, Glacier Sands, and Ulta Farms.
   Q. And I'm sorry, remind me again, how many wind turbines does that make up total?
   A. Five hundred twenty-one total turbines.
   Q. Do you know approximately the number of -- total number of wind turbines in the United States?
   A. Seventy thousand.
   Q. Is it reasonable to assume that a significant

number of those are located on aquifers?
A. I think that's a --
MR. LUETKEHANS: Objection.
A. -- reasonable assumption.
MR. KAINS: If he knows. Do you know the answer?
A. I don't know for certain --
MR. KAINS: Very good.
A. - how many are on the aquifer.
MR. KAINS: Very good.
MR. GERSHON: I'm sorry. One second. Was Apex, in the operative, addressing the drainage issues prior to the text amendment into Appendix A, Standards for Wind Energy Conversion Systems Over 500 KW under the Zoning Ordinance?
A. Yes, and I didn't mention that we're working with a local group that's KCoe or Pinion Digs. They've been working with us for several months back earlier in the year to reach out to the different drainage districts to collect maps to show where the infrastructure's located.
Q. Are you familiar with the recent text amendments regarding drainage which were made to that wind ordinance?
A. Yes, I'm familiar. I communicated that to everyone involved.

Q. Will the applicant be in compliance with those drainage text amendments?

A. Yes.

Q. When do those text amendments require the applicant to comply related to -- with respect to the drainage agreements?

A. Prior to -- fourteen days prior to the construction.

Q. You identified --

A. I do need to clarify that. That's to mark and locate all the district drainage facilities fourteen days prior to the construction.

Q. Do you know when the text amendments require that you enter into agreements or identify that you're unable to enter into agreements with the drainage districts?

A. That's related to the building permits. So prior to submitting building permits must show an agreement -- an established agreement or good faith in reaching an agreement.

Q. You mentioned two hundred million gallons a day of water use from the Mahomet Aquifer. Can you tell me where you obtained that information?

A. The same report we identified, the Mahomet Aquifer Protection Task Force Report.

Q. A similar question with respect to road use agreements. When does Appendix A to the Piatt Zoning Ordinance regarding wind farms require you to comply with the requirements for a road use agreement?

A. That's prior to submitting the building permit. A lot of items I have discussed -- those are for the building permit, not necessarily for the special use permit.

MR. GERSHON: No further questions.

MR. KAINS: Very good. Thank you, Mr. Gershon. Would it be helpful for the Board if we took a three to five-minute break to assemble questions for this witness, or are we ready to go now?

MR. WAX: I have two or three questions.

MR. KAINS: We will not take a break. We will open it up to questions from members of the Piatt County Zoning Board of Appeals. Mr. Wax?

EXAMINATION BY

MR. WAX:

Q. A couple of questions. First one: What is the diameter and depth of the base, the concrete base for each of these turbines?

A. Depth of approximately ten to eleven feet. Diameter, we're still working on the final foundation design, but what you'd see only would just be the pedestal that sticks up out of the ground. Then we would have what we call a beauty ring of the aggregate rock of about twenty feet, but the total diameter, sixty to seventy feet.

Q. Okay. You mentioned working with the road commissioner and the drainage districts. Are you satisfied that you're making significant progress, or where are you as far as -- I realize you don't have to turn this in until, you know, prior to getting a permanent building permit, but what's the progress so far?

A. That's a good question. I can start with the drainage districts. We've received development agreements from Deland and Trenkle Slough. Those are the two largest districts. We're in the process of filling out those development agreements, and engaging with legal representation Amy Rupiper, and we would also be submitting our collection system design with that. That collection system design, we're at the point where we can submit that and show exactly where we're going to be crossing. We know for those two largest districts where we're crossing. Just receiving the maps today from Goose Creek 2, 3 and 4, it's going to take one to two days for KCoe to digitize those maps, and then we take those, submit them to our collection system design, also gave them a formal agreement to talk with their legal representation as well. I could see that whole process taking another month potentially.

Q. Okay.

A. Road Use. We submitted our road use agreement to the County September first, and we have not received a return of the road use agreement. We've been asking many times, but I've been in contact with the County engineer and have had engineers talking to keep the engineering side of this and to develop the exhibits, keep that going while the legal discussions are in progress.

Q. Okay.

A. So I think that one's slow. It'll take some more time.

Q. Okay, thank you. One more. Could you explain your perception of how the ADLS system is going to work?

A. Yes. I know Alan Moore spoke about some of the specifics, and I can't remember exactly like at what height above the ground that an aircraft needs to be detected to -- or at what distance, but I can explain generally like how the system works. So once an aircraft comes to a certain range, this is at night time, then the lights would turn back on. So from what -- we've worked with the companies that build these systems, it could be ninety percent of the night time you won't have a blinking light, and I think people know around here you're not going to have that much air traffic, and it's not going to pick up jets that are traveling way above us. This is for like a certain air space and a certain range to the wind farm. So generally speaking, it's going to be the vast majority of the night that the lights wouldn't be on at all. An important safety distinction, if there's an issue with the system that fails, then the lights turn on, and they stay on. So that's just a good general design.

Q. Okay.

A. But I think it's a great improvement. I know it's something that we get a lot of questions about, and you look at the wooden farm that was built ten years ago, I mean it would take a lot of money and time for them to convert that wind farm with 94 turbines and put a new ADLS system there and a new radar tower, but we'll have it as a fully wrapped package here.

Q. In the application, there's a mention of one ADLS tower?

A. Yes.

Q. Is that one -- is that a separate tower, or is that one of the turbines that detects and then controls all of the other turbines?

A. That's a great question. Yes, it'll be one radar tower, and that's a lattice tower, kind of like a MET tower with a radar on top of it operating, and that is fed -- that information's fed to all the turbines in the system inside the turbines -- or on top of the turbines. So all of that fiber that's running between all of the different turbines is just along the same collection path that we're building.

Q. Do you know approximately at what distance away an airplane is detected, and then how far it has to get away before they go back on?

A. Alan did speak to that. I don't have that right number off the top of my head.

MR. WAX: Okay. Thank you.

MR. KAINS: Just a second, Mr. Gershon. Any other questions from Members of the Zoning Board of Appeals? Mr. Chambers.

EXAMINATION BY

MR. CHAMBERS:

Q. So staying with the ADLS for now, my understanding from what we've talked about so far on the ADLS is that it's applied for but it has to be approved by the FFA for that to be installed? What's the process like for that?
A. Yes, good question. We've already done that. We've applied FFA, received a --
Q. And you --
A. -- upper designator.
Q. Do you anticipate approval on that?
A. We anticipate approval on that, yes.
Q. Okay. To roads. On the timeline that you laid out here, on the post-construction, the repair of roads, damage assessment, and repair on the roads that are used, where does that fall into the timeline as it's laid out?
A. Yes. So the public road restoration, the plan would be to chip and seal all the roads that we stabilized. So you get a fantastic product at the end of the day, but really we need to figure out what time of year to do that. So like if the project went exactly to what the timeline showed, we wouldn't be able to chip and seal in January --

Q. Yeah.

A. -- or December. So we would have to, um, probably just wait until the next summer.

Q. Okay.

A. Or late spring.

Q. Okay. Then a question on the crane. So what is the average size crane that's used for installation of the cells, the large crawler crane?

A. The type of crane that we'd use here is called an LR 11000, I don't have all of the specs off the top of my head, but I have some information from Vestas on all of the specs, weights and dimensions.

Q. Okay. Follow-up to that is: You're talking about the crane path, and how the crane will move around the project. So I think what I heard you say is that that crane is basically going to follow the collection line paths. Is that going to be true across the whole project, is that the crane would only follow the collection path, or is there other traveling that would occur?

A. There would be other traveling that occurs. Generally speaking, it would follow the collection path from turbine to turbine, but we have -- I've seen as White's working through this, a preliminary crane path, and they have to basically section it out, different areas of the project. Like you don't want to take -- you're not going to want to take a fully assembled crane over the over-pass, over I-74, like they'll break it down and then move it to the southern area of the project or northern area of the project. So they have about eight different sections of the project. Between those, that's when they would move the cranes along the public road route but have the crane broken down. The most limiting factor would be the bridges and box culverts, but also pipelines that are running through the project, several oil and gas pipelines running through.

Q. My thought process there is related to the drainage issues that we discussed in the past about field tile and damage that could be done there just by the weight of the crane.

A. Exactly. Yes, that could definitely occur, and that's something that we've already accounted for with how many projected drain tiles repairs we're going to have to complete here on this project.

Q. And the timeline for the repair on that as well in relation to the rest of the project?

A. So as we'd be going through and entrenching the collection cable, there would be a crew that follows behind and does the drain tile repair. I'm not going to say like it's going to be one day or two or seven, but it's going to be approximately that timing. With that crew following right behind, they would be repairing it as quickly as possible. That's just for the collection system. If a crane is breaking a tile, so that tile we're going to have to -- well for one, replacing it right away, whenever we find out whatever is broken, but usually you're going to find that out later on than you would as your trenching, because they're going to be able to see what they're doing as they're trenching and going through drain tile.

And for the private landowner tiles, a lot of the pattern tiles, we would be replacing tile ten feet out from that center line, either side. So you'd have a brand new section of tile there.

Q. So to find that there's not really a way to find maybe the tile that is damaged except for later on when an issue presents itself with the drain tile?

A. For the crane paths specifically, but we have asked for the majority of the landowners, and all of them for the drainage commissioners or for the district drainage. So that would really help us too, and we can then re-route our cranes to avoid. We've already done the same in engineering design where access roads are located, where collection system is run to minimize how many times we would be impacting drain tile.

MR. CHAMBERS: Okay. That's all I've got.

MR. KAINS: Thank you, Mr. Chambers. Any other questions from Members of the Board. Mr. Harrington.

EXAMINATION BY
MR. HARRINGTON:

Q. Loyd had asked about your concrete depth and circumference. You said seventy feet wide by eleven foot deep. There's no other protrusions in that diameter? That's it? Obviously you don't -- there's going to be dirt and what not, but I'm just saying, there's no exceptions? You don't have any scenarios where you go deeper or wider?

A. Not wider. The only thing where we could -- where we could go deeper is aggregate pier designs, but we don't know about that yet. That is -- we just don't know. We conducted our final geo tech here this last month waiting on the final results, and that gets feed into the final foundation design. So... a comparison, Fork Ridge that was built, there were two geopiers on forty-three turbines there. Um, it could be that here.

Q. So in that case, how deep do they go?

A. It depends on -- it's going to be a different design for each geopier.

Q. So give me an --

A. Maybe ten more feet, but that's just the aggregate pier sitting below the foundation. It's not all the concrete then goes down to twenty feet or twenty-one feet.

Q. But in that scenario, it was twenty feet for the base of the aggregate, and then what depth does your concrete begin?

A. It would be the same. It would just be sitting on the piers, we call them aggregate piers, yes. So the concrete doesn't go any deeper.

Q. Right. You may not know this answer, but just answer if you do. In the case of decommissioning, how deep does that removal occur?

A. The removal is per the decommissioning plan. It would only be at four feet. That's really just the pedestal. You don't even get into any of the base.

Q. I gotcha. So you talked a little bit about roads, right, and widening, and I would have to assume you're in coordination with the township commissioners and Eric Sebring?

A. Eric Sebring.

Q. Right. So sort of following that thought process through, you mentioned at the end of it you're going to be doing sort of a reclamation, right, and come back and you're going to clean these roads up, and chip and oil. Does the road commissioner have the final hey, we walked it, I'm good with it, or how does that work?

A. Yes. So per the RUA, there'd be an independent third party engineer that comes in, and we're already working with them for all the pre-construction work, Cummins Engineering, and they will then do and independent analysis and then sign off along with us.

Q. So really it would be a third party that'll decide whether it's done or not, you're saying?

A. Yes.

Q. Not the road commissioner?

A. Correct, yes.

Q. That's good to know. So, in regard to the drainage, a lot of conversation there, right, and I may have misquoted you here, so just correct me if I'm wrong. You said you gained agreement from effective drainage districts. In that case, are we talking verbal agreement, written agreement, or -- you say it sounded like in some of the further comment, maybe you just presented a proposal of an agreement?

A. Yes. I must have misspoke. Yeah, we presented an agreements.

Q. So would it be accurate in saying currently that you have not received any of those back yet?
A. We have not received any of those back.
Q. In that same vein, talking about Will mentioning the crane path, and you can't predict exactly where these machines are going to go based on the details, probably a very dynamic situation, hypothetically, if you track up a field, and two years later after quite White Construction is long gone and there's a failure, is there anything in your drainage agreements that covers that or not?
A. It might not be specific to the drainage agreement, but it would be pertinent per the lease.
Q. With that landowner that you made the deal with that the truck could come across, right?
A. Yes.
Q. Okay.
A. We're obligated to repair all drain tile.
Q. For what length of time?
A. I don't recall the amount of years.
Q. Can you guys find out? That'd be good. Okay.
MR. GERSHON: We know the answer.
MR. KAINS: We'll do that on re-direct.
Q. When you guys do your drainage conversation agreement, per say, it's you and this -- what did you

call it, not Digs, but --

A. KCoe.

Q. Like K hyphen C-O?

A. No. K-C-o-e.

Q. And they're basically representing you in that case, I would assume?

A. Yes, to reach out to the commissioners to collect the maps, and the same with private landowners.

Q. They're doing the negotiations?

A. No. It'll be on Apex to do the negotiations.

MR. HARRINGTON: Okay. That's all for now.

MR. KAINS: Very good. Thank you, Mr. Harrington. Any other questions from the Zoning Board? All right. Now questions for Mr. Carlson from members of units of local government including school districts? Miss Rupiper. Jamie, do you know her? I figured. Go right ahead.

MS. RUPIPER: I'm here on behalf of the Deland Special Drainage District, Trenkle Slough Drainage District, and Mahomet Valley Water Authority.

MR. KAINS: Can you check to see if your mic is on?

MS. RUPIPER: Is this on?

MR. KAINS: Oh, there you go.

MS. RUPIPER: Okay.

EXAMINATION BY

MS. RUPIPER:

MS. RUPIPER: I'm here on behalf of three different governmental entities, Mahomet Valley Water Authority, I'm their counsel, and also counsel for Trinkle Slough Drainage District and Deland Special. So I guess the first question I have, I'll just start with the issues regarding Mahomet Valley Water Authority. Mr. Carlson, are you aware that one of their primary tasks is to issue well permits?

A. Yes.

Q. Okay. Have you been in contact or reached out to the Clerk of the Mahomet Valley Water Authority? Her name is Colleen Kidd?

A. I have not reached out to Colleen. One of our site team members who's not here, he had reached out to her office and received one of the blank permits.

Q. A permit application?

A. A permit application, yes.

Q. How many wells do you anticipate having to dig as part of the project?

A. So there'd be one for the batch plant, that would be temporary; one for the laydown yard, also temporary;

and then the operations and maintenance building would be a permanent well, but like I mentioned, that one would be no more water usage than like a restaurant or a house.

Q. So you said there will be one well for the batch plant?

A. Concrete batch plant, yes.

Q. Okay. So is that where you're going to be mixing the concrete on site?

A. Yes.

Q. Okay. So for the whole project then, there'll be one batch plant?

A. One batch plant, yes.

Q. And then one well to service that?

A. Yes, correct.

Q. I didn't catch the other well. What was the other one?

A. Laydown yard.

Q. Okay.

A. That's where all the trailers and all of the equipment would be staged.

Q. So one well for the laydown yard?

A. And that's where the water trucks would be filling up for dust control.

Q. Okay. And the well for the batch plant and the well for the laydown yard, you said those would be temporary?

A. Temporary, yes.

Q. Temporary wells?

A. Yes.

Q. So there won't be a well at each wind turbine site?

A. No.

Q. Okay. What was the -- you had mentioned a third well.

A. Operations and maintenance building. That's the permanent one.

Q. That's the permanent one?

A. Yes, ma'am.

Q. Do you know who your well contractor will be?

A. We don't.

Q. Okay. What other entities do you have to receive permits from in order to drill the well?

A. It's the local health department.

Q. Okay.

A. So that's -- well yes, local health department.

Q. Okay. Do you know when you will select a contractor to dig the wells?

A. Really, we could do it right now. I mean we've already reached out with a few companies --

Q. Okay.
A. -- to understand the process for how they go about the permitting, and that's how we came about to getting the local permit application.
Q. Okay.
A. And I don't know exactly who our site contractor had reached out to, probably several different people within Piatt County.
Q. So do you anticipate that the well contractors will be local to the area?
A. Yes. That would be my preference. Yeah.
Q. Okay. To your knowledge have any drawdown studies been down concerning pulling from the well, and whether that would impact other usages on the wells in the area, including farm wells, city resources, that sort of thing?
A. That's a good question. I don't have any of that, to my knowledge.
Q. So at this point no drawdown studies have been done?
A. Correct.
Q. Okay. Do you know, and maybe you had answered this, but of these wells here, the batch plant, laydown yard, and then the operation and the maintenance building well, which one of those will pull out the most

water?

A. The concrete batch plant. That would be approximately three months --

Q. Three months?

A. -- that that well would be operational. Yes.

Q. Then when the wells are no longer necessary, at least in the case of the temporary ones, what do you do with them?

A. That, I personally can't answer. I have an assumption, but that's not a good way to answer that question.

Q. I understand.

A. I just haven't experienced that in the construction yet.

Q. Okay.

A. Is there a preference from the Mahomet Valley Water Authority on how they --

Q. I'm not sure yet.

A. Okay.

Q. Now you're aware, we've been in contact, but just for the record, you have received the court-approved development regulations that Trenkle Slough and Deland Special have passed?

A. Yes.

Q. And you understand that those are court-ordered guidelines for boring and any, you know, what needs to be agreed upon and procedures when using drainage facilities and their rights-of-way?

A. Yes.

Q. You had mentioned when you were giving your testimony that those are in progress of, you know -- is it correct that you are in the process of submitting those applications to Deland Special and Trenkle Slough?

A. Yes. We have the development agreements fully filled out.

Q. Okay.

A. I was just waiting for the collection system design to get to the point where we share that has an exhibit, because there's also the requirement to go out and mark and locate all the drain tiles. So that's the piece where kind of the chicken and the egg, do we do that now, do we do that after the development agreement is established, and that's something that we have to discuss and determine timeline on.

Q. One of the concerns that we have with the -- as to the drainage is, we know from prior experience that what is agreed upon and required in development agreements, you know, such as with the drainage district, you know, it's one thing that, you know, we all understand the upper levels of how that has to look like and how that has that work, but what actually happens on the ground can be a completely different thing and can be a disaster. So what is your procedure and, you know, as a project manager, or White Construction, how do we prevent those mistakes from happening on the ground and then, you know, hopefully prevent us from having to do a stop work order situation?

A. Yes. That's a really really good question. My personal approach is that communication is key. We have to be communicating with the contractors and sub-contractors what our priorities are, and this is one of the top ones for the project. I already mentioned that I laid that out in the very first meeting I had with White Construction, and they very much understand, but also collaboration is key, like working together as a team between the different groups. So it will be a requirement that drainage commissioners go out and mark -- or see where we mark the drainage facilities.

Q. Uh-huh.

A. So that would be extremely helpful, so there's no ambiguity there for the district drainage facilities where they are. As for, you know, that trickle down effect you're talking about, with getting down to the person that's actually doing the work on the ground, that -- I don't know exactly how to answer you because I personally won't be out there walking around with them, right?

Q. Okay.

A. But there's been times in construction, it's like all right, civil site coordinator you go out and you watch every single thing that's happening.

Q. Uh-huh.

A. And I'll have the power and authority to do that.

Q. Who exactly would be on the site?

A. Yes. So we'll have our senior site manager. I'm just talking about the Apex team. So a senior site manager, we'd have our civil coordinator, mechanical coordinator, electrical coordinator, site admin, site engineer. It's a fairly small site team compared to what the general contractor would bring. General contractor, they would have their own trailer or multiple trailers, could be twenty or thirty people in their management group, safety representatives, all the way down to whoever's representing them for a breach sub-contractor. Then they'd have different sub-contractors for electrical, for civil work. They would each have their own trailer as well. It'll be a lot of people just in the management realm, like who's at the laydown yard could be at least fifty people a day, and then who's out there doing the work, it's going to be hundreds of people.

Q. Okay. So White Construction is the general contractor?

A. Correct.

Q. And so then who would be the entity or -- I mean would it be up to them to determine who would be the one boring under the tile or the open ditches?

A. Yes. It would be up to them, but we have a lot of say in that. We're the project owner, so we can tell them no, you cannot pick this company, you need to pick this company because of x, y and z.

Q. Okay. So who would be the sub-contractors who would be handling the drainage facilities and the boring and, you know, anything that you get within the right-of-way -- I'm just going to go with boring, for example, because, you know, under our regulations that's the only thing that's allowed as going under to a certain depth?

A. Yes.

Q. Will you be -- do you anticipate you'll be employing a sub-contractor that specializes in drainage work, or is this --

A. Yes. The one contractor that White has brought up so far is AM Construction, an Illinois-based company.

Q. AM Construction?
A. AM, yeah.
Q. Okay.
A. But they haven't come to any agreements or contracts with all of their sub-contractors yet. So this has not been decided.
Q. Okay. I understand that.
A. Yeah.
Q. But at least tentatively, you know, informally, AM Construction is on the list for the entities that would be doing any drainage work?
A. They have that listed for tile repair specifically.
Q. Tile repair? Okay.
A. So I might have misspoke for the boring piece --
Q. Okay.
A. For boring work specifically. But this is something, again, about communication -- constant communication is key. Once we know who we have, we will communicate back with --
Q. Okay.
A. -- you and the commissioners.
Q. I also had a question on your presentation, there was a discussion about what happens to the top soil?
A. Yes.

Q. I guess I wasn't really quite clear on that. So you obviously have to remove the top soil from the site. Where does it go?

A. So if we take the sub-station for example, it's just a big mound that stays on the site of that parcel of land until the end of the construction, of the foundation and construction of the sub-station, and then we would move that top soil back out around that parcel.

Q. Okay.

A. Or, if there is -- yeah, actually that's what we do. I've seen it where it also just stays there for a longer period of time.

Q. Uh-huh. So it remains on the ground? It remains at the site?

A. It remains at the site and at the parcel where it was, per lease.

Q. Okay.

A. Yeah. I just wanted to really clarify that we're not moving it, removing it from the site and taking it to another place.

MS. RUPIPER: Okay. I think that's all I have.

MR. KAINS: Very good. Thank you, Miss Rupiper. Any other questions from members of units of local governments including school districts? Questions from interested parties represented by licensed attorneys? Mr. Luetkehans.

MR. LUETKEHANS: This is going to be relatively lengthier than the last couple. So I don't know how --

MR. KAINS: We're going to go until we're done with Mr. Carlson.

MR. LUETKEHANS: Perfect. Thank you.

EXAMINATION BY
MR. LUETKEHANS:

Q. So you listed the people that are going to be on site. One of the people I didn't hear was you. Are you going to be project manager on this from Virginia, or are you going to be on site.

A. I will be out here several times a month. We'll also have weekly meetings, monthly meetings, and then --

Q. Okay. So, you're --

A. -- monthly --

Q. I have no objection. Go ahead.

A. Yeah. During our monthly meetings we'll bring out all of our other executives as well, the VPs of our contractors and sub-contractor groups.

Q. So you're not a day-to-day on-site manager?

A. I'm not day-to-day on-site, and that's not the typical structure for the owner of the wind farm. It is for the general contractor. They'll have a project manager on site, and each one of their sub-contractors has a project manager, and I've been in contact with the general contractor, project manager, project executives daily.

Q. On, I think it's page two of your powerpoint, you say you were project manager construction of Ford County Wind Farm in '21 to '22?

A. Yes.

Q. When was that completed?

A. That was completed approximately in March for the wind farm facility, and then to answer one question about the roads, that's when all the public roadwork was completed throughout the summer. It was just the best time to do it.

Q. Yeah. And that's the same wind farm we heard has already been sold by Apex, correct?

A. Yes, that was sold to Orsted.

Q. Okay. I apologize, you may have said this. Your family farm, were you a participating property owner or not? I'm sorry.

A. We were not. This larger land owner, adjacent to us. Not something that we didn't want to be participating in, but...

Q. The height that we're seeing in this, if I remember correctly, 2012, was less than three hundred fifty feet, correct, of the wind turbines?

A. That sounds in the ballpark, but I can't answer that definitively.

Q. Okay. And what we're talking here is over six hundred feet high, correct?

A. Correct.

Q. You talked about the ADLS and how often it goes off. Are you aware of the fact that the U of I Flight School regularly flies over this wind farm area?

A. I'm not aware of that.

Q. In your construction practices you make a mention of mark and locate all public drain tiles. Do you recall that?

A. Yes.

Q. What's a public drain tile versus private?

A. So a public is what the district drainage commissioners are responsible for. That's all drain tile, drainage ditches, other infra-structure.

Q. You're aware that there are, I assume, private drain tiles in the area as well?

A. Yes.

Q. Do you have any idea what percentage is public versus private?

A. Public for the -- do you mean for how we would be impacting it, or the amount of -- like length of tile?

Q. Length of tile in the area?

A. A lot of farms now are pattern tile. It's going to be pretty close, if you look at the total linear footage of private versus district drainage facilities.

Q. So I guess you're saying pretty close, about 50/50. Is that what you're saying?

A. It's going to be 50/50.

Q. I'm not trying to hold you to a number. I'm just trying to get a handle.

A. It's a lot for both.

Q. So the private drain tiles, is it fair to say that you may not catch all of the collapses or all of the breakdowns that happen on the private drainage tiles, because you may not know where they exist?

A. We'll know where they exist by trenching through the fields installing collection cable, and we have the majority of landowner maps, so we know where they are.

Q. But if you have a crane or a truck that goes over one that you're not trenched, where you're not trenching, that you will only find out later, or may only find out later upon someone making a complaint. Is that fair to say?

A. Yes, that's fair to say. And that's been our practice for handling.

Q. You know what? I apologize, I just didn't hear your answer.

A. That we do have a standard practice for handling. Again, that open-door policy, and that's how we hear about these things on-site for when we have -- for going down the drain path, hear about a drain tile, or one that wasn't fixed correctly, we'll get people out there immediately.

Q. Okay. You talked about the SWPPP, storm water pollution prevention plan. Do you recall that?

A. Yes.

Q. Okay. That's not something you're implementing because -- I mean that's something that's required by law to implement?

A. Yeah, that's something that's required by law.

Q. Just so I'm clear, I think just for the record, the traffic impact analysis you talked about, that has not been submitted to the ZBA and is not part of the application; correct?

A. Correct. That'll be an exhibit with the RUA which is for the building permit.

Q. Okay. Your contract with White. Has that been executed yet?

A. It has not been executed.
Q. You said it was bid. How is it bid? Lump sum? Cost plus? What kind of project?
A. Can you repeat that question?
Q. You said -- I think you said, we selected White Construction's bid, correct?
A. Correct.
Q. Okay. A bid for what type of contract? Is it a lump sum? Is it a cost plus? A GMAX? What is it?
A. A lump sum.
Q. Okay. So whatever the savings they come up with, it goes to them, correct?
A. Not necessarily.
Q. Why not?
A. Actually, I'll retract my statement. I don't know how to answer that.
Q. Yeah, and that's fair. I'm not trying -- but primarily, and there may be circumstances, don't get me wrong, but primarily they're going to select the sub-contractors, correct?
A. Correct.
Q. And they'll decide if they select a sub-contractor that the cost was a million dollars versus one point two million. That's their decision, correct?

A. Yes.

Q. Okay. I'm going to backtrack a little. The restoration process that you talk about in your powerpoint, that's not de-commissioning? That's the restoration process at the end of your construction, probably sometime in probably '24, or '23 to '24 under your current schedule, correct?

A. Correct, not de-commissioning.

Q. Okay. One thing you say is the excess rock from access roads and turbine sites will be reclaimed. You said something about it would be taken back by the contractor. Could you explain that?

A. So any excess rock, we'd take what -- let's say an access road for example, the standard profile would be a sixteen-foot wide road. If there's any of that rock throughout the construction, you're talking about outside that limit of disturbance, so that's sixteen feet, would be reclaiming it back onto the road. Usually that's what's going to happen, it's going to go back on the road or different areas of the site, or actually add to the public road improvements, because generally -- well, we'll have a certain amount of inches of aggregate rock that have to be applied to all the public roads. So it'll be on the contractor to determine where it goes.

Q. Okay. Have you ever been involved in public road construction?

A. Yes, for Ford County.

Q. But that's the -- that's the chip and bind?

A. Chip and seal.

Q. Chip and seal, correct?

A. Yes.

Q. That's not where public funds are being used, correct?

A. Correct.

Q. Are you aware of the fact that public funds, where you're building a private road with public funds that you have to comply with IDOT specs?

A. Yes.

Q. And IDOT specs do not allow what we call dirty CA6 or CA5, correct?

A. Yeah. So let me clarify. We wouldn't be taking the reclaimed or dirty rock and putting it on the public roads. I know I said that. That was not a good answer for --

Q. And that's -- no, and honestly you may be able to if you're doing it. I don't know. I'm just trying to figure out --

A. I know there are ways to clean it, but we wouldn't be going through it in that manner if that rock could be used elsewhere.

Q. You would agree that the cleaning, excuse me. Let me back up for a second, because the record's not clear. The kind of gravel you put -- you use for base and for your, let's call it a driveway, it may not be the right word, that's CA5, CA6?
A. Correct. Six, CA6, yep.
Q. So CA6 is the size of the stone, correct?
A. Yes. The six is the size?
Q. Okay. So that stone, the costs to clean that is more expensive than the costs of the new stone; correct? That's why you don't clean it?
A. I can't answer that, but it's possible.
Q. Okay.
(SOUND OF PHONE RINGING.)
Q. I'm going to wait a second. I'm not smart enough to do this once, but I'm --
(LAUGHTER.)
Q. Okay. Do you know, and now I'm talking about access roads in general. Do you know how many linear feet of access roads are going to be in your project approximately?
A. Linear feet? I don't have the number off the top of my head.
Q. Okay. But each access road did you say is sixteen feet wide?

A. Sixteen feet wide.
Q. And how deep?
A. Eight inches.
Q. Okay. And some of these are significant -- I mean, so, just so I'm clear, an access road is used to get from the public road primarily to the turbine, correct?
A. Yes, and it has to be constructed to Vestas specs. We also have an independent inspector from Vestas that would look at the roads.
Q. So there's a lot of CA6 going into this project. Is that a fair statement?
A. Yes, a lot of CA6.
Q. And I'm going to talk about de-commissioning for a second, and I know you're not a de-commissioning expert, but you're the closest I have, as we've found out. So you're kind of stuck with me, Mr. Carlson, for a few minutes.
A. Yes, sir.
Q. When you take out that access road at the end of the project, that gravel has to be pulled up, correct?
A. Yes.
Q. Usually with a backhoe, correct?
A. Yes.
Q. And then it's loaded onto a truck, correct?

A. Yes.
Q. And then it's taken -- we've just decided, you can't use dirty CA6 or use CA6 in a public project, correct?
A. Are you saying that by law it's not allowed.
Q. IDOT specs require that it be clean CA6, we went through that, in order to be used on a public project with public money.
A. Then, yes. It wouldn't be able to be used.
Q. Okay. So that has to be hauled somewhere, and I'm assuming you don't know where it would be hauled?
A. I don't know.
Q. Okay. And you don't know how far away it would be, et cetera, right?
A. No.
Q. And you don't know if there would have to be a tipping fee or what the tipping fee would be if it was hauled to a landfill or some other kind of C and D facility?
A. I do not know.
Q. Now when I say C and D, I mean a construction and debris facility, correct? You're familiar with that term?
A. I am not.
Q. Okay. At the end of the project when you're

de-commissioning the pads, and I think it goes to four feet?

A. Yes, at least four feet.

Q. You don't know what the costs to de-commission those pads are, correct?

A. The de-commissioning plan does have an average cost per turbine. That's talked about.

Q. But that also includes hauling it somewhere?

A. And hauling, yes.

Q. We don't know where it's going to be hauled to, correct?

A. We do not.

Q. We don't know what the tipping fee is where it's going to be hauled to, correct?

A. We do not.

Q. Okay. And one of the huge costs of any de-commissioning is truck hours and time, correct?

A. Yes.

Q. I mean when I'm taking away a pad and I've got to take it somewhere, if I am taking it a mile versus sixteen miles, that cost is multiple somewhat. It may not be all sixteen, but it's a multiple?

A. Yes.

Q. And it's the same thing with the turbines. We don't know where we're going to have to haul the turbines, do we?

A. Yes, and I would say that we don't -- the note on de-commissioning was more likely is that there would be a re-power of this project. So that's just to say that de-commissioning could get pushed out further and then the county has, every five years, could be going over the de-commissioning plan and going over that.

Q. Yeah, but we don't have a chance in this hearing. I've heard that a couple of times already, but the reality of it is, the public doesn't have a chance at those points to have another public hearing and cross-examine and try to figure out those costs, do they?

A. They wouldn't unless it was required.

Q. And it's not required under the ordinance, you're familiar -- strike that. You're familiar with the ordinance, right?

A. Yes. It wouldn't be required.

MR. LUETKEHANS: Okay. I have nothing further. Thank you, Mr. Carlson.

MR. KAINS: Very good. Thank you, Mr. Luetkehans. Any other attorneys in the room with questions for Mr. Carlson? All right. Other interested parties? That would be members of the public opposed to the application or neutral on the application. Mr. Bill

Gallagher.

MR. KAINS: Go ahead, sir.

EXAMINATION BY

BILL GALLAGHER:

Q. All right. Thank you. A lot of talk about rock. Let's get back to the rock for a minute.

A. Yes, sir.

Q. First thing I want to know is about the laydown yard. Can you explain to me what will happen there? What's the first thing that I would see if I lived close to the laydown yard?

A. So being close to the laydown yard you would see a grater going out, grating the land per our grating plan that's laid out in our civil specs, and be being bringing in the rock to lay down the aggregate, and then the trailers would come in, more equipment would come in or CONEX boxes, start to see maybe some of the miscellaneous components for the turbines, but the larger components for the turbines, those are delivered to each site. They're not staged at the laydown yard.

Q. So there would be a lot of rock that would be stockpiled early in the project in the laydown yard; is that correct?

A. Yes. Yes, that would be standard.
Q. Any idea how many ton?
A. I don't.
Q. A lot, right?
A. It would be a lot. Yes.
Q. A lot?
A. Yes, sir.
Q. So average rock hauler about twenty ton. That sound close?
A. Yes. Yeah.
Q. But you don't have any idea how many total tons in this project?
A. I don't, not off the top of my head. No.
Q. Not based off other projects you've been involved with?
A. I could do some math on that, but I don't have an exact number for you.
Q. What kind of hours of operation at the laydown yard?
A. Generally it would be six to, I don't know, it could be six to six. Generally speaking, you're going to have an eight to ten-hour work day, but you're going to have different groups that get there at different times, and then there's sometimes when people would have to work late. I think there would be -- you would have a

lot of activity there from sun up to sun down.
Q. It sounds like there would be a lot of activity there.
A. Yes, sir.
Q. So if you lived close to the laydown yard, you're definitely going to know something's going on over there, back-up alarms, tailgates slamming, those types of noises?
A. Yes, sir.
Q. How long would that go on?
A. Could go on for eight months.
Q. Eight months?
A. Uh-huh.
Q. Sounds like a long time. Where will the batch plant be located in relationship to the laydown yard?
A. We don't have the location assigned yet for the batch plant, but ideally would be more central to the project. If you look at the map, more central, south of 74.
Q. Central to the project?
A. By central to the project boundary, and more specifically central to where the turbine footprints are, because that time that it takes to get to the furthest turbine and the curing time for the concrete. Yeah, so we just don't have a specific location picked

out yet.

Q. So the batch plant could be located not along a county road, but maybe just out in the township or somewhere?

A. That's correct. It could be.

Q. You mentioned earlier that, excuse me if I didn't get this right, you would not be using 150 to access the site?

A. Not with the turbine components.

Q. That would be the blades, the towers?

A. Yes, blades, towers, cell, box, that would all travel north off of '74 and loop around and go over the overpass, over I74, but they wouldn't be using US150 to go through Mansfield.

Q. But the rock haulers would be obviously coming in through Mansfield, through Farmer City?

A. Potentially, but we haven't got to those discussions yet. I talked -- I briefly talked with White Construction about that, and we haven't made any decisions on the haul route and egress and ingress.

Q. Where would the rock be coming from?

A. White hasn't picked a specific place yet, but what they did tell me is potentially Tuscola or Champaign.

Q. Pardon me?

A. Potentially Tuscola or Champaign, east of Champaign.

Q. Champaign? I'm not familiar with a quarry there. I am with Tuscola.

A. Yeah, Tuscola. They mentioned east of Champaign, so I don't know if there's something near St. Joe or not.

Q. Fair enough. Possibility. Okay. Back to the concrete plant. How big a well would it take to service that concrete plant?

A. I'm not familiar enough to answer that. I don't know.

Q. Would it be generally like a household well out in the country?

A. I would assume so, due to the volume of water for the concrete mixing.

Q. It was alluded to earlier that possibly you could draw down and affect someone that might be close?

A. Well, I don't know that yet. We don't have any --

Q. You don't have any studies on that?

A. No. Not done anything along those lines.

Q. Will there be fuel storage at either the concrete mix plant or the laydown yard?

A. Potentially at the laydown yard, yes.

Q. What would be an example of that? Thousand gallon tanks?
A. Yes. My recollection from Ford County, yep.
Q. Then one last question on the drainage districts. The drainage districts, they don't regulate all of the tile in the district. There are district tiles --
A. Uh-huh.
Q. -- that they maintain and have responsibility for, and also there's land techs involved in those drainage districts. Private tiles are private. So, if those are impacted, do you work with the owners of those private tiles?
A. Yes, and that's the additional outreach that we've done.
Q. Pardon me?
A. That's the additional outreach that we've done, working with all private landowners --
Q. I just want to make sure, you realize the drainage districts don't have responsibilities for all the tiles --
A. Oh, yes.
Q. -- you make contact with?
A. Yes.
Q. So you may have maps from the drainage districts, but you may not have a map of everything?

A. Not of everything, not yet at least. I mean we have the vast majority of even the private landowner drain tile. It's extremely helpful for us with design to know where to route a collection system.

Q. Some of those drainage tiles are pretty old. Are you aware of that?

A. The clay, yep. I'm aware.

BILL GALLAGHER: All right. Thank you.

MR. CARLSON: Yes, sir. Thank you.

MR. KAINS: Thank you, Mr. Gallagher. Mr. Dylan Gallagher?

COURT REPORTER And how are you spelling Dylan Mr Gallagher?

DYLAN GALLAGHER: D-Y-L-A-N.

COURT REPORTER: Thank you.

MR. KAINS: Go ahead with questions for Mr. Carlson.

EXAMINATION BY
DYLAN GALLAGHER:

Q. On the crane path and tiles that Mr. Chambers had brought up, I know you said you're working with KCoe and DIGS.

A. Yes, sir.

Q. Have they made a recommendation of running ground penetrating radar over the crane path to applying tiles?
A. No, and we don't have a finalized crane path yet either.
Q. No, I'm just saying, has anybody brought that up, that that would be a good idea to eliminate the broken tiles, finding them a year or two years later?
A. No. No one's brought up that recommendation, not to me directly, but maybe it's been discussed elsewhere.
Q. Okay. On private tiles, I know you said that a participating landowner, or I'm assuming a participating landowner would be compensated for any crop damage that may result in a broken tile. Is that true?
A. Yes, that's true.
Q. What about the unscreened, non-participating land owners? What is their compensation for crop loss?
A. That, I can't definitively answer. I know how I want to answer, but I just don't know what's in the leases.
Q. Well, that person would not have a lease. So what is the remedy for crop losses for an unscreened, non-participating landowner?
A. I know that our development team could answer that better than I could on how that's handled.
Q. Is it true that there's a lot of moving parts on

this project that you have no clue or others have no clue of right now, and maybe you guys need to get all your ducks in a row before you come to the public so questions can be answered? Is that a fair statement?

A. I don't think that's a fair statement. We all work at -- we all have different responsibilities and we work together as a team to --

Q. But there's still a lot of engineering and stuff that needs to be done that the public should be aware of before a special use permit should be issued; is that correct?

A. No. That's more tied to the building permit than the special use permit. So all the engineering data that I've laid out applies to the building permits.

Q. But that's still true, there is still a lot of information that needs to be provided to the public?

A. Yes, but it's -- I don't -- it depends on what engineering you're talking about, whether it's -- some of it's confidential information too for the company or for Vestas or for other groups that we're working with.

Q. So the crane path is confidential?

A. Crane path, not necessarily, no.

Q. When will that be produced?

A. Potentially in the next month.

Q. Okay.

A. Really what we're waiting for is the collection system design to be finalized, and then the crane path design -- or crane path can be finalized.

Q. Okay. Let's see. Tile repair.

A. Uh-huh.

Q. Do you have a standard practice that you use?

A. Yes. Um, so we would talk -- or we would repair tile ten feet away from where the trenching was, ten feet out either direction, but that's for the private tile. There potentially could be different requirements with each district drain. I mean it could be eight feet or ten feet, it just depends on what our agreement lays out.

Q. So basically your calling the AIMA and Illinois Department of Ag?

A. Exactly.

Q. As examples?

A. Yes.

Q. And then you had brought up why you did a lump sum bid on that, on the whole project?

A. Yes.

Q. So a contractor that is going to bid on the tile repair, which is basically impossible to do, has White stated that tile repair will be done on an hourly basis?

A. No. It's per tile basis.

Q. So what's that figure per tile cost?
A. We haven't quite decided on that yet.
Q. Do you have a range?
A. I can give you a range --
Q. A value from another project?
A. Yeah. What I've seen is anywhere from four hundred to eight hundred per tile repair.
Q. Okay.
A. So, yeah, and we have an estimate for the amount of tile we would be repairing here based on the maps that we've received, in comparison to other projects in the area. So like Ford County, we had upwards of like fourteen hundred drain tile repairs.
Q. And how many of those were on maps of the fourteen hundred that you had?
A. For Ford County, surprisingly very few where they were pattern tile or mapped out.
Q. One last question. Actually I've got two possibly. Have you guys been in contact with Rise Broadband on interference with turbines?
A. Rise Broaden?
Q. Rise Broadband.
A. No, I have not.
Q. But you guys stated earlier that you had been in contact with all telecommunication companies?

A. I don't know. I might have missed that hearing if that was mentioned.

MR. GERSHON: It's not an area of your expertise. We're not required to answer.

MR. KAINS: He's already answered he doesn't know. Go ahead and ask another question.

DYLAN GALLAGHER: Actually that would be it. Thank you.

MR. KAINS: Very good. Thank you, Mr. Gallagher. Yes, Mr. Reed. This is James Reed. Go ahead, Mr. Reed, with your questions for Mr. Carlson please.

EXAMINATION BY

MR. REED:

Q. Thank you. First after all, Mr. Carlson, thank you for your service to the Country. We all appreciate that.

A. Thank you, sir.

Q. White Construction, are there any other projects nearby that they've completed within the last four or five years that the public might go and look at to see how those turned out?

A. Yes. I mentioned in my testimony that you could

look at Sapphire Star project north of Piatt County. You can see it as you head north.
Q. Is that in McLean?
A. McLean. Southern McLean, yes.
Q. It's one just north Farmer City?
A. Yes, and those turbines will be very similar to what would be constructed here.
Q. Okay. Help me clear up a little bit of confusion on the roads. On the public roads, I thought you said they would have to be widened from sixteen out to eighteen feet?
A. I didn't specifically say that, but that would be per the Vestas specs to get the turbine components into the site. It would be widened out to eighteen feet, but access roads are different. That would be sixteen feet.
Q. Okay. I'm just talking about the public roads. You also mentioned that there might have to be aggregate added to them, I suppose, for weight carrying capacity?
A. Exactly, yes.
Q. So what depth of additional aggregate has to be added?
A. Four inches.
Q. Four inches?
A. Yes, after cement stabilization.
Q. After -- so --

A. After eight to twelve inches of cement stabilization.

Q. So eight to twelve inches, and then four inches?

A. Yes.

Q. Of new rock on the roads?

A. Yes.

Q. Okay. If they are wide enough, eighteen foot, is there a shoulder created then beyond that?

A. Yes. They would have a one-foot shoulder on either side as well.

Q. Okay. So if you're raising the roads up, you know, eighteen inches and you're widening them out a couple of feet on either side, how do you maintain a safe shoulder drop-off since essentially you're taking it from this to that, (witness indicating), and I know in some project areas that semis have flipped over because the shoulder was not maintained, the ditch grade was greatly changing its angle to the road, and essentially while they had a great base in the roads, those roads became completely unsafe. So how do you continue to have a safe road after these construction projects?

A. So that's all part of the drainage study that we're conducting now for the public road work. It's a pre-construction baseline survey. We have the pre-existing conditions, the existing conditions, what the proposed condition of the road will be, and then what the sloping will be, and that will all be laid out in the argument as well, road use agreement.

Q. You say that's part of a drainage study?

A. Yes, because it's not just the safety element there. It's also how water flows off the road and impacts the drainage ditches on the side of the road and right-of-way.

Q. Okay. Are you aware that there are state requirements for public roads as far as the angular to slope being two to one, three to one? Will these roads be totally in compliance with that?

A. Yes, sir. Yes, they would be.

Q. Okay. Thank you.

A. And I would say, I was up at Ford County here recently and saw the end product, and it's a great product, something that's going to last for decades and in a great safe condition.

Q. I hope so. The ones I have driven in the last thirty days are completely unsafe road conditions, but thank you?

MR. KAINS: Thank you, Mr. Reed. Any other questions from members of the audience? Miss Rupiper, and then Mr. Gantz, you'll be next. Ms. Rupiper, go ahead.

FURTHER EXAMINATION BY

MS. RUPIPER:

Q. Thank you. I just have a follow-up from my last question. Do you anticipate at some point on having an answer to my previous question to give to the ZBA as to the impact of your water usage on surrounding landowners and wells and farms in the area, in terms of drawdown, because you're going to have a concrete plant there essentially? And do you anticipate on having an answer to that question as to the impact of any drawdown that other well owners in the project area might experience?

A. I obviously don't have an answer now, but I can look into this.

MS. RUPIPER: All right. Thank you.

MR. KAINS: Mr. Gantz? Sir, if you could state your name spelling first and last names for the record, please.

MR. GANTZ: Steven Gantz, S-T-E-V-E-N, G-A-N-T-Z.

MR. KAINS: Go ahead.

EXAMINATION BY

STEVEN GANTZ:

Q. I just have some quick questions about the power line that connects the substation to the transmission lines down by the peaker plant, and I live right close in that area where that's all gonna come together, make the right turn down to the south. So I'm just curious what it's going to look like. I assume this is going to be an above-ground?

A. It's above ground, yes.

Q. Okay. Are they going to do those -- like those big galvanized metal poles --

A. Yes.

Q. -- I see these days?

A. Yes, sir.

Q. How tall will these be?

A. We're still finalizing the design, but one reference point is that the Ameren line, that's the existing 345 Ameren line that runs north of the peaker plant, our team line will go under that. They'll have to raise their line slightly, but you can just get a reference from that.

Q. The big poles down by the peaker plant that hook into the track, it will be slightly lower than those?

A. Yes.

Q. Okay. How many power lines would be on this transmission line? How many -- will it be like three lines on the poles?

A. Three lines, and it's just that one transmission line that runs down from the substation or peaker plant.

Q. When that line comes out of the substation and it's running east and west, or running to the east, it's running parallel to the 2400 road, which is the road I live on, how close -- what's the distance between that power line and the road? I guess I wanna know how close is that going to be to me?

A. About half a mile. It's going to be about halfway out in the field.

Q. No, it won't be that far, I don't believe. The way the map is shown, it's gonna be, it looks like more like a quarter mile, or a little bit less, but...

A. Yeah, I don't have an exact distance.

Q. Could you find out?

A. Yes. I can find that out. Yeah.

Q. The line goes to the east, it gets right basically in front of my house, and then turns straight south, and then goes straight south down to the peaker plant or the transmission line down there by the peaker plant. I'm just wondering, when I look out my windows, I'm going to be looking basically right down a bunch of these power line poles coming right toward my house. So I'm wondering how far out in the field are they gonna be from like the property line of the eighty acres that the substation is on. I just wonder, is it going to be --

A. It'll ride closer to the property line, once you head east from the substation parcel. So once we get into the next field, then we ride that property line, and that's where it would be about half a mile, half a county mile right down the middle of the field, but right running that property line. I could show you on the map.

Q. Okay. I'll talk to you later about that.

A. Yes, sir.

Q. This is something else about the batch plant. Did I miss understand you? Do you know where the batch plant is going to be now?

A. We don't have a specific location picked out. We have a few options, but we have not decided.

Q. Would they more than likely be to the north end of this project, or --

A. No. It would be more centralized with the project.

MR. GANTZ: Okay. I guess that's all.

MR. KAINS: Thank you, Mr. Gantz. Any other questions from members of the audience? Yes, ma'am. Could you please state your name, spelling your first and last for the record.

MS. STALTER: Lori Staler, L-O-R-I, S-T-A-L-T-E-R.

EXAMINATION BY

LORI STALTER:

Q. Just a couple of questions. How much do cranes weigh?

A. I can pull that up for you. I don't have that number off the top of my head.

Q. So the compaction of the soil. You indicated that you remove the top soil. What do you do about the sub-soil?

A. We leave it and grade it out, depending on the location.

Q. Okay, the compaction with that soil, because of the cranes going in and out and all of that stuff, so it just stays compacted?

A. Not everywhere. During the restoration we have a whole process of de-compacting the soil along where the crane path was. That's going to be the piece of equipment that would have the most compaction throughout

the construction.
Q. Right. Because of the crane?
A. Uh-huh.
Q. Okay. But how do you do that?
A. It's a machine that would go through and till up and de-compact the soil. I don't have an exact answer for you.
Q. You don't know how far down that goes?
A. Um, I don't. I know our site team would know that answer, but off the top of my head, I don't have an answer.
Q. Okay. State roads. I know township roads, they have -- they get a grievance or whatever to fix the township roads. What about the State roads? You say you're not going to use Route 150.
A. For the turbine components.
Q. Right.
A. We have to have permits for all of the State roads. There's a whole transportation plan that Vestas, they contract out a transportation company. They work with IDOT. We've already been working with IDOT for where we're coming off the interstate, where we're having -- we're taking all the turbine components. That's the most limiting factor here.
Q. I know you're not involved with the, what you

call it, the Sapphire project --

A. Uh-huh.

Q. -- that's in McLean County. Does that mean they're going to fix Route 136?

A. It depends on how their road use agreement is laid out. I can't speak for them.

Q. Okay. So if you're not going to use Route 150, but you're going to come off of I-74, are you coming off of the Mansfield exit?

A. Yes, heading north.

Q. Heading north?

A. Yes.

Q. And then heading north how far?

A. Close to Blue Ridge, and then we would be heading west, and it's more of a circuitous route to then get back down to the southern end of the project over I-74.

Q. So then when you go north and you go west, and then you come south.

A. Yes.

Q. Where are you coming south at?

A. I can't remember the county road, but there's an overpass that's closer to Farmer City that we'd have to go over, and that's IDOT.

Q. So you're coming just on the east side of Harris?

A. East side of Harris? Yes. Yes, that overpass, because there's another overpass in between there and Mansfield, but that one's not in good shape compared --

Q. You're right, it's not. So the project up at Sapphire, you say those turbines would be similar to what will be -- would be in Piatt County?

A. Yes.

Q. So currently, all the lights are on?

A. Yes.

Q. And are they going to remain on?

A. I don't know for that project if they have ADLS or not.

Q. Would that be because of the restrictions that McLean County does or does not have on the project?

A. That, or it's by contract of White Construction, but not something I can answer for them.

Q. All right. So would you say that Apex has an open-door policy?

A. Yes, I personally do, and our site team will as well.

Q. Okay. After the wind farm sells?

A. At the wind --

Q. After post -- the sale of the wind farm, is there still an open-door policy? So up at Ford County where you just finished the wind farm up there this last Spring and it sold to another firm?

A. Uh-huh.

Q. Is there still the open-door policy?

A. I would assume so, but I can't speak for them. That's a whole different company.

Q. Okay. So it's no longer Apex's business?

A. It's no longer Apex's, yes.

MS. STALTER: Okay. Thank you.

MR. KAINS: Thank up, Miss Stalter. Any other questions from the public? Questions from Piatt County staff and consultants? Mr. Gershon, re-direct and clarification?

MR. GERSHON: Thank you.

FURTHER EXAMINATION BY

MR. GERSHON:

Q. The first question and the use of time, I'd ask for -- rather than ask our court reporter to go back to the first day of public hearings in which Alan identified the ADLS, I would ask for leave to identify that. As indicated in his testimony there was the ADLS system operates at five thousand feet. It operates, and again, I'm quoting straight from what he said --

MR. KAINS: Leave is granted by the way, so go ahead.

MR. GERSHON: Sorry. When an airplane is within three point five nautical miles they are turned on. When they are more than three point five nautical miles on the other side of the project, it turns off five minutes later.

I want to try and go through a number of items here more briefly given the hour. But there's been a lot of discussion on the improvements and the construction that's done on private property, whether that's private drives, whether those are turbines, whether that's compaction of dirt, and whatever impact there may be on drainage tiles.

Does Apex do any work on any private property without having an agreement with that property owner to allow them to do that work?

A. No.

Q. Do your agreements with private property owners confirm that you are obligated to repair any impact you cause to drainage tile during the life of the project?

A. Yes.

Q. Does Apex have any power to force someone to enter an agreement with you with respect to those improvements?

A. No.

Q. A lot of discussion about the batch plant and the watering. Again, I'll try to summarize this question, but is this batch plant and associated well use of water similar to other road construction projects?

A. Yes.

Q. And that the same technique was used on other road construction projects in this county and other counties in Illinois?

A. Yes.

Q. When are we required to obtain well permits?

A. Prior to construction.

Q. Can we build without those well permits, if they are required?

A. If they're required, no.

Q. And again, I'm trying to go to a general question here because there's a lot of understandable confusion and concern being raised about why you can't answer every question about every aspect of this project. So I want to ask you to clarify that confusion about what's required pursuant to the zoning ordinance adopted by this County to be done as part of the special use permit and what's required as to be part of the (inaudible) well, how about this, prior to the building permit. Is the road use agreement and all of the associated things that are related to it that we've discussed here including road routes, construction techniques, crane routes, et cetera, required to be submitted as part of the special use process, or required to be done as part of the building permit?

A. It would be required per the building permit.

Q. Same question, all of the discussion on the drainage districts. Is that required pursuant to the county's ordinance to be done as part of the special use permit, or is it required to be done prior to issuance of the building permit?

A. Prior to the building permit.

Q. Same question on de-commissioning. Is the de-commissioning plan identified in the ordinance required to be done as part of the special use permit or required to be done prior to --

MR. LUETKEHANS: Objection. Asks for a legal conclusion.

MR. KAINS: I'm going to overrule, and if he knows the answer he can answer.

MR. GERSHON: I can also make it easier, if you'd like, he can read the ordinance which says it.

MR. KAINS: Just go ahead and ask the question.

Q. Is it required under the ordinance to be done pursuant to -- prior to the building permit or prior -- as part of the special use permit?

A. Prior to the building permit.
Q. With respect to the drainage tiles and the property, I'm not going to go ask you to go over all the work we've already done. We already talked about that, but one you didn't really discuss, do you discuss with every property owner prior to constructing on their property where their drainage tiles are, their private drainage tiles?
A. Yes, every single one of them.
Q. And again, even if they're wrong, even if they don't identify it, are we required under our lease to repair any damage that we cause?
A. Yes. We're required to repair all of it.
Q. Can you describe how many staff Apex will have here on a daily basis?
A. Approximately ten people.
MR. GERSHON: No further questions.
MR. KAINS: Thank you, Mr. Gershon. Mr. Luetkehans?

FURTHER EXAMINATION BY
MR. LUETKEHANS:

Q. What are the hours of operation at the batch plant?
A. I don't have an answer for you.
Q. So you don't know if it's a nine to five, or -- you don't know how -- White's in charge of the batch plant, right?
A. Yes.
Q. Okay. So we don't know what the hours are that White intends to utilize at the batch plant, correct?
A. I do not yet, no.
Q. Okay. One of the other -- have the plans been done to show the actual location of all the access roads?
A. Yes. That's at the sixty percent design phase to be completed in January, or per the ISC, issue for construction.
Q. Could you -- at sixty percent design phase. I heard that, but I didn't hear at the end.
A. So, the final product would be completed in January.
Q. So does that mean we do or don't know exactly the length of the roads, the access roads?

A. We do know. I just personally don't know off the top of my head, linear footage.

Q. Would a helicopter trigger the ALDS, do you know?

A. Yes.

Q. Do you know whether there's any aerial application companies in the area of your wind farm?

A. I do not know.

MR. LUETKEHANS: Nothing further. Thank you.

MR. KAINS: Very good. Thank you, Mr. Luetkehans. Mr. Gershon, anything?

MR. GERSHON: Just two last questions.

FURTHER EXAMINATION BY

MR. GERSHON:

Q. Are you aware of whether aerial operators operate at day or night?

A. I would assume in the daytime.

Q. Okay. And are all of the access roads that you're currently designing on private property and only done with the agreement of the property owners who have signed agreements with you?

A. Yes. That's correct.

MR. GERSHON: No further questions.

MR. KAINS: Thank you. Final questions for

Mr. Carlson coming from members of the Zoning Board. Mr. Harrington?

FURTHER EXAMINATION BY

MR. HARRINGTON:

Q. Through the course of all this conversation you've mentioned several times that you're not completely finalized in your plan, right? You haven't located the batch plant or the laydown yard, and I believe you said the crane route, you don't have that finalized. Do you or don't you have the underground collection line finalized?
A. That also will be complete in January.
Q. I guess I have a lot of concern around that because they've provided maps sort of indicating that, and you're leading me to believe that's subject to change. Is that accurate?
A. It could change slightly in some cases.
Q. Right. So when we talked about the batch plant and laydown, you sort of indicated like it wasn't going to be anywhere close to the map, it might be in the middle of the project, right?
A. For the batch plant. I didn't say the laydown. For the batch plant.

Q. Well on the map they show them together. It's described as preliminary laydown area/batch plant?

A. Preliminary, yes.

Q. So in the process of deciding this, and who is and isn't affected, how or when would we get that information to make a decision?

A. Prior to the issuance of the building permit. Pretty much everything I discussed today is for building permit and not the special use permit. So it's for the general information of the Board.

Q. I gotcha. Mr. Gantz was concerned, and rightfully so, about your high line. That's preliminary or final?

A. It's tracking the same timeline as the collection system. So January.

MR. HARRINGTON: Gotcha. I don't know that I have any further questions.

MR. KAINS: Very good. Thank you. Any questions from members of the Board? Very good. Thank you, Mr. Carlson, and you may step down, and you are excused as a witness unless you are recalled by your counsel or by the Zoning Board. Mr. Gershon, looks like you have something to say?

MR. GERSHON: Just two things. One, I know we always try to identify who will be coming up next.

MR. KAINS: Yes, sir.

MR. GERSHON: But before I do that, and I apologize, did you release the other two witnesses?

MR. KAINS: Yes. Both Dr. Rogers and Mr. Conley are released subject to recall.

MR. GERSHON: I couldn't remember from multiple hours ago. So tomorrow we have Zack Dietmeier, D-I-E-T-M-E-I-E-R, but I can verify for you, whose Rivian, Normal, Illinois's Plant Communications Senior Manager who will be here to present solely as an informational witness to present the press release that we previously submitted as an exhibit, and at that point we will close our case, and we will give our closing statement.

MR. KAINS: Well, if you want to reserve your closing statement until the end, that might be -- I'll let you have that call.

MR. GERSHON: All right. I would appreciate that opportunity.

MR. KAINS: Yep. Very good. And then after Mr. Dietmeier testifies tomorrow, then we will have witnesses who are in support of the application for the special use permit. So if you are in support of that, in favor of that, and you've signed in to testify, it will be your opportunity tomorrow.

In addition, there will be a Professor Sarah

Fox from Northern Illinois University, who will be -- I'm going to contact her. I'm going to send her an e-mail tonight and have her ready with her witnesses tomorrow as well. So that kind of gives us a road map. There will be -- Mr. Gershon will conclude his presentation, his case. Then we will follow that up with folks who are in support of the application tomorrow night. Then if we get through all of those folks, and if we can get doctor -- Professor Fox from Northern Illinois University down here tomorrow, and we get through her witnesses, then it will be Mr. Luetkehans' opportunity to present his case. So that's kind of a road map of where we're going. We're meeting tomorrow night and Thursday night this week, and just for your information we will also meet next Wednesday December 14th and next Thursday December 15th. Anything else from counsel?

MR. GERSHON: Simply to let you know that a number of people who are supporters of the project had anticipated being here on Thursday. If there's an opportunity to hold open time for them on Thursday we will certainly try to make sure they are aware of the time change.

MR. KAINS: Yeah, I don't want to come here tomorrow night to have a five or ten-minute witness. So

I'm hopeful that I'm going to get in touch with Professor Fox tonight via e-mail. I'm certainly not going to call somebody at this late hour, but we want to try to keep this moving along. As many folks as can get on the stand tomorrow night to testify in support, and then we can get moving with the opposition's case. All right. Anything further? We're in recess until tomorrow night at six o'clock. Thank you.

MR. GERSHON: Can you confirm that's for here tomorrow?

MR. KAINS: In this room, yes.

(PROCEEDINGS THIS DATE CONCLUDED.)

I, Jamie J. Mumm, an Official Court Reporter and Certified Shorthand Reporter in and for the Sixth Judicial Circuit of the State of Illinois, do hereby certify that I transcribed from shorthand notes the foregoing proceedings and that the foregoing is a true and correct transcript to the best of my ability.

Jamie J. Mumm, CSR
Official Court Reporter
CSR #084-00233

'

1

2

3

4

5

6

7

9

A

B

C

G

M

N

O

P

Q

R

S

T

Y

Z