

STATE OF ILLINOIS
PIATT COUNTY ZONING BOARD

GOOSE CREEK WIND, LLC
APPLICATION FOR A SPECIAL USE PERMIT

11/29/2022, 2022
6:01 P.M. - 9:00 P.M.
Held at Monticello, IL, Community Building

PIATT COUNTY ZONING OFFICER:
Jennifer Harper

TEMPORARY HEARING FACILITATOR:
Andy Keyt, Esq.

PIATT COUNTY ZONING BOARD MEMBERS:
Loyd Wax - Chairman
Jim Harrington - Vice Chairman
Kyle Lovin
William Chambers

PIATT COUNTY BOARD MEMBERS:
Jerry Edwards
Ms. Jones

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

COUNSEL FOR THE APPLICANT:
Mark A. Gershon, Esq.
Adam C. Rayford, Esq.

APPLICANT - APEX CLEAN ENERGY:
Alan Moore, Senior Project Manager

COURT REPORTER: Tammy Greenfield, CSR

INDEX OF PROCEEDINGS

**WITNESSES FOR
THE APPLICANT:**

Direct Cross Redirect Recross

Jennie Geiger
T. Travis Brown

APPLICANT'S

<u>EXHIBIT NO.</u>	<u>Description</u>	<u>Offered</u>	<u>Admitted</u>
--------------------	--------------------	----------------	-----------------

Exhibit 14	Geiger PP	5	
Exhibit 15	Wind Energy Interactions With Wildlife and their Habitats	31 57	
Exhibit 16	West PP	67	
Exhibit 17	Preliminary site plan	112	

1 CHAIRMAN WAX: Call the meeting to order,
2 please. First order of business, would you join me in the
3 pledge of allegiance.

4 (WHEREUPON, the Pledge of
5 Allegiance was recited.)

6 CHAIRMAN WAX: Thank you, and welcome to
7 the meeting.

8 Could we have the roll call, Ms. Harper.

9 MS. HARPER: Mr. Larson, Mr. Harrington.

10 MR. HARRINGTON: Here.

11 MS. HARPER: Mr. Lovin.

12 MR. LOVIN: Here.

13 MS. HARPER: Mr. Wax.

14 CHAIRMAN WAX: Here.

15 MS. HARPER: Mr. Chambers.

16 MR. CHAMBERS: Here.

17 MS. HARPER: Mr. Foran, State's Attorney
18 Perry, Mr. Spencer.

19 MR. SPENCER: Here.

20 MS. HARPER: Mr. Carol, Mr. Edwards.

21 MR. EDWARDS: Here.

22 MS. HARPER: Ms. Jones.

23 MS. JONES: Here.

24 MS. HARPER: Mr. Henricks, Mr. Shumard.

1 CHAIRMAN WAX: Thank you. Looks like we
2 have a quorum to proceed.

3 MR. KEYT: Okay. So welcome to tonight's
4 Zoning Board of Appeals hearing on the Goose Creek Wind
5 Farm application. As some of you have been regularly
6 attending can tell, I am not Scott Kains, the regular
7 hearing officer. He is ill today and sent me a message
8 that he wasn't gonna be able to make it and apparently is
9 very under the weather, so I have agreed to serve in his
10 absence if the zoning board so chooses.

11 As a matter of course, someone from the zoning
12 board would have to make a motion to appoint me to serve as
13 the temporary hearing officer in Mr. Kain's absence. I'm
14 happy to do that and still be able to do the stuff I'm
15 regularly doing for the zoning board as well if someone so
16 chooses to appoint me to that.

17 MR. HARRINGTON: Make a motion to ask
18 that Andy Keyt serve as interim moderator tonight.

19 CHAIRMAN WAX: Thank you. Is there a
20 second.

21 MR. LOVIN: I'll second.

22 MR. CHAMBERS: I'll second.

23 CHAIRMAN WAX: Okay. Two seconds, I
24 believe.

1 Okay. Any discussion? If not, could we have a
2 roll call, please.

3 MS. HARPER: Mr. Harrington.

4 MR. HARRINGTON: Yes.

5 MS. HARPER: Mr. Lovin.

6 MR. LOVIN: Yes.

7 MS. HARPER: Mr. Wax.

8 CHAIRMAN WAX: Yes.

9 MS. HARPER: Mr. Chambers.

10 MR. CHAMBERS: Yes.

11 CHAIRMAN WAX: Okay. It's been decided.

12 Thank you.

13 MR. KEYT: Well, unfortunately, that
14 passed so we left off last time we were getting ready for,
15 I think, environmental witnesses on behalf of the applicant
16 and we had finished off with property or economic impact
17 analysis.

18 So, Mr. Gershon, you can call your next witness,
19 please.

20 MR. GERSHON: Thank you. And welcome
21 back, everyone. I hope everyone had a great Thanksgiving.

22 I'd actually like to start by submitting into the
23 record Petitioner's Exhibit 14, which is the PowerPoint for
24 tonight's initial environmental presentation. I believe

1 the zoning board -- that Andy Keyt has copies for the
2 entire zoning board, which he's passing out now. And with
3 that, we're going to introduce our first witness, Jennie
4 Geiger, who is Apex's director of environmental. And I'll
5 do Andy a favor since he's not doing this one every night
6 to ask that the reporter swear you in.

7 (WHEREUPON, the witness
8 was sworn.)

9 DIRECT EXAMINATION

10 BY MR. GERSHON:

11 Q. Would you please state your name and spell it for
12 the record.

13 A. Yes, my name is Jennie Geiger. J-e-n-n-i-e. Last
14 name G-e-i-g-e-r.

15 Q. Thank you. And could you -- oh, sorry about that.
16 Did you hear that okay?

17 THE REPORTER: I did.

18 A. Sorry.

19 Q. Again, this would be Jennie, Jennie Geiger who's
20 given her name for the record.

21 Would you give us your background and experience.

22 A. Can I go so my slides?

23 Q. Yes. Can we go to slide two?

24 A. Yeah. Hi, my name's Jennie. I'm director of

1 environmental for Apex Clean Energy. My background is that
2 I have an undergrad degree in forestry and wildlife biology
3 from the University of Georgia and I have a master's in
4 environmental policy and administration from the Colorado
5 State University.

6 I have spent over 22 years in the environmental
7 field doing various types of work for commercial academics,
8 nonprofits and commercial sectors. I've spent about
9 ten years of that in the renewable energy sector primarily
10 working on wind and solar projects. And I've been the
11 environmental lead on seven wind and solar projects in
12 Illinois, five of which are currently in operations.

13 I'm also a member of the Renewable Energy Wildlife
14 Institute Research committee which is a collaboration of
15 industry, nonprofits and academia that works to address
16 wildlife and renewable energy issues.

17 Q. Thank you. If you would, would you please walk
18 through the work you've done on this project and other
19 information you'd like to provide?

20 A. Yeah, sure. So Apex, in general -- one of our core
21 values is sustainability. So all of our projects, we
22 approach them with trying to minimize our impacts to the
23 environment and wildlife to the greatest extent
24 practicable.

1 Q. If I could pause for one second, I'm sure Andy was
2 just about to do this, but we would like to ask that the
3 zoning board accept Jennie as an expert.

4 MR. KEYT: Okay. Is there any objection?
5 Okay. Hearing none, so accepted.

6 MR. GERSHON: Thank you.

7 A. So the slide up here is just kind of an overall
8 roadmap of how we address, or approach, all of our
9 projects. And so in order to minimize our potential
10 impacts we start really early in the process doing site
11 assessments and looking at where we're considering putting
12 our project, making sure that there's nothing that exists
13 there that is a concern or we're gonna have a negative
14 impact on.

15 Then we work with agencies, various agencies
16 depending on which state we're in, but in Illinois it's
17 gonna be the Illinois Department of Natural History -- or,
18 sorry -- Natural Resources, and the U.S. Fish & Wildlife
19 Service. And we coordinate with them on our project where
20 we're siting any concerns that they might have and then we
21 take the information that they give us and we create a
22 study plan and we go out on site and we do site-specific
23 studies for the project to understand how wildlife
24 (inaudible), what kind of habitats are in the area. And

1 then that information from the studies is used to design --
2 to inform siting and design project facilities and make
3 sure that we're a minimizing our impacts. Once a project
4 is constructed, then on the back end of it during
5 operations, we monitor and make sure that our low risk
6 conclusions are appropriate and then we'll respond as
7 needed.

8 And so the overall process that's we approach all
9 projects, including Goose Creek, is to avoid impacts. If
10 we can't fully avoid, we minimize. And if we can't fully
11 minimize, we'll mitigate as appropriate.

12 Next slide. This first slide here is Fish &
13 Wildlife Service and talking about kind of how we approach
14 Fish & Wildlife Service. So as an industry we are required
15 to be in compliance with federal and state laws. For U.S.
16 Fish & Wildlife Service, that includes the Endangered
17 Species Act, the Bald and Golden Eagle Protection Act, and
18 the Migratory Bird Treaty Act. And, again, like I kind of
19 mentioned on the last slide, what we do to make sure we're
20 in compliance with those various regulations is that we do
21 an initial site assessments using publically-available data
22 to assess sites to make sure that they're appropriate for
23 the projects that we're considering. And then we figure
24 out which potential species of concern might occur in the

1 area. And a lot of what we're doing for Fish & Wildlife
2 Service specifically is following two sets of guidance that
3 they put out, one being the land-based wind energy
4 guidelines and the second one being the eagle conservation
5 plan guidance.

6 Once we do this initial site assessment we go and
7 we meet with agencies. So for Fish & Wildlife Service for
8 Goose Creek Wind, we initiated consultation in early 2019
9 and we talked to them about how we've assessed the site and
10 our initial opinions or interpretation of what potential
11 concerns there might be. And that information, they take
12 it and they take into consideration and give us feedback if
13 they agree. And then they also -- we use that to inform
14 what appropriate studies will be for on the ground.

15 For Goose Creek Wind, that has included two years
16 of avian and eagle use surveys, two years of raptor and
17 eagle nest surveys, as well as habitat assessments for
18 federally-listed bats, which includes the Indiana and
19 northern long-eared bat, as well as the eastern massasauga
20 snake. And all of these surveys are complete for the
21 project.

22 Once the surveys are completed -- and actually
23 after year one of surveys as well -- we go and meet again
24 with Fish & Wildlife Service to discuss the results of the

1 surveys, make sure that they are in agreeance with our next
2 steps and make sure we don't need to do any additional
3 surveys, and then we use that information to inform
4 avoidance and minimization measures for the project. For
5 Goose Creek, that includes siting turbines a minimum of a
6 thousand feet from a suitable bat habitat. It also means
7 clearing any trees, if necessary, during winter when bats
8 are not going to be present on the landscape. It also
9 means curtailment of turbines during the fall migration
10 season for bats, which is considered the higher risky
11 season by Fish & Wildlife Service. We also -- all of our
12 turbines are sited a minimum of 2.4 miles from any bald
13 eagle nests.

14 Next slide.

15 Another agency that we coordinate closely with is
16 the Illinois Department of Natural Resources. We are,
17 again, required to be in compliance with state regulations
18 which include the Illinois Endangered Species Protection
19 Act and the Illinois Natural Areas Preservation Act. We,
20 again, coordinate very early with IDNR, and that was in
21 mid-2019, again, to discuss our initial site assessment and
22 to discuss with them what they think appropriate studies
23 are going to be based on their concerns for state-listed
24 species.

1 The initial, kind of, review is called the EcoCAT
2 in Illinois and so that gives initial information to us
3 about what species might occur as well as any
4 state-protected lands that might be in the area that we
5 need to consider for setbacks.

6 For surveys for Goose Creek Wind, that has included
7 habitat assessments for three different species, one being
8 Sangamon phlox, which is a state-listed plant, Kirtland
9 snake, which is a state-listed snake, and Upland Sandpiper,
10 which is a state-listed bird.

11 We have also received formal consultation letters
12 from IDNR through the EcoCAT system which is required by
13 law. We received to two date, and they have been provided
14 to Piatt County and they are part of the application in
15 Appendix F. All surveys that we've done similarly to U.S.
16 Fish & Wildlife Service we go and we meet with IDNR again
17 to discuss survey results, make sure that they're in
18 agreement with our next steps, and then we discuss and
19 agree upon avoidance and minimization measures.

20 Q. And if I could, just to clarify for the record, you
21 said that was Appendix --

22 A. F.

23 Q. That's actually Exhibit 1, Appendix F6, just for
24 the record.

1 A. Agreed-upon avoidance and minimization measures
2 based on surveys for the project with IDNR include
3 avoidance of suitable habitat for state-listed species. In
4 the case of the Upland Sandpiper where there's a lot more
5 suitable habitat out here also, if we can't completely
6 avoid it is a construction timing item where we will clear
7 habitat prior to the breeding season which IDNR has
8 approved and agreed upon will avoid impacts to that
9 species. We have implemented a number of recommended
10 buffers from perennial streams, forested streams and
11 five-acre wood lots.

12 Beyond just wildlife, we are also required to take
13 into consideration cultural resources. So in the state of
14 Illinois the overarching regulations are -- and federal
15 regulations are -- the National Historic Preservation Act
16 and the Illinois State Agency Historic Resource
17 Preservation Act. In order to do -- ensure that we
18 minimize or avoid our impacts to cultural resources, we
19 start by doing a database review of previously-identified
20 or known cultural resources and we initially site around
21 those areas. That is followed by in-the-field surveys
22 based on state requirements and guidelines for
23 archeological resources and architectural resources.
24 Archaeological resources are those that are historic or

1 prehistoric, kind of, items that you'd find in the ground.
2 Architectural resources are gonna be structures on
3 landscape that are 45 years or older. So those are
4 required surveys as part of the development process.

5 The results of those surveys and the methods that
6 are used are then submitted to the State Historic
7 Preservation Office for review and concurrence or for
8 recommendations from them. All of the surveys are complete
9 at this time. Architectural surveys have been submitted to
10 SHPO for review. Archeological surveys have not been
11 submitted at this time but will be submitted in the very
12 near future. Information from these surveys is, again,
13 incorporated into project design and avoidance and
14 mitigation measures are developed from that.

15 Goose Creek Wind will have limited, if any, adverse
16 effects on cultural resources listed in National Register
17 of Historic Places. That is a register that, kind of,
18 significant resources would be listed in. So there are no
19 impacts to significant cultural resources.

20 We will also have an unanticipated discovery plan
21 in place during construction, and that will outline what is
22 to be done if a cultural resource is identified
23 inadvertently during construction, and it tells the staff
24 what to do and who we need to reach out to ensure we are

1 following regulations.

2 Finally, we also are required to be in compliance
3 with the Clean Water Act and the Rivers, Lakes & Streams
4 Act. These are various things that protect wetlands,
5 streams and water bodies in the state of Illinois. And,
6 again, similarly to cultural resources, we start with a
7 general database review where we're looking for known
8 wetlands, streams and water bodies that are available
9 through public database and then we design around that
10 information initially, and we further go out and do field
11 surveys and follow-up protocols put out by the Corp of
12 Engineers. There's a variety of guidelines that are
13 required to be followed, and that will identify boundaries
14 of streams and wetlands for us to design around or permit
15 through.

16 This project has been designed to avoid siting
17 turbines in other large infrastructure which would be
18 things like substations and Operations and Maintenance
19 buildings and any wetland, streams or water bodies. Linear
20 facilities, such as roads and collection lines, have been
21 designed to avoid or minimize impacts to wetland, streams
22 and water bodies to the greatest extent practicable. If we
23 are unable to fully avoid impacts from lineal facilities we
24 will permit it as appropriate through Section 404 of the

1 Clean Water Act using what is called a nationwide permit
2 from the Corp of Engineers. There's also a number of IDNR
3 statewide permits for various impacts to water areas that
4 we will also comply with or attain as necessary.

5 And then finally I just wanted to talk about Apex's
6 conservation grant program. So, as I mentioned earlier,
7 Apex -- sustainability is one of our core values and we
8 really do try to minimize our potential impacts to the
9 environment from our projects. And so, as something to
10 benefit communities further, we've implemented this grant
11 program. Apex was the first one to do it in the industry
12 and is still one of the only ones that does do this.

13 It's a completely voluntary contribution of money.
14 It's a thousand dollars per megawatt that is provided to a
15 nonprofit organization, local or regional, that is going to
16 enhance local ecosystems and habitats. There's a specific
17 topic or focus area that we pick for each of our projects.
18 We have not done that yet for Goose Creek, but we certainly
19 will be talking to various people that decide what will be
20 the most beneficial for the area from an environmental
21 perspective. This money will be awarded -- someone will be
22 selected to receive the money and the money will be awarded
23 upon construction of the project.

24 We have awarded three of these grants in Illinois

1 to date. The first one was for Lincoln Land Wind, which is
2 down in Morgan County. It was \$300,000 that was awarded to
3 Ducks Unlimited to restore migratory bat habitat. Ford
4 Ridge County Wind in Ford County, \$120,000 was given to two
5 different entities, Prairie Land Conservancy and Grand
6 Prairie Friends to manage and restore grassland and bird
7 habitat, which included purchasing a cemetery of native
8 prairie. And then Mulligan Solar, \$70,000 which was given
9 to the conservation fund to establish an enhance grassland
10 and prairie habitat.

11 That concludes my presentation.

12 MR. KEYT: All right. Is there any
13 follow-up questions for Mr. Gershon for the witness?

14 MR. GERSHON: No further questions at
15 this time.

16 MR. KEYT: Okay. We're gonna take a
17 probably five-minute recess for the board to review
18 information and compile any questions they may have for the
19 witness and then we'll return at -- the time is 6:23.
20 We'll come back at 6:30.

21 (WHEREUPON, a brief
22 recess was had.)

23 MR. KEYT: Okay. We're gonna call the
24 meeting back to order.

1 The Zoning Board of Appeals, if there's any
2 questions for the witness, you can proceed.

3 CHAIRMAN WAX: I have one.

4 EXAMINATION

5 BY CHAIRMAN WAX:

6 Q. On your fish and wildlife, the working with Fish &
7 Wildlife Service on the survey, was that conducted in the
8 site here or is that conducted elsewhere?

9 A. Yeah. It was conducted within the project
10 boundary. I think the boundary changed slightly but it's
11 completely covered the current boundary.

12 Q. Okay. So is the site turbines a thousand feet from
13 potential bat habitat, is that an acceptable range from the
14 Fish & Wildlife Service?

15 A. Yes, that is the recommended setback from both IDNR
16 and Fish & Wildlife Service to avoid impacts during
17 roosting period, like the summers, to protected bats.

18 Q. Okay. Could you explain what your definition of
19 curtail turbines, how do you do that when you're talking
20 about, well, we're going to, we're gonna minimize the
21 potential by 1%, 30%, 50%, and how do you do that?

22 A. Yes. Give me one second. I have exact numbers of
23 the reduction and impacts. Hold on. Well, I don't have
24 the exact number.

1 So curtailing, when we talk about it for bats
2 specifically, they also call it feathering, but essentially
3 at wind speeds that are underneath that -- at lower wind
4 speeds, so below five meters per second -- the turbines are
5 turned into the wind so that they are not producing energy.
6 They're turned so that the wind hits them. It's not
7 spinning them. And it's called feathering. So they
8 slightly move but not very fast. And so that the lower
9 wind is when the listed bats, or the protected bats, are
10 moving through the area. And so when you do that it avoids
11 impacts to those bats during the time that's most risky to
12 them. And that is what is approved and requested from IDNR
13 and Fish & Wildlife Service. And the reduction -- Travis,
14 who is coming up after me -- may have a better number that
15 he can whip out for you offhand. Oh, here we go.

16 MR. KEYT: Ms. Geiger, can I just
17 interrupt you for a second.

18 THE WITNESS: Sure.

19 MR. KEYT: You're a very fast talker.

20 THE WITNESS: I'm sorry.

21 MR. KEYT: It's okay. Tammy's trying to
22 take down everything you say. If you could just slow down.
23 And I'm trying to write it down, which I'm not very
24 successful, but if you could just slow a beat down.

1 THE WITNESS: Yes.

2 MR. KEYT: That would be great.

3 THE WITNESS: Apologies. Do you want me
4 to start over, or are you good?

5 THE REPORTER: No, that's okay.

6 CHAIRMAN WAX: I'm not sure I picked up
7 on this yet, so maybe, maybe you could repeat --

8 THE WITNESS: Yes.

9 CHAIRMAN WAX: -- some of that.

10 THE WITNESS: So --

11 BY CHAIRMAN WAX:

12 Q. What does curtail actually mean and how do you do
13 it?

14 A. Yes. Well, and I'm not the turbine expert here so
15 this is my, you know, from my wildlife perspective. But --
16 so the turbines will not start generating energy until they
17 get to what is considered a manufacturer's cut-in speed, so
18 it's a certain wind speed. I'm not sure what that is for
19 these turbines, but I believe it's three meters per second.
20 Don't quote me on that.

21 Q. That was a question I was gonna ask for myself
22 rather than have to do the math, and maybe for some of the
23 crowd here, is that a -- give us a ball park number what
24 that means in miles per hour --

1 A. Miles per hour --

2 Q. -- wind speed.

3 A. I knew you were gonna ask me that. I am not --
4 Travis might be able to answer that question coming up next
5 or somebody else.

6 MR. GERSHON: Mr. Chair, if you don't
7 mind, I'm sure I can get that number calculated here. I'll
8 make sure that we get that.

9 CHAIRMAN WAX: Okay. Sounds good. Okay.

10 MR. GERSHON: And that's how fast we are.
11 6.711 miles per hour, three meters per second equals.

12 THE WITNESS: That's cut-in. So what's
13 the five again for the curtailment?

14 MR. GERSHON: We'll continue to get that
15 to you.

16 CHAIRMAN WAX: Okay. Fine.

17 Q. This number of no eagle nests within 2.4 miles.
18 That's a U.S. Fish & Wildlife number?

19 A. No. The Fish & Wildlife Services recommend --
20 recommendation -- or they look -- we look for eagle nests
21 within two miles. That's what they look for. And that
22 doesn't necessarily mean that there's risk to eagle nests
23 within two miles of a turbine, but that's, that's the
24 distance that we research and look and where they kind of

1 consider there's more risk. We do not have a turbine
2 within 2.4 miles, so we're exceeding --

3 Q. Okay.

4 A. -- what Fish & Wildlife Service recommendations
5 are.

6 Q. So you checked this out and no turbine will be
7 within 2.4-miles of an eagle's nest?

8 A. Correct. Currently, yes.

9 Q. Okay. I'll let somebody else ask the questions.

10 MR. GERSHON: Mr. Chair, again, I
11 apologize. We're running some fast math here. But, as I
12 said, three meters per second would be 6.711 miles per hour
13 and five meters per second would be 11.185 miles per hour.

14 CHAIRMAN WAX: Thank you.

15 A. And to answer your -- the reduction in fatalities
16 between for five to six meters per second is 50 to 87%
17 reduced from just regular operations, so it's --

18 Q. How, how --

19 A. -- a minimum.

20 Q. How much reduction?

21 A. A minimum of 50% reduction.

22 Q. Okay.

23 MR. KEYT: Any other questions from
24 members of the Zoning Board of Appeals?

1 MR. HARRINGTON: Yes.

2 EXAMINATION

3 BY MR. HARRINGTON:

4 Q. So you referenced surveys a lot. Who's conducting
5 the surveys?

6 A. West is, and Travis will be our expert coming up
7 next.

8 Q. So in-house essentially?

9 A. No. It's a consultant, third-party consultant --

10 Q. Third-party --

11 A. -- that's a --

12 Q. -- consultant. Okay.

13 A. -- certified wildlife biologist.

14 Q. And then, you know, so you make reference in some
15 of your presentation of 2019 confirmed site assessment,
16 right. So these, hypothetically, would be not installed
17 until 2023-24. How does that work in relation to obviously
18 the habitats progressing in that period of time? Is it
19 rechecked? Are you -- how does this work?

20 A. Yeah. And so the 2019 date was when we started
21 coordinating with Fish & Wildlife Service. Studies have
22 actually continued through 2021 for wildlife studies and
23 2022 for wetland and cultural studies.

24 And the habitat -- the item -- the areas on the

1 landscape that we're looking at are not going to increase,
2 at least for habitat perspective. It's mostly cultivated
3 farmland and cropland where the turbines are going to be
4 located. And they -- there's three years of assessments of
5 how birds are using the area, timing, and that data is not
6 going to change -- that -- their general behavior is not
7 going to change in a couple of years.

8 Q. Okay. And if, by chance, it would, what happens?

9 A. We're still out there looking at things and we're
10 gonna be there for post-construction monitoring also. So
11 if something had changed on the landscape and the risk
12 profile changes we're gonna pick it up during operations
13 and we will, we will respond accordingly.

14 Q. Okay. So, so when you do these surveys are you
15 basing it off of this map as your distances?

16 A. We're basing -- I'm not sure which map that is.

17 Q. Well, this has been, this has been given to us as
18 the tower location -- proposed tower locations. So
19 assuming that's the case, but maybe not?

20 A. The -- actually, all of our surveys are done --
21 well, all of the wildlife surveys are completed on the
22 boundaries.

23 Q. Just the edge of the whole project?

24 A. I -- Travis, again, will probably be a little bit

1 better to answer this, but not all of them.

2 Q. Okay.

3 A. So it depends on the survey.

4 Q. Okay.

5 A. Raptor nest surveys go out to two miles of the
6 boundary.

7 Q. Right.

8 A. I believe that the habitat assessments go out to a
9 thousand feet for bats. Some of 'em are just the boundary.

10 Q. Right. So it's really more about the boundary of
11 the project than the individual turbine?

12 A. For wildlife, yes, because the -- we didn't know
13 where the turbines were gonna go. So we're trying to site
14 the project accordingly, you know, earlier on. We want to
15 understand where the potential risks are so that we can
16 plan accordingly and site accordingly, and that's what
17 we've done.

18 Q. Okay. I hear 'ya.

19 I guess outside of that -- I mean, your third-party
20 group is really the one that managed the study, right? It
21 wasn't in collaboration with IDNR; it was simply following
22 IDNR's guidelines?

23 A. Yes. Well, yes. I mean, we -- so they're part of
24 the discussions with the agencies also, but, yeah, it's in

1 accordance with their guidelines. So we go and we meet --
2 we, myself -- I was part these meetings -- we go and sit
3 down with Fish & Wildlife Service and IDNR and there is
4 guidance that's already set out about how these studies are
5 supposed to be completed to make sure that they're
6 providing the correct information. So third-party follows
7 that.

8 Q. Okay. You follow the protocol. But there wasn't
9 an actual -- they didn't actually conduct them. You guys
10 had the third-party?

11 A. Right. Correct.

12 Q. That's all. I was just trying to clarify.

13 A. Yep.

14 Q. I'm done.

15 MR. KEYT: Okay. Any other questions?

16 MR. CHAMBERS: I have a few.

17 EXAMINATION

18 BY MR. CHAMBERS:

19 Q. So the site studies, are those pretty much a
20 stand-alone study or are those kind of informed by, by
21 other past studies that are done in the area or regionally
22 or statewide? Is there -- where do you pull data from to
23 kind of compare with for those studies?

24 A. In terms of which studies we decide undertake; is

1 that what you're asking?

2 Q. Well, your, your wildlife studies, for example,
3 for, say, the birds, do you, do you -- when you're looking
4 at, you know, doing, doing this study for this area with
5 birds, do you also pull in data for other, you know,
6 statewide bird studies or anything else to kind of inform
7 those, those numbers that you get? I just wanted, wanted
8 to know if there's any, any relationship between the
9 studies conducted for this project and, you know, a wider
10 study elsewhere?

11 A. Yeah. They're not really related to other wider
12 studies, I wouldn't say, other than -- and, again, Travis
13 is the one that can answer this question -- but there --
14 oftentimes there's comparisons to other projects nearby to
15 kind of inform risk of a project, and so other regional
16 studies will come in when they're kind of comparing this
17 one to other ones.

18 But in terms of -- these are kind of stand-alone
19 studies, I guess I would say, for this project. I will say
20 that, you know, the studies that they go along they kind of
21 inform whether or not you need other studies. So in this
22 case the avian use surveys, when we're out there on a
23 monthly basis counting birds and figuring out what species
24 are out there using the landscape, we picked up an Upland

1 Sandpiper, which is a state-listed bird. And so then we
2 went and did habitat assessments to understand where
3 potential habitat for that bird is. So if we picked up
4 something in one survey it will inform additional surveys
5 that may be need to be done on the landscape.

6 Q. Okay. And then some of my other questions here
7 might be questions for Travis here so I'll kind of go
8 through these and you can let me know whether, whether this
9 is in your expertise or not.

10 So on the, on the bald eagles, the 2.4 miles from
11 the nest number there, what, what is the, the, the range of
12 a bald eagle? So say they have a nest somewhere, but
13 what's their, their hunting range, their actual habitat
14 that they, that they travel?

15 A. The two-mile buffer -- it used to be ten miles from
16 Fish & Wildlife Service, and they reduced it two miles
17 because of data that they collected over a really long
18 time. So the two-mile buffer is what they feel like is the
19 appropriate distance that eagles will travel. It is
20 specific really to golden eagles more than bald eagles.
21 And so if you talk to an eagle expert they will say it's
22 even smaller for balds, but we still abide by or look that
23 the two-mile to start out with.

24 Q. Okay. And is that mostly because of bodies of

1 water for bald eagles that they, they stick to the wetlands
2 area and don't go outside of that, or is that just they
3 just set that, that mile boundary and it doesn't matter
4 whether that's wetlands or, or prairie lands or what it is?

5 A. I will defer to Travis on the answer of that
6 question but --

7 Q. Okay.

8 A. -- I don't think it matters with the habitat within
9 the two miles, but I'll let him answer that.

10 Q. Okay. On the construction timing, so, so say -- so
11 give us an example of that. Say there was, was something
12 where, where there was a concern for construction timing.
13 Give us an example of that and then how that would work
14 with changing the construction timing?

15 A. Yeah. So for this project there's -- from a
16 wildlife perspective at least there's -- two different kind
17 of time periods that we're taking into consideration. So
18 one of them is going to be bat roosting habitats, so that
19 suitable bat habitat we want to clear it in the winter so
20 that would be -- I think it's, like, November until March
21 -- and so any trees that need to be cleared for the
22 project, which I -- if there are any, it's gonna be very
23 minimal -- but they would need to be cleared during that
24 period just to make sure that we don't accidentally take a

1 tree that has a bat in it or something like that.

2 And then for Upland Sandpipers, it's a breeding
3 habitat thing. So we would need to clear any of the
4 habitat that would be suitable breeding habitat for them
5 before they could nest in there so they'll just go find
6 another area to nest and so then there's no impact to that
7 species either.

8 Q. Okay. Last couple questions here.

9 On the, the data on -- I don't know what the
10 official label for it would be -- like bird strike data,
11 the birds that are hit -- is there, is there specific data
12 in the report on, on the projected rates for that and, and
13 for, for each species, or is that, is that not included?

14 A. It's not in any of the reports that I'm aware of.
15 It's typically more of information I feel like that is,
16 that is provided from other types of reports that compile a
17 lot of information from different studies into one but --

18 Q. Okay.

19 A. -- I don't believe it's in --

20 Q. And then I was gonna have a follow-up question to
21 that which would be if there are reports like that on
22 existing installations nearby where they would do surveys
23 and assessment of the, of the birds there and have data on
24 that too?

1 A. There -- yes, there probably is. Whether or not
2 it's publically available, I'm not sure for, you know,
3 projects that surround Goose Creek. It kind of depends on
4 a variety of factors of whether or not the
5 post-construction data is made publically available. I
6 know that there's general data for the Midwest, which would
7 include Illinois, and there's kind of a general number for
8 operating wind projects.

9 Q. Okay. Do you know where we might find that?

10 A. Yeah. We can provide this -- can I provide this
11 later? Okay. We can submit one as an exhibit. There's a
12 publication out by the American Wind Wildlife Institute.

13 MR. GERSHON: I'm sorry. Not trying to
14 whisper. Is the only copy we have with us, this one?

15 THE WITNESS: Yes.

16 MR. GERSHON: So when this witness is
17 finished I will have a copy made -- copies made -- for you
18 and submit. This will be Exhibit, Exhibit 15, which is the
19 Wind Energy Interactions with Wildlife and their Habitats
20 issued by the --

21 THE WITNESS: American Wind Wildlife
22 Institute, 2001.

23 MR. GERSHON: September 2000 --

24 THE WITNESS: Oh, '21. Sorry 2021.

1 Apologies.

2 MR. GERSHON: September 2021. My
3 apologies. We didn't have extra copies of this, but we
4 will have those copies made before the end of this meeting
5 and submit it as Exhibit 15.

6 MR. KEYT: Can I make a suggestion? Is
7 there someone that can make a copy now so that the ZBA
8 could review it before she's dismissed?

9 MR. GERSHON: Thank you. We'll have
10 those copies made right now.

11 MR. KEYT: Okay. Any other questions
12 from members of the zoning board?

13 MR. LOVIN: Yeah. I got one for 'ya.

14 EXAMINATION

15 BY MR. LOVIN:

16 Q. Who exactly are you working with with U.S. Fish &
17 Wildlife and IDNR? Do you have names of those people?

18 A. Yeah. Amber Schorg is the primary lead for Fish &
19 Wildlife Service. And then Kyle -- I want to say -- why am
20 I drawing a blank on his last name? It starts with a B.
21 Burkwald. I'm sorry. Kyle Burkwald.

22 MR. KEYT: Can, can you spell those last
23 names for the record, please.

24 A. Yeah. Amber Schorg is S-c-h-o-r-g for U.S. Fish &

1 Wildlife Service. And Kyle Burkwald is B-u-r-k-w-a-l-d, I
2 believe.

3 Q. With those individuals, looking through this, this
4 survey, a lot of these say potential to occur. So on the
5 survey potential means could or could not in my mind. But
6 looking through this whole area in this map, how do we know
7 whether or not there is or isn't for sure, and who is the
8 oversight on that? And do you have any information on
9 that?

10 A. Can you -- what, what are we looking at?

11 Q. Well, I'm lookin' at Table 3 on page 4 in Appendix
12 F6.

13 A. Is this the Goose Creek Wind avoidance of habitats
14 and species of concern --

15 Q. Yep.

16 A. -- table?

17 Okay. So -- well, again, Travis, Travis may have
18 better answers on these. But these are based on surveys
19 that are conducted throughout project area. For, say, the
20 bats possible is because we're just assuming that they
21 could occur there. So that's -- we don't know for a fact
22 that they are there or not there, so that's where possible
23 comes from.

24 Some of these other items where it says unlikely,

1 eastern massasauga, that is specifically directly from IDNR
2 and Fish & Wildlife Service that they do not believe that
3 that species is in the project area. So that is from
4 coordinations with them.

5 Same thing for eastern prairie fringed orchid.
6 That is directly from U.S. Fish & Wildlife Service.

7 Same for the Kirtland snake and the mud puppies.
8 So these are the experts in the state and of, you know, for
9 federal for these species and they do not believe that
10 they're going to be in the area, just based on the last
11 time they've been documented to occur or based on habitat.

12 We still took a conservative approach with this and
13 we're siting away from these habitats. So we have sited
14 away from the bat habitat even though they're only
15 possible. We've sited away from eastern massasauga habitat
16 even though they're unlikely. We have sited away from
17 Kirtland snakes, Sangamon phlox, Upland Sandpiper. All of
18 these things we've taken into account --

19 Q. Okay.

20 A. -- even if they're considered unlikely.

21 Q. Do you know how the surveys are conducted?

22 A. I will defer to Travis to discuss that.

23 Q. Okay. Another question I have is obviously this is
24 avoidance of habitat in this table, but listed you have

1 construction activities will avoid breeding season to the
2 extent practicable. That's April 15th through July 31st.
3 But then it says if construction activities occurred in
4 breeding season suitable habitat wouldn't be removed prior
5 to the 15th of April or; i.e., mowed. Okay.

6 So I guess why are we mowing or removing habitat if
7 you're trying to avoid, you're just doing away with
8 completely?

9 A. We are avoiding to the greatest extent practicable
10 with Upland Sandpipers. They are kind of more of a
11 generalist species. They can be in a lot of different
12 habitat areas and so IDNR is agreed and is fine with
13 clearing of habitat prior to the breeding season because
14 they are most concerned about take or impacts occurring
15 during breeding. So if you remove the habitat -- and it
16 wouldn't be very much in this case -- it would be for a
17 collection line or something like that -- the bird will
18 nest elsewhere, and IDNR considers that avoidance.

19 Q. Same with the bats and removing trees?

20 A. No. Well, in the winter, yes. Yes.

21 EXAMINATION

22 BY CHAIRMAN WAX:

23 Q. I have one more question and possibly I just didn't
24 pick up on this and then maybe you may have already

1 answered this when Will Chambers asked it. That is about
2 this curtailment of -- indicated you could adjust the
3 turbines so that you curtailed the bat kill and you gave an
4 example of it might be possible to reduce bat kill up to
5 50%. Is that what, is that what you said?

6 A. The number -- and honestly it's -- I can't exactly
7 remember where I got it from, but Travis can -- ask Travis
8 again when he comes up here. But curtailment below
9 five meters per second, which is what we're planning to do
10 for this project, is -- decreases fatalities approximately
11 50%.

12 Q. Okay. Is that somebody's estimate, or are those
13 data that came from one of your other wind farms where you
14 ran a study of this?

15 A. It's a, it's a -- it's more of a general piece of
16 information that's out there from a variety of studies that
17 that been completed and --

18 Q. So you really have no data to support that?

19 A. There is data --

20 Q. Is that what you're saying?

21 A. No, there's data to support it. And I'm gonna
22 defer to Travis because he's a bat expert --

23 Q. Oh, okay.

24 A. -- and he -- but there is data to support it.

1 MR. KEYT: Okay. Any other questions
2 from the zoning board?

3 Mr. Harrington?

4 EXAMINATION

5 BY MR. HARRINGTON:

6 Q. Yeah. So this is gonna sound a little
7 confrontational but I picked up on somethin' when Kyle was
8 asking you a question there in regards to the table, and
9 I'm just doin' it for clarity. I'm not --

10 A. You're fine.

11 Q. -- trying to pick a fight with you.

12 A. You're fine.

13 Q. So you did make the comment -- I might have got it
14 wrong -- but it sounded like the listing in the table for
15 potential occurrence in reference to possible you were
16 saying a little bit of that comes from assumption, right?
17 I guess, I'm a little disconcerted by that because I guess
18 I would think that is the purpose of the survey is to
19 identify what the percentage of, you know, occurrence or
20 contact is here. So, I guess, maybe can you clarify what
21 --

22 A. Yes.

23 Q. -- you're doing on assumption?

24 A. Yes. So the surveys that we completed for this

1 project were to identify habitat, suitable habitat for the
2 species for roosting. We did those surveys. That doesn't
3 tell us whether or not the bat is actually there. There's
4 a different type of survey one would do to determine if
5 they're present or absent on the landscape during summer.
6 We did not do those surveys. We are assuming that they're
7 there and we're managing the project accordingly. That is
8 why it says possible.

9 Q. That's good to know because assumption in that case
10 sounded a little --

11 A. Sorry. We are, we are -- yes, we are managing.
12 We're being conservative and managing the project as if the
13 species are present.

14 Q. Right. Okay. Well, that's, that's appreciated.

15 MR. KEYT: Okay. Any other questions
16 from the members of the Zoning Board of Appeals?

17 Okay. Seeing none, we move on to any questions
18 from units of local government including school districts.

19 Okay. Seeing and hearing none, we then move on
20 from any questions from interested parties represented by
21 licensed attorneys.

22 Okay. Seeing and hearing none, any questions from
23 members of the public for the witness?

24 All right. Come on up and -- I think we're all

1 familiar, but you may share the stage and spell your, spell
2 your name for the record, please.

3 MS. COIL: Claudia Coil.

4 MR. KEYT: Okay. You may proceed.

5 EXAMINATION

6 BY MS. COIL:

7 Q. So bat questions should go to Travis?

8 A. He is probably a better person to answer most of
9 them, yes.

10 Q. Okay. Just -- well, then I guess a couple general
11 questions.

12 You -- would you say that you are, by this project,
13 you are limiting habitat for wildlife and birds? You're,
14 you're taking away habitat?

15 A. This project has been sited to avoid habitat that I
16 would consider to be preferential to wildlife. Turbines
17 are sited in cropland and actively farmed agricultural
18 fields.

19 Q. Okay. So you mentioned eagles. We see a lot of
20 hawks. We see owls. And in the summer a lot of bats. So
21 how, how do you assess hawks and owls?

22 A. We did two years of avian and eagle use surveys,
23 and they're in accordance with Fish & Wildlife Services
24 guidelines on counting small birds, large birds, eagles,

1 and to inform risk to those species.

2 Q. And how, how do you go back to assess bats from --

3 A. We will conduct post-construction monitoring
4 surveys in accordance with -- we'll come up with a
5 methodology in agreeance with Fish & Wildlife Service and
6 IDNR to go out and make sure that our conclusions, our
7 assessments, of low risk are accurate. And if we see
8 something that concerns us or suggests the risk is
9 different, then we will work with the agencies to figure
10 out a solution.

11 Q. Okay. So would you say that you, you can have an
12 accurate count of bodies of, of birds and bats because
13 scavengers will also remove some of this? So how do you
14 assess that?

15 A. There is a whole statistical methodology that's
16 approved from Fish & Wildlife Service, USGS, that takes
17 that into account. So you have to do -- figure out
18 scavenger rates, you have to figure out how likely it is
19 for an individual that's searching -- search for efficiency
20 is what they call it -- to find it. So it's an entire
21 statistical analysis, and so you're only looking and
22 finding a small fraction of those carcasses but it's
23 extrapolating them to the whole wind form.

24 Q. And then do you have -- how do you measure with

1 wildlife in an area? You can measure maybe collisions.
2 But how do you measure other things like noise pollution,
3 the actual result of habitat loss, survival, decrease in
4 reproduction because of all these changes? Do you have any
5 way of going back and assessing that?

6 A. Not my area of expertise, I'm afraid, so I'm not
7 sure.

8 Q. Okay. Thank you.

9 A. Thank you.

10 MR. KEYT: All right. Thank you.

11 Any other questions for this witness from members
12 of the public? Please come up -- and same routine -- state
13 and spell your name.

14 MS. STALTER: Lori Stalter. L-o-r-i.
15 S-t-a-l-t-e-r.

16 EXAMINATION

17 BY MS. STALTER:

18 Q. So you mentioned that the project is, I think,
19 two-and-a-half miles from the eagle's nest?

20 A. (The witness nodded her head.)

21 Q. Where was that nest?

22 A. I will defer to Travis on that. He's gonna talk
23 about the studies.

24 Q. Okay. On -- I noticed on one of the slides that

1 you talked about migratory birds. But you have not
2 mentioned Canadian geese, loons, swans, ducks. What about
3 monarch butterflies? Are they impacted?

4 A. Um, waterfowl does not often end up being impacted
5 by wind farms.

6 Q. Well, I live on a lake, north Piatt County, and in
7 the wintertime, like last winter, there were probably over
8 a hundred geese on our lake. And in the mornings they take
9 off, in the evenings they come back, and so I know that
10 they're flying.

11 A. The research -- and Travis can talk about this as
12 well -- but waterfowl do not end up in the
13 post-construction monitoring data very often. They avoid
14 the turbines.

15 Q. Okay. So when you talk about the Sandpiper, is
16 that is that similar to the killdeer or --

17 A. It's a bird.

18 Q. -- you don't know?

19 Okay. I think that was it.

20 A. Okay.

21 Q. Thanks.

22 MR. KEYT: Okay. Thank you.

23 Any other questions for the witness by members of
24 the public?

1 Okay. Please come up. Please state and spell your
2 name for the record, please.

3 MS. RYAN: Susan Ryan. S-u-s-a-n
4 R-y-a-n.

5 MR. KEYT: All right. Please proceed.

6 EXAMINATION

7 BY MS. RYAN:

8 Q. Did I understand that you said that there's -- you
9 didn't hire any spotters, spotters as in people looking for
10 wildlife in the area?

11 A. Yes. That's what Travis and his company did, and
12 he's coming up next to talk about it.

13 Q. Okay. Okay. I misunderstood.

14 Have you heard of the Mahomet aquifer?

15 A. I have heard of it.

16 Q. So does this wind complex -- is that over the
17 Mahomet aquifer?

18 A. My understanding is yes.

19 Q. Do you happen to know how many tons of concrete go
20 into each site for a wind turbine?

21 A. This is not my area of expertise and our
22 construction person is coming up later.

23 Q. For the environmental factor, do you have any
24 concerns with potentially 30,000 tons of concrete being

1 sited for each turbine?

2 A. Again, not my area of expertise.

3 Q. I see. Did you know that in 2017 a Mahomet aquifer
4 protection task force was created? Have you heard of that
5 task force?

6 A. (The witness shook her head.)

7 Q. You have not. Do you live in Illinois?

8 A. I do not.

9 Q. Okay. The task force was created to see if there's
10 any issues with water or aquifer because it's a sole-source
11 aquifer for 500,000 people. But did you know that they
12 were hoping to use electromagnetic mapping of the aquifer
13 in all of the counties -- can't remember how many counties
14 there are but it's 500,000 people that are -- use this
15 sole-source aquifer. They're going to -- have you heard of
16 this electronic magnet -- electromagnetic mapping that they
17 wanted to do?

18 A. (The witness shook her head.)

19 Q. So you don't know that they were going to use
20 helicopters to do this; that the hope is to use
21 helicopters? And do you know if that's even possible if --

22 MR. KEYT: Can I hold up?

23 A. -- these turbines are put up?

24 MR. KEYT: Let me hold you on that for a

1 second. You're asking a question but the witness is not at
2 times giving a verbal response. I think we just need to
3 have a verbal response before you move on to your next
4 question.

5 A. No.

6 MR. KEYT: Okay. Let's do this.

7 Can you -- yeah. Can you read -- can the court
8 reporter read it back?

9 (WHEREUPON, the record
10 was read by the reporter
11 as requested.)

12 MR. KEYT: Okay. So hold on. Your
13 answer to that question.

14 THE WITNESS: Oh, I didn't -- had she
15 finished her question?

16 MR. KEYT: Well, I think -- there was a
17 question in there and I --

18 THE WITNESS: Oh, no. My answer is no.

19 MR. KEYT: Okay. You can move on to your
20 next question.

21 BY MS. RYAN:

22 Q. So you're not aware of anything that the Mahomet
23 aquifer task force is trying do to protect the citizens
24 here from water contamination for our sole-source aquifer?

1 A. No, I am not.

2 Q. I think that's all I have. Thank you.

3 MR. KEYT: Okay. Thank you.

4 Any other questions for this witness from members
5 of the public?

6 MR. KEYT: Okay. Seeing none and hearing
7 none, are there any questions from Piatt County staff and
8 consultants for this witness?

9 All right. Seeing none and hearing none, any
10 redirect from Mr. Gershon?

11 MR. GERSHON: Just a couple of questions
12 for clarification.

13 REDIRECT EXAMINATION

14 BY MR. GERSHON:

15 Q. Does the county or ZBA, as special use permit
16 approval, allow you to violate or disregard federal or
17 state agencies such as IDNR, Illinois Fish & Wildlife
18 requirements, review, required approvals or laws, including
19 the Illinois Clean Water & Rivers & Lakes & Stream Acts?

20 A. No.

21 Q. And, similarly, are you required to comply with
22 both the county ordinances and such state and federal
23 review and requirements and laws?

24 A. Yes.

1 Q. I want to clarify the issue that came up on where
2 the surveys are done. Do you survey everything within the
3 broader project boundary, not just the turbine locations?

4 A. Again, it's survey-dependent. But for wildlife,
5 yes. I would say for wetlands and cultural, it's more
6 specific to linear design and turbine positions.

7 Q. Thank you. And are those survey findings then used
8 to help set turbine locations?

9 A. Yes.

10 Q. And just to clarify, I think there was a good
11 question asked by Member Harrington, but I want to make
12 sure that I didn't miss it that when we talk about the
13 assumption that the species are there, even if they're not
14 there when you do these surveys, is that the most
15 conservative method to use and, if so, why?

16 A. Yes, I would say so, because you're assuming that
17 they're present so you're managing accordingly. You're
18 being more conservative in your assumptions.

19 Q. Thank you. No further questions?

20 MR. KEYT: Okay. Thank you, Mr. Gershon.

21 I believe the copies are back that the witness had
22 referenced earlier. And if I were -- how many pages are
23 those documents?

24 THE WITNESS: I think they're 22.

1 MR. KEYT: Okay. Can, can we -- I'm
2 gonna suggest we do a brief break so the ZBA members can
3 look at those. And if they have any questions based on
4 those documents or any follow-up from what they've heard
5 they can then have an opportunity to ask those questions of
6 the witness.

7 MR. GERSHON: Thank you. I will provide
8 this. And, again, this is Exhibit Number 15, correct?

9 MR. RAYFORD: Yes.

10 MR. GERSHON: We're giving you ten
11 copies, as we did previously, with the expectation that
12 when Phil returns you'll want to give him a copy of that.

13 MR. KEYT: Yes.

14 Okay. So the time is now 7:05. Let's take a break
15 until 7:10 so the ZBA members can review Exhibit Number 15,
16 which they have not yet seen, and if there's any follow-up
17 questions for the witness the ZBA members will ask those
18 questions. So we'll stand in recess until 7:10.

19 (WHEREUPON, a brief
20 recess was had.)

21 MR. KEYT: Okay. We're gonna reconvene.

22 Okay. Go ahead. Mr. Gershon has something to --

23 MR. GERSHON: Just one clarification on
24 Exhibit 15. As the zoning board knows, we took Jennie

1 Geiger's copy of that document and it had copied, so I want
2 to be clear for the record that the yellow highlighting in
3 there is not part of the document. That's Jennie's own
4 highlighting. You may disregard it to the extent you'd
5 like to, but I didn't want you to think that that was a
6 part of the article.

7 MR. KEYT: Okay. Understood.

8 All right. Are there any members of the zoning
9 board that have questions for Ms. Geiger based on the new
10 document or any information that's come up since the last
11 session of questions?

12 EXAMINATION

13 BY CHAIRMAN WAX:

14 Q. I noticed a section in here -- by the way, thank
15 you for this very detailed publications. It came out in
16 '21. I'm assuming that, that most of the data, it looks
17 like from the dates, were based on turbines that were
18 perhaps two megawatt and maybe 400 feet tower tip height.
19 But there is a section that indicates -- okay. There's a
20 number of studies that indicate we kind of expect, it says,
21 that the taller the turbine there's a, there's a reasonable
22 likelihood of greater bat and bird kill, if I understood
23 that right.

24 Could, could you address that in terms of now we're

1 going from 350 to 400-foot tip height to over 600-foot tip
2 height?

3 A. Yeah. There's -- there isn't a definitive answer
4 there yet. I think it's something that's still being
5 studied because the taller turbines are kind of a newer
6 infrastructure. But, in general, you either get more
7 smaller or less taller. And so the actual wind -- like the
8 area of risk, which is where the blades are spinning, is
9 very similar typically from a smaller project to a larger
10 project. You just have -- it's just different. It's
11 bigger in one area versus a lot of smaller ones. So I
12 think it's, it's an unknown answer if it's a higher risk or
13 not. I think it's a time-will-tell thing. But there is no
14 scientific evidence right now to say one way or the other
15 if it is.

16 Q. Okay. Thank you.

17 MR. KEYT: Okay. Any other questions
18 from the members of the zoning board?

19 EXAMINATION

20 BY MR. HARRINGTON:

21 Q. I guess not in regard to your wind energy, but I
22 guess thinking along the lines back on your page 7 of your
23 presentation that one audience member did bring up a good
24 question in regards to the aquifer. I would assume --

1 correct me if I'm wrong -- your wetland, streams and water
2 bodies that you did not include anything regarding the
3 aquifer; is that right?

4 A. Correct. It is above-ground features --

5 Q. Surfaces?

6 A. Uh-huh.

7 Q. So out of curiosity, maybe not you, but was there
8 anybody in the project that looked into groundwater effects
9 and/or issues?

10 A. My understanding is that the construction
11 representative will speak to that.

12 Q. Okay. Good to know. What's his name or her?

13 A. Adam Carlson.

14 Q. Adam. All right. Thank you.

15 MR. KEYT: Any other questions from the
16 zoning board? Mr. Chambers.

17 EXAMINATION.

18 BY MR. CHAMBERS:

19 Q. So I tried to speed through the study a little bit
20 here, but Lloyd already touched on this. The higher
21 frequency with the taller turbines from, from most of the
22 studies cited in here being, being a bit older with that,
23 with that lower, you know, lower tip height, loader --
24 lower -- or smaller rotor diameter, you have quite a bit

1 different -- what, what they seem to indicate would be
2 quite a bit different -- impact.

3 Is there any way to maybe take that data and -- do
4 you have any baseline for, for taking their kill rates for,
5 for these turbines, for example, and estimating that into a
6 larger project with larger turbines? Is there any, is
7 there any way to do that, or is this data just pretty much
8 invalid when, when looking at the larger turbines?

9 A. I don't think it's invalid. Again, it's just an
10 unknown question because it's, it's you know, science and
11 things changing in realtime and as scientists you just have
12 to kind of, you know, do studies and figure out if there is
13 or is not more of an impact as we go along.

14 I have seen for projects I've seen them compare
15 different layouts, you know one that uses a smaller turbine
16 with lower megawatt, more lower versus the taller one. And
17 the taller ones, at least for the project that I saw it
18 done on, the taller turbines had a lower -- I don't know --
19 area, you know, area -- Travis is gonna have a better word
20 for this -- but of potential impact, right. So the area of
21 the blades spinning makes a circle and so when you compare
22 the areas of the fewer, larger --

23 Q. The cross-section?

24 A. -- turbines versus the lots of smaller ones, it was

1 actually lower with the taller turbines. That doesn't
2 necessarily mean that the impacts would be similar or
3 different, but there was a decrease, at least for the
4 project that I saw it compared for.

5 Q. Okay. Something I picked out of the, the bat
6 section of this report is tends to be a little, little
7 harder to get answers out of because of the variability and
8 all the data that's in there, so I figured that out pretty
9 quick and, and kind of skipped through it a little bit.
10 But I did pick up in there there was discussion about
11 ultrasonic transmitters for the deterrence of bats.

12 Is that something that's ever been implemented
13 anywhere that we would be able to see data on that --

14 A. I will --

15 Q. -- for example?

16 A. -- defer to Travis. He probably has more
17 information on that, but my understanding is it's
18 definitely in more of a beta phase. You know, they're,
19 they're trying to find things that are gonna be really
20 effective in deterring bats and they have tried that and it
21 has not been successful to my understanding. I think it's
22 still trying to figure out what works, but I would defer to
23 Travis.

24 Q. Okay. And this may be a question for Travis, but

1 it also mentions -- so for the larger birds, which are
2 moving slower obviously, the impact to those birds is
3 higher just because they're more -- if they are in the area
4 they're more likely to be hit because of their slower
5 speed.

6 It, it notes that population level impacts are more
7 likely to raptor species. Is that something that for -- if
8 you look at the population levels for those raptors in
9 Piatt County, is there any concern there of the, of the
10 impact being severe enough to cause population level
11 impacts?

12 A. I will let Travis answer that question.

13 Q. Okay. Very good. I have no more questions. Thank
14 you.

15 MR. KEYT: Okay. Any other questions
16 from the members of the Zoning Board of Appeals?

17 Okay. Seeing none. Any redirect from Mr. Gershon
18 based on those questions?

19 MR. GERSHON: Just a couple of quick ones
20 for clarification.

21 REDIRECT EXAMINATION

22 BY MR. GERSHON:

23 Q. Alan Moore testified previously that taller wind
24 turbines have a higher megawatt per turbine which means

1 that we have fewer turbines being located. Does identify
2 -- does reducing the number of turbines give you greater
3 flexibility in turbine placement and location to avoid
4 habitat, to better avoid habitat?

5 A. Yes.

6 Q. A lot of good questions, a lot of quick review we
7 heard today, but do any of the issues that have been raised
8 today change any of your findings or conclusions as
9 provided to the zoning board?

10 A. No.

11 Q. And we talked a great deal about impact on animals,
12 et cetera. Are wind turbines the biggest thing that
13 impacts bird kills, et cetera?

14 A. No. There's a lot of research that's been done and
15 information available from Fish & Wildlife Service and
16 others that a lot of things on the landscape have a much
17 higher impact on birds, including buildings, which has a
18 250,000% more chance of killing a bird.

19 Q. Thank you.

20 MR. HARRINGTON: Can I ask clarification?

21 MR. KEYT: Okay. Yeah, if there's any
22 follow-up questions from members of the zoning board you
23 may proceed.

24 EXAMINATION

1 BY MR. HARRINGTON:

2 Q. You referenced buildings?

3 A. Yep.

4 Q. So, so can you maybe explain that in more context?

5 A. Structures like windows, buildings with windows.

6 Q. Right. You're saying the presence of buildings?

7 A. (The witness nodded her head.)

8 Q. Gotcha.

9 MR. KEYT: Anyone else? Okay.

10 EXAMINATION

11 BY MR. CHAMBERS:

12 Q. Is that only for small birds and not for raptor
13 species?

14 A. I believe that is just avian in general. It's on
15 the migratory birds page.

16 Q. Okay.

17 MR. KEYT: Okay. Any other questions
18 from members of the board?

19 Okay. Seeing none, Ms. Geiger, you're excused.

20 Mr. Gershon, you can call your next witness,
21 please.

22 MR. GERSHON: Can we also confirm that
23 she is also released --

24 MR. KEYT: Yes.

1 MR. GERSHON: -- as required by your
2 rules? Thank you.

3 Andy, do you want to take break before our next
4 witness comes up or should we start --

5 MR. KEYT: Yeah, that's what I was gonna
6 suggest actually. Why don't we do -- it is currently 7:25.
7 Let's come back at 7:35 so the ZBA members can have a
8 chance to take a break. And we'll be in recess until then.

9 MR. GERSHON. Thank you.

10 (WHEREUPON, a brief
11 recess was had.)

12 MR. KEYT: Okay. Folks, we're gonna get
13 restarted here.

14 Mr. Gershon, call your next witness, please.

15 MR. GERSHON: I'd like to call Travis
16 Brown with West Environmental.

17 Before I have him start, I'd like to submit as
18 Exhibit 16 the -- our PowerPoint that he's about to
19 present.

20 MR. KEYT: Okay. Thank you.

21 Mr. Brown, can you raise your right hand and have
22 the court reporter swear you in, please.

23 (WHEREUPON, the witness
24 was sworn.)

1 DIRECT EXAMINATION

2 BY MR. GERSHON:

3 Q. Would you state your, state your name and spell it
4 for the record.

5 A. Travis Brown. T-r-a-v-i-s B-r-o-w-n.

6 Q. And would you identify your qualifications and
7 those western ecosystems technology.

8 A. Yes. West is a -- we're an environmental and
9 statistical consultant company. We've been working on the
10 interaction of wind and wildlife for over 25 years. We
11 employ mostly biologists, ecologists and statisticians who
12 design studies, carry out the studies and then look at the
13 results and the study designs with the agencies to try to
14 come up with effective management and conservation
15 strategies.

16 I have a bachelor's degree in wildlife biology and
17 a master's degree in biology. I've been a professional
18 biologist for over 15 years, with experience as a
19 technician, intern, field biologist before that.

20 I worked on over 60 wind projects in the Midwest,
21 over 25 projects in Illinois, some of those are proposed or
22 existing projects. And I'm permitted to survey for over 50
23 species of animals. I work on a wide variety of species,
24 from birds and bats to reptiles and other species.

1 Q. And, just for the record, we previously submitted
2 -- I don't have the exhibit in front of me. We previously
3 submitted as an exhibit Travis's resume, and we'd ask that
4 he be accepted as an expert?

5 MR. KEYT: Okay. Thank you.

6 Is there any objection to Mr. Brown being accepted
7 as an expert witness in the matter? Hearing none, seeing
8 none, so accepted.

9 Q. Travis, did (sic) you walk through the studies and
10 work you did here and your findings?

11 A. Yes, so consultation with the U.S. Fish & Wildlife
12 Service and Illinois DNR started back in 2019, so that's
13 where you meet, talk about the project. They let you know
14 what records of rare species are already known from the
15 area and what their concerns are. And then you come up
16 with a series of studies that need to be completed. You
17 review the study design with them and then meet
18 periodically to go over results.

19 But those studies included avian use surveys with
20 an emphasis on eagles, eagle and raptor nest surveys,
21 Sangamon phlox habitat assessment, Upland Sandpiper
22 habitat, eastern massasauga habitat assessment and then
23 also Kirtland snake and bat habitat assessments.

24 Next slide. So the avian and eagle use survey is

1 one of the more long-term studies that we do for obvious
2 reasons at a wind project. And the objective there is to
3 characterize use of the project area by birds, figure out
4 what species are then, but then especially by eagles and
5 any listed species.

6 We conducted those for two years, from 2019 to
7 2021. Following the U.S. Fish & Wildlife Services wind
8 energy guidelines as long -- as well as their eagle
9 conservation planning guidelines -- and then Illinois DNR
10 recommendations. And most of the birds we observed, as you
11 might expect in cropland, were common agricultural species.
12 Bald eagle use was, was pretty typical for the Midwest, and
13 we didn't observe any golden eagles in the project area.
14 No federally-listed species were observed and two
15 state-listed bird species were observed, Northern Harrier
16 and Upland Sandpiper.

17 During the eagle and raptor nest surveys we looked
18 for nests for two years in the spring when the leaves are
19 off the trees. The objective is to identify large stick
20 nests, especially huge nests that could be bald eagle
21 nests. And ultimately no occupied bald eagle nests were
22 found in the project or the two-mile buffer that the U.S.
23 Fish & Wildlife Service recommends that we search.

24 For the eastern massasauga rattlesnake, we looked

1 for suitable habitat for that species which tends to
2 include wetland habitats, particularly with an open canopy.
3 So you're looking for things that a prairie wetland
4 rattlesnake would live in, basically. And approximately
5 3.7% of the project area was thought to be suitable
6 habitat, so that's 3.7% of that larger nearly 70,000-acre
7 project boundary.

8 Next slide. During the bat habitat assessment the
9 idea was to identify a suitable habitat for listed bats,
10 which includes forest or wood lots where they're suitable
11 roost trees or trees of the appropriate size and species,
12 and less than 1% of that project area provides suitable
13 summer habitat for listed bat species. It's largely
14 concentrated in the southeast along the Sangamon River and
15 its tributaries.

16 Similarly, for the Sangamon phlox, we did a habitat
17 assessment. And in that case you're looking for prairie
18 remnants and abandoned fields, but it's also located mostly
19 along the Sangamon River, with less, less than 1% of the
20 project area providing some potential habitat.

21 For Upland Sandpipers, since we had some
22 observations in the project area, we identified suitable
23 nesting habitat for that species, which -- this is a --
24 it's a prairie bird that really inhabits prairies where

1 there's short grass areas, like around 12 inches for it to
2 inhabit. In this part of the country it sort of hangs on
3 by nesting occasionally in, in mowed areas. And that's
4 mostly what we identify things that, where I'm from, Edgar
5 County, we call waterways, grass strips, which mostly are
6 mowed throughout the year so they don't provide -- we
7 wouldn't call them optimal habitat, not like a prairie
8 remnant or something like that which we wouldn't call
9 marginal. And approximately 1.2% of the project area was
10 considered to be suitable habitat for Upland Sandpipers.

11 During the Kirtland snake habitat assessment we're
12 looking for basically wetlands, whether that's prairie
13 fens, kind of grassy wetland areas, or wet meadows or
14 forested wetlands. And less than 1% of the project area
15 was considered suitable for that species and it mostly
16 overlapped with bat habitat.

17 Next slide. So a couple of the, the takeaway
18 messages with the wildlife surveys from this project were
19 that, as you would expect in cropland, we mostly observed
20 common agricultural bird species. No bald eagle nests
21 within 2.4 miles of the proposed turbines. Out of that 70
22 -- almost 70,000-acre area, a small portion, less than 1%
23 to up to 3.7%, provides suitable habitat for one of the
24 listed species of concern, but the turbines have and been

1 sited to avoid those areas and then construction will be
2 coordinated to avoid potential impacts to Upland Sandpipers
3 during the breeding season.

4 The project meets Illinois DNR setback requirements
5 from streams and forests, and then the project will also
6 reduce impacts by curtailing during the fall migration
7 season and avoiding tree-clearing during the summer, so
8 clearing trees during the wintertime. In addition, after
9 the project is built, they've agreed to conduct three years
10 of post-construction monitoring during which basically a
11 third-party monitor will be out there doing studies, trying
12 to determine what species have actually been hit, whether
13 the project meets the assumption that we are making right
14 now that it's a low-impact project. And then those results
15 are coordinated with the agencies each year so they'll have
16 an opportunity to weigh in in case there's adaptive
17 management that needs to happen.

18 So ultimately they've reviewed the project with the
19 agencies, designed the studies with the agencies and have
20 agreed to the recommendations from the agencies. So this
21 project has been designed to be constructed and operated in
22 a way that avoids wildlife impacts as much as the agency
23 guidance recommends.

24 MR. KEYT: Any follow-up questions here

1 from Mr. Gershon?

2 EXAMINATION

3 BY MR. GERSHON:

4 Q. Can you explain the three-year post-construction
5 survey that we are -- monitoring that we're doing and how
6 that compares to the county code requirement?

7 A. Yeah. I believe the county code requires one year,
8 and the project has agreed to three years.

9 Q. Again, just for the record, it's 3 years to do
10 what?

11 A. Go out to the project after it's built and conduct
12 searches under the turbines that will identify any bird or
13 bat species that have been hit. While you're doing that
14 you also conduct bias trials, is what we call them. So
15 that's where we, for example, may put bats out on a site
16 without the observer knowing and use that to estimate what
17 percentage of searcher efficiency we're getting. We also
18 put out carcasses to try to estimate the persistence rate,
19 how many of those were scavenged, and put together area
20 corrections to determine how much of the area you're
21 actually surveying. All of that stuff basically goes into
22 a complicated statistical analysis that you use to estimate
23 how many of the different birds and bats that are being
24 killed at the project.

1 Q. I'd like to ask you to clarify that when we talk
2 about the project area for these studies we're generally
3 talking -- is it correct that we're generally talking about
4 70,000 area -- acre area?

5 A. That's true.

6 Q. And for this purpose, just for the board's review,
7 I'd like to show you our large map here, which is a
8 compilation of Appendix B4 of Exhibit 1, our site plan.
9 Just -- I think a picture's worth a thousand words here, so
10 I just want to pull it out real quick.

11 I'll let you see it and then show it to them. Can
12 you confirm for the record that the black outlined are
13 here, which obviously includes both participating property
14 owners who have turbines, other participants, but also
15 people beyond that, that that black area is the
16 approximately 70,000-acre area that we talk about as the
17 project area?

18 A. Yes. It's been nearly the same -- there are a few
19 boundary changes that, you know, add or subtract a little
20 bit, but that is the boundary that we studied.

21 Q. I think I'm loud enough without a microphone, but
22 just for your purposes, as you can see from the exhibit,
23 that is the black line showing here. So we talk about the
24 project area is a much larger area than just the parcels

1 that have turbines on it and that's what we, what we study.

2 And let me get back to the microphone. Can you
3 explain for the record why we look at a broader area rather
4 than just the parcels that have turbines?

5 A. Yeah. So the idea is to identify parts of the
6 project that are sensitive, that have sensitive wildlife
7 habitat, and try to site in the places where those impacts
8 are avoided to the greatest extent possible.

9 MR. KEYT: Okay. Wait. Before you go on
10 to another question, this exhibit that is sitting here, is
11 there a copy of this exhibit somewhere?

12 MR. GERSHON: The exhibit -- this exhibit
13 is a compilation of Appendix B4, the preliminary site plan,
14 identified in the Exhibit 1, the application binder.

15 MR. KEYT: Okay. So is that exact image
16 on that exhibit?

17 MR. GERSHON: It's just a blowup of those
18 maps. It's, it's large enough that if we --

19 MR. KEYT: Right. But my question --
20 you're saying it's a compilation. Are you suggesting it's
21 two maps overlaid on each other? Like I, I -- we have
22 something that looks similar. What I want to make sure is
23 that exhibit gets into the record because you're
24 referencing it as an exhibit so that there's a copy of it.

1 MR. GERSHON: Yes, it is. I'm just
2 confirming it is exactly the same as the four maps that are
3 included in Appendix B4 simply placed onto one board to
4 make it easier for people to see.

5 MR. KEYT: So my question is is that
6 image depicted in one of those maps? It sounds like it is
7 an overlay -- it's combination of those four maps.

8 MR. GERSHON: That is correct. I'm happy
9 to submit that as an exhibit if you'd rather we do so. The
10 reason we did not is that if we reduce that map and put in
11 the binder as one map you wouldn't be able to see the
12 details, but it is --

13 MR. KEYT: I understand, but I think what
14 -- so our record is complete, we need a copy of that exact
15 image, even if it's not necessarily readable later on.
16 They can see it now. But, for the record, I think we need
17 a copy of that map.

18 MR. GERSHON: Absolutely. We will submit
19 that. We'll identify -- for now I'm going to submit but we
20 will replace it with a smaller version. I can also provide
21 a digital version. This is Exhibit 17, which is our
22 preliminary site plan and we will bring to next week's
23 meeting a copy for each of you of that reduced down with
24 the recognition that it won't be readable.

1 MR. KEYT: That's okay. We need
2 something so that it's identified in the record. Okay.

3 MR. GERSHON: We will also present, for
4 the record, one full-sized copy the size of this board
5 that's folded so you can maintain in your records as
6 opposed to this Styrofoam board version. But, for the
7 record, this map has, I believe, been on an easel and used
8 by the community a number of times throughout these
9 hearings.

10 MR. KEYT: Understood. Okay.

11 MR. GERSHON: Thank you. Appreciate the
12 clarification.

13 MR. KEYT: Go ahead.

14 MR. GERSHON: No further questions.

15 MR. KEYT: Okay. The zoning board have
16 any questions for this witness? And if you want to take a
17 break we can.

18 MR. HARRINGTON: I think Will's got one.

19 MR. CHAMBERS: I'll go ahead and start.

20 MR. KEYT: Mr. Chambers.

21 EXAMINATION

22 BY MR. CHAMBERS:

23 Q. So some of these will be from, you know, re-asking
24 some, some stuff that's already been asked a little bit

1 here but let me figure out where to start first.

2 So I'll just kind of go down my list here. The
3 surveys that you're talking about for the post, post-build
4 surveys that are done, when those are done and you start
5 to, to try to put together that data and factor in the, you
6 know, the scavenging from predators, do you do any sort of
7 control tests in this area to try to figure that out with,
8 you know, coyote population, raccoons, all that, or is that
9 just something that you just try to estimate?

10 A. So most all of these studies incorporate what we
11 call a carcass persistence trial, or a series of them, in
12 different seasons. And that's where we basically just put
13 dead bats that we have found on the project or from, you
14 know, from a vet or something like that, out on the ground
15 and look to see how long it takes them to disappear.

16 Q. Okay. And then that is used as a control for the
17 data that's collected for the next the three years for the
18 post study?

19 A. It's used as a, as a correction factor. So it's
20 one of the bias trials that we do, and those are typically
21 done each year of the monitoring.

22 Q. That was gonna be my next question. As, as, say
23 the predators learn that they can go, you know, to the
24 turbine for food, if that increases the -- or decreases the

1 -- duration of the carcass being present, that that would
2 be accounted for as well?

3 A. It -- yeah, that is the intent.

4 Q. Okay. Let's see here. On the migratory birds, the
5 AWWI study talks a little bit about the -- well, especially
6 for waterfowl, that they tend to avoid the turbines and so
7 you don't see a lot of kill on waterfowl.

8 Does that have any -- does that avoidance have any
9 impact on, on the actual presence and habitat of those
10 particular birds? In other words, does, does avoidance
11 equal a change in, in their habitat in the area of a, of a
12 wind farm?

13 A. Well, you're right, they're not typically found as
14 fatalities. They seem to be able to avoid the turbines.
15 In terms of whether they, you know, they may not nest right
16 next to a turbine, but, in general, you know, geese are
17 pretty tolerant. Over time they learn to live in the
18 county park so they're pretty tolerant of disturbance. I
19 don't know of a study off the top of my head that
20 references avoidance directly or --

21 Q. Okay. Let's see. We'll talk about eagles for a
22 minute here. We're all Americans so we, we like our bald
23 eagles. The -- what I had asked about earlier were, you
24 know, the higher risk for larger raptors like eagles and

1 that being more likely to move into a population level
2 impact. Do you see any -- with the current eagle
3 population in this area, do you have any concerns for
4 population level impact for raptors?

5 A. For bald eagles specifically, you know, they're one
6 of our greatest wildlife success stories. They -- in some
7 areas their nesting rates have increased as much as 40% in
8 ten years. So I don't -- bald eagles are doing much
9 better, so I don't foresee -- and they're not particularly
10 susceptible to wind turbine impacts compared to golden
11 eagles which live out west and they are more susceptible to
12 wind turbine impacts.

13 In regard to other raptor species, we mostly
14 observe common ones, red tail hawks, kestrels that you
15 typically see. The one rare raptor that we saw, relatively
16 rare, was the Northern Harrier, which is state-listed, but
17 they typically fly about this high (indicating) off the
18 ground and just are not found as fatalities at wind
19 projects very often. So for that species I don't foresee a
20 lot of impacts either.

21 Q. Okay. So on bats the ultrasonic transmitter idea,
22 it seems like it hasn't been implemented many places. Do
23 you, do you have any knowledge or background to, to give us
24 an idea what that, what that would look like and if that

1 would be something that is commercially available?

2 A. Yes. Actually we work on a lot of those projects
3 and, you know, my company, and especially my office, has
4 recently published literature on that topic. I think the
5 short answer is that the ultrasonic deterrence can -- they
6 can have -- they can reduce mortality. Sometimes it's a
7 species-specific thing for certain bats. There are a few
8 problems with it still so it's not something that's
9 commercially ready to go. You know, it's not something
10 that we fully figured out, the biggest problem being
11 ultrasound doesn't, doesn't transfer very far. It
12 attenuates very quickly. So getting that ultrasound out to
13 the end of the blade tip where you can scare bats away from
14 that, you would think it would be as easy as puttin' like a
15 deer whistle on turbine blades, but, unfortunately, it's
16 more complicated than that.

17 Q. Right. And then kind of along the same lines of
18 that, there's automated detection systems for large birds
19 that have been, I guess, recently trialed. The study
20 mentions Wyoming for golden eagles. Is that something
21 that's also not, not commercially available yet, not just
22 -- or it's just in its trial phase, not ready for
23 implementation?

24 A. My understanding of that is, you know, it's mostly

1 right now an out-west thing where golden eagles, which are
2 more susceptible to being hit by turbines exist, and it's
3 something that's used at very high-risk sites, which is not
4 really what we see here.

5 Q. Okay. Just out of curiosity for, for the
6 difference in risk between golden eagles, for example, and
7 bald eagles, why is it that a golden eagle is so much more
8 susceptible? Is it, is it the height?

9 A. It's, like most things, probably a few different
10 things. For one, bald eagles are pretty closely tied to
11 water bodies a lot of the time for a majority of their
12 movements. I mean, obviously they fly out over fields,
13 especially in the winter. They go find roadkill or
14 carrion. But golden eagles are, are hunting throughout,
15 all over the landscape. And, you know, I hate to repeat
16 conjecture, but basically they're hunting a lot so their
17 attention is focused on the ground, not up where the
18 turbine blades are.

19 Q. All right. Okay. And one last question. We've
20 talked a lot about birds. But other, other mammals such as
21 deer, do you have any, any reason to believe that the
22 movement of deer population is, is affected by turbines, if
23 they, if they avoid turbines or if they, like the geese for
24 example, get tolerant of it and, and retain their normal

1 movements?

2 A. I'm not aware of any specific studies on that.
3 Like the geese, you know, they are resilient and travel
4 throughout urban landscapes all over the place. So that's
5 the best information I can give you.

6 Q. All right. Thank you.

7 MR. KEYT: Okay. Any other questions
8 from members of the Zoning Board of Appeals?

9 EXAMINATION

10 BY MR. LOVIN:

11 Q. On this list we have a bat that is endangered.
12 What is one of the biggest, I guess, reasons why the
13 species go endangered? Is it habitat loss?

14 A. It is often habitat loss. With bats specifically,
15 especially the one that was recently up-listed from
16 threatened to endangered, it's more white nose syndrome,
17 which is a fungus that attacks bats in their caves and it's
18 been produced to the U.S.

19 Q. But you would agree, though, that part of that is
20 habitat loss?

21 A. Yes.

22 Q. Okay. So part of this conclusion is is that tree
23 clearing, would you agree that's habitat loss?

24 A. Yes, but I think that the kind of tree clearing

1 they're talking about is like clearing through a fence row
2 for the most part. And so the turbines are sited in
3 cropland, and I don't, I don't think this would represent a
4 whole lot of bat habitat loss.

5 Q. But is there fence rows in this area?

6 A. Yeah.

7 Q. Okay.

8 MR. HARRINGTON: Are you done?

9 MR. LOVIN: Yeah.

10 EXAMINATION

11 BY MR. HARRINGTON:

12 Q. So I notice on your presentation here you did
13 mention there was no nests, bald eagle nests, found, right?

14 A. (The witness nodded his head.)

15 Q. But you said bald eagle use was typical for
16 Midwest. Does that mean you assume they fly through this
17 area, correct, or no?

18 A. Yeah. I mean, they'll -- yes.

19 Q. All right. So I guess that sort of leads into the
20 bigger question, which is maybe describe how you conduct
21 your survey. You know, how is it you -- is it one, two,
22 three, four people? How many days, weeks? I don't know
23 how you're doing it so --

24 A. Okay. So we follow the eagle conservation planning

1 guidance the U.S. Fish & Wildlife Service put together.
2 They kind of describe how you're supposed to do it.

3 The idea is that you randomly select points
4 throughout the project area such that an 800-meter circle
5 around that point covers at least 30% of the project area.
6 Then we send an observer out typically once, once per month
7 to sit out there at each point for an hour. Those are
8 sited in the areas that are representative of where the
9 turbines will be. So ultimately we use the observations
10 from that 800-meter area to kind of have a standardized way
11 of comparing across the country. That's how we do it.

12 Q. I got 'ya. So once month for about an hour
13 800-meter general geography. Is it at the proposed sites
14 or are you, because you're doin' it for the whole project,
15 you're just picking random locations wherever, I assume?

16 A. Usually, you know, two years ago the turbine
17 locations it's in the planning stage so we --

18 Q. Right.

19 A. -- we base it off that larger project boundary.

20 Q. Gotcha. Gotcha. And what, what -- you know, that
21 was, like you said, two years ago. Is there any thought
22 or, like I said before to the previous expert, do we think
23 there's any reason to review that closer to the
24 construction or prior, you know what I'm saying, in time

1 line? We assume these birds change their, their habits
2 somewhat.

3 A. Well, we started two years ago. We just ended in
4 2021, so ended very recently. Usually the way that's dealt
5 with is the project is built and then, you know, you're out
6 there doing post-construction monitoring and you're
7 checking in with the U.S. Fish & Wildlife Service each year
8 based on, based on the results of that. So you're kind of
9 switching to post-construction methodology.

10 Q. Right. But -- correct me if I'm wrong -- once it's
11 constructed, I mean, your, your tactics are relatively
12 limited, aren't there?

13 A. Yeah. Then you're basically figuring out if your
14 assumptions were, correct.

15 Q. Right. It's not -- you're not really gonna do much
16 to help the species?

17 A. Well, there may be situations where you go back to
18 the U.S. Fish & Wildlife Service and, and, you know,
19 revisit that each year and they may have some
20 recommendations. But yeah.

21 Q. Yeah. I understand. Once it's constructed it's
22 gonna be hard to change, I think.

23 But is there, is there anything about -- you know,
24 I know you referenced the Sangamon River on the south

1 eastern portion of this project, right?

2 A. (The witness nodded his head.)

3 Q. Is there anything about that particular section of
4 the Sangamon that lends to high populations of red hawks or
5 anything you noticed or anything you can tell us about what
6 you observed?

7 A. Just in general, you know, those large river
8 corridors are gonna be where you're gonna have more
9 activity --

10 Q. Right.

11 A. -- consistently, and that's pretty consistent no
12 matter which large area of corridor it is.

13 Q. Okay. Nothin' special about this one, you're
14 sayin'?

15 A. Well, I'm sure there are special things but I --

16 Q. Okay. All right. That's all I got.

17 MR. KEYT: Okay. Any other questions
18 from members of the zoning board?

19 CHAIRMAN WAX: I've got a question here.

20 EXAMINATION

21 BY CHAIRMAN WAX:

22 Q. You stated and concluded, and the previous speaker
23 concluded the same thing, that it is possible to minimize
24 bat impact by curtailing, by changing the system a bit,

1 slowing down under certain wind conditions. You said it's
2 possible. To your knowledge, is it the intention or the
3 commitment of the company to actually do that?

4 A. Yes, they've, they've committed to meet those
5 recommendations from the Illinois DNR.

6 Q. Okay. Okay.

7 Just looking at your overall broad area, which is
8 outlined here, how close to the edge of that black-lined
9 area are some of your turbines?

10 A. That would probably be a developer question.

11 MR. GERSHON: I believe that Adam Carlson
12 could probably answer that question when he discusses
13 construction.

14 CHAIRMAN WAX: Okay.

15 MR. HARRINGTON: I don't have anything
16 else.

17 MR. KEYT: Any other questions from
18 members of the zoning board?

19 Okay. Seeing none, hearing none, any questions
20 from local units of local government including school
21 districts?

22 Seeing none, hearing none, any questions from
23 interested parties represented by counsel?

24 Seeing none, hearing none, any questions from

1 members of the public?

2 Come on up, ma'am. Okay. If you could state and
3 spell your name for the record, please, and then --

4 MS. DILLAVOU: Michele, with one L,
5 Dillavou.

6 THE REPORTER: Can you spell that?

7 MS. DILLAVOU: D-i-l-l-a-v, as in Victor,
8 o-u.

9 EXAMINATION

10 BY MS. DILLAVOU:

11 Q. I had a -- my questions kind of stem from the lack
12 of information, I guess, just, just this evening on
13 migratory birds. Is, is that just not a problem with them
14 getting into turbines?

15 A. Well, most, most migratory birds are at much higher
16 altitudes while they're migrating. But it's, it's not as
17 big of an issue as a lot of other things. That's the only
18 way I know how to really put it in perspective.

19 I think Jennie mentioned windows on all the
20 buildings in the U.S. are estimated to kill 599 -- 599
21 million birds a year, whereas wind projects are more on the
22 order of 2 to 300,000. Cats are 2.4 billion per year. So
23 just putting it in perspective, that's, that's kind of the
24 only way I know how to frame that.

1 Q. Were you aware of the migratory patterns in Piatt
2 County?

3 A. Well, during our avian use survey we characterize
4 use of birds in the project boundary. We can always make
5 generalizations about fly-aways and moving through river
6 corridors, but, you know, bird migration is something that
7 we're always learning more about too.

8 Q. Did you do any kind of a study at all on the
9 migratory patterns of our county?

10 A. Our avian use survey that focused on avian use in
11 the project boundary.

12 Q. It's kind of hard to hear.

13 A. Oh, sorry. Is that better?

14 Q. Over here it, for some reason, it's like dead
15 space.

16 A. Oh, well, just our avian use survey which focused
17 on avian use patterns within the project boundary.

18 Q. Okay. So general, general bird patterns?

19 A. Uh-huh.

20 Q. So you're not aware of large groups of migratory
21 birds in the winter coming through here?

22 A. Yeah. Similar to most of the cropland in Illinois,
23 you know, large groups of geese and things like that move
24 around. During our avian use surveys we pick up a lot of

1 things that are likely just migrating through, you know,
2 warblers that don't nest here but nest far up north, that
3 kind of thing.

4 Q. Yeah. Well, they wouldn't have a lot of nests or
5 anything if they're just going through four or five days so
6 I can see why that you wouldn't be aware of something like
7 that.

8 But it's -- it is a, it is a pretty good migratory
9 area because of the fact that we've got the drainage
10 ditches just, you know, every mile or two so they got
11 plenty of water. You've got all of residue left from the
12 fields so they've got plenty of food. And they are here,
13 and I'm just wondering what kind of studies -- I mentioned
14 -- somebody said that there was some information in things
15 that we couldn't see about migratory issues and I just
16 wondered if that was a, was a problem that you thought of.

17 I've seen -- I've only lived here for about
18 25 years. But in that period of time there'll be years on
19 our farm where we won't have any migratory birds. And
20 there have been -- there was -- there have been at least
21 twice where we've had thousands and thousands and
22 thousands. And, and it just seems to me that there's an
23 awful -- that it may be a spotty type of thing and there's
24 not a consistent type of thing, but it is, it is something

1 that I think should have been studied --

2 MR. KEYT: Ma'am, is there --

3 Q. -- for our county.

4 MR. KEYT: I'm not trying to cut you off,
5 but there's a fine line here between giving testimony --

6 MS. DILLAVOU: Okay.

7 MR. KEYT: -- and asking a question. But
8 if you have a question --

9 MS. DILLAVOU: No, I don't have it. I, I
10 think he's answered my questions that --

11 MR. KEYT: Okay.

12 MS. DILLAVOU: Okay.

13 MR. KEYT: Okay. Any other members of
14 the public that have questions for Mr. Brown?

15 Please come up, sir.

16 MR. MCKANIC: Dennis McKanic.

17 D-e-n-n-i-s M-c-K-a-n-i-c.

18 EXAMINATION

19 BY MR. MCKANIC:

20 Q. For lack of a better words, would you say you're a
21 scientist?

22 A. Yes.

23 Q. Would you agree that animals are more sensitive to
24 vibration and sound than humans are?

1 A. In some cases certain kinds of animals, yes.

2 Q. So in your professional opinion do you think that
3 the sound or vibrations coming from wind turbines would
4 affect or just cause stress on the animals or it may affect
5 breeding or migration or anything like that?

6 A. I'm not, I'm not aware of studies looking at the
7 effects of vibration on --

8 Q. I'm just thinking, you know, 'cause there's farmers
9 that have livestock, you know. And if the breeding is
10 altered, that ultimately is going to affect their
11 livelihood.

12 A. I guess I just -- I would have to say that I'm not
13 a, not a veterinarian and I don't, I don't really -- I'm
14 not aware of studies of the effects of vibration on, on
15 animals.

16 Q. Okay. All right. Thanks.

17 MR. KEYT: Thank you, sir.

18 Any other questions from members of the public? I
19 thought I saw a few hands up.

20 Okay. Come on up.

21 MS. COIL: Claudia Coil.

22 EXAMINATION

23 BY MS. COIL:

24 Q. As a biologist would you say that any loss of

1 habitat has a negative impact on the environment?

2 A. Can, can you repeat the question?

3 Q. As a biologist would you say any loss of habitat
4 has a negative impact on the environment?

5 A. I would say yes. From, from a development
6 perspective, you know, basically any sort of development
7 has potential to negatively affect the environment. And
8 there are agencies like the U.S. Fish & Wildlife Service
9 and the Illinois DNR that, that basically produce the
10 guidelines for us to study and try to determine what's
11 acceptable and what -- how we should avoid impacts as much
12 as possible.

13 Q. Would you say there's need for better and continued
14 studies?

15 A. I, I think, yes, we can always increase our
16 understanding of those impacts.

17 Q. When you're talking about the main species and
18 birds that you're following, they seem to be more in the
19 endangered-type area. Do you study the impact on all other
20 wildlife in this area?

21 A. The studies are mostly limited to species that have
22 laws protecting them, the rare species.

23 Q. Would you say that the other wildlife can be
24 impacted possibly, potentially?

1 A. Yes. Yeah, wildlife can be impacted by any kind of
2 development.

3 Q. Okay. Is there any way that you assess the
4 economic impact that loss of bats would have for the
5 agricultural community through, you know, like increase of
6 pesticides, lack of pollination, other than just the number
7 of bats that died? How do you assess the impact it has on
8 the agricultural community?

9 A. There have been some studies that extrapolate that
10 based on how many bats, you know, how many insects bats eat
11 and that sort of thing. Really, it's just a handful of, of
12 studies, and it's mostly the direct impacts to the bats
13 that we try to avoid, sort of worry about what you can
14 worry about.

15 Q. Okay. My last question has to do with -- and this
16 isn't a construction question -- is on the blade erosion
17 that happens. There's more articles lately on the micro-
18 and nanoparticles that are constantly being eroded from
19 blades, and these have this federal A or BTA in them
20 because of the epoxy and plastics that are used in the
21 blade. What impact do you think that would have on
22 groundwater and streams for wildlife?

23 A. I'm not a, not a toxicologist. I think that might
24 be a better question for someone with an engineering

1 background.

2 Q. Would you agree that if BPA that has negative
3 effects on biology?

4 A. I don't know.

5 Q. Okay. All right. Thank you.

6 MR. KEYT: Okay. Anyone else with
7 questions?

8 Okay. Please come up.

9 MS. STALTER: Lori Stalter. L-o-r-i.
10 S-t-a-l-t-e-r.

11 EXAMINATION

12 BY MS. STALTER:

13 Q. So I asked Ms. Geiger where the eagles' nests were
14 that you had found. She said that they were not -- they
15 were outside of the area. Where were the eagle nests?

16 A. The closest one was south of the project area. I
17 don't want to share exact locations of eagle nests because
18 they're a sensitive, protected resource, but it was south
19 of the project area more than 2.4 miles.

20 Q. Okay. Did you check in DeWitt County?

21 A. We checked within two miles of the project
22 boundary, so if that extended into DeWitt County we did.

23 Q. Okay. Because we've had, we've had eagles that
24 have come to our lake and there isn't a nest anywhere close

1 to our lake so I -- my understanding is that there is a
2 nest that is over in DeWitt County but the eagles are
3 willing to fly from there to our house or to our lake. And
4 I'm concerned, as other members, about our bald eagles and
5 would hate to see something happen to a pair of our bald
6 eagles that are very rare in our area.

7 So do you think we should be concerned about the
8 fact that these turbines could impact a very small portion
9 of our wildlife but a portion that we enjoy because they
10 are so rare?

11 A. That's what our surveys focus on is trying to site
12 the turbines in places where they'll have the least amount
13 of impact on rare wildlife, and these are mostly sited in
14 cropland. Most bald eagle movements are gonna be along
15 large water courses. They will move around in the winter
16 after roadkill or carrion. So, you know, if in the future
17 there was a bald eagle fatality, the project operators
18 would meet with U.S. Fish & Wildlife Service to come up
19 with additional adaptive management strategies, like
20 picking up roadkill and keeping those away from turbines,
21 things like that. But I do agree that that's what we do
22 most of the these surveys for.

23 Q. But do you, do you come out for an hour, did you
24 say, once a month or once every three months? I didn't

1 catch that.

2 A. Once a month, an hour at each point. And I forget
3 how many points there were in this particular project area.
4 Probably 20 or -- I can look it up but, you know, 20 or
5 30 points. So it's -- it does turn out to be hundreds of
6 hours over the course of two years.

7 Q. Okay.

8 A. It's 50 points, sorry.

9 Q. You said you have 25 years of experience. And my
10 question is since you started this 25 years ago doing these
11 studies and such, have you seen, have you seen or found
12 ecological problems with wind turbines? And I'm assuming
13 things have improved, but have there been problems?

14 A. Well, I said our company, West, has been working on
15 wind --

16 Q. Oh, not you personally?

17 A. -- and wildlife for 25 years. I've been working as
18 a biologist for over 15 years.

19 Q. Okay.

20 A. So that, that is why we continue to do these
21 post-construction monitoring surveys is there there's
22 potential for projects to impact bats and eagles. And
23 there have been stories along the way that have led to
24 changes in the way that turbines are sited. And as I was

1 talking about with the deterrence studies, we are
2 continually trying to improve to avoid those impacts.

3 Q. There have been?

4 A. Yes.

5 Q. So the sample of birds, the number of birds that
6 have been killed by flying into buildings, I'm assuming
7 that includes large cities?

8 A. Yes. The reason that number is so high is because
9 it includes big --

10 Q. Tall buildings?

11 A. -- glass-covered buildings.

12 Q. Tall buildings, large cities, yeah. Where as in
13 Piatt County, what is our tallest building?

14 MR. HARRINGTON: Probably an elevator.

15 Q. This one? So, I mean, I had a bird fly into my
16 window yesterday but it shook it off and flew off so, yeah.

17 I also, I also question the concern of Apex and
18 other wind turbine companies, you know, their concern about
19 wildlife. You know, I question whether or not there is
20 true concern about blue herons and loons and swans and
21 ducks and the pelicans that come through every once in a
22 while. And I see them rarely but they do come through.
23 So --

24 MR. GERSHON: Can you clarify what the

1 question is?

2 MR. KEYT: Yeah. Ms. Stalter, at some
3 point --

4 MS. STALTER: I know.

5 MR. KEYT: -- you'll have an opportunity
6 to present evidence, but you need to get to a question --

7 MS. STALTER: Right. You are right.

8 MR. KEYT: -- for Mr. Brown.

9 Q. I'm assuming you have -- did you ever see any of
10 those migrating birds come through in your one hour in any
11 different zones?

12 A. Yes. We -- I can come up with a --

13 Q. I mean, you named basically the Sandpiper and
14 eagles and hawks?

15 A. Yes. I focused on the rare species that come
16 through, but we also see herons, geese, all the typical
17 birds that you probably see around your home, and we
18 recorded those.

19 Q. Do you know how, how far off the ground do the
20 blades come? I mean, the tip of the blades is how far
21 above the ground?

22 A. I think it's 610 feet.

23 Q. At the top?

24 A. Isn't that, isn't that what you said?

1 Q. I want to know how far it is off of the --

2 A. Oh, the --

3 Q. -- the bottom. When it hits the low point, how far
4 is that above the ground?

5 A. Seventy-eight feet.

6 Q. Seventy-eight feet. Okay.

7 MR. GERSHON: If I can clarify, that's,
8 that's directly from our prior submittals that you've
9 received.

10 Q. And will you, will you agree that that the damage
11 done is irreversible? Even Ms. Geiger said -- I believe it
12 was her that said -- you know, time will tell. And if
13 that's true, the damage will have been done?

14 A. If, if there were species here that were just
15 completely killed off by the project, I could agree with
16 that. But they're gonna meet each year to talk about any
17 adaptive management strategies that need to be put into
18 place if there's, you know, an impact on wildlife. And the
19 common, mostly common species that we observed, are capable
20 of reproducing. So the damage wouldn't be permanent in
21 that case.

22 Q. Okay. Two eagles all we've ever seen. Two eagles.
23 Thank you.

24 MR. KEYT: Okay. Any other questions

1 from members of the public for Mr. Brown?

2 Okay. Come on up, ma'am.

3 MS. RYAN: My name again?

4 MR. KEYT: Yes, please.

5 MS. RYAN: Susan Ryan.

6 EXAMINATION

7 BY MS. RYAN:

8 Q. I asked this question of the previous witness. Are
9 you aware of the Mahomet aquifer?

10 A. I am aware that it exists.

11 Q. So the Mahomet aquifer is our sole-source aquifer
12 and so you didn't know that it's serves over 500,000 -- I'm
13 asking a question -- 500,000 people in central Illinois?
14 And am I understanding that, at least we were told, that it
15 was above this turbine complex -- or, sorry -- the aquifer
16 is below this wind tower complex?

17 MR. GERSHON: Just to repeat. Our
18 construction witness, who will be here next week, will
19 discuss the aquifer.

20 MR. KEYT: Well, I think Mr. Brown can
21 answer the question even if that answer I don't know.
22 That's --

23 Q. I was assuming that since you were talking about
24 waterways and the ground water that --

1 MR. KEYT: Well, hold on. You have a
2 question pending.

3 Mr. Brown, if you can answer the question, you may.
4 If you don't know, I don't know is a fine answer as well.

5 A. I don't know.

6 Q. You don't know if the Mahomet aquifer is below this
7 complex?

8 A. I conducted wildlife studies for the project so
9 that's not my area of expertise.

10 Q. Okay. So any questions having to do with the
11 aquifer, you're not able to answer; is that correct?

12 A. That's correct.

13 Q. Okay. Thank you.

14 You said that there was a study for three years,
15 post-construction, about studying the wildlife around the
16 area; is that correct?

17 A. That's a post-construction mortality monitoring,
18 studying what impacts may come from the project.

19 Q. So -- I know it's been touched on, but I'm
20 confused. What, what are the consequences of what you
21 study for three years, that post-construction, when these
22 turbines are already built?

23 A. Well, for example, if there was an eagle fatality
24 or a state- or federally-listed species found as a fatality

1 then that would be reported to the agencies usually within
2 one business day, and at that point there would need to be
3 -- in consultation with the agencies, there would be
4 adaptive management strategies, whatever that might be,
5 like making sure roadkill is not in the project or look at
6 getting a take permit, which is a whole other process for
7 the project so --

8 Q. The take permit basically allows you to kill the
9 wildlife; is that, is that -- I don't know. Is that what
10 I'm understanding?

11 A. It's a process where you get a permit to take a
12 certain amount of wildlife in exchange for agreeing to
13 abide by certain conservation measures and also mitigate
14 for habitat impacts.

15 Q. So what would be the conservation measures that
16 would be taken with a completed wind turbine complex that's
17 already going for three years and more?

18 A. It would, it would have to be developed in, in
19 association with the agencies to come up with what that
20 might specifically look like, and it would depend on what
21 species you were talking about.

22 Q. So my understanding that currently there's really
23 no consequences to killing wildlife from, you know, even
24 though you're studying it? You study it but you don't

1 really -- there aren't any consequences to like, oh, hey,
2 we need to shut these down, that's -- that wouldn't happen?

3 A. No. That could potentially happen.

4 Q. Has that ever happened in your knowledge?

5 A. That has happened at projects in the past that I
6 can think of.

7 Q. Just individual turbines are shut down?

8 A. I can think of one project where the whole project
9 was shut down.

10 Q. Okay. I guess that kind of brings me to the
11 curtailment feathering, I guess it -- is that what it's
12 called, curtailment? I understood there was a 50%
13 reduction in deaths when that is done?

14 A. It varies by bat species, and we're continually
15 getting better information on that. It could range from --
16 the most recent study I saw was between 33 and 79%.
17 There's a lot of variables there.

18 Q. Okay. So we were told that there is data to
19 support this reduction that was, that was caused because of
20 curtailment. Do you have the data for that?

21 A. The most recent information I have comes from a
22 report that summarizes eight studies. And in those studies
23 the average reduction in bat mortality from curtailing up
24 to five meters per second was 62%, with a range of 33 to

1 79%.

2 Q. So 50% reduction if it's like 10,000 bats and 50%
3 is down to, you know, 5000 bats that aren't killed or are
4 killed. That's still significant, isn't it?

5 A. That sounds like it would, in the case you cited,
6 sounds like it would be significant.

7 Q. Yeah. I, I -- I'm not hearing any data numbers
8 about how many are actually killed.

9 MR. GERSHON: Can you provide the
10 reference for the source for the numbers you're providing?

11 MS. RYAN: I'm sorry. What?

12 MR. GERSHON: You just identified a
13 number of kills and the impact on it. Can you provide what
14 is the source for that?

15 MS. RYAN: I don't have those numbers,
16 but we were told that there was data to support this
17 reduction number. I don't -- we were told that. We were
18 told there's data. I threw out a number because I have no
19 idea. But you guys are the experts.

20 MR. KEYT: Hold on. Hold on. Hold on.
21 We're not gonna argue back and forth. I believe what she
22 was doing is coming up with a hypothetical --

23 MS. RYAN: Yeah.

24 MR. KEYT: -- numbers, correct?

1 MS. RYAN: Because I don't --

2 MR. KEYT: -- as opposed to referencing a
3 specific report or something like that?

4 MS. RYAN: Yeah. I have no idea.

5 MR. KEYT: Okay. With that said, go on
6 with your next question.

7 MS. RYAN: I guess that's all I've got.
8 I had some questions about the aquifer, but I guess that
9 will have to wait for the construction guy. Thank you.

10 MR. KEYT: Okay. Thank you, ma'am.

11 Any other questions from members of the public for
12 this witness?

13 Okay. Mr. Gallagher, please come up.

14 After Mr. Gallagher are there any -- is there
15 anyone else after Mr. Gallagher?

16 Okay.

17 MR. GALLAGHER: Bill Gallagher. B-i-l-l
18 G-a-l-l-a-g-h-e-r.

19 EXAMINATION

20 BY MR. GALLAGHER:

21 Q. Mr. Brown, you referenced a project that was shut
22 down because of a kill situation.

23 A. Yes.

24 Q. Could you tell us some details about that. You

1 said you knew about it.

2 A. I believe that was the Mountaineer.

3 Q. Pardon me.

4 A. I believe that was the Mountaineer wind project in
5 West Virginia.

6 Q. What exactly happened? What species was affected?

7 A. That's a project that was in a forested area of
8 Appalachia and that was the Indiana bat in that situation.
9 There were no protective measures that -- at that point in
10 time. It was an earlier era.

11 Q. Was there a study done prior to that wind farm
12 being sited?

13 A. I believe so.

14 Q. It would have been required, right?

15 A. Or recommended, yes.

16 Q. Recommended.

17 So that was a big deal. So they shut it clear
18 down; is that right? Is that what you said?

19 A. Yes.

20 Q. For how long?

21 A. I don't know.

22 Q. Not sure?

23 A. I'm not sure. I'd have to go back and --

24 Q. Not sure if they shut it down completely and never

1 started back up?

2 A. I believe it operates today, but I think it was
3 shut down for a period of time.

4 Q. Okay. Back to the eagle, what's the significance
5 of the 2.4, 2.5 miles of no nests?

6 A. It's -- generally the U.S. Fish & Wildlife Service
7 recommends that you survey out to two miles from the
8 project boundary just to try to figure out what eagle use
9 is like in the area. If, if there were nests closer you
10 might do some additional studies.

11 In general, projects are recommended to try to
12 avoid -- it's -- the latest information from the U.S. Fish
13 & Wildlife Service that I've seen is for a project to avoid
14 eagle nests by at least half-a-mile.

15 Q. Eagles travel quite a distance, though, to feed
16 throughout the day; is that correct?

17 A. That's true.

18 Q. It's not like two-and-a-half miles is only their
19 range, that's all they travel?

20 A. That's true, but usually, you know, along rivers
21 and --

22 Q. Creeks, yeah?

23 A. -- things likes that.

24 Q. Okay. All right.

1 That's all I have. Thank you.

2 MR. KEYT: Thank you, sir.

3 I believe there was one other person in the back.

4 MR. CHAMBERS: My name is Bob Chambers.

5 It's B-o-b C-h-a-m-b-e-r-s.

6 EXAMINATION

7 BY MR. BOB CHAMBERS:

8 Q. Mr. Brown, I haven't heard anyone say what the wing
9 -- or the blade tip -- speed is on these turbines, but I
10 gather that they're 550 feet in diameter. And if they go
11 10 RPM, I calculate that out to approximately 196 miles per
12 hour.

13 My question is can an eagle or a hawk avoid turbine
14 blades going nearly 200 miles per hour?

15 A. Well, typically they can they can see it and not
16 fly into it most of the time. In terms of whether or not
17 they can fly faster than that, that's unlikely unless it's,
18 you know, a diving peregrine falcon.

19 Q. Well, they typically just glide around and end up
20 in the blades' path, don't they?

21 A. Potentially, if they don't see it and avoid it.

22 Q. I farm and where my house is next to my farmland I
23 have seen seagulls and Canada geese on this piece of
24 property. And you said Canada geese typically are high

1 altitude. So between high altitude and my farmland, they
2 have to come down through what would be the height of those
3 wind turbines. So they would be vulnerable to getting hit
4 there; is that correct?

5 A. To some extent. We don't typically find many
6 waterfowl -- you guys have that AWWI report that has a good
7 citation. Waterfowl typically aren't found as fatalities
8 very often in wind farms.

9 Q. Okay. Well, the seagulls I've seen they would have
10 had to come either from the Clinton power plant lake or
11 from Lake Decatur. So to get to my farm from those areas
12 they would be flying directly through this project; is that
13 correct?

14 A. Potentially. I'm not sure exactly how they fly.

15 Q. Let's see. I have one more question. Oh, you
16 mentioned there's a three-year after-the-construction
17 study, and I kind of wondered what the point of that study
18 is because if -- well, you did say one farm was shut down
19 because of bats. I really don't -- do you really think
20 that this company would shut a project down if your study
21 showed that there was a widespread damage to wildlife?

22 A. Well, the results of those studies will be reviewed
23 with the agencies that, that manage and oversee the
24 wildlife.

1 Q. Okay. You mentioned a number of birds that were
2 killed by cats. Do you remember what that number was?

3 A. I believe it's 2.4 billion.

4 Q. Okay. And what size are those birds that cats
5 typically kill?

6 A. Largely small birds, passerines, but some larger
7 birds.

8 Q. Nothing near the size of eagles or hawks?

9 A. Yeah, that would be unlikely.

10 Q. And then there was a term called kill rate. So
11 rate leads me to think that that's a value or numerical
12 value. So what is an acceptable level kill rate for Goose
13 Creek Wind considered is okay?

14 A. There is not a specific value. It would be, you
15 know, if something was observed where it was outside the
16 range of what's typically seen at most other wind farms by
17 the U.S. Fish & Wildlife Service, that would be cause for
18 concern.

19 Q. Well, by saying it's a kill rate, rate means a
20 number to me. So is that like one hawk per turbine per
21 day, or what is that rate? What does -- what's indicated
22 in that rate?

23 A. Well, if there are certain species where they're
24 listed or protected like eagles where even one would be a

1 big issue. But for the other species it's really up to the
2 U.S. Fish & Wildlife Service.

3 Q. Okay. Did you mention a 300,000 figure for
4 livestock for wildlife that were damaged or destroyed in a
5 year?

6 A. I think I'm citing a U.S. Fish & Wildlife Service
7 web page, and that -- the number they list, it was between
8 2 and 300,000 --

9 Q. So is that an acceptable number for dead wildlife?

10 A. -- 234,000 per year. It's not my position to judge
11 what's acceptable. It's just -- that's -- those are the
12 numbers reported by the U.S. Fish & Wildlife Service.

13 Q. As a biologist, that's a substantial number of
14 birds, would you say?

15 A. Not when I put it in the context of 2.4 billion
16 lost to cats.

17 Q. Tame, tame birds maybe?

18 A. What's that?

19 Q. Those are small birds lost to cats?

20 A. Yeah.

21 Q. Okay. All right. That's all I have.

22 MR. KEYT: Okay. Thank you, sir.

23 Any other questions for Mr. Brown from members of
24 the public? Going once, going twice.

1 Okay. Seeing none, hearing none, any questions
2 from Piatt County staff and consultants?

3 Okay. Seeing none, any redirect from you, Mr.
4 Gershon?

5 MR. GERSHON: Just to clarify a couple of
6 issues.

7 REDIRECT EXAMINATION

8 BY MR. GERSHON:

9 Q. There were a number of questions which relate to
10 the surveys that are done by the project. Can you confirm
11 what the primary purpose is of all of the state agencies
12 that required surveys is to allow placement of turbines to
13 avoid impacting habitat?

14 A. Yes, that's true.

15 Q. Part of that was a question related to impact on
16 geese nesting areas. Would those surveys also direct how
17 turbines are located to avoid geese nesting areas?

18 A. In -- well, not really. In a large goose nesting
19 area here, other than some of the resident species, but,
20 yes, if there were nesting areas, that would be picked up
21 in the avian use survey.

22 Q. We talked about the buffer for bald eagles nests.
23 Has there recently -- and tell me again what the current
24 buffer is in our project.

1 A. Over 2.4 miles.

2 Q. And has there been recent guidance from U.S. Fish &
3 Wildlife Service suggesting that a half-mile setback from
4 bald eagles nests is adequate?

5 A. Yes.

6 Q. So are we, therefore, significantly in excess of
7 what U.S. Fish & Wildlife Survey (sic) would recommend?

8 A. Yes.

9 Q. And I wanted to clarify, again, the number of
10 points in which studies were done. Is it, is it accurate
11 that there are over 1200 hours of observations done in only
12 the first two years of observations of the project?

13 A. Yes.

14 Q. And that doesn't count the observations we'll be
15 doing for three years after the project?

16 A. That's true. It'll be a different kind of survey,
17 but yes.

18 Q. There was a fair question and a fair concern that
19 once constructed it's hard to change what's occurred.
20 Again, you mentioned a number of items here as to what
21 that's done. The most extreme was shutting down an entire
22 wind farm.

23 Can you identify whether the developer gets to
24 decide how to curtail that, or is that done in consultation

1 with the agencies and the laws that respect that?

2 A. That's done in consultation with the agencies that
3 are in charge of that.

4 Q. There was also some question -- and I think maybe
5 it was early on so people didn't realize that there were
6 years of studies done -- but do you do bird counts during
7 all seasons, winter, summer breeding, that -- I guess first
8 that question. Do you do studies during all those periods?

9 A. Yes, every month for two years.

10 Q. And while you, in accordance with the law
11 concentrate on those that are actually protected, do you --
12 protected species -- do you also count all other birds
13 species that you identify that you see?

14 A. Yes. During the first year we look at all birds.
15 And then during the second year we tend to focus on eagles,
16 which are the main, the main focus of the study. But we
17 record all large birds in the second year.

18 Q. Is the project required to be in compliance with
19 the Migratory Bird Treaty Act?

20 A. Yes.

21 Q. We identified earlier the 70,000 acres that's
22 included in this project. For the record, the Piatt
23 County's website indicates there are 279,600 acres in Piatt
24 County. Are you aware that this project only impacts

1 approximately 25 acres of farmland for all of the turbines
2 and improvements?

3 A. Yes.

4 Q. And when you talked about other forms of
5 development that could also impact birds and habitat
6 species, would that include all of those 279,680 acres in
7 the county, development on those acres?

8 A. Yes.

9 Q. You discussed the project -- I apologize. I did
10 not get the name of it -- but the project that was shut
11 down for a portion of time. Are you aware that that
12 project may have predated U.S. Fish & Wildlife survey
13 land-based wind energy guidelines that this project is
14 required to follow?

15 A. That is, that is likely true.

16 Q. And that that would include the obligation to do
17 the types of bird studies that we're doing?

18 A. Yes.

19 Q. And just to emphasize again the -- there are
20 numerous ways from the curtailment -- you've identified
21 numerous ways from curtailment to full shutdown of what can
22 be required. But, again, that's not a decision by the --
23 can you confirm that that is not a decision by the
24 developer or the operator of the wind farm; that's a

1 decision done in consultation with the state agencies?

2 A. That's, that's correct.

3 MR. GERSHON: No further questions.

4 Thank you.

5 MR. KEYT: Okay. Thank you.

6 Any other questions from any members of the Zoning
7 Board of Appeals?

8 Okay. Mr. Harrington.

9 EXAMINATION

10 BY MR. HARRINGTON:

11 Q. So it's been a big topic here, right, the adaptive
12 management strategies and the post-construction
13 surveillance, right. So do I take it correctly that your
14 firm would be conducting that post-construction, or is that
15 assumption incorrect?

16 A. Could be. It's -- there are a number of different
17 companies who do this kind of work, and I don't, I don't
18 know who it would end up being.

19 Q. I guess while I ask that you have served in that
20 function for other projects?

21 A. Yes, we conduct those studies --

22 Q. Right.

23 A. -- a lot.

24 Q. So in your experience doing that essentially it's

1 up to you as the surveyor to call out the issue, correct,
2 if you see one, 'cause there wouldn't really be anybody
3 else watching, right?

4 A. Well, I am aware that on some projects U.S. Fish &
5 Wildlife Service does do site visits, but it would be our
6 responsibility, or the operator's, to notify the agencies
7 in most cases.

8 Q. Gotcha. So, so, I guess, just trying to provide
9 some clarity in the case that, you know, that did happen,
10 you know, I think you guys are trying to make a point of
11 who's actually the judge and jury there, and I think, I
12 think that's probably a key point, right. And obviously
13 you're in consultation with IDNR or U.S. Fish & Wildlife,
14 but you still are the boots on the ground in that case,
15 right, 'cause I'm sure U.S. Fish & Wildlife have a very
16 broad swatch to cover so --

17 A. Yeah. Our company does provide the boots on the
18 ground and we're required to report those very quickly to
19 the agencies.

20 Q. Right. When it comes to the consultation and
21 presumptively you look at adaptive management strategies,
22 is it the company and the state and federal agencies that
23 are conferring, or is the county involved at all?

24 A. It may vary by county, but I think it's typically

1 the company and the agencies.

2 Q. Right. I think that's the way I interpret it also.
3 That may be all I have.

4 MR. KEYT: Okay. Thank you, sir.

5 Any other questions from members of the Zoning
6 Board of Appeals?

7 MR. CHAMBERS: I've got one to add.

8 EXAMINATION

9 BY MR. CHAMBERS:

10 Q. We talked earlier about the process for applying
11 for takes for, for eagles, for example. Is it true that
12 they -- there's already been applications for takes in
13 relation to this project?

14 A. I'm, I'm not really familiar with how exactly
15 they're, they're handling their permitting process. That
16 would be a question for the developer.

17 MR. GERSHON: If you would permit, my
18 client has confirmed that we have not requested any take
19 permits for birds on this project.

20 Q. There, there's no preemptive application for those?

21 MR. GERSHON: Correct, no preemptive bird
22 takes.

23 MR. CHAMBERS: Thank you.

24 MR. GERSHON: And, again, to review as

1 was said before, the whole reason we do these studies and
2 locate is to avoid that.

3 MR. KEYT: Okay. Any other questions
4 from members of the zoning board?

5 MR. CHAMBERS: That was all.

6 MR. KEYT: All right. Mr. Brown, you're
7 excused and released, subject to recall by the zoning
8 board.

9 But with that, Mr. Gershon, we have gone through
10 the two witnesses we plan to go through tonight. Can you
11 give us and the public a list of who you plan to call next
12 at the December 6th hearing then?

13 MR. GERSHON: On December 6th we
14 anticipate calling Dr. Jonathan Rogers with Persimia, LLC.
15 This zoning board is familiar with him. He testified
16 previously as part of the text amendment hearings regarding
17 ice and blade throw issues. And in that respect, I would
18 like to submit -- is this 9 -- I'd like to submit what will
19 be Exhibit 18, which is an ice shatter and blade throw risk
20 assessment study done by Persimia dated as of November
21 28th, 2022, which he will be presenting.

22 MR. KEYT: Okay. Thank you.

23 MR. GERSHON: And the reason we're
24 bringing in this new expert to testify before you is to

1 address the concerns that were raised about ice throw
2 occurring over, I think it was identified, as up to a one-
3 to two-mile area. Which, since it's not physically
4 possible, given gravity and the energy generated, we wanted
5 to have him testify to, you know, give some comfort level
6 as to what actually occurs on ice and blade throw.

7 We would also have Jason Conley here again to
8 hopefully this time testify on safety, and Adam Carlson to
9 testify on construction issues.

10 MR. KEYT: Okay. Thank you.

11 So the three witnesses planned for December 6th are
12 Dr. Jonathan Rogers, who will testify about ice and blade
13 throw; Jason Conley. Who will testify about safety; and
14 Adam, who will testify about construction, correct?

15 MR. GERSHON: Correct.

16 MR. KEYT: Okay. Sounds good.

17 We are in recess until Tuesday. We are in recess
18 until Tuesday, December 6th, at p.m. I believe we're right
19 back here in this room. Yep, we will be right back here in
20 this room.

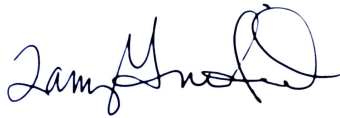
21 If you see Mr. Kains, make sure to reference that
22 we got through two witnesses tonight as opposed to his
23 average of one. So we'll stand in recess.

24 MR. GERSHON: Thank you very much.

(WHEREUPON, the proceedings
were adjourned for the evening.)

CERTIFICATE OF REPORTER

I, Tammy Greenfield, CSR# 084-004214, an Official Court Reporter for the Circuit Court of DeWitt County, Sixth Judicial Circuit of Illinois, reported in machine shorthand the proceedings had in the above-entitled cause and transcribed the same by computer-aided transcription, which I hereby certify to be a true and accurate transcript of the proceedings had before the Piatt County Zoning Board of Appeals.

A handwritten signature in blue ink, appearing to read "Tammy Greenfield", is written over a horizontal line.

Official Court Reporter

Dated this 15th day
of January, 2023.

\$	2022 [3] - 1:4, 23:23, 112:22 2023 [1] - 115:20 2023-24 [1] - 23:17 22 [2] - 7:6, 47:24 234,000 [1] - 104:11 25 [7] - 58:10, 58:21, 82:18, 89:9, 89:10, 89:17, 108:2 250,000% [1] - 55:18 279,600 [1] - 107:24 279,680 [1] - 108:7 28th [1] - 112:22	6:30 [1] - 17:20 6th [4] - 112:13, 112:14, 113:12, 113:19	24:13, 25:14, 25:16, 38:7, 47:17 account [2] - 34:18, 40:17 accounted [1] - 70:2 accurate [4] - 40:7, 40:12, 106:11, 115:8 acre [2] - 13:11, 65:4 acres [5] - 107:22, 107:24, 108:2, 108:7, 108:8 Act [11] - 9:17, 9:18, 11:19, 13:15, 13:17, 15:3, 15:4, 16:1, 107:20 actively [1] - 39:17 activities [2] - 35:1, 35:3 activity [1] - 78:9 Acts [1] - 46:19 actual [5] - 26:9, 28:13, 41:3, 50:7, 70:9 Adam [6] - 1:16, 51:13, 51:14, 79:11, 113:9, 113:15 adaptive [6] - 63:16, 88:19, 92:17, 95:4, 109:12, 110:22 add [2] - 65:19, 111:8 addition [1] - 63:8 additional [4] - 11:2, 28:4, 88:19, 100:11 address [4] - 7:15, 8:8, 49:24, 113:2 adequate [1] - 106:5 adjourned [1] - 114:3 adjust [1] - 36:2 administration [1] - 7:4 Admitted [1] - 2:5 adverse [1] - 14:15 affect [4] - 84:4, 84:10, 85:7 affected [2] - 73:22, 99:7 afraid [1] - 41:6 after-the-construction [1] - 102:17 agencies [24] - 8:15, 10:7, 25:24, 40:9, 46:17, 58:13, 63:15, 63:19, 63:20, 85:8, 95:1, 95:3, 95:19, 102:24, 105:12, 107:2, 107:3, 109:2, 110:7, 110:20, 110:23, 111:2 Agency [1] - 13:16	agency [2] - 11:15, 63:22 ago [4] - 76:16, 76:21, 77:3, 89:10 agree [9] - 10:13, 12:19, 74:19, 74:23, 83:23, 87:2, 88:21, 92:10, 92:15 agreeance [2] - 11:1, 40:5 agreed [7] - 4:9, 13:1, 13:8, 35:12, 63:9, 63:20, 64:8 agreed-upon [1] - 13:1 agreeing [1] - 95:12 agreement [1] - 12:18 agricultural [5] - 39:17, 60:11, 62:20, 86:5, 86:8 ahead [3] - 48:22, 68:13, 68:19 aided [1] - 115:7 Alan [2] - 1:18, 54:23 allegiance [1] - 3:3 Allegiance [1] - 3:5 allow [2] - 46:16, 105:13 allows [1] - 95:8 almost [1] - 62:22 alone [2] - 26:20, 27:18 altered [1] - 84:10 altitude [2] - 102:2 altitudes [1] - 80:16 amber [2] - 32:18, 32:24 amendment [1] - 112:17 American [2] - 31:12, 31:21 Americans [1] - 70:22 amount [2] - 88:12, 95:12 analysis [3] - 5:17, 40:21, 64:22 Andrew [1] - 1:14 andy [1] - 57:3 Andy [5] - 1:8, 4:18, 6:1, 6:5, 8:1 animals [6] - 55:11, 58:23, 83:23, 84:1, 84:4, 84:15 answer [19] - 21:4, 22:15, 25:1, 27:13, 29:5, 29:9, 39:8, 45:13, 45:18, 50:3, 50:12, 54:12, 72:5, 79:12, 93:21, 94:3, 94:4, 94:11
'	'21 [2] - 31:24, 49:16 'em [1] - 25:9 'ya [3] - 25:18, 32:13, 76:12	7		
0	084-004214 [1] - 115:3	7 [1] - 50:22 70 [1] - 62:21 70,000 [2] - 65:4, 107:22 70,000-acre [3] - 61:6, 62:22, 65:16 79% [2] - 96:16, 97:1 7:05 [1] - 48:14 7:10 [2] - 48:15, 48:18 7:25 [1] - 57:6 7:35 [1] - 57:7		
1	1 [3] - 12:23, 65:8, 66:14 1% [5] - 18:21, 61:12, 61:19, 62:14, 62:22 1.2% [1] - 62:9 10 [1] - 101:12 10,000 [1] - 97:2 11.185 [1] - 22:13 11/29/2022 [1] - 1:4 12 [1] - 62:1 1200 [1] - 106:12 13th [1] - 115:19 14 [2] - 2:6, 5:23 15 [8] - 2:7, 31:18, 32:5, 48:8, 48:15, 48:24, 58:18, 89:18 15th [2] - 35:2, 35:5 16 [2] - 2:8, 57:18 17 [2] - 2:9, 67:21 18 [1] - 112:20 196 [1] - 101:12	3	8	
2	2 [2] - 80:22, 104:9 2.4 [11] - 11:12, 21:17, 22:2, 28:10, 62:21, 80:22, 87:19, 100:6, 103:4, 104:16, 106:2 2.4-miles [1] - 22:7 2.5 [1] - 100:6 20 [2] - 89:4 200 [1] - 101:15 2000 [1] - 31:23 2001 [1] - 31:22 2017 [1] - 44:3 2019 [5] - 10:8, 23:15, 23:20, 59:12, 60:6 2021 [5] - 23:22, 31:24, 32:2, 60:7, 77:4	3 [2] - 33:11, 64:9 3.7% [3] - 61:5, 61:6, 62:23 30 [1] - 89:5 30% [2] - 18:21, 76:5 30,000 [1] - 43:24 300,000 [3] - 80:22, 104:4, 104:9 31st [1] - 35:2 33 [2] - 96:16, 96:24 350 [1] - 50:1	800-meter [3] - 76:4, 76:10, 76:13 87% [1] - 22:16	
		4	9	
		4 [1] - 33:11 40% [1] - 71:7 400 [1] - 49:18 400-foot [1] - 50:1 404 [1] - 15:24 45 [1] - 14:3	9 [1] - 112:19 9:00 [1] - 1:4	
		5	A	
		50 [3] - 22:16, 58:22, 89:8 50% [7] - 18:21, 22:21, 36:5, 36:11, 96:12, 97:2 500,000 [4] - 44:11, 44:14, 93:12, 93:13 5000 [1] - 97:3 550 [1] - 101:11 599 [2] - 80:20	abandoned [1] - 61:18 abide [2] - 28:22, 95:13 able [7] - 4:8, 4:14, 21:4, 53:13, 67:11, 70:14, 94:11 above-entitled [1] - 115:6 above-ground [1] - 51:4 absence [2] - 4:10, 4:13 absent [1] - 38:5 absolutely [1] - 67:18 academia [1] - 7:15 academics [1] - 7:7 accept [1] - 8:3 acceptable [5] - 18:13, 85:11, 103:13, 104:10, 104:12 accepted [4] - 8:5, 59:4, 59:6, 59:8 accidentally [1] - 29:24 accordance [4] - 26:1, 39:23, 40:4, 107:11 accordingly [6] -	
		6		
		6.711 [2] - 21:11, 22:12 60 [1] - 58:20 600-foot [1] - 50:1 610 [1] - 91:22 62% [1] - 96:24 6:01 [1] - 1:4 6:23 [1] - 17:19		

answered [2] - 36:1, 83:10
answers [2] - 33:18, 53:7
anticipate [1] - 112:15
APEX [1] - 1:17
Apex [5] - 7:1, 7:20, 16:7, 16:11, 90:17
Apex's [2] - 6:4, 16:5
apologies [3] - 20:3, 32:1, 32:3
apologize [2] - 22:11, 108:10
Appalachia [1] - 99:9
Appeals [9] - 4:4, 18:1, 22:24, 38:16, 54:16, 74:8, 109:8, 111:7, 115:10
Appendix [7] - 12:15, 12:21, 12:23, 33:11, 65:8, 66:13, 67:3
applicant [1] - 5:15
APPLICANT [3] - 1:15, 1:17, 2:2
APPLICANTS [1] - 2:5
application [4] - 4:5, 12:14, 66:14, 111:21
APPLICATION [1] - 1:3
applications [1] - 111:13
applying [1] - 111:11
appoint [2] - 4:12, 4:16
appreciate [1] - 68:11
appreciated [1] - 38:14
approach [5] - 7:22, 8:8, 9:8, 9:13, 34:12
appropriate [8] - 9:6, 9:11, 9:22, 10:14, 11:22, 15:24, 28:19, 61:11
approval [1] - 46:16
approvals [1] - 46:18
approved [3] - 13:8, 19:12, 40:16
April [2] - 35:2, 35:5
aquifer [19] - 43:14, 43:17, 44:3, 44:10, 44:11, 44:12, 44:15, 45:23, 45:24, 50:24, 51:3, 93:9, 93:11, 93:15, 93:19, 94:6, 94:11, 98:8
archaeological [1] - 13:24
archeological [2] - 13:23, 14:10

architectural [3] - 13:23, 14:2, 14:9
area [72] - 8:24, 10:1, 12:4, 16:17, 16:20, 19:10, 24:5, 26:21, 27:4, 29:2, 30:6, 33:6, 33:19, 34:3, 34:10, 41:1, 41:6, 43:10, 43:21, 44:2, 50:8, 50:11, 52:19, 52:20, 54:3, 59:15, 60:3, 60:13, 61:5, 61:12, 61:20, 61:22, 62:9, 62:14, 62:22, 64:19, 64:20, 65:2, 65:4, 65:15, 65:16, 65:17, 65:24, 66:3, 69:7, 70:11, 71:3, 75:5, 75:17, 76:4, 76:5, 76:10, 78:12, 79:7, 79:9, 82:9, 85:19, 85:20, 87:15, 87:16, 87:19, 88:6, 89:3, 94:9, 94:16, 99:8, 100:10, 105:20, 113:4
Areas [1] - 11:19
areas [15] - 13:21, 16:3, 23:24, 35:12, 52:22, 62:1, 62:3, 62:13, 63:1, 71:7, 76:8, 102:12, 105:17, 105:18, 105:21
argue [1] - 97:21
article [1] - 49:6
articles [1] - 86:17
assess [6] - 9:22, 39:21, 40:2, 40:14, 86:3, 86:7
assessed [1] - 10:9
assessing [1] - 41:5
assessment [10] - 10:6, 11:21, 23:15, 30:23, 59:21, 59:22, 61:8, 61:17, 62:11, 112:21
assessments [9] - 8:11, 9:21, 10:17, 12:7, 24:4, 25:8, 28:2, 40:7, 59:23
association [1] - 95:19
assume [4] - 50:24, 75:16, 76:15, 77:1
assuming [9] - 24:19, 33:20, 38:6, 47:16, 49:16, 89:12, 90:6, 91:9, 93:23
assumption [6] -

37:16, 37:23, 38:9, 47:13, 63:13, 109:16
assumptions [2] - 47:18, 77:14
attacks [1] - 74:17
attain [1] - 16:4
attending [1] - 4:6
attention [1] - 73:17
attenuates [1] - 72:12
Attorney [1] - 3:17
attorneys [1] - 38:21
audience [1] - 50:23
automated [1] - 72:18
available [7] - 9:21, 15:8, 31:2, 31:5, 55:15, 72:1, 72:21
average [2] - 96:23, 113:24
avian [13] - 10:16, 27:22, 39:22, 56:14, 59:19, 59:24, 81:3, 81:10, 81:16, 81:17, 81:24, 105:22
avoid [30] - 9:9, 9:10, 13:6, 13:8, 13:18, 15:16, 15:21, 15:23, 18:16, 35:1, 35:7, 39:15, 42:13, 55:3, 55:4, 63:1, 63:2, 70:6, 70:14, 73:23, 85:11, 86:13, 90:2, 100:13, 100:14, 101:14, 101:22, 105:14, 105:18, 112:3
avoidance [11] - 11:4, 12:19, 13:1, 13:3, 14:13, 33:13, 34:24, 35:18, 70:8, 70:10, 70:20
avoided [1] - 66:8
avoiding [2] - 35:9, 63:7
avoids [2] - 19:10, 63:22
awarded [4] - 16:21, 16:22, 16:24, 17:2
aware [13] - 30:14, 45:22, 74:2, 81:1, 81:20, 82:6, 84:6, 84:14, 93:9, 93:10, 108:1, 108:12, 110:5
aways [1] - 81:5
awful [1] - 82:23
AWWI [2] - 70:5, 102:7

B

B-r-o-w-n [1] - 58:5
B4 [3] - 65:8, 66:13,

67:3
bachelor's [1] - 58:16
background [4] - 6:21, 7:1, 71:23, 87:1
Bald [1] - 9:17
bald [22] - 11:12, 28:10, 28:12, 28:20, 29:1, 60:12, 60:20, 60:21, 62:20, 70:22, 71:5, 71:8, 73:7, 73:10, 75:13, 75:15, 88:4, 88:5, 88:14, 88:17, 105:23, 106:5
balds [1] - 28:22
ball [1] - 20:23
base [1] - 76:19
based [15] - 10:3, 11:23, 13:2, 13:22, 33:18, 34:10, 34:11, 48:3, 49:9, 49:17, 54:18, 77:8, 86:10, 108:14
baseline [1] - 52:4
basing [2] - 24:15, 24:16
basis [1] - 27:23
bat [26] - 10:19, 11:6, 17:3, 18:13, 29:18, 29:19, 30:1, 34:14, 36:3, 36:4, 36:22, 38:3, 39:7, 49:22, 53:5, 59:23, 61:8, 61:13, 62:16, 64:13, 74:11, 75:4, 78:24, 96:14, 96:23, 99:9
bats [35] - 10:18, 11:7, 11:10, 18:17, 19:1, 19:9, 19:11, 25:9, 33:20, 35:19, 39:20, 40:2, 40:12, 53:11, 53:20, 58:24, 61:9, 64:15, 64:23, 69:13, 71:21, 72:7, 72:13, 74:14, 74:17, 86:4, 86:7, 86:10, 86:12, 89:22, 97:2, 97:3, 102:20
beat [1] - 19:24
behalf [1] - 5:15
behavior [1] - 24:6
below [4] - 19:4, 36:8, 93:16, 94:6
beneficial [1] - 16:20
benefit [1] - 16:10
best [1] - 74:5
beta [1] - 53:18
better [12] - 19:14, 25:1, 33:18, 39:8, 52:19, 55:4, 71:9,

81:13, 83:20, 85:13, 86:24, 96:15
between [7] - 22:16, 27:8, 73:6, 83:5, 96:16, 102:2, 104:8
beyond [2] - 13:12, 65:15
bias [2] - 64:14, 69:20
big [5] - 80:17, 90:9, 99:18, 104:2, 109:12
bigger [2] - 50:11, 75:20
biggest [3] - 55:12, 72:10, 74:12
Bill [1] - 98:18
BILL [1] - 98:18
billion [3] - 80:22, 103:4, 104:16
binder [2] - 66:14, 67:11
biologist [7] - 23:13, 58:18, 58:19, 84:24, 85:3, 89:18, 104:14
biologists [1] - 58:11
biology [4] - 7:2, 58:16, 58:17, 87:3
bird [21] - 12:10, 17:6, 27:6, 28:1, 28:3, 30:10, 35:17, 42:17, 49:22, 55:13, 55:18, 60:15, 61:24, 62:20, 64:12, 81:6, 81:18, 90:15, 107:7, 108:18, 111:22
Bird [2] - 9:18, 107:20
birds [48] - 24:5, 27:3, 27:5, 27:23, 30:11, 30:23, 39:13, 39:24, 40:12, 42:1, 54:1, 54:2, 55:17, 56:12, 56:15, 58:24, 60:3, 60:10, 64:23, 70:4, 70:10, 72:18, 73:20, 77:1, 80:13, 80:15, 80:21, 81:4, 81:21, 82:19, 85:18, 90:5, 91:10, 91:17, 103:2, 103:5, 103:7, 103:8, 104:15, 104:18, 104:20, 107:13, 107:15, 107:18, 108:6, 111:20
bit [11] - 24:24, 37:16, 51:19, 51:22, 51:24, 52:2, 53:9, 65:20, 68:24, 70:5, 78:24
black [4] - 65:12, 65:15, 65:23, 79:8
black-lined [1] - 79:8
blade [8] - 72:13,

86:16, 86:21, 101:10, 112:18, 112:20, 113:7, 113:13 blades [8] - 50:8, 52:21, 72:15, 73:18, 86:19, 91:20, 101:15 blades' [1] - 101:21 blank [1] - 32:20 blowup [1] - 66:17 blue [1] - 90:20 BOARD [4] - 1:1, 1:9, 1:12, 1:14 Board [9] - 4:4, 18:1, 22:24, 38:16, 54:16, 74:8, 109:8, 111:7, 115:9 board [25] - 4:10, 4:12, 4:15, 6:1, 6:2, 8:3, 17:17, 32:12, 37:2, 48:24, 49:9, 50:18, 51:16, 55:9, 55:22, 56:18, 67:3, 68:4, 68:6, 68:15, 78:18, 79:18, 112:5, 112:9, 112:16 board's [1] - 65:6 Bob [1] - 101:5 BOB [2] - 101:6, 101:8 bodies [3] - 15:19, 28:24, 40:12 boots [2] - 110:15, 110:18 bottom [1] - 92:3 boundaries [2] - 15:13, 24:22 boundary [17] - 18:10, 18:11, 25:6, 25:9, 25:10, 29:3, 47:3, 61:7, 65:19, 65:20, 76:19, 81:4, 81:11, 81:17, 87:22, 100:9 BPA [1] - 87:2 break [5] - 48:2, 48:14, 57:3, 57:8, 68:17 breeding [11] - 13:7, 30:2, 30:4, 35:1, 35:4, 35:13, 35:15, 63:3, 84:5, 84:9, 107:8 brief [4] - 17:21, 48:2, 48:19, 57:10 bring [2] - 50:23, 67:22 bringing [1] - 113:1 brings [1] - 96:10 broad [2] - 79:7, 110:17 broader [2] - 47:3,	66:3 Brown [14] - 2:4, 57:16, 57:21, 58:5, 59:6, 83:14, 91:8, 93:1, 93:20, 94:3, 98:22, 101:9, 104:24, 112:7 BTA [1] - 86:19 buffer [5] - 28:15, 28:18, 60:22, 105:23, 106:1 buffers [1] - 13:10 build [1] - 69:3 building [1] - 90:13 Building [1] - 1:5 buildings [10] - 15:19, 55:17, 56:2, 56:5, 56:6, 80:20, 90:6, 90:10, 90:11, 90:12 built [4] - 63:9, 64:11, 77:5, 94:22 Burkwald [3] - 32:21, 33:1 BURKWALD [1] - 33:1 business [2] - 3:2, 95:2 butterflies [1] - 42:3 BY [35] - 6:10, 18:5, 20:11, 23:3, 26:18, 32:15, 35:22, 37:5, 39:6, 41:17, 43:7, 45:21, 46:14, 49:13, 50:20, 51:18, 54:22, 56:1, 56:11, 58:2, 64:3, 68:22, 74:10, 75:11, 78:21, 80:10, 83:19, 84:23, 87:12, 93:7, 98:21, 101:8, 105:9, 109:11, 111:10	88:16 carry [1] - 58:12 case [11] - 13:4, 24:19, 27:22, 35:16, 38:9, 61:17, 63:16, 92:21, 97:5, 110:10, 110:15 cases [2] - 84:1, 110:8 catch [1] - 89:1 cats [5] - 80:22, 103:3, 103:5, 104:17, 104:20 caused [1] - 96:19 caves [1] - 74:17 cemetery [1] - 17:7 central [1] - 93:13 certain [7] - 20:18, 72:7, 79:1, 84:1, 95:12, 95:13, 103:24 certainly [1] - 16:18 CERTIFICATE [1] - 115:1 certified [1] - 23:13 certify [1] - 115:8 cetera [2] - 55:12, 55:13 chair [2] - 21:6, 22:10 CHAIRMAN [20] - 3:1, 3:6, 3:14, 4:1, 4:19, 4:23, 5:8, 5:11, 18:3, 20:6, 20:9, 20:11, 21:9, 21:16, 22:14, 35:22, 49:13, 78:19, 78:21, 79:14 Chairman [2] - 1:10, 1:10 chambers [4] - 3:15, 5:9, 51:16, 68:20 Chambers [3] - 1:11, 36:1, 101:5 CHAMBERS [15] - 3:16, 4:22, 5:10, 26:16, 26:18, 51:18, 56:11, 68:19, 68:22, 101:5, 101:8, 111:8, 111:10, 111:24, 112:6 chance [3] - 24:8, 55:18, 57:8 change [7] - 24:6, 24:7, 55:8, 70:11, 77:1, 77:22, 106:20 changed [2] - 18:10, 24:11 changes [4] - 24:12, 41:4, 65:19, 89:24 changing [3] - 29:14, 52:11, 78:24 characterize [2] - 60:3, 81:3 charge [1] - 107:4	check [1] - 87:20 checked [2] - 22:6, 87:21 checking [1] - 77:7 chooses [2] - 4:10, 4:16 circle [2] - 52:21, 76:4 Circuit [2] - 115:4, 115:5 citation [1] - 102:8 cited [2] - 51:22, 97:5 cities [2] - 90:7, 90:12 citing [1] - 104:7 citizens [1] - 45:23 clarification [5] - 46:12, 48:23, 54:20, 55:20, 68:12 clarify [10] - 12:20, 26:12, 37:20, 47:1, 47:10, 65:1, 90:24, 92:7, 105:6, 106:10 clarity [2] - 37:9, 110:10 Claudia [2] - 39:3, 84:21 Clean [4] - 7:1, 15:3, 16:1, 46:19 CLEAN [1] - 1:17 clear [5] - 13:6, 29:19, 30:3, 49:2, 99:18 cleared [2] - 29:21, 29:23 clearing [7] - 11:7, 35:13, 63:7, 63:8, 74:23, 74:24, 75:1 client [1] - 111:19 Clinton [1] - 102:11 close [2] - 79:8, 87:24 closely [2] - 11:15, 73:10 closer [2] - 76:23, 100:10 closest [1] - 87:16 code [2] - 64:6, 64:7 COIL [4] - 39:3, 39:6, 84:21, 84:23 Coil [2] - 39:3, 84:21 collaboration [2] - 7:14, 25:21 collected [2] - 28:17, 69:17 collection [2] - 15:20, 35:17 collisions [1] - 41:1 Colorado [1] - 7:4 combination [1] - 67:7 comfort [1] - 113:6 coming [8] - 19:14, 21:4, 23:6, 43:12, 43:22, 81:21, 84:3,	97:22 comment [1] - 37:13 commercial [2] - 7:7, 7:8 commercially [3] - 72:1, 72:9, 72:21 commitment [1] - 79:3 committed [1] - 79:4 committee [1] - 7:14 common [5] - 60:11, 62:20, 71:14, 92:19 communities [1] - 16:10 community [3] - 68:8, 86:5, 86:8 Community [1] - 1:5 companies [2] - 90:18, 109:18 company [9] - 43:11, 58:9, 72:3, 79:3, 89:14, 102:21, 110:18, 110:23, 111:2 compare [3] - 26:23, 52:14, 52:21 compared [2] - 53:4, 71:10 compares [1] - 64:6 comparing [2] - 27:16, 76:11 comparisons [1] - 27:14 compilation [3] - 65:8, 66:13, 66:20 compile [2] - 17:18, 30:16 complete [3] - 10:20, 14:8, 67:14 completed [7] - 10:22, 24:21, 26:5, 36:17, 37:24, 59:16, 95:16 completely [6] - 13:5, 16:13, 18:11, 35:8, 92:15, 100:1 complex [5] - 43:16, 93:15, 93:16, 94:7, 95:16 compliance [5] - 9:15, 9:20, 11:17, 15:2, 107:19 complicated [2] - 64:22, 72:16 comply [2] - 16:4, 46:21 computer [1] - 115:7 computer-aided [1] - 115:7 concentrate [1] - 107:12 concentrated [1] -
--	--	--	--	---

<p>61:14</p> <p>concern [11] - 8:13, 9:24, 29:12, 33:14, 54:9, 62:24, 90:17, 90:18, 90:20, 103:19, 106:19</p> <p>concerned [3] - 35:14, 88:4, 88:7</p> <p>concerns [8] - 8:20, 10:11, 11:23, 40:8, 43:24, 59:15, 71:3, 113:2</p> <p>concluded [2] - 78:22, 78:23</p> <p>concludes [1] - 17:11</p> <p>conclusion [1] - 74:22</p> <p>conclusions [3] - 9:6, 40:6, 55:8</p> <p>concrete [2] - 43:19, 43:24</p> <p>concurrence [1] - 14:7</p> <p>conditions [1] - 79:1</p> <p>conduct [7] - 26:9, 40:3, 63:9, 64:11, 64:14, 75:20, 109:22</p> <p>conducted [8] - 18:7, 18:8, 18:9, 27:9, 33:19, 34:21, 60:6, 94:8</p> <p>conducting [2] - 23:4, 109:15</p> <p>conferring [1] - 110:24</p> <p>confirm [4] - 56:22, 65:12, 105:11, 108:24</p> <p>confirmed [2] - 23:15, 111:19</p> <p>confirming [1] - 67:2</p> <p>confrontational [1] - 37:7</p> <p>confused [1] - 94:20</p> <p>conjecture [1] - 73:16</p> <p>Conley [2] - 113:8, 113:14</p> <p>consequences [3] - 94:20, 95:23, 96:1</p> <p>Conservancy [1] - 17:5</p> <p>conservation [8] - 10:4, 16:6, 17:9, 58:14, 60:9, 75:24, 95:13, 95:15</p> <p>conservative [4] - 34:12, 38:12, 47:15, 47:18</p> <p>consider [3] - 12:5, 22:1, 39:16</p> <p>consideration [3] - 10:12, 13:13, 29:17</p>	<p>considered [6] - 11:10, 20:17, 34:20, 62:10, 62:15, 103:14</p> <p>considering [2] - 8:11, 9:23</p> <p>considers [1] - 35:18</p> <p>consistent [2] - 78:11, 82:24</p> <p>consistently [1] - 78:11</p> <p>constantly [1] - 86:18</p> <p>constructed [5] - 9:4, 63:21, 77:11, 77:21, 106:20</p> <p>construction [34] - 13:6, 14:21, 14:23, 16:23, 24:10, 29:10, 29:12, 29:14, 31:5, 35:1, 35:3, 40:3, 42:13, 43:22, 51:10, 63:1, 63:10, 64:4, 76:24, 77:6, 77:9, 79:13, 86:16, 89:21, 93:18, 94:15, 94:17, 94:21, 98:9, 102:17, 109:13, 109:15, 113:10, 113:15</p> <p>consultant [4] - 23:9, 23:12, 58:9</p> <p>consultants [2] - 46:8, 105:3</p> <p>consultation [9] - 10:8, 12:11, 59:11, 95:3, 107:1, 107:3, 109:2, 110:14, 110:21</p> <p>contact [1] - 37:20</p> <p>contamination [1] - 45:24</p> <p>context [2] - 56:4, 104:16</p> <p>continually [2] - 90:2, 96:14</p> <p>continue [2] - 21:14, 89:20</p> <p>continued [2] - 23:22, 85:13</p> <p>contribution [1] - 16:13</p> <p>control [2] - 69:7, 69:16</p> <p>coordinate [3] - 8:19, 11:15, 11:20</p> <p>coordinated [2] - 63:2, 63:15</p> <p>coordinating [1] - 23:21</p> <p>coordinations [1] - 34:4</p> <p>copied [1] - 49:1</p>	<p>copies [7] - 6:1, 31:17, 32:3, 32:4, 32:10, 47:21, 48:11</p> <p>copy [11] - 31:14, 31:17, 32:7, 48:12, 49:1, 66:11, 66:24, 67:14, 67:17, 67:23, 68:4</p> <p>core [2] - 7:20, 16:7</p> <p>Corp [2] - 15:11, 16:2</p> <p>correct [23] - 22:8, 26:6, 26:11, 48:8, 51:1, 51:4, 65:3, 67:8, 75:17, 77:10, 77:14, 94:11, 94:12, 94:16, 97:24, 100:17, 102:5, 102:14, 109:3, 110:2, 111:22, 113:15, 113:16</p> <p>correction [1] - 69:19</p> <p>corrections [1] - 64:20</p> <p>correctly [1] - 109:14</p> <p>corridor [1] - 78:12</p> <p>corridors [2] - 78:8, 81:6</p> <p>COUNSEL [2] - 1:14, 1:15</p> <p>counsel [1] - 79:23</p> <p>count [3] - 40:12, 106:15, 107:13</p> <p>counties [2] - 44:13</p> <p>counting [2] - 27:23, 39:24</p> <p>country [2] - 62:2, 76:11</p> <p>counts [1] - 107:7</p> <p>county [10] - 46:15, 46:22, 64:6, 64:7, 70:18, 81:9, 83:3, 108:8, 110:24, 111:1</p> <p>COUNTY [5] - 1:1, 1:6, 1:9, 1:12, 1:14</p> <p>County [17] - 12:14, 17:2, 17:4, 42:6, 46:7, 54:9, 62:5, 81:2, 87:20, 87:22, 88:2, 90:13, 105:3, 108:1, 115:4, 115:9</p> <p>County's [1] - 107:24</p> <p>couple [7] - 24:7, 30:8, 39:10, 46:11, 54:19, 62:17, 105:6</p> <p>course [2] - 4:11, 89:6</p> <p>courses [1] - 88:15</p> <p>Court [3] - 115:3, 115:4, 115:17</p> <p>COURT [2] - 1:19, 3:11</p> <p>court [2] - 45:7, 57:22</p>	<p>cover [1] - 110:17</p> <p>covered [2] - 18:11, 90:11</p> <p>covers [1] - 76:5</p> <p>coyote [1] - 69:8</p> <p>create [1] - 8:21</p> <p>created [2] - 44:4, 44:9</p> <p>Creek [11] - 4:4, 9:9, 10:8, 10:15, 11:5, 12:6, 14:15, 16:18, 31:3, 33:13, 103:14</p> <p>CREEK [1] - 1:2</p> <p>creeks [1] - 100:23</p> <p>cropland [7] - 24:3, 39:17, 60:11, 62:19, 75:3, 81:22, 88:14</p> <p>cross [1] - 52:23</p> <p>Cross [1] - 2:2</p> <p>cross-section [1] - 52:23</p> <p>crowd [1] - 20:23</p> <p>CSR [2] - 1:19, 115:3</p> <p>cultivated [1] - 24:2</p> <p>cultural [9] - 13:13, 13:18, 13:20, 14:16, 14:19, 14:22, 15:6, 23:23, 47:5</p> <p>curiosity [2] - 51:7, 73:5</p> <p>current [3] - 18:11, 71:2, 105:24</p> <p>curtail [3] - 18:19, 20:12, 107:1</p> <p>curtailed [1] - 36:3</p> <p>curtailing [4] - 19:1, 63:6, 78:24, 96:23</p> <p>curtailment [9] - 11:9, 21:13, 36:2, 36:8, 96:11, 96:12, 96:20, 108:21, 108:22</p> <p>cut [3] - 20:17, 21:12, 83:4</p> <p>cut-in [2] - 20:17, 21:12</p>	<p>97:7, 97:16, 97:18</p> <p>database [3] - 13:19, 15:7, 15:9</p> <p>date [3] - 12:13, 17:1, 23:20</p> <p>dated [1] - 112:21</p> <p>Dated [1] - 115:19</p> <p>dates [1] - 49:17</p> <p>days [2] - 75:22, 82:5</p> <p>dead [3] - 69:13, 81:14, 104:10</p> <p>deal [2] - 55:11, 99:18</p> <p>dealt [1] - 77:4</p> <p>deaths [1] - 96:13</p> <p>Decatur [1] - 102:12</p> <p>December [4] - 112:13, 112:14, 113:12, 113:19</p> <p>decide [3] - 16:19, 26:24, 107:1</p> <p>decided [1] - 5:11</p> <p>decision [3] - 108:23, 108:24, 109:2</p> <p>decrease [2] - 41:3, 53:3</p> <p>decreases [2] - 36:10, 69:24</p> <p>deer [3] - 72:15, 73:21, 73:22</p> <p>defer [6] - 29:5, 34:22, 36:22, 41:22, 53:16, 53:22</p> <p>definitely [1] - 53:18</p> <p>definition [1] - 18:18</p> <p>definitive [1] - 50:3</p> <p>degree [3] - 7:2, 58:16, 58:17</p> <p>Dennis [1] - 83:16</p> <p>DENNIS [1] - 83:17</p> <p>Department [2] - 8:17, 11:16</p> <p>dependent [1] - 47:4</p> <p>depicted [1] - 67:6</p> <p>describe [2] - 75:20, 76:2</p> <p>Description [1] - 2:5</p> <p>design [8] - 9:1, 9:2, 14:13, 15:9, 15:14, 47:6, 58:12, 59:17</p> <p>designed [4] - 15:16, 15:21, 63:19, 63:21</p> <p>designs [1] - 58:13</p> <p>destroyed [1] - 104:5</p> <p>detailed [1] - 49:15</p> <p>details [2] - 67:12, 99:1</p> <p>detection [1] - 72:18</p> <p>determine [4] - 38:4, 63:12, 64:20, 85:10</p> <p>deterrence [3] - 53:11,</p>
--	---	---	--	--

<p>72:5, 90:1 detering [1] - 53:20 developed [2] - 14:14, 95:18 developer [4] - 79:10, 106:24, 109:1, 111:17 development [6] - 14:4, 85:5, 85:6, 86:2, 108:6, 108:8 DeWitt [4] - 87:20, 87:22, 88:2, 115:4 diameter [2] - 51:24, 101:11 died [1] - 86:7 difference [1] - 73:6 different [18] - 12:7, 17:5, 29:16, 30:17, 35:11, 38:4, 40:9, 50:10, 52:1, 52:2, 52:15, 53:3, 64:23, 69:12, 73:9, 91:11, 106:17, 109:17 digital [1] - 67:21 DILLAV [1] - 80:7 DILLAVOU [6] - 80:4, 80:7, 80:10, 83:6, 83:9, 83:12 Dillavou [1] - 80:5 DIRECT [2] - 6:9, 58:1 direct [2] - 86:12, 105:17 Direct [1] - 2:2 directly [5] - 34:1, 34:6, 70:20, 92:8, 102:13 director [2] - 6:4, 6:24 disappear [1] - 69:15 disconcerted [1] - 37:17 discovery [1] - 14:20 discuss [7] - 10:24, 11:21, 11:22, 12:17, 12:18, 34:22, 93:19 discussed [1] - 108:10 discusses [1] - 79:12 discussion [2] - 5:1, 53:10 discussions [1] - 25:24 dismissed [1] - 32:8 disregard [2] - 46:16, 49:4 distance [3] - 21:24, 28:19, 100:16 distances [1] - 24:15 districts [2] - 38:18, 79:21 disturbance [1] -</p>	<p>70:18 ditches [1] - 82:10 diving [1] - 101:19 DNR [5] - 59:12, 60:9, 63:4, 79:5, 85:9 document [3] - 49:1, 49:3, 49:10 documented [1] - 34:11 documents [2] - 47:23, 48:4 doin' [2] - 37:9, 76:14 dollars [1] - 16:14 done [29] - 7:18, 12:15, 14:22, 16:18, 24:20, 25:17, 26:14, 26:21, 28:5, 47:2, 52:18, 55:14, 69:4, 69:21, 75:8, 92:11, 92:13, 96:13, 99:12, 105:11, 106:11, 106:12, 106:22, 107:1, 107:3, 107:7, 109:2, 112:21 down [22] - 17:2, 19:22, 19:23, 19:24, 26:3, 67:23, 69:2, 79:1, 96:2, 96:7, 96:9, 97:3, 98:23, 99:19, 100:1, 100:4, 102:3, 102:19, 102:21, 106:22, 108:12 Dr [2] - 112:15, 113:13 drainage [1] - 82:9 drawing [1] - 32:20 ducks [2] - 42:2, 90:21 Ducks [1] - 17:3 duration [1] - 70:1 during [25] - 9:4, 11:7, 11:9, 14:21, 14:23, 18:16, 19:11, 24:12, 29:23, 35:15, 38:5, 60:17, 61:8, 62:11, 63:3, 63:6, 63:7, 63:8, 63:10, 81:3, 81:24, 107:7, 107:9, 107:15, 107:16</p>	<p>88:14, 88:17, 94:23, 100:5, 100:9, 100:15, 101:14 Eagle [1] - 9:17 eagle's [2] - 22:7, 41:19 eagles [37] - 28:10, 28:19, 28:20, 29:1, 39:19, 39:24, 59:20, 60:4, 60:13, 70:21, 70:23, 70:24, 71:5, 71:8, 71:11, 72:20, 73:1, 73:6, 73:7, 73:10, 73:14, 87:23, 88:2, 88:4, 88:6, 89:22, 91:14, 92:22, 100:16, 103:9, 104:1, 105:23, 106:5, 107:16, 111:12 eagles' [1] - 87:13 eared [1] - 10:19 early [4] - 8:10, 10:8, 11:20, 107:6 easel [1] - 68:7 easier [1] - 67:4 eastern [7] - 10:19, 34:1, 34:5, 34:15, 59:22, 60:24, 78:1 easy [1] - 72:14 eat [1] - 86:10 EcoCAT [2] - 12:1, 12:12 ecological [1] - 89:12 ecologists [1] - 58:11 economic [2] - 5:16, 86:4 ecosystems [2] - 16:16, 58:7 Edgar [1] - 62:4 edge [2] - 24:23, 79:8 EDWARDS [1] - 3:21 Edwards [2] - 1:13, 3:20 effective [2] - 53:20, 58:14 effects [5] - 14:16, 51:8, 84:7, 84:14, 87:3 efficiency [2] - 40:19, 64:17 eight [3] - 92:5, 92:6, 96:22 either [4] - 30:7, 50:6, 71:20, 102:11 electromagnetic [2] - 44:12, 44:16 electronic [1] - 44:16 elevator [1] - 90:14 elsewhere [3] - 18:8,</p>	<p>27:10, 35:18 emphasis [1] - 59:20 emphasize [1] - 108:20 employ [1] - 58:11 end [7] - 9:4, 32:4, 42:4, 42:12, 72:13, 101:20, 109:19 endangered [4] - 74:11, 74:13, 74:16, 85:19 Endangered [2] - 9:16, 11:18 endangered-type [1] - 85:19 ended [2] - 77:3, 77:4 ENERGY [1] - 1:17 Energy [4] - 2:7, 7:1, 7:13, 31:19 energy [9] - 7:9, 7:16, 10:3, 19:5, 20:16, 50:21, 60:8, 108:14, 113:5 engineering [1] - 86:24 Engineers [2] - 15:12, 16:2 enhance [2] - 16:16, 17:9 enjoy [1] - 88:9 ensure [2] - 13:17, 14:24 entire [3] - 6:2, 40:20, 106:22 entities [1] - 17:5 entitled [1] - 115:6 environment [5] - 7:23, 16:9, 85:1, 85:4, 85:7 Environmental [1] - 57:16 environmental [10] - 5:15, 5:24, 6:4, 7:1, 7:4, 7:6, 7:11, 16:20, 43:23, 58:8 epoxy [1] - 86:20 equal [1] - 70:11 equals [1] - 21:11 era [1] - 99:11 eroded [1] - 86:18 erosion [1] - 86:16 especially [6] - 60:4, 60:20, 70:5, 72:3, 73:13, 74:15 Esq [4] - 1:8, 1:14, 1:16, 1:16 essentially [3] - 19:2, 23:8, 110:1 establish [1] - 17:9 estimate [5] - 36:12,</p>	<p>64:16, 64:18, 64:22, 69:9 estimated [1] - 80:20 estimating [1] - 52:5 et [2] - 55:12, 55:13 evening [2] - 80:12, 114:3 evenings [1] - 42:9 evidence [2] - 50:14, 91:6 exact [5] - 18:22, 18:24, 66:15, 67:14, 87:17 exactly [6] - 32:16, 36:6, 67:2, 99:7, 102:15, 111:15 eXAMINATION [2] - 75:10, 78:20 EXAMINATION [31] - 6:9, 18:4, 23:2, 26:17, 32:14, 35:21, 37:4, 39:5, 41:16, 43:6, 46:13, 49:12, 50:19, 51:17, 54:21, 55:24, 56:10, 58:1, 64:2, 68:21, 74:9, 80:9, 83:18, 84:22, 87:11, 93:6, 98:20, 101:7, 105:8, 109:10, 111:9 example [11] - 27:2, 29:11, 29:13, 36:4, 52:5, 53:15, 64:15, 73:6, 73:24, 94:23, 111:12 exceeding [1] - 22:2 excess [1] - 106:7 exchange [1] - 95:12 excused [2] - 56:19, 112:8 exhibit [12] - 31:11, 59:2, 59:3, 65:22, 66:10, 66:11, 66:12, 66:16, 66:23, 66:24, 67:9 EXHIBIT [1] - 2:5 Exhibit [17] - 2:6, 2:7, 2:8, 2:9, 5:23, 12:23, 31:18, 32:5, 48:8, 48:15, 48:24, 57:18, 65:8, 66:14, 67:21, 112:20 exist [1] - 73:2 existing [2] - 30:22, 58:22 exists [2] - 8:12, 93:10 expect [3] - 49:20, 60:11, 62:19 expectation [1] - 48:11</p>
--	---	---	--	---

<p>experience ^[4] - 6:21, 58:18, 89:9, 110:1</p> <p>expert ^[9] - 8:3, 20:14, 23:6, 28:21, 36:22, 59:4, 59:7, 76:22, 113:1</p> <p>expertise ^[5] - 28:9, 41:6, 43:21, 44:2, 94:9</p> <p>experts ^[2] - 34:8, 97:19</p> <p>explain ^[4] - 18:18, 56:4, 64:4, 66:3</p> <p>extended ^[1] - 87:22</p> <p>extent ^[7] - 7:23, 15:22, 35:2, 35:9, 49:4, 66:8, 102:6</p> <p>extra ^[1] - 32:3</p> <p>extrapolate ^[1] - 86:9</p> <p>extrapolating ^[1] - 40:23</p> <p>extreme ^[1] - 106:22</p>	<p>102:8</p> <p>fatality ^[3] - 88:17, 94:23, 94:24</p> <p>favor ^[1] - 6:5</p> <p>feathering ^[3] - 19:2, 19:7, 96:11</p> <p>features ^[1] - 51:4</p> <p>federal ^[7] - 9:15, 13:14, 34:9, 46:16, 46:22, 86:19, 110:23</p> <p>federally ^[3] - 10:18, 60:14, 94:24</p> <p>federally-listed ^[3] - 10:18, 60:14, 94:24</p> <p>feed ^[1] - 100:16</p> <p>feedback ^[1] - 10:12</p> <p>feet ^[8] - 11:6, 18:12, 25:9, 49:18, 91:22, 92:5, 92:6, 101:11</p> <p>fence ^[2] - 75:1, 75:5</p> <p>few ^[5] - 26:16, 65:18, 72:7, 73:9, 84:19</p> <p>fewer ^[2] - 52:22, 55:1</p> <p>field ^[4] - 7:7, 13:21, 15:10, 58:19</p> <p>fields ^[4] - 39:18, 61:18, 73:12, 82:12</p> <p>fight ^[1] - 37:11</p> <p>figure ^[11] - 9:23, 40:9, 40:17, 40:18, 52:12, 53:22, 60:3, 69:1, 69:7, 100:9, 104:4</p> <p>figured ^[2] - 53:8, 72:10</p> <p>figuring ^[2] - 27:23, 77:13</p> <p>finally ^[2] - 15:2, 16:5</p> <p>findings ^[3] - 47:7, 55:8, 59:10</p> <p>fine ^[6] - 21:16, 35:12, 37:10, 37:12, 83:5, 94:4</p> <p>finished ^[3] - 5:16, 31:17, 45:15</p> <p>fins ^[1] - 62:13</p> <p>firm ^[1] - 109:15</p> <p>first ^[9] - 3:2, 6:3, 9:12, 16:11, 17:1, 69:1, 106:13, 107:8, 107:15</p> <p>fish ^[1] - 18:6</p> <p>Fish ^[49] - 8:18, 9:12, 9:14, 9:16, 10:1, 10:7, 10:24, 11:11, 12:16, 18:6, 18:14, 18:16, 19:13, 21:18, 21:19, 22:4, 23:21, 26:3, 28:16, 32:16, 32:18, 32:24, 34:2, 34:6, 39:23, 40:5,</p>	<p>40:16, 46:17, 55:15, 59:11, 60:7, 60:23, 76:1, 77:7, 77:18, 85:8, 88:18, 100:7, 100:13, 103:18, 104:3, 104:7, 104:13, 106:3, 106:8, 108:13, 110:5, 110:14, 110:16</p> <p>five ^[10] - 7:12, 13:11, 17:17, 19:4, 21:13, 22:13, 22:16, 36:9, 82:5, 96:24</p> <p>five-acre ^[1] - 13:11</p> <p>five-minute ^[1] - 17:17</p> <p>flew ^[1] - 90:16</p> <p>flexibility ^[1] - 55:3</p> <p>fly ^[9] - 71:17, 73:12, 75:16, 81:5, 88:3, 90:15, 101:17, 101:18, 102:15</p> <p>fly-aways ^[1] - 81:5</p> <p>flying ^[3] - 42:10, 90:6, 102:13</p> <p>focus ^[4] - 16:17, 88:11, 107:16, 107:17</p> <p>focused ^[4] - 73:17, 81:10, 81:16, 91:15</p> <p>folded ^[1] - 68:5</p> <p>folks ^[1] - 57:12</p> <p>follow ^[10] - 15:11, 17:13, 26:8, 30:20, 48:4, 48:16, 55:22, 63:24, 75:24, 108:15</p> <p>follow-up ^[7] - 15:11, 17:13, 30:20, 48:4, 48:16, 55:22, 63:24</p> <p>followed ^[2] - 13:21, 15:13</p> <p>following ^[5] - 10:2, 15:1, 25:21, 60:7, 85:18</p> <p>follows ^[1] - 26:6</p> <p>food ^[2] - 69:24, 82:12</p> <p>FOR ^[4] - 1:3, 1:14, 1:15, 2:2</p> <p>foran ^[1] - 3:17</p> <p>force ^[4] - 44:4, 44:5, 44:9, 45:23</p> <p>ford ^[1] - 17:3</p> <p>Ford ^[1] - 17:4</p> <p>foresee ^[2] - 71:9, 71:19</p> <p>forest ^[1] - 61:10</p> <p>forested ^[3] - 13:10, 62:14, 99:8</p> <p>forestry ^[1] - 7:2</p> <p>forests ^[1] - 63:5</p>	<p>forget ^[1] - 89:2</p> <p>form ^[1] - 40:23</p> <p>formal ^[1] - 12:11</p> <p>forms ^[1] - 108:5</p> <p>forth ^[1] - 97:21</p> <p>four ^[4] - 67:2, 67:7, 75:22, 82:5</p> <p>fraction ^[1] - 40:22</p> <p>frame ^[1] - 80:24</p> <p>frequency ^[1] - 51:21</p> <p>Friends ^[1] - 17:6</p> <p>fringed ^[1] - 34:5</p> <p>front ^[1] - 59:2</p> <p>full ^[2] - 68:4, 108:22</p> <p>full-sized ^[1] - 68:4</p> <p>fully ^[4] - 9:10, 15:23, 72:10</p> <p>function ^[1] - 109:21</p> <p>fund ^[1] - 17:9</p> <p>fungus ^[1] - 74:17</p> <p>future ^[2] - 14:12, 88:16</p>	<p>Gershon ^[12] - 1:16, 5:18, 17:13, 46:10, 47:20, 48:22, 54:17, 56:20, 57:14, 64:1, 105:5, 112:10</p> <p>GERSHON ^[50] - 5:20, 6:10, 8:6, 17:14, 21:6, 21:10, 21:14, 22:10, 31:13, 31:16, 31:23, 32:2, 32:9, 46:11, 46:14, 48:7, 48:10, 48:23, 54:19, 54:22, 56:22, 57:1, 57:9, 57:15, 58:2, 64:3, 66:12, 66:17, 67:1, 67:8, 67:18, 68:3, 68:11, 68:14, 79:11, 90:24, 92:7, 93:17, 97:9, 97:12, 105:6, 105:9, 109:4, 111:18, 111:22, 112:1, 112:14, 112:24, 113:16, 114:1</p> <p>given ^[5] - 6:20, 17:4, 17:8, 24:17, 113:5</p> <p>glass ^[1] - 90:11</p> <p>glass-covered ^[1] - 90:11</p> <p>glide ^[1] - 101:20</p> <p>Golden ^[1] - 9:17</p> <p>golden ^[8] - 28:20, 60:13, 71:10, 72:20, 73:1, 73:6, 73:7, 73:14</p> <p>gonna ^[31] - 4:8, 8:13, 8:17, 14:2, 17:16, 17:23, 18:20, 20:21, 21:3, 24:10, 24:12, 25:13, 29:22, 30:20, 36:21, 37:6, 41:22, 48:2, 48:21, 52:19, 53:19, 57:5, 57:12, 69:22, 77:15, 77:22, 78:8, 88:14, 92:16, 97:21</p> <p>GOOSE ^[1] - 1:2</p> <p>goose ^[1] - 105:19</p> <p>Goose ^[11] - 4:4, 9:9, 10:8, 10:15, 11:5, 12:6, 14:15, 16:18, 31:3, 33:13, 103:13</p> <p>gotcha ^[4] - 56:8, 76:20, 110:9</p> <p>government ^[2] - 38:18, 79:20</p> <p>Grand ^[1] - 17:5</p> <p>grant ^[2] - 16:6, 16:10</p> <p>grants ^[1] - 16:24</p> <p>grass ^[2] - 62:1, 62:5</p>
F				
<p>F6 ^[2] - 12:23, 33:12</p> <p>FACILITATOR ^[1] - 1:8</p> <p>facilities ^[3] - 9:2, 15:20, 15:23</p> <p>fact ^[3] - 33:21, 82:9, 88:8</p> <p>factor ^[3] - 43:23, 69:5, 69:19</p> <p>factors ^[1] - 31:4</p> <p>fair ^[2] - 106:19</p> <p>falcon ^[1] - 101:19</p> <p>fall ^[2] - 11:9, 63:6</p> <p>familiar ^[3] - 39:1, 111:15, 112:16</p> <p>far ^[6] - 72:11, 82:2, 91:19, 91:20, 92:1, 92:3</p> <p>farm ^[8] - 70:12, 82:19, 99:12, 101:23, 102:12, 102:19, 106:23, 109:1</p> <p>Farm ^[1] - 4:5</p> <p>farmed ^[1] - 39:17</p> <p>farmers ^[1] - 84:8</p> <p>farmland ^[4] - 24:3, 101:23, 102:2, 108:2</p> <p>farms ^[4] - 36:13, 42:5, 102:9, 103:17</p> <p>fast ^[4] - 19:8, 19:19, 21:10, 22:11</p> <p>faster ^[1] - 101:18</p> <p>fatalities ^[5] - 22:15, 36:10, 70:14, 71:18,</p>				
G				
<p>G-a-l-l-a-g-h-e-r ^[1] - 98:19</p> <p>G-e-i-g-e-r ^[1] - 6:14</p> <p>GALLAGHE ^[1] - 98:18</p> <p>Gallagher ^[4] - 98:14, 98:15, 98:16, 98:18</p> <p>GALLAGHER ^[1] - 98:21</p> <p>gather ^[1] - 101:11</p> <p>geese ^[11] - 42:2, 42:8, 70:16, 73:23, 74:3, 81:23, 91:16, 101:24, 102:1, 105:17, 105:18</p> <p>Geiger ^[10] - 2:3, 2:6, 6:4, 6:13, 6:19, 19:16, 49:9, 56:19, 87:13, 92:11</p> <p>Geiger's ^[1] - 49:1</p> <p>general ^[15] - 7:20, 15:7, 24:6, 31:6, 31:7, 36:15, 39:10, 50:6, 56:14, 70:16, 76:13, 78:7, 81:18, 100:12</p> <p>generalist ^[1] - 35:11</p> <p>generalizations ^[1] - 81:5</p> <p>generally ^[3] - 65:2, 65:3, 100:7</p> <p>generated ^[1] - 113:5</p> <p>generating ^[1] - 20:16</p> <p>geography ^[1] - 76:13</p> <p>Georgie ^[1] - 7:3</p>				

<p>grassland [2] - 17:6, 17:9</p> <p>grassy [1] - 62:13</p> <p>gravity [1] - 113:5</p> <p>great [3] - 5:21, 20:2, 55:11</p> <p>greater [2] - 49:22, 55:2</p> <p>greatest [5] - 7:23, 15:22, 35:9, 66:8, 71:6</p> <p>Greenfield [2] - 1:19, 115:3</p> <p>ground [12] - 10:14, 14:1, 51:4, 69:14, 71:18, 73:17, 91:19, 91:21, 92:4, 93:24, 110:15, 110:19</p> <p>groundwater [2] - 51:8, 86:22</p> <p>group [1] - 25:20</p> <p>groups [2] - 81:20, 81:23</p> <p>guess [21] - 25:19, 27:19, 35:6, 37:17, 37:20, 39:10, 50:21, 50:22, 72:19, 74:12, 75:19, 80:12, 84:12, 96:10, 96:11, 98:7, 98:8, 107:8, 109:20, 110:9</p> <p>guidance [6] - 10:2, 10:5, 26:4, 63:23, 76:1, 106:3</p> <p>guidelines [10] - 10:4, 13:22, 15:12, 25:22, 26:1, 39:24, 60:8, 60:9, 85:10, 108:14</p> <p>guy [1] - 98:9</p> <p>guys [4] - 26:9, 97:19, 102:7, 110:11</p>	<p>62:7, 62:10, 62:11, 62:16, 62:23, 66:7, 70:9, 70:11, 74:13, 74:14, 74:20, 74:23, 75:4, 85:1, 85:3, 95:14, 105:14, 108:6</p> <p>Habitats [2] - 2:8, 31:19</p> <p>habitats [7] - 8:24, 16:16, 23:18, 29:18, 33:13, 34:13, 61:2</p> <p>habits [1] - 77:1</p> <p>half [4] - 41:19, 100:15, 100:19, 106:4</p> <p>half-a-mile [1] - 100:15</p> <p>half-mile [1] - 106:4</p> <p>hand [1] - 57:21</p> <p>handful [1] - 86:11</p> <p>handling [1] - 111:16</p> <p>hands [1] - 84:19</p> <p>hangs [1] - 62:2</p> <p>happy [2] - 4:14, 67:8</p> <p>hard [3] - 77:22, 81:12, 106:20</p> <p>harder [1] - 53:7</p> <p>Harper [2] - 1:7, 3:8</p> <p>HARPER [11] - 3:9, 3:13, 3:15, 3:17, 3:20, 3:22, 3:24, 5:3, 5:5, 5:7, 5:9</p> <p>Harrier [2] - 60:15, 71:16</p> <p>Harrington [5] - 1:10, 3:9, 37:3, 47:11, 109:9</p> <p>HARRINGTON [13] - 3:10, 23:1, 23:3, 37:5, 50:20, 55:20, 56:1, 68:18, 75:8, 75:11, 79:15, 90:14, 109:11</p> <p>hate [2] - 73:15, 88:5</p> <p>hawk [2] - 101:14, 103:21</p> <p>hawks [6] - 39:20, 39:21, 71:14, 78:4, 91:14, 103:9</p> <p>head [7] - 41:20, 44:6, 44:18, 56:7, 70:19, 75:14, 78:2</p> <p>hear [3] - 6:16, 25:18, 81:12</p> <p>heard [7] - 43:14, 43:15, 44:4, 44:15, 48:4, 55:7, 101:9</p> <p>hearing [15] - 4:4, 4:7, 4:13, 8:5, 38:19, 38:22, 46:6, 46:9,</p>	<p>59:7, 79:19, 79:22, 79:24, 97:7, 105:2, 112:13</p> <p>HEARING [1] - 1:8</p> <p>hearings [2] - 68:9, 112:17</p> <p>height [6] - 49:18, 50:1, 50:2, 51:23, 73:8, 102:3</p> <p>Held [1] - 1:5</p> <p>helicopters [2] - 44:20, 44:21</p> <p>help [2] - 47:8, 77:16</p> <p>Henrick [1] - 3:24</p> <p>hereby [1] - 115:8</p> <p>herons [2] - 90:20, 91:16</p> <p>HERRINGTON [2] - 4:17, 5:4</p> <p>Herrington [1] - 5:3</p> <p>hi [1] - 6:24</p> <p>high [6] - 71:17, 73:3, 78:4, 90:8, 102:1, 102:2</p> <p>high-risk [1] - 73:3</p> <p>higher [8] - 11:10, 50:12, 51:20, 54:3, 54:24, 55:17, 70:24, 80:15</p> <p>highlighting [2] - 49:2, 49:4</p> <p>hire [1] - 43:9</p> <p>Historic [4] - 13:15, 13:16, 14:6, 14:17</p> <p>historic [1] - 13:24</p> <p>History [1] - 8:17</p> <p>hit [6] - 30:11, 54:4, 63:12, 64:13, 73:2, 102:4</p> <p>hits [2] - 19:6, 92:3</p> <p>hold [8] - 18:23, 44:22, 44:24, 45:12, 94:1, 97:20</p> <p>home [1] - 91:17</p> <p>honestly [1] - 36:6</p> <p>hope [2] - 5:21, 44:20</p> <p>hopefully [1] - 113:9</p> <p>hoping [1] - 44:12</p> <p>hour [12] - 20:24, 21:1, 21:11, 22:12, 22:13, 76:7, 76:12, 88:23, 89:2, 91:10, 101:13, 101:15</p> <p>hours [2] - 89:6, 106:12</p> <p>house [3] - 23:8, 88:3, 101:23</p> <p>huge [1] - 60:20</p> <p>humans [1] - 83:24</p> <p>hundred [1] - 42:8</p>	<p>hundreds [1] - 89:5</p> <p>hunting [3] - 28:13, 73:14, 73:16</p> <p>hypothetical [1] - 97:22</p> <p>hypothetically [1] - 23:16</p>	<p>I</p> <p>i.e [1] - 35:5</p> <p>ice [5] - 112:18, 112:20, 113:2, 113:7, 113:13</p> <p>idea [7] - 61:9, 66:5, 71:21, 71:24, 76:3, 97:19, 98:4</p> <p>identified [9] - 13:19, 14:22, 61:22, 66:14, 68:2, 97:12, 107:22, 108:21, 113:3</p> <p>identify [13] - 15:13, 37:19, 38:1, 55:1, 58:6, 60:19, 61:9, 62:4, 64:12, 66:5, 67:19, 106:24, 107:14</p> <p>IDNR [17] - 11:20, 12:12, 12:16, 13:2, 13:7, 16:2, 18:15, 19:12, 25:21, 26:3, 32:17, 34:1, 35:12, 35:18, 40:6, 46:17, 110:14</p> <p>IDNR's [1] - 25:22</p> <p>IL [1] - 1:5</p> <p>ill [1] - 4:7</p> <p>Illinois [24] - 7:12, 8:16, 8:17, 11:16, 11:18, 11:19, 12:2, 13:14, 13:16, 15:5, 16:24, 31:7, 44:7, 46:17, 46:19, 58:21, 59:12, 60:9, 63:4, 79:5, 81:22, 85:9, 93:13, 115:5</p> <p>ILLINOIS [1] - 1:1</p> <p>image [3] - 66:15, 67:6, 67:15</p> <p>impact [28] - 5:16, 8:14, 30:6, 52:2, 52:13, 52:20, 54:2, 54:10, 55:11, 55:17, 63:14, 70:9, 71:2, 71:4, 78:24, 85:1, 85:4, 85:19, 86:4, 86:7, 86:21, 88:8, 88:13, 89:22, 92:18, 97:13, 105:16, 108:6</p> <p>impacted [4] - 42:3,</p>	<p>42:4, 85:24, 86:1</p> <p>impacting [1] - 105:14</p> <p>impacts [33] - 7:22, 8:10, 9:3, 9:9, 13:8, 13:18, 14:19, 15:21, 15:23, 16:3, 16:8, 18:16, 18:23, 19:11, 35:14, 53:2, 54:6, 54:11, 55:13, 63:2, 63:6, 63:22, 66:7, 71:10, 71:12, 71:20, 85:11, 85:16, 86:12, 90:2, 94:18, 95:14, 108:1</p> <p>implementation [1] - 72:23</p> <p>implemented [4] - 13:9, 16:10, 53:12, 71:22</p> <p>improve [1] - 90:2</p> <p>improved [1] - 89:13</p> <p>improvements [1] - 108:3</p> <p>in-house [1] - 23:8</p> <p>in-the-field [1] - 13:21</p> <p>inadvertently [1] - 14:23</p> <p>inaudible [1] - 8:24</p> <p>inches [1] - 62:1</p> <p>include [7] - 11:18, 13:2, 31:7, 51:2, 61:2, 108:7, 108:17</p> <p>included [7] - 10:15, 12:6, 17:7, 30:13, 59:19, 67:3, 107:23</p> <p>includes [7] - 9:16, 10:18, 11:5, 61:10, 65:13, 90:7, 90:9</p> <p>including [5] - 9:9, 38:18, 46:18, 55:17, 79:20</p> <p>incorporate [1] - 69:10</p> <p>incorporated [1] - 14:13</p> <p>incorrect [1] - 109:16</p> <p>increase [3] - 24:1, 85:15, 86:5</p> <p>increased [1] - 71:7</p> <p>increases [1] - 69:24</p> <p>INDEX [1] - 2:1</p> <p>Indiana [2] - 10:18, 99:9</p> <p>indicate [2] - 49:20, 52:1</p> <p>indicated [2] - 36:2, 103:22</p> <p>indicates [2] - 49:19, 107:24</p> <p>indicating [1] - 71:17</p>
--	--	---	---	---	---

<p>individual [3] - 25:11, 40:19, 96:7</p> <p>individuals [1] - 33:3</p> <p>industry [3] - 7:15, 9:14, 16:11</p> <p>inform [8] - 9:2, 10:13, 11:3, 27:6, 27:15, 27:21, 28:4, 40:1</p> <p>information [23] - 7:19, 8:21, 9:1, 10:11, 11:3, 12:2, 14:12, 15:10, 17:18, 26:6, 30:15, 30:17, 33:8, 36:16, 49:10, 53:17, 55:15, 74:5, 80:12, 82:14, 96:15, 96:21, 100:13</p> <p>informed [1] - 26:20</p> <p>infrastructure [2] - 15:17, 50:6</p> <p>inhabit [1] - 62:2</p> <p>inhabits [1] - 61:24</p> <p>initial [7] - 5:24, 9:21, 10:6, 10:10, 11:21, 12:1, 12:2</p> <p>initiated [1] - 10:8</p> <p>insects [1] - 86:10</p> <p>installations [1] - 30:22</p> <p>installed [1] - 23:16</p> <p>Institute [3] - 7:14, 31:12, 31:22</p> <p>intent [1] - 70:3</p> <p>intention [1] - 79:2</p> <p>interaction [1] - 58:10</p> <p>Interactions [2] - 2:7, 31:19</p> <p>interested [2] - 38:20, 79:23</p> <p>interim [1] - 4:18</p> <p>intern [1] - 58:19</p> <p>interpret [1] - 111:3</p> <p>interpretation [1] - 10:10</p> <p>interrupt [1] - 19:17</p> <p>introduce [1] - 6:3</p> <p>invalid [2] - 52:8, 52:9</p> <p>involved [1] - 110:24</p> <p>irreversible [1] - 92:11</p> <p>issue [4] - 47:1, 80:17, 104:2, 110:2</p> <p>issued [1] - 31:20</p> <p>issues [8] - 7:16, 44:10, 51:9, 55:7, 82:15, 105:7, 112:18, 113:10</p> <p>it'll [1] - 106:17</p> <p>item [2] - 13:6, 23:24</p> <p>items [3] - 14:1, 33:24, 106:21</p>	<p style="text-align: center;">J</p> <p>J-e-n-n-i-e [1] - 6:13</p> <p>January [1] - 115:20</p> <p>Jason [2] - 113:8, 113:14</p> <p>Jennie [9] - 2:3, 6:3, 6:13, 6:19, 6:24, 8:3, 48:24, 80:19</p> <p>Jennie's [1] - 49:3</p> <p>Jennifer [1] - 1:7</p> <p>Jerry [1] - 1:13</p> <p>Jim [1] - 1:10</p> <p>join [1] - 3:2</p> <p>Jonathan [2] - 112:15, 113:13</p> <p>Jones [1] - 3:22</p> <p>JONES [1] - 3:23</p> <p>judge [2] - 104:11, 110:12</p> <p>Judicial [1] - 115:5</p> <p>July [1] - 35:2</p> <p>jury [1] - 110:12</p> <p style="text-align: center;">K</p> <p>Kain's [1] - 4:13</p> <p>Kains [2] - 4:6, 113:22</p> <p>keeping [1] - 88:20</p> <p>kestrels [1] - 71:14</p> <p>key [1] - 110:13</p> <p>Keyt [4] - 1:8, 1:14, 4:18, 6:1</p> <p>KEYT [87] - 4:3, 5:13, 8:4, 17:12, 17:16, 17:23, 19:16, 19:19, 19:21, 20:2, 22:23, 26:15, 32:6, 32:11, 32:22, 37:1, 38:15, 39:4, 41:10, 42:22, 43:5, 44:22, 44:24, 45:6, 45:12, 45:16, 45:19, 46:3, 46:6, 47:20, 48:1, 48:13, 48:21, 49:7, 50:17, 51:15, 54:15, 55:21, 56:9, 56:17, 56:24, 57:5, 57:12, 57:20, 59:5, 63:24, 66:9, 66:15, 66:19, 67:5, 67:13, 68:1, 68:10, 68:13, 68:15, 68:20, 74:7, 78:17, 79:17, 83:2, 83:4, 83:7, 83:11, 83:13, 84:17, 87:6, 91:2, 91:5, 91:8, 92:24, 93:4, 93:20, 94:1, 97:20, 97:24, 98:2, 98:5, 98:11, 101:3,</p>	<p>104:23, 109:6, 111:5, 112:4, 112:7, 112:23, 113:11, 113:17</p> <p>kill [12] - 36:3, 36:4, 49:22, 52:4, 70:7, 80:20, 95:8, 98:23, 103:6, 103:11, 103:13, 103:20</p> <p>killdeer [1] - 42:16</p> <p>killed [7] - 64:24, 90:6, 92:15, 97:3, 97:4, 97:8, 103:3</p> <p>killing [2] - 55:18, 95:23</p> <p>kills [2] - 55:13, 97:13</p> <p>kind [42] - 8:7, 8:24, 9:13, 9:18, 12:1, 14:1, 14:17, 21:24, 26:20, 26:23, 27:6, 27:15, 27:16, 27:18, 27:20, 28:7, 29:16, 31:3, 31:7, 35:10, 49:20, 50:5, 52:12, 53:9, 62:13, 69:2, 72:17, 74:24, 76:2, 76:10, 77:8, 80:11, 80:23, 81:8, 81:12, 82:3, 82:13, 86:1, 96:10, 102:18, 106:17, 109:18</p> <p>kinds [1] - 84:1</p> <p>Kirtland [5] - 12:8, 34:7, 34:17, 59:23, 62:11</p> <p>knowing [1] - 64:16</p> <p>knowledge [3] - 71:23, 79:2, 96:4</p> <p>known [3] - 13:20, 15:7, 59:14</p> <p>knows [1] - 48:24</p> <p>Kyle [5] - 1:11, 32:19, 32:21, 33:1, 37:7</p> <p style="text-align: center;">L</p> <p>L-o-r-i [2] - 41:14, 87:9</p> <p>label [1] - 30:10</p> <p>lack [3] - 80:11, 83:20, 86:6</p> <p>Lake [1] - 102:12</p> <p>lake [6] - 42:6, 42:8, 87:24, 88:1, 88:3, 102:11</p> <p>Lakes [2] - 15:3, 46:19</p> <p>land [2] - 10:3, 108:14</p> <p>Land [2] - 17:1, 17:5</p> <p>land-based [2] - 10:3, 108:14</p> <p>lands [2] - 12:4, 29:4</p>	<p>landscape [9] - 11:8, 14:3, 24:1, 24:11, 27:24, 28:5, 38:5, 55:16, 73:15</p> <p>landscapes [1] - 74:4</p> <p>large [15] - 15:17, 39:24, 60:19, 65:7, 66:18, 72:18, 78:7, 78:12, 81:20, 81:23, 88:15, 90:7, 90:12, 105:19, 107:18</p> <p>largely [2] - 61:13, 103:7</p> <p>larger [11] - 50:9, 52:6, 52:8, 52:22, 54:1, 61:6, 65:24, 70:24, 76:19, 103:7</p> <p>Larson [1] - 3:9</p> <p>last [11] - 5:14, 6:13, 9:19, 30:8, 32:20, 32:22, 34:10, 42:7, 49:10, 73:19, 86:15</p> <p>lately [1] - 86:17</p> <p>latest [1] - 100:13</p> <p>law [2] - 12:13, 107:11</p> <p>laws [5] - 9:15, 46:18, 46:23, 85:22, 107:2</p> <p>layouts [1] - 52:15</p> <p>lead [2] - 7:11, 32:18</p> <p>leads [2] - 75:19, 103:12</p> <p>learn [2] - 69:23, 70:17</p> <p>learning [1] - 81:7</p> <p>least [9] - 24:2, 29:16, 52:17, 53:3, 76:5, 82:20, 88:12, 93:14, 100:15</p> <p>leaves [1] - 60:18</p> <p>led [1] - 89:23</p> <p>left [2] - 5:14, 82:11</p> <p>lends [1] - 78:4</p> <p>less [6] - 50:7, 61:12, 61:19, 62:14, 62:22</p> <p>letters [1] - 12:11</p> <p>level [6] - 54:6, 54:10, 71:1, 71:4, 103:13, 113:6</p> <p>levels [1] - 54:8</p> <p>licensed [1] - 38:21</p> <p>likelihood [1] - 49:22</p> <p>likely [6] - 40:18, 54:4, 54:7, 71:1, 82:1, 108:16</p> <p>limited [3] - 14:15, 77:12, 85:21</p> <p>limiting [1] - 39:13</p> <p>Lincoln [1] - 17:1</p> <p>line [4] - 35:17, 65:23, 77:1, 83:5</p>	<p>lineal [1] - 15:23</p> <p>linear [2] - 15:19, 47:6</p> <p>lined [1] - 79:8</p> <p>lines [3] - 15:20, 50:22, 72:17</p> <p>list [4] - 69:2, 74:11, 104:8, 112:12</p> <p>listed [21] - 10:18, 11:23, 12:8, 12:9, 12:10, 13:3, 14:16, 14:18, 19:9, 28:1, 34:24, 60:5, 60:14, 60:15, 61:9, 61:13, 62:24, 71:16, 74:15, 94:24, 104:1</p> <p>listing [1] - 37:14</p> <p>literature [1] - 72:4</p> <p>live [5] - 42:6, 44:7, 61:4, 70:17, 71:11</p> <p>lived [1] - 82:17</p> <p>livelihood [1] - 84:11</p> <p>livestock [2] - 84:9, 104:5</p> <p>LLC [2] - 1:2, 112:15</p> <p>Lloyd [1] - 51:20</p> <p>loader [1] - 51:23</p> <p>local [5] - 16:15, 16:16, 38:18, 79:20</p> <p>locate [1] - 112:3</p> <p>located [4] - 24:4, 55:1, 61:18, 105:18</p> <p>location [2] - 24:18, 55:3</p> <p>locations [6] - 24:18, 47:3, 47:8, 76:15, 76:17, 87:17</p> <p>long-eared [1] - 10:19</p> <p>long-term [1] - 60:1</p> <p>look [16] - 21:20, 21:21, 21:24, 28:22, 48:3, 54:8, 58:12, 66:3, 69:15, 71:24, 89:4, 95:5, 95:20, 107:15, 110:22</p> <p>looked [3] - 51:8, 60:17, 60:24</p> <p>lookin' [1] - 33:11</p> <p>looking [16] - 8:11, 15:7, 24:1, 24:9, 27:3, 33:3, 33:6, 33:10, 40:21, 43:9, 52:8, 61:3, 61:17, 62:12, 79:7, 84:6</p> <p>looks [3] - 4:1, 49:16, 66:22</p> <p>loons [2] - 42:2, 90:20</p> <p>Lori [2] - 41:14, 87:9</p> <p>loss [9] - 41:3, 74:13, 74:14, 74:20, 74:23, 75:4, 84:24, 85:3,</p>
---	--	--	---	---

<p>86:4 lost [2] - 104:17, 104:20 loud [1] - 65:21 LOVIN [7] - 3:12, 4:21, 5:6, 32:13, 32:15, 74:10, 75:9 Lovin [3] - 1:11, 3:11, 5:5 low [4] - 9:5, 40:7, 63:14, 92:3 low-impact [1] - 63:14 lower [9] - 19:3, 19:8, 51:23, 51:24, 52:16, 52:18, 53:1 Loyd [1] - 1:10</p>	<p>59:22, 60:24 master's [2] - 7:3, 58:17 math [2] - 20:22, 22:11 matter [4] - 4:11, 29:3, 59:7, 78:12 matters [1] - 29:8 MCKANIC [2] - 83:16, 83:19 McKanic [1] - 83:16 meadows [1] - 62:13 mean [12] - 20:12, 21:22, 25:19, 25:23, 53:2, 73:12, 75:16, 75:18, 77:11, 90:15, 91:13, 91:20 means [6] - 11:6, 11:9, 20:24, 33:5, 54:24, 103:20 measure [3] - 40:24, 41:1, 41:2 measures [7] - 11:4, 12:19, 13:1, 14:14, 95:13, 95:15, 99:10 meet [9] - 10:7, 10:23, 12:16, 26:1, 59:13, 59:17, 79:4, 88:18, 92:16 meeting [5] - 3:1, 3:7, 17:24, 32:4, 67:23 meetings [1] - 26:2 meets [2] - 63:4, 63:13 megawatt [4] - 16:14, 49:18, 52:16, 54:24 Member [1] - 47:11 member [2] - 7:13, 50:23 MEMBERS [2] - 1:9, 1:12 members [29] - 22:24, 32:12, 38:16, 38:23, 41:11, 42:23, 46:4, 48:2, 48:15, 48:17, 49:8, 50:18, 54:16, 55:22, 56:18, 57:7, 74:8, 78:18, 79:18, 80:1, 83:13, 84:18, 88:4, 93:1, 98:12, 104:24, 109:7, 111:6, 112:5 mention [2] - 75:13, 104:4 mentioned [10] - 9:19, 16:6, 39:19, 41:18, 42:2, 80:19, 82:13, 102:17, 103:2, 106:21 mentions [2] - 54:1, 72:20</p>	<p>message [1] - 4:7 messages [1] - 62:18 meters [8] - 19:4, 20:19, 21:11, 22:12, 22:13, 22:16, 36:9, 96:24 method [1] - 47:15 methodology [3] - 40:5, 40:15, 77:9 methods [1] - 14:5 Michele [1] - 80:4 micro [1] - 86:17 microphone [2] - 65:21, 66:2 mid-2019 [1] - 11:21 Midwest [4] - 31:6, 58:20, 60:12, 75:16 might [15] - 8:20, 9:24, 10:11, 12:3, 12:4, 21:4, 28:7, 31:9, 36:4, 37:13, 60:11, 86:23, 95:4, 95:20, 100:11 migrating [3] - 80:16, 82:1, 91:10 migration [4] - 11:9, 63:6, 81:6, 84:5 Migratory [2] - 9:18, 107:20 migratory [12] - 17:3, 42:1, 56:15, 70:4, 80:13, 80:15, 81:1, 81:9, 81:20, 82:8, 82:15, 82:19 mile [9] - 28:15, 28:18, 28:23, 29:3, 60:22, 82:10, 100:15, 106:4, 113:4 miles [25] - 11:12, 20:24, 21:1, 21:11, 21:17, 21:21, 21:23, 22:2, 22:12, 22:13, 25:5, 28:10, 28:15, 28:16, 29:9, 41:19, 62:21, 87:19, 87:21, 100:6, 100:8, 100:19, 101:12, 101:15, 106:2 million [1] - 80:21 mind [2] - 21:7, 33:5 minimal [1] - 29:23 minimization [3] - 11:4, 12:19, 13:1 minimize [9] - 7:22, 8:9, 9:10, 9:11, 13:18, 15:21, 16:8, 18:20, 78:23 minimizing [1] - 9:3 minimum [4] - 11:5, 11:12, 22:19, 22:21</p>	<p>minute [2] - 17:17, 70:22 miss [1] - 47:12 misunderstood [1] - 43:13 mitigate [2] - 9:11, 95:13 mitigation [1] - 14:14 moderator [1] - 4:18 monarch [1] - 42:3 money [4] - 16:13, 16:21, 16:22 monitor [2] - 9:5, 63:11 monitoring [9] - 24:10, 40:3, 42:13, 63:10, 64:5, 69:21, 77:6, 89:21, 94:17 month [5] - 76:6, 76:12, 88:24, 89:2, 107:10 monthly [1] - 27:23 months [1] - 88:24 Monticello [1] - 1:5 Moore [2] - 1:18, 54:23 Morgan [1] - 17:2 mornings [1] - 42:8 mortality [3] - 72:6, 94:17, 96:23 most [22] - 16:20, 19:11, 35:14, 39:8, 47:14, 49:16, 51:21, 60:10, 69:10, 73:9, 75:2, 80:15, 81:22, 88:14, 88:22, 96:16, 96:21, 101:17, 103:17, 106:22, 110:8 mostly [14] - 24:2, 28:24, 58:11, 61:18, 62:4, 62:5, 62:15, 62:19, 71:13, 72:24, 85:21, 86:12, 88:13, 92:19 motion [2] - 4:12, 4:17 Mountaineer [2] - 99:3, 99:5 move [8] - 19:8, 38:17, 38:19, 45:3, 45:19, 71:1, 81:23, 88:15 movement [1] - 73:22 movements [3] - 73:12, 74:1, 88:14 moving [3] - 19:10, 54:2, 81:5 mowed [3] - 35:5, 62:3, 62:6 mowing [1] - 35:6 MR [180] - 3:10, 3:12,</p>	<p>3:16, 3:19, 3:21, 4:3, 4:17, 4:21, 4:22, 5:4, 5:6, 5:10, 5:13, 5:20, 6:10, 8:4, 8:6, 17:12, 17:14, 17:16, 17:23, 18:5, 19:16, 19:19, 19:21, 20:2, 21:6, 21:10, 21:14, 22:10, 22:23, 23:1, 23:3, 26:15, 26:16, 26:18, 31:13, 31:16, 31:23, 32:2, 32:6, 32:9, 32:11, 32:13, 32:15, 32:22, 37:1, 37:5, 38:15, 39:4, 41:10, 42:22, 43:5, 44:22, 44:24, 45:6, 45:12, 45:16, 45:19, 46:3, 46:6, 46:11, 46:14, 47:20, 48:1, 48:7, 48:9, 48:10, 48:13, 48:21, 48:23, 49:7, 50:17, 50:20, 51:15, 51:18, 54:15, 54:19, 54:22, 55:20, 55:21, 56:1, 56:9, 56:11, 56:17, 56:22, 56:24, 57:1, 57:5, 57:9, 57:12, 57:15, 57:20, 58:2, 59:5, 63:24, 64:3, 66:9, 66:12, 66:15, 66:17, 66:19, 67:1, 67:5, 67:8, 67:13, 67:18, 68:1, 68:3, 68:10, 68:11, 68:13, 68:14, 68:15, 68:18, 68:20, 68:22, 74:7, 74:10, 75:8, 75:9, 75:11, 78:17, 79:11, 79:15, 79:17, 83:2, 83:4, 83:11, 83:13, 83:16, 83:19, 84:17, 87:6, 90:14, 90:24, 91:2, 91:5, 91:8, 92:7, 92:24, 93:4, 93:17, 93:20, 94:1, 97:9, 97:12, 97:20, 97:24, 98:2, 98:5, 98:11, 98:18, 98:21, 101:3, 101:5, 101:8, 104:23, 105:6, 105:9, 109:4, 109:6, 109:11, 111:5, 111:8, 111:10, 111:18, 111:22, 111:24, 112:1, 112:4, 112:6, 112:7, 112:14, 112:23, 112:24, 113:11, 113:16, 113:17, 114:1</p>
M				
<p>M-c-K-a-n-i-c [1] - 83:17 ma'am [4] - 80:2, 83:2, 93:2, 98:11 machine [1] - 115:5 magnet [1] - 44:16 Mahomet [7] - 43:14, 43:17, 44:3, 45:22, 93:9, 93:11, 94:6 main [3] - 85:17, 107:17 maintain [1] - 68:5 Maintenance [1] - 15:18 majority [1] - 73:11 mammals [1] - 73:20 manage [2] - 17:6, 102:24 managed [1] - 25:20 management [7] - 58:14, 63:17, 88:19, 92:17, 95:4, 109:13, 110:22 Manager [1] - 1:18 managing [4] - 38:7, 38:11, 38:12, 47:17 manufacturer's [1] - 20:17 map [8] - 24:15, 24:16, 33:6, 65:7, 67:10, 67:11, 67:17, 68:7 mapping [2] - 44:12, 44:16 maps [5] - 66:18, 66:21, 67:2, 67:6, 67:7 March [1] - 29:20 marginal [1] - 62:9 Mark [1] - 1:16 massasauga [5] - 10:19, 34:1, 34:15,</p>				

<p>MS ^[37] - 3:9, 3:13, 3:15, 3:17, 3:20, 3:22, 3:23, 3:24, 5:5, 5:7, 5:9, 39:3, 39:6, 41:14, 41:17, 43:3, 43:7, 45:21, 80:4, 80:7, 80:10, 83:6, 83:9, 84:21, 84:23, 87:9, 87:12, 91:4, 93:3, 93:5, 93:7, 97:11, 97:15, 97:23, 98:1, 98:4, 98:7</p> <p>mudpuppies ^[1] - 34:7</p> <p>Mulligan ^[1] - 17:8</p>	<p>87:24, 88:2</p> <p>nesting ^[7] - 61:23, 62:3, 71:7, 105:17, 105:18, 105:19, 105:21</p> <p>nests ^[21] - 11:13, 21:17, 21:20, 21:22, 60:18, 60:20, 60:21, 62:20, 75:13, 82:4, 87:13, 87:15, 87:17, 100:6, 100:10, 100:15, 105:23, 106:5</p> <p>never ^[1] - 100:1</p> <p>new ^[2] - 49:9, 113:1</p> <p>newer ^[1] - 50:5</p> <p>next ^[24] - 5:18, 9:12, 11:1, 11:14, 12:18, 21:4, 23:7, 43:12, 45:3, 45:20, 56:20, 57:3, 57:14, 59:24, 61:8, 62:17, 67:22, 69:17, 69:22, 70:16, 93:18, 98:6, 101:23, 112:12</p> <p>night ^[1] - 6:5</p> <p>NO ^[1] - 2:5</p> <p>noise ^[1] - 41:2</p> <p>none ^[21] - 8:5, 38:17, 38:19, 38:22, 46:6, 46:7, 46:9, 54:17, 56:19, 59:7, 59:8, 79:19, 79:22, 79:24, 105:2, 105:4</p> <p>nonprofit ^[1] - 16:15</p> <p>nonprofits ^[2] - 7:8, 7:15</p> <p>normal ^[1] - 74:1</p> <p>north ^[2] - 42:6, 82:2</p> <p>Northern ^[2] - 60:15, 71:16</p> <p>northern ^[1] - 10:19</p> <p>nose ^[1] - 74:16</p> <p>notes ^[1] - 54:6</p> <p>nothin' ^[1] - 78:13</p> <p>nothing ^[2] - 8:12, 103:9</p> <p>notice ^[1] - 75:12</p> <p>noticed ^[3] - 41:24, 49:14, 78:5</p> <p>notify ^[1] - 110:7</p> <p>November ^[2] - 29:20, 112:21</p> <p>number ^[30] - 13:9, 16:2, 18:24, 19:14, 20:23, 21:7, 21:17, 21:18, 28:11, 31:7, 36:6, 49:20, 55:2, 68:8, 86:6, 90:5, 90:8, 97:13, 97:17,</p>	<p>97:18, 103:2, 103:3, 103:21, 104:8, 104:10, 104:14, 105:10, 106:10, 106:21, 109:17</p> <p>Number ^[2] - 48:8, 48:15</p> <p>numbers ^[7] - 18:22, 27:7, 97:7, 97:10, 97:15, 97:24, 104:13</p> <p>numerical ^[1] - 103:12</p> <p>numerous ^[2] - 108:21, 108:22</p>	<p>older ^[2] - 14:3, 51:22</p> <p>once ^[14] - 9:3, 10:6, 10:22, 76:6, 76:12, 77:10, 77:21, 88:24, 89:2, 90:21, 105:1, 106:20</p> <p>one ^[64] - 6:5, 7:20, 8:1, 10:3, 10:4, 10:23, 12:7, 16:7, 16:11, 16:12, 17:1, 18:3, 18:22, 25:20, 27:13, 27:17, 28:4, 29:18, 30:17, 31:11, 31:14, 32:13, 35:23, 36:13, 38:4, 41:24, 48:23, 50:11, 50:14, 50:23, 52:15, 52:16, 60:1, 62:23, 64:7, 67:3, 67:6, 67:11, 68:4, 68:18, 69:20, 71:5, 71:15, 73:10, 73:19, 74:12, 74:15, 75:21, 78:13, 80:4, 87:16, 90:15, 91:10, 95:2, 96:8, 101:4, 102:16, 102:19, 103:21, 104:1, 110:3, 111:8, 113:3, 113:24</p> <p>ones ^[7] - 16:12, 27:17, 50:11, 52:17, 52:24, 54:19, 71:14</p> <p>open ^[1] - 61:2</p> <p>operated ^[1] - 63:21</p> <p>operates ^[1] - 100:3</p> <p>operating ^[1] - 31:8</p> <p>Operations ^[1] - 15:18</p> <p>operations ^[4] - 7:12, 9:5, 22:17, 24:12</p> <p>operator ^[1] - 109:1</p> <p>operator's ^[1] - 110:7</p> <p>operators ^[1] - 88:17</p> <p>opinion ^[1] - 84:2</p> <p>opinions ^[1] - 10:10</p> <p>opportunity ^[3] - 48:5, 63:16, 91:5</p> <p>opposed ^[3] - 68:6, 98:2, 113:23</p> <p>optimal ^[1] - 62:7</p> <p>orchid ^[1] - 34:5</p> <p>order ^[6] - 3:1, 3:2, 8:9, 13:17, 17:24, 80:22</p> <p>ordinances ^[1] - 46:22</p> <p>organization ^[1] - 16:15</p> <p>out-west ^[1] - 73:1</p> <p>outline ^[1] - 14:21</p> <p>outlined ^[2] - 65:12, 79:8</p>	<p>outside ^[4] - 25:19, 29:2, 87:15, 103:16</p> <p>overall ^[3] - 8:7, 9:8, 79:7</p> <p>overarching ^[1] - 13:14</p> <p>overlaid ^[1] - 66:21</p> <p>overlapped ^[1] - 62:16</p> <p>overlay ^[1] - 67:7</p> <p>oversee ^[1] - 102:24</p> <p>oversight ^[1] - 33:8</p> <p>owls ^[2] - 39:20, 39:21</p> <p>own ^[1] - 49:3</p> <p>owners ^[1] - 65:14</p>
<p>N</p>		<p>O</p>		<p>P</p>
<p>name ^[14] - 6:11, 6:13, 6:14, 6:20, 32:20, 39:2, 41:13, 43:2, 51:12, 58:3, 80:3, 93:3, 101:5, 108:11</p> <p>name's ^[1] - 6:24</p> <p>named ^[1] - 91:13</p> <p>names ^[2] - 32:17, 32:23</p> <p>nanoparticles ^[1] - 86:18</p> <p>National ^[2] - 13:15, 14:16</p> <p>nationwide ^[1] - 16:1</p> <p>native ^[1] - 17:7</p> <p>Natural ^[4] - 8:17, 8:18, 11:16, 11:19</p> <p>near ^[2] - 14:12, 103:9</p> <p>nearby ^[2] - 27:14, 30:22</p> <p>nearly ^[3] - 61:6, 65:18, 101:15</p> <p>necessarily ^[3] - 21:22, 53:2, 67:15</p> <p>necessary ^[2] - 11:7, 16:4</p> <p>need ^[18] - 11:2, 12:5, 14:24, 27:21, 28:5, 29:21, 29:23, 30:3, 45:2, 59:16, 67:14, 67:16, 68:1, 85:13, 91:6, 92:17, 95:2, 96:2</p> <p>needed ^[1] - 9:7</p> <p>needs ^[1] - 63:17</p> <p>negative ^[4] - 8:13, 85:1, 85:4, 87:2</p> <p>negatively ^[1] - 85:7</p> <p>nest ^[17] - 10:17, 22:7, 25:5, 28:11, 28:12, 30:5, 30:6, 35:18, 41:19, 41:21, 59:20, 60:17, 70:15, 82:2,</p>	<p>87:24, 88:2</p> <p>nesting ^[7] - 61:23, 62:3, 71:7, 105:17, 105:18, 105:19, 105:21</p> <p>nests ^[21] - 11:13, 21:17, 21:20, 21:22, 60:18, 60:20, 60:21, 62:20, 75:13, 82:4, 87:13, 87:15, 87:17, 100:6, 100:10, 100:15, 105:23, 106:5</p> <p>never ^[1] - 100:1</p> <p>new ^[2] - 49:9, 113:1</p> <p>newer ^[1] - 50:5</p> <p>next ^[24] - 5:18, 9:12, 11:1, 11:14, 12:18, 21:4, 23:7, 43:12, 45:3, 45:20, 56:20, 57:3, 57:14, 59:24, 61:8, 62:17, 67:22, 69:17, 69:22, 70:16, 93:18, 98:6, 101:23, 112:12</p> <p>night ^[1] - 6:5</p> <p>NO ^[1] - 2:5</p> <p>noise ^[1] - 41:2</p> <p>none ^[21] - 8:5, 38:17, 38:19, 38:22, 46:6, 46:7, 46:9, 54:17, 56:19, 59:7, 59:8, 79:19, 79:22, 79:24, 105:2, 105:4</p> <p>nonprofit ^[1] - 16:15</p> <p>nonprofits ^[2] - 7:8, 7:15</p> <p>normal ^[1] - 74:1</p> <p>north ^[2] - 42:6, 82:2</p> <p>Northern ^[2] - 60:15, 71:16</p> <p>northern ^[1] - 10:19</p> <p>nose ^[1] - 74:16</p> <p>notes ^[1] - 54:6</p> <p>nothin' ^[1] - 78:13</p> <p>nothing ^[2] - 8:12, 103:9</p> <p>notice ^[1] - 75:12</p> <p>noticed ^[3] - 41:24, 49:14, 78:5</p> <p>notify ^[1] - 110:7</p> <p>November ^[2] - 29:20, 112:21</p> <p>number ^[30] - 13:9, 16:2, 18:24, 19:14, 20:23, 21:7, 21:17, 21:18, 28:11, 31:7, 36:6, 49:20, 55:2, 68:8, 86:6, 90:5, 90:8, 97:13, 97:17,</p>	<p>o-u ^[1] - 80:8</p> <p>objection ^[2] - 8:4, 59:6</p> <p>objective ^[2] - 60:2, 60:19</p> <p>obligation ^[1] - 108:17</p> <p>observations ^[5] - 61:22, 76:9, 106:12, 106:13, 106:15</p> <p>observe ^[2] - 60:13, 71:14</p> <p>observed ^[7] - 60:10, 60:14, 60:15, 62:19, 78:6, 92:19, 103:16</p> <p>observer ^[2] - 64:16, 76:6</p> <p>obvious ^[1] - 60:1</p> <p>obviously ^[6] - 23:17, 34:23, 54:2, 65:13, 73:12, 110:13</p> <p>occasionally ^[1] - 62:3</p> <p>occupied ^[1] - 60:21</p> <p>occur ^[5] - 9:24, 12:3, 33:4, 33:21, 34:11</p> <p>occurred ^[2] - 35:3, 106:20</p> <p>occurrence ^[2] - 37:15, 37:19</p> <p>occurring ^[2] - 35:14, 113:3</p> <p>occurs ^[1] - 113:7</p> <p>OF ^[3] - 1:1, 2:1, 115:1</p> <p>Offered ^[1] - 2:5</p> <p>offhand ^[1] - 19:15</p> <p>office ^[1] - 72:3</p> <p>Office ^[1] - 14:7</p> <p>OFFICER ^[1] - 1:6</p> <p>officer ^[2] - 4:7, 4:13</p> <p>official ^[2] - 30:10, 115:17</p> <p>Official ^[1] - 115:3</p> <p>often ^[5] - 42:4, 42:13, 71:19, 74:14, 102:9</p> <p>oftentimes ^[1] - 27:14</p>	<p>older ^[2] - 14:3, 51:22</p> <p>once ^[14] - 9:3, 10:6, 10:22, 76:6, 76:12, 77:10, 77:21, 88:24, 89:2, 90:21, 105:1, 106:20</p> <p>one ^[64] - 6:5, 7:20, 8:1, 10:3, 10:4, 10:23, 12:7, 16:7, 16:11, 16:12, 17:1, 18:3, 18:22, 25:20, 27:13, 27:17, 28:4, 29:18, 30:17, 31:11, 31:14, 32:13, 35:23, 36:13, 38:4, 41:24, 48:23, 50:11, 50:14, 50:23, 52:15, 52:16, 60:1, 62:23, 64:7, 67:3, 67:6, 67:11, 68:4, 68:18, 69:20, 71:5, 71:15, 73:10, 73:19, 74:12, 74:15, 75:21, 78:13, 80:4, 87:16, 90:15, 91:10, 95:2, 96:8, 101:4, 102:16, 102:19, 103:21, 104:1, 110:3, 111:8, 113:3, 113:24</p> <p>ones ^[7] - 16:12, 27:17, 50:11, 52:17, 52:24, 54:19, 71:14</p> <p>open ^[1] - 61:2</p> <p>operated ^[1] - 63:21</p> <p>operates ^[1] - 100:3</p> <p>operating ^[1] - 31:8</p> <p>Operations ^[1] - 15:18</p> <p>operations ^[4] - 7:12, 9:5, 22:17, 24:12</p> <p>operator ^[1] - 109:1</p> <p>operator's ^[1] - 110:7</p> <p>operators ^[1] - 88:17</p> <p>opinion ^[1] - 84:2</p> <p>opinions ^[1] - 10:10</p> <p>opportunity ^[3] - 48:5, 63:16, 91:5</p> <p>opposed ^[3] - 68:6, 98:2, 113:23</p> <p>optimal ^[1] - 62:7</p> <p>orchid ^[1] - 34:5</p> <p>order ^[6] - 3:1, 3:2, 8:9, 13:17, 17:24, 80:22</p> <p>ordinances ^[1] - 46:22</p> <p>organization ^[1] - 16:15</p> <p>out-west ^[1] - 73:1</p> <p>outline ^[1] - 14:21</p> <p>outlined ^[2] - 65:12, 79:8</p>	<p>P.M ^[2] - 1:4</p> <p>p.m ^[1] - 113:19</p> <p>page ^[4] - 33:11, 50:22, 56:15, 104:8</p> <p>pages ^[1] - 47:22</p> <p>pair ^[1] - 88:5</p> <p>parcels ^[2] - 65:24, 66:4</p> <p>pardon ^[1] - 99:4</p> <p>park ^[2] - 20:23, 70:18</p> <p>part ^[12] - 12:14, 14:4, 25:23, 26:2, 49:3, 49:6, 62:2, 74:19, 74:22, 75:2, 105:16, 112:17</p> <p>participants ^[1] - 65:14</p> <p>participating ^[1] - 65:13</p> <p>particular ^[3] - 70:10, 78:3, 89:3</p> <p>particularly ^[2] - 61:2, 71:9</p> <p>parties ^[2] - 38:20, 79:23</p> <p>parts ^[1] - 66:5</p> <p>party ^[6] - 23:9, 23:10, 25:19, 26:6, 26:10, 63:11</p> <p>passed ^[1] - 5:14</p> <p>passerines ^[1] - 103:7</p> <p>passing ^[1] - 6:2</p> <p>past ^[2] - 26:21, 96:5</p> <p>path ^[1] - 101:21</p> <p>patterns ^[4] - 81:1, 81:9, 81:17, 81:18</p> <p>pause ^[1] - 8:1</p> <p>pelicans ^[1] - 90:21</p> <p>pending ^[1] - 94:2</p> <p>people ^[10] - 16:19, 32:17, 43:9, 44:11, 44:14, 65:15, 67:4, 75:22, 93:13, 107:6</p>

per [22] - 16:14, 19:4, 20:19, 20:24, 21:1, 21:11, 22:12, 22:13, 22:16, 36:9, 54:24, 76:6, 80:22, 96:24, 101:12, 101:15, 103:21, 104:11
percentage [2] - 37:19, 64:17
peregrine [1] - 101:19
perennial [1] - 13:10
perhaps [1] - 49:18
period [5] - 18:17, 23:18, 29:24, 82:18, 100:4
periodically [1] - 59:18
periods [2] - 29:17, 107:9
permanent [1] - 92:20
PERMIT [1] - 1:3
permit [8] - 15:14, 15:24, 16:1, 46:15, 95:6, 95:8, 95:11, 111:18
permits [2] - 16:3, 111:20
permitted [1] - 58:22
permitting [1] - 111:16
Perry [1] - 3:18
Persimnia [2] - 112:15, 112:21
persistence [2] - 64:18, 69:11
person [3] - 39:8, 43:22, 101:4
personally [1] - 89:16
perspective [7] - 16:21, 20:15, 24:2, 29:16, 80:18, 80:23, 85:6
pesticides [1] - 86:6
Petitioner's [1] - 5:23
phase [2] - 53:18, 72:22
Phil [1] - 48:12
phlox [4] - 12:8, 34:17, 59:21, 61:16
physically [1] - 113:4
PIATT [5] - 1:1, 1:6, 1:9, 1:12, 1:14
Piatt [10] - 12:14, 42:6, 46:7, 54:9, 81:1, 90:13, 105:3, 107:23, 107:24, 115:9
pick [6] - 16:17, 24:12, 35:24, 37:11, 53:10, 81:24

picked [6] - 20:6, 27:24, 28:3, 37:7, 53:5, 105:21
picking [2] - 76:15, 88:20
picture's [1] - 65:9
piece [2] - 36:15, 101:24
place [3] - 14:21, 74:4, 92:18
placed [1] - 67:3
placement [2] - 55:3, 105:13
Places [1] - 14:17
places [3] - 66:7, 71:22, 88:12
plan [10] - 2:9, 8:22, 10:5, 14:20, 25:16, 65:8, 66:13, 67:22, 112:11, 112:12
planned [1] - 113:12
planning [4] - 36:9, 60:9, 75:24, 76:17
plant [2] - 12:8, 102:11
plastics [1] - 86:20
pledge [1] - 3:3
Pledge [1] - 3:4
plenty [2] - 82:11, 82:12
point [10] - 76:5, 76:7, 89:2, 91:3, 92:3, 95:2, 99:10, 102:18, 110:11, 110:13
points [5] - 76:3, 89:3, 89:5, 89:8, 106:11
policy [1] - 7:4
pollination [1] - 86:6
pollution [1] - 41:2
population [8] - 54:6, 54:8, 54:10, 69:8, 71:1, 71:3, 71:4, 73:22
populations [1] - 78:4
portion [5] - 62:22, 78:1, 88:8, 88:9, 108:12
position [1] - 104:11
positions [1] - 47:6
possible [12] - 33:20, 33:22, 34:15, 36:4, 37:15, 38:8, 44:21, 66:8, 78:23, 79:2, 85:12, 113:5
possibly [2] - 35:23, 85:24
post [17] - 24:10, 31:5, 40:3, 42:13, 63:10, 64:4, 69:3, 69:18, 77:6, 77:9, 89:21,

94:15, 94:17, 94:21, 109:13, 109:15
post-build [1] - 69:3
post-construction [14] - 24:10, 31:5, 40:3, 42:13, 63:10, 64:4, 77:6, 77:9, 89:21, 94:15, 94:17, 94:21, 109:13, 109:15
potential [16] - 8:9, 9:24, 10:10, 16:8, 18:13, 18:21, 25:15, 28:3, 33:4, 33:5, 37:15, 52:20, 61:20, 63:2, 85:7, 89:22
potentially [5] - 43:24, 85:24, 96:3, 101:22, 102:15
power [1] - 102:11
PowerPoint [2] - 5:23, 57:18
PP [2] - 2:6, 2:8
practicable [4] - 7:24, 15:22, 35:2, 35:9
Prairie [2] - 17:5, 17:6
prairie [9] - 17:8, 17:10, 29:4, 34:5, 61:3, 61:17, 61:24, 62:7, 62:12
prairies [1] - 61:24
predated [1] - 108:13
predators [2] - 69:6, 69:23
preemptive [2] - 111:21, 111:22
preferential [1] - 39:16
prehistoric [1] - 14:1
Preliminary [1] - 2:9
preliminary [2] - 66:13, 67:22
presence [2] - 56:6, 70:9
present [8] - 11:8, 38:5, 38:13, 47:17, 57:19, 68:3, 70:1, 91:6
presentation [5] - 5:24, 17:11, 23:15, 50:23, 75:12
presenting [1] - 112:22
Preservation [4] - 11:19, 13:15, 13:17, 14:7
presumptively [1] - 110:22
pretty [9] - 26:19, 52:7, 53:8, 60:12, 70:17, 70:18, 73:10,

78:11, 82:8
previous [3] - 76:22, 78:22, 93:8
previously [6] - 13:19, 48:11, 54:23, 59:1, 59:2, 112:17
previously-identified [1] - 13:19
primarily [1] - 7:9
primary [2] - 32:18, 105:12
problem [3] - 72:10, 80:13, 82:16
problems [3] - 72:8, 89:12, 89:13
proceed [5] - 4:2, 18:2, 39:4, 43:5, 55:23
proceedings [3] - 114:2, 115:6, 115:9
PROCEEDINGS [1] - 2:1
process [7] - 8:10, 9:8, 14:4, 95:6, 95:11, 111:11, 111:16
produce [1] - 85:9
produced [1] - 74:18
producing [1] - 19:5
Proection [1] - 9:17
professional [2] - 58:17, 84:2
profile [1] - 24:12
program [2] - 16:6, 16:11
progressing [1] - 23:18
Project [1] - 1:18
project [106] - 7:18, 8:12, 8:19, 8:23, 9:2, 9:3, 10:21, 11:4, 13:2, 14:13, 15:16, 16:23, 18:9, 24:23, 25:11, 25:14, 27:9, 27:15, 27:19, 29:15, 29:22, 33:19, 34:3, 36:10, 38:1, 38:7, 38:12, 39:12, 39:15, 41:18, 47:3, 50:9, 50:10, 51:8, 52:6, 52:17, 53:4, 59:13, 60:2, 60:3, 60:13, 60:22, 61:5, 61:7, 61:12, 61:20, 61:22, 62:9, 62:14, 62:18, 63:4, 63:5, 63:9, 63:13, 63:14, 63:18, 63:21, 64:8, 64:11, 64:24, 65:2, 65:17, 65:24, 66:6, 69:13,

76:4, 76:5, 76:14, 76:19, 77:5, 78:1, 81:4, 81:11, 81:17, 87:16, 87:19, 87:21, 88:17, 89:3, 92:15, 94:8, 94:18, 95:5, 95:7, 96:8, 98:22, 99:5, 99:8, 100:9, 100:14, 102:13, 102:21, 105:11, 106:1, 106:13, 106:16, 107:19, 107:23, 108:1, 108:10, 108:11, 108:13, 108:14, 111:14, 111:20
projected [1] - 30:12
projects [23] - 7:10, 7:11, 7:21, 8:9, 9:9, 9:23, 16:9, 16:17, 27:14, 31:3, 31:8, 52:14, 58:20, 58:21, 58:22, 71:19, 72:2, 80:21, 89:22, 96:5, 100:12, 109:21, 110:5
property [3] - 5:16, 65:13, 102:1
proposed [4] - 24:18, 58:21, 62:21, 76:13
protect [2] - 15:4, 45:23
protected [7] - 12:4, 18:17, 19:9, 87:18, 104:1, 107:12, 107:13
protecting [1] - 85:22
Protection [1] - 11:18
protection [1] - 44:4
protective [1] - 99:10
protocol [1] - 26:8
protocols [1] - 15:11
provide [10] - 7:19, 31:10, 48:7, 62:6, 67:20, 97:9, 97:13, 110:9, 110:18
provided [4] - 12:13, 16:14, 30:16, 55:9
provides [2] - 61:12, 62:23
providing [3] - 26:6, 61:20, 97:10
public [12] - 15:9, 38:23, 41:12, 42:24, 46:5, 80:1, 83:14, 84:18, 93:1, 98:12, 105:1, 112:12
publically [3] - 9:21, 31:2, 31:5
publically-available

<p>[1] - 9:21 publication [1] - 31:12 publications [1] - 49:15 published [1] - 72:4 pull [3] - 26:22, 27:5, 65:10 purchasing [1] - 17:7 purpose [3] - 37:18, 65:6, 105:12 purposes [1] - 65:22 put [13] - 10:3, 15:11, 44:23, 64:15, 64:18, 64:19, 67:10, 69:5, 69:12, 76:1, 80:18, 92:17, 104:16 puttin' [1] - 72:14 putting [2] - 8:11, 80:23</p>	<p>raise [1] - 57:21 raised [2] - 55:7, 113:2 ran [1] - 36:14 random [1] - 76:15 randomly [1] - 76:3 range [7] - 18:13, 28:11, 28:13, 96:15, 96:24, 100:20, 103:17 raptor [8] - 10:16, 25:5, 54:7, 56:12, 59:20, 60:17, 71:13, 71:15 raptors [3] - 54:8, 70:24, 71:4 rare [8] - 59:14, 71:15, 71:16, 85:22, 88:6, 88:10, 88:13, 91:15 rarely [1] - 90:22 rate [8] - 64:18, 103:11, 103:12, 103:13, 103:20, 103:22, 103:23 rates [4] - 30:12, 40:18, 52:4, 71:7 rather [3] - 20:22, 66:3, 67:9 rattlesnake [2] - 60:24, 61:4 Rayford [1] - 1:16 RAYFORD [1] - 48:9 re [1] - 68:23 re-asking [1] - 68:23 reach [1] - 14:24 read [3] - 45:7, 45:8, 45:10 readable [2] - 67:15, 67:24 ready [3] - 5:14, 72:9, 72:22 real [1] - 65:10 realize [1] - 107:6 really [23] - 8:10, 16:8, 25:10, 25:20, 27:11, 28:17, 28:20, 36:18, 53:19, 61:24, 73:4, 77:15, 80:18, 84:13, 86:11, 95:22, 96:1, 102:20, 104:2, 105:19, 110:3, 111:15 realtime [1] - 52:11 reason [7] - 67:10, 73:21, 76:23, 81:14, 90:8, 112:2, 112:24 reasonable [1] - 49:21 reasons [2] - 60:2, 74:12 receive [1] - 16:22</p>	<p>received [3] - 12:11, 12:13, 92:9 recent [3] - 96:16, 96:21, 106:3 recently [5] - 72:4, 72:19, 74:15, 77:4, 105:24 recess [9] - 17:17, 17:22, 48:18, 48:20, 57:8, 57:11, 113:18, 113:24 rechecked [1] - 23:19 recited [1] - 3:5 recognition [1] - 67:24 recommend [2] - 21:19, 106:8 recommendation [1] - 21:20 recommendations [6] - 14:8, 22:4, 60:10, 63:20, 77:20, 79:5 recommended [5] - 13:9, 18:15, 99:16, 99:17, 100:12 recommends [3] - 60:23, 63:23, 100:8 reconvene [1] - 48:21 record [24] - 5:23, 6:12, 6:20, 12:20, 12:24, 32:23, 39:2, 43:2, 45:9, 49:2, 58:4, 59:1, 64:9, 65:12, 66:3, 66:23, 67:14, 67:16, 68:2, 68:4, 68:7, 80:3, 107:18, 107:23 recorded [1] - 91:18 records [2] - 59:14, 68:5 Recross [1] - 2:2 red [2] - 71:14, 78:4 redirect [3] - 46:10, 54:17, 105:4 Redirect [1] - 2:2 REDIRECT [3] - 46:13, 54:21, 105:8 reduce [4] - 36:4, 63:6, 67:10, 72:6 reduced [3] - 22:17, 28:16, 67:23 reducing [1] - 55:2 reduction [10] - 18:23, 19:13, 22:15, 22:20, 22:21, 96:13, 96:19, 96:23, 97:2, 97:17 reference [4] - 23:14, 37:15, 97:10, 113:22 referenced [5] - 23:4, 47:22, 56:2, 77:24,</p>	<p>98:22 references [1] - 70:20 referencing [2] - 66:24, 98:2 regard [2] - 50:21, 71:13 regarding [2] - 51:2, 112:17 regards [2] - 37:8, 50:24 regional [2] - 16:15, 27:15 regionally [1] - 26:21 Register [1] - 14:16 register [1] - 14:17 regular [2] - 4:6, 22:17 regularly [2] - 4:5, 4:15 regulations [5] - 9:20, 11:17, 13:14, 13:15, 15:1 relate [1] - 105:10 related [2] - 27:11, 105:16 relation [2] - 23:17, 111:14 relationship [1] - 27:8 relatively [2] - 71:15, 77:11 released [2] - 56:23, 112:8 remember [3] - 36:7, 44:13, 103:3 remnant [1] - 62:8 remnants [1] - 61:18 remove [2] - 35:15, 40:13 removed [1] - 35:4 removing [2] - 35:6, 35:19 renewable [2] - 7:9, 7:16 Renewable [1] - 7:13 repeat [4] - 20:7, 73:15, 85:2, 93:17 replace [1] - 67:20 report [6] - 30:12, 53:6, 96:22, 98:3, 102:7, 110:19 reported [3] - 95:1, 104:13, 115:5 Reporter [2] - 115:4, 115:17 reporter [4] - 6:6, 45:8, 45:10, 57:22 REPORTER [5] - 1:19, 6:17, 20:5, 80:6, 115:1 reports [3] - 30:14, 30:16, 30:21</p>	<p>represent [1] - 75:3 representative [2] - 51:11, 76:8 represented [2] - 38:20, 79:23 reproducing [1] - 92:20 reproduction [1] - 41:4 reptiles [1] - 58:24 requested [3] - 19:12, 45:11, 111:19 required [16] - 9:14, 11:17, 12:12, 13:12, 14:4, 15:2, 15:13, 46:18, 46:21, 57:1, 99:15, 105:13, 107:19, 108:15, 108:23, 110:19 requirement [1] - 64:6 requirements [4] - 13:22, 46:18, 46:23, 63:4 requires [1] - 64:7 Research [1] - 7:14 research [3] - 21:24, 42:11, 55:14 resident [1] - 105:20 residue [1] - 82:11 resilient [1] - 74:3 resource [2] - 14:22, 87:18 Resource [1] - 13:16 Resources [2] - 8:18, 11:16 resources [11] - 13:13, 13:18, 13:20, 13:23, 13:24, 14:2, 14:16, 14:18, 14:19, 15:6 respect [2] - 107:2, 112:18 respond [2] - 9:6, 24:13 response [2] - 45:2, 45:3 responsibility [1] - 110:7 restarted [1] - 57:13 restore [2] - 17:3, 17:6 result [1] - 41:3 results [8] - 10:24, 12:17, 14:5, 58:13, 59:18, 63:14, 77:8, 102:23 resume [1] - 59:3 retain [1] - 73:24 return [1] - 17:19 returns [1] - 48:12 review [15] - 12:1,</p>
<p>Q</p>				
<p>qualifications [1] - 58:6 questions [63] - 17:13, 17:14, 17:18, 18:2, 22:9, 22:23, 26:15, 28:6, 28:7, 30:8, 32:11, 37:1, 38:15, 38:17, 38:20, 38:22, 39:7, 39:11, 41:11, 42:23, 46:4, 46:7, 46:11, 47:19, 48:3, 48:5, 48:17, 48:18, 49:9, 49:11, 50:17, 51:15, 54:13, 54:15, 54:18, 55:6, 55:22, 56:17, 63:24, 68:14, 68:16, 74:7, 78:17, 79:17, 79:19, 79:22, 79:24, 80:11, 83:10, 83:14, 84:18, 87:7, 92:24, 94:10, 98:8, 98:12, 104:24, 105:2, 105:10, 109:4, 109:7, 111:6, 112:4 quick [4] - 53:9, 54:19, 55:6, 65:10 quickly [2] - 72:12, 110:19 quite [3] - 51:24, 52:2, 100:16 quorum [1] - 4:2 quote [1] - 20:20</p>				
<p>R</p>				
<p>R-y-a-n [1] - 43:4 raccoons [1] - 69:8</p>				

13:19, 14:7, 14:10,
15:7, 17:17, 32:8,
46:18, 46:23, 48:15,
55:6, 59:17, 65:6,
76:23, 112:1
reviewed [2] - 63:18,
102:23
revisit [1] - 77:19
Ridge [1] - 17:4
risk [14] - 9:5, 21:22,
22:1, 24:11, 27:15,
40:1, 40:7, 40:8,
50:8, 50:12, 70:24,
73:3, 73:6, 112:20
risks [1] - 25:15
risky [2] - 11:10, 19:11
river [2] - 78:7, 81:5
River [3] - 61:14,
61:19, 77:24
rivers [1] - 100:21
Rivers [2] - 15:3,
46:19
roadkill [4] - 73:13,
88:16, 88:20, 95:5
roadmap [1] - 8:8
roads [1] - 15:20
Rogers [2] - 112:15,
113:13
roll [2] - 3:8, 5:2
room [2] - 113:20,
113:21
roost [1] - 61:11
roosting [3] - 18:17,
29:18, 38:2
rotor [1] - 51:24
routine [1] - 41:12
row [1] - 75:1
rows [1] - 75:5
RPM [1] - 101:12
rules [1] - 57:2
running [1] - 22:11
RYAN [12] - 43:3,
43:7, 45:21, 93:3,
93:5, 93:7, 97:11,
97:15, 97:23, 98:1,
98:4, 98:7
Ryan [2] - 43:3, 93:5

S

S-t-a-l-t-e-r [2] - 41:15,
87:10
safety [2] - 113:9,
113:14
sample [1] - 90:5
Sandpiper [8] - 12:9,
13:4, 28:1, 34:17,
42:15, 59:21, 60:16,
91:13
Sandpipers [5] - 30:2,

35:10, 61:21, 62:10,
63:2
Sangamon [8] - 12:8,
34:17, 59:21, 61:14,
61:16, 61:19, 77:24,
78:4
saw [5] - 52:17, 53:4,
71:15, 84:19, 96:16
sayin' [1] - 78:14
scare [1] - 72:13
scavenged [1] - 64:19
scavenger [1] - 40:18
scavengers [1] -
40:13
scavenging [1] - 69:6
school [2] - 38:18,
79:20
Schorg [2] - 32:18,
32:24
SCHORG [1] - 32:24
science [1] - 52:10
scientific [1] - 50:14
scientist [1] - 83:21
scientists [1] - 52:11
Scott [1] - 4:6
seagulls [2] - 101:24,
102:10
search [2] - 40:19,
60:23
searcher [1] - 64:17
searches [1] - 64:12
searching [1] - 40:19
season [8] - 11:10,
11:11, 13:7, 35:1,
35:4, 35:13, 63:3,
63:7
seasons [2] - 69:12,
107:8
second [18] - 4:20,
4:21, 4:22, 8:1, 10:4,
18:22, 19:4, 19:17,
20:19, 21:11, 22:12,
22:13, 22:16, 36:9,
45:1, 96:24, 107:16,
107:18
seconds [1] - 4:23
section [5] - 49:14,
49:19, 52:23, 53:6,
78:3
Section [1] - 15:24
sector [1] - 7:9
sectors [1] - 7:8
see [31] - 39:19, 39:20,
40:7, 44:3, 44:9,
53:13, 65:11, 65:22,
67:4, 67:11, 67:16,
69:15, 70:4, 70:7,
70:21, 71:2, 71:15,
73:4, 82:6, 82:15,
88:5, 90:22, 91:9,

91:16, 91:17,
101:16, 101:22,
102:16, 107:14,
110:3, 113:22
seeing [13] - 38:17,
38:19, 38:22, 46:6,
46:9, 54:17, 56:19,
59:7, 79:19, 79:22,
79:24, 105:2, 105:4
seem [3] - 52:1, 70:14,
85:18
select [1] - 76:3
selected [1] - 16:22
send [1] - 76:6
Senior [1] - 1:18
sensitive [4] - 66:6,
83:23, 87:18
sent [1] - 4:7
September [2] - 31:23,
32:2
series [2] - 59:16,
69:11
serve [3] - 4:9, 4:12,
4:18
served [1] - 109:20
serves [1] - 93:12
Service [39] - 8:19,
9:13, 9:14, 9:16,
10:2, 10:7, 10:24,
11:11, 12:16, 18:7,
18:14, 18:16, 19:13,
22:4, 23:21, 26:3,
28:16, 32:19, 33:1,
34:2, 34:6, 40:5,
40:16, 55:15, 59:12,
60:23, 76:1, 77:7,
77:18, 85:8, 88:18,
100:7, 100:14,
103:18, 104:3,
104:7, 104:13,
106:4, 110:6
Services [3] - 21:19,
39:23, 60:7
session [1] - 49:11
set [3] - 26:4, 29:3,
47:8
setback [3] - 18:15,
63:4, 106:4
setbacks [1] - 12:5
sets [1] - 10:2
seven [1] - 7:11
seventy [2] - 92:5,
92:6
seventy-eight [2] -
92:5, 92:6
severe [1] - 54:10
share [2] - 39:1, 87:17
shatter [1] - 112:20
shook [3] - 44:6,
44:18, 90:16

short [2] - 62:1, 72:5
shorthand [1] - 115:5
show [2] - 65:7, 65:11
showed [1] - 102:22
showing [1] - 65:23
SHPO [1] - 14:10
Shumard [1] - 3:24
shut [10] - 96:2, 96:7,
96:9, 98:22, 99:18,
100:1, 100:4,
102:19, 102:21,
108:11
shutdown [1] - 108:22
shutting [1] - 106:22
sic [2] - 59:9, 106:8
significance [1] -
100:5
significant [4] - 14:18,
14:19, 97:4, 97:6
significantly [1] -
106:7
similar [5] - 42:16,
50:9, 53:2, 66:22,
81:22
similarly [4] - 12:15,
15:6, 46:21, 61:16
simply [2] - 25:21,
67:3
sit [2] - 26:2, 76:7
site [23] - 2:9, 8:10,
8:22, 9:21, 10:6,
10:9, 11:21, 13:20,
18:8, 18:12, 23:15,
25:13, 25:16, 26:19,
43:20, 64:15, 65:8,
66:7, 66:13, 67:22,
88:11, 110:6
site-specific [1] - 8:22
sited [13] - 11:12,
34:13, 34:15, 34:16,
39:15, 39:17, 44:1,
63:1, 75:2, 76:8,
88:13, 89:24, 99:13
sites [3] - 9:22, 73:3,
76:13
siting [5] - 8:20, 9:2,
11:5, 15:16, 34:13
sitting [1] - 66:10
situation [2] - 98:23,
99:9
situations [1] - 77:17
six [1] - 22:16
Sixth [1] - 115:4
size [4] - 61:11, 68:4,
103:5, 103:9
sized [1] - 68:4
skipped [1] - 53:9
slide [9] - 6:23, 8:7,
9:12, 9:19, 11:14,
59:24, 61:8, 62:17

slides [2] - 6:22, 41:24
slightly [2] - 18:10,
19:8
slow [2] - 19:22, 19:24
slower [2] - 54:2, 54:4
slowing [1] - 79:1
small [7] - 39:24,
40:22, 56:12, 62:22,
88:8, 103:7, 104:20
smaller [8] - 28:22,
50:7, 50:9, 50:11,
51:24, 52:15, 52:24,
67:20
snake [6] - 10:20,
12:9, 34:7, 59:23,
62:11
snakes [1] - 34:17
solar [2] - 7:10, 7:11
Solar [1] - 17:8
sole [4] - 44:10, 44:15,
45:24, 93:11
sole-source [4] -
44:10, 44:15, 45:24,
93:11
solution [1] - 40:10
someone [5] - 4:11,
4:15, 16:21, 32:7,
86:24
somethin' [1] - 37:7
sometimes [1] - 72:6
somewhat [1] - 77:2
somewhere [2] -
28:12, 66:11
sorry [12] - 6:15, 6:18,
8:18, 19:20, 31:13,
31:24, 32:21, 38:11,
81:13, 89:8, 93:15,
97:11
sort [6] - 62:2, 69:6,
75:19, 85:6, 86:11,
86:13
sound [3] - 37:6,
83:24, 84:3
sounded [2] - 37:14,
38:10
sounds [5] - 21:9,
67:6, 97:5, 97:6,
113:17
source [6] - 44:10,
44:15, 45:24, 93:11,
97:10, 97:14
south [3] - 77:24,
87:16, 87:18
southeast [1] - 61:14
space [1] - 81:15
speaker [1] - 78:22
special [3] - 46:15,
78:13, 78:15
SPECIAL [1] - 1:3
species [58] - 9:24,

11:24, 12:3, 12:7, 13:3, 13:9, 27:23, 30:7, 30:13, 33:14, 34:3, 34:9, 35:11, 38:2, 38:13, 40:1, 47:13, 54:7, 56:13, 58:23, 58:24, 59:14, 60:4, 60:5, 60:11, 60:14, 60:15, 61:1, 61:11, 61:13, 61:23, 62:15, 62:20, 62:24, 63:12, 64:13, 71:13, 71:19, 72:7, 74:13, 77:16, 85:17, 85:21, 85:22, 91:15, 92:14, 92:19, 94:24, 95:21, 96:14, 99:7, 103:24, 104:2, 105:20, 107:13, 107:14, 108:7 Species [2] - 9:17, 11:18 species-specific [1] - 72:7 specific [9] - 8:22, 16:16, 28:20, 30:11, 47:6, 72:7, 74:2, 98:3, 103:15 specifically [6] - 10:2, 19:2, 34:1, 71:5, 74:14, 95:20 speed [6] - 20:17, 20:18, 21:2, 51:19, 54:5, 101:10 speeds [2] - 19:3, 19:4 spell [9] - 6:11, 32:22, 39:1, 41:13, 43:1, 58:3, 80:3, 80:6 Spencer [1] - 3:18 SPENCER [1] - 3:19 spent [2] - 7:6, 7:8 spinning [3] - 19:7, 50:8, 52:21 spotters [2] - 43:9 spotty [1] - 82:23 spring [1] - 60:18 staff [3] - 14:23, 46:7, 105:3 stage [2] - 39:1, 76:17 STALTER [6] - 41:14, 41:17, 87:9, 87:12, 91:4, 91:7 Stalter [3] - 41:14, 87:9, 91:2 stand [4] - 26:20, 27:18, 48:18, 113:24 stand-alone [2] - 26:20, 27:18 standardized [1] - 76:10	start [12] - 5:22, 8:10, 13:19, 15:6, 20:4, 20:16, 28:23, 57:4, 57:17, 68:19, 69:1, 69:4 started [5] - 23:20, 59:12, 77:3, 89:10, 100:2 starts [1] - 32:20 STATE [1] - 1:1 state [28] - 6:11, 8:16, 9:15, 11:17, 11:23, 12:4, 12:8, 12:9, 12:10, 13:3, 13:13, 13:22, 15:5, 28:1, 34:8, 41:12, 43:1, 46:17, 46:22, 58:3, 60:15, 71:16, 80:2, 94:24, 105:12, 109:2, 110:23 State [3] - 7:5, 13:16, 14:6 State's [1] - 3:17 state-listed [8] - 11:23, 12:8, 12:9, 12:10, 13:3, 28:1, 60:15, 71:16 state-protected [1] - 12:4 statewide [3] - 16:3, 26:22, 27:6 statistical [4] - 40:15, 40:21, 58:9, 64:22 statisticians [1] - 58:11 stem [1] - 80:11 steps [2] - 11:2, 12:18 stick [2] - 29:1, 60:19 still [10] - 4:14, 16:12, 24:9, 28:22, 34:12, 50:4, 53:22, 72:8, 97:4, 110:15 stories [2] - 71:6, 89:23 strategies [6] - 58:15, 88:19, 92:17, 95:4, 109:13, 110:22 Stream [1] - 46:19 streams [10] - 13:10, 15:5, 15:8, 15:14, 15:19, 15:21, 51:1, 63:5, 86:22 Streams [1] - 15:3 stress [1] - 84:4 strike [1] - 30:10 strips [1] - 62:5 structures [2] - 14:2, 56:5 studied [3] - 50:5, 65:20, 83:1	studies [57] - 8:23, 9:1, 10:14, 11:22, 23:21, 23:22, 23:23, 26:4, 26:19, 26:21, 26:23, 26:24, 27:2, 27:6, 27:9, 27:12, 27:16, 27:19, 27:20, 27:21, 30:17, 36:16, 41:23, 49:20, 51:22, 52:12, 58:12, 59:9, 59:16, 59:19, 60:1, 63:11, 63:19, 65:2, 69:10, 74:2, 82:13, 84:6, 84:14, 85:14, 85:21, 86:9, 86:12, 89:11, 90:1, 94:8, 96:22, 100:11, 102:23, 106:11, 107:7, 107:9, 108:18, 109:22, 112:2 study [27] - 8:22, 25:20, 26:20, 27:4, 27:10, 36:14, 51:19, 58:13, 59:17, 66:1, 69:18, 70:5, 70:19, 72:19, 81:8, 85:10, 85:19, 94:14, 94:21, 95:24, 96:16, 99:12, 102:18, 102:21, 107:17, 112:21 studying [3] - 94:15, 94:18, 95:24 stuff [3] - 4:14, 64:21, 68:24 styrofoam [1] - 68:6 subject [1] - 112:8 submit [9] - 31:11, 31:18, 32:5, 57:17, 67:9, 67:18, 67:19, 112:19 submittals [1] - 92:8 submitted [6] - 14:6, 14:9, 14:11, 59:1, 59:3 submitting [1] - 5:22 substantial [1] - 104:14 substations [1] - 15:18 subtract [1] - 65:19 success [1] - 71:6 successful [2] - 19:24, 53:21 suggest [2] - 48:2, 57:6 suggesting [2] - 66:20, 106:4 suggestion [1] - 32:6 suggests [1] - 40:8	suitable [16] - 11:6, 13:3, 13:5, 29:19, 30:4, 35:4, 38:1, 61:1, 61:5, 61:9, 61:10, 61:12, 61:22, 62:10, 62:15, 62:23 summarizes [1] - 96:22 summer [5] - 38:5, 39:20, 61:13, 63:7, 107:8 summers [1] - 18:17 support [5] - 36:18, 36:21, 36:24, 96:19, 97:16 supposed [2] - 26:5, 76:2 surfaces [1] - 51:5 surround [1] - 31:3 surveillance [1] - 109:14 Survey [1] - 106:8 survey [22] - 12:17, 18:7, 25:3, 28:4, 33:4, 33:5, 37:18, 38:4, 47:2, 47:4, 47:7, 58:22, 59:24, 64:5, 75:21, 81:3, 81:10, 81:16, 100:8, 105:22, 106:17, 108:13 survey-dependent [1] - 47:4 surveying [1] - 64:21 surveyor [1] - 110:2 surveys [49] - 10:16, 10:17, 10:20, 10:22, 10:23, 11:1, 11:3, 12:6, 12:15, 13:2, 13:21, 14:4, 14:5, 14:8, 14:9, 14:10, 14:12, 15:11, 23:4, 23:5, 24:14, 24:20, 24:21, 25:5, 27:22, 28:4, 30:22, 33:18, 34:21, 37:24, 38:2, 38:6, 39:22, 40:4, 47:2, 47:14, 59:19, 59:20, 60:17, 62:18, 69:3, 69:4, 81:24, 88:11, 88:22, 89:21, 105:11, 105:13, 105:17 survival [1] - 41:3 Susan [2] - 43:3, 93:5 SUSAN [1] - 43:3 susceptible [4] - 71:10, 71:11, 73:2, 73:8 sustainability [2] -	7:21, 16:7 swans [2] - 42:2, 90:20 swatch [1] - 110:17 swear [2] - 6:6, 57:22 switching [1] - 77:9 sworn [2] - 6:8, 57:24 syndrome [1] - 74:16 system [2] - 12:12, 78:24 systems [1] - 72:18
T				
Table [1] - 33:11 table [4] - 33:16, 34:24, 37:8, 37:14 tactics [1] - 77:11 tail [1] - 71:14 takeaway [1] - 62:17 talker [1] - 19:19 talks [1] - 70:5 tall [2] - 90:10, 90:12 taller [9] - 49:21, 50:5, 50:7, 51:21, 52:16, 52:17, 52:18, 53:1, 54:23 tallest [1] - 90:13 tame [2] - 104:18 Tammy [2] - 1:19, 115:3 tammy's [1] - 19:21 task [4] - 44:4, 44:5, 44:9, 45:23 technician [1] - 58:19 technology [1] - 58:7 TEMPORARY [1] - 1:8 temporary [1] - 4:13 ten [4] - 7:9, 28:15, 48:10, 71:8 tend [2] - 70:6, 107:16 tends [2] - 53:6, 61:1 term [2] - 60:1, 103:11 terms [5] - 26:24, 27:18, 49:24, 70:15, 101:17 testified [2] - 54:23, 112:16 testify [7] - 113:1, 113:6, 113:9, 113:10, 113:13, 113:14, 113:15 testimony [1] - 83:5 tests [1] - 69:7 text [1] - 112:17 Thanksgiving [1] - 5:21 THE [20] - 1:14, 1:15, 2:2, 3:11, 6:17, 19:18, 19:20, 20:1,				

<p>20:3, 20:5, 20:8, 20:10, 21:12, 31:15, 31:21, 31:24, 45:14, 45:18, 47:24, 80:6</p> <p>there'll ^[1] - 82:18</p> <p>therefore ^[1] - 106:7</p> <p>they've ^[7] - 34:11, 48:4, 63:9, 63:18, 79:4, 82:12</p> <p>thinking ^[2] - 50:22, 84:8</p> <p>third ^[6] - 23:9, 23:10, 25:19, 26:6, 26:10, 63:11</p> <p>third-party ^[6] - 23:9, 23:10, 25:19, 26:6, 26:10, 63:11</p> <p>thousand ^[5] - 11:6, 16:14, 18:12, 25:9, 65:9</p> <p>thousands ^[3] - 82:21, 82:22</p> <p>threatened ^[1] - 74:16</p> <p>three ^[18] - 12:7, 16:24, 20:19, 21:11, 22:12, 24:4, 63:9, 64:4, 64:8, 69:17, 75:22, 88:24, 94:14, 94:21, 95:17, 102:17, 106:16, 113:12</p> <p>three-year ^[2] - 64:4, 102:17</p> <p>threw ^[1] - 97:18</p> <p>throughout ^[7] - 33:19, 62:6, 68:8, 73:14, 74:4, 76:4, 100:17</p> <p>throw ^[5] - 112:18, 112:20, 113:2, 113:7, 113:14</p> <p>tied ^[1] - 73:10</p> <p>time-will-tell ^[1] - 50:13</p> <p>timing ^[5] - 13:6, 24:5, 29:10, 29:12, 29:14</p> <p>tip ^[7] - 49:18, 50:1, 51:23, 72:13, 91:20, 101:10</p> <p>today ^[4] - 4:7, 55:7, 55:8, 100:3</p> <p>together ^[3] - 64:19, 69:5, 76:1</p> <p>tolerant ^[3] - 70:17, 70:18, 73:24</p> <p>tonight ^[3] - 4:18, 112:11, 113:23</p> <p>tonight's ^[2] - 4:3, 5:24</p> <p>tons ^[2] - 43:19, 43:24</p>	<p>took ^[2] - 34:12, 48:24</p> <p>top ^[2] - 70:19, 91:23</p> <p>topic ^[3] - 16:17, 72:4, 109:12</p> <p>touched ^[2] - 51:20, 94:19</p> <p>tower ^[4] - 24:18, 49:18, 93:16</p> <p>toxicologist ^[1] - 86:23</p> <p>transcribed ^[1] - 115:7</p> <p>transcript ^[1] - 115:8</p> <p>transcription ^[1] - 115:7</p> <p>transfer ^[1] - 72:11</p> <p>transmitter ^[1] - 71:21</p> <p>transmitters ^[1] - 53:11</p> <p>travel ^[5] - 28:14, 28:19, 74:3, 100:16, 100:20</p> <p>TRAVIS ^[1] - 58:5</p> <p>Travis ^[26] - 2:4, 19:13, 21:4, 23:6, 24:24, 27:12, 28:7, 29:5, 33:17, 34:22, 36:7, 36:22, 39:7, 41:22, 42:11, 43:11, 52:19, 53:16, 53:23, 53:24, 54:12, 57:15, 58:5, 59:9</p> <p>Travis's ^[1] - 59:3</p> <p>Treaty ^[2] - 9:18, 107:20</p> <p>tree ^[4] - 30:1, 63:7, 74:22, 74:24</p> <p>tree-clearing ^[1] - 63:7</p> <p>trees ^[7] - 11:7, 29:21, 35:19, 60:19, 61:11, 63:8</p> <p>trial ^[2] - 69:11, 72:22</p> <p>trialed ^[1] - 72:19</p> <p>trials ^[2] - 64:14, 69:20</p> <p>tributaries ^[1] - 61:15</p> <p>tried ^[2] - 51:19, 53:20</p> <p>true ^[10] - 65:5, 90:20, 92:13, 100:18, 100:21, 105:15, 106:17, 108:16, 111:12, 115:8</p> <p>try ^[11] - 16:8, 58:13, 64:18, 66:7, 69:5, 69:7, 69:9, 85:10, 86:13, 100:9, 100:12</p> <p>trying ^[17] - 7:22, 19:21, 19:23, 25:13, 26:12, 31:13, 35:7, 37:11, 45:23, 53:19, 53:22, 63:11, 83:4,</p>	<p>88:11, 90:2, 110:9, 110:11</p> <p>Tuesday ^[2] - 113:18, 113:19</p> <p>turbine ^[26] - 20:14, 21:23, 22:1, 22:6, 25:11, 43:20, 44:1, 47:3, 47:6, 47:8, 49:21, 52:15, 54:24, 55:3, 69:24, 70:16, 71:10, 71:12, 72:15, 73:18, 76:16, 90:18, 93:15, 95:16, 101:14, 103:21</p> <p>turbines ^[56] - 11:5, 11:9, 11:12, 15:17, 18:12, 18:19, 19:4, 20:16, 20:19, 24:3, 25:13, 36:3, 39:16, 42:14, 44:23, 49:17, 50:5, 51:21, 52:5, 52:6, 52:8, 52:18, 52:24, 53:1, 54:24, 55:1, 55:2, 55:12, 62:21, 62:24, 64:12, 65:14, 66:1, 66:4, 70:6, 70:14, 73:2, 73:22, 73:23, 75:2, 76:9, 79:9, 80:14, 84:3, 88:8, 88:12, 88:20, 89:12, 89:24, 94:22, 96:7, 101:10, 102:4, 105:13, 105:18, 108:2</p> <p>turn ^[1] - 89:5</p> <p>turned ^[2] - 19:5, 19:6</p> <p>twice ^[2] - 82:21, 105:1</p> <p>two ^[39] - 6:23, 10:2, 10:15, 10:16, 12:13, 17:4, 21:21, 21:23, 25:5, 28:15, 28:16, 28:18, 28:23, 29:9, 29:16, 39:22, 41:19, 49:18, 60:6, 60:14, 60:18, 60:22, 66:21, 75:21, 76:16, 76:21, 77:3, 82:10, 87:21, 89:6, 92:22, 100:8, 100:19, 106:13, 107:10, 112:11, 113:4, 113:23</p> <p>Two ^[1] - 4:23</p> <p>two-and-a-half ^[2] - 41:19, 100:19</p> <p>two-mile ^[5] - 28:15, 28:18, 28:23, 60:22, 113:4</p> <p>type ^[4] - 38:4, 82:23, 82:24, 85:19</p>	<p>types ^[3] - 7:7, 30:16, 108:18</p> <p>typical ^[3] - 60:12, 75:15, 91:16</p> <p>typically ^[15] - 30:15, 50:9, 69:20, 70:13, 71:15, 71:17, 76:6, 101:16, 101:20, 102:1, 102:6, 102:8, 103:6, 103:17, 111:1</p>	<p>U</p> <p>U.S ^[29] - 8:18, 9:15, 12:15, 21:18, 32:16, 32:24, 34:6, 59:11, 60:7, 60:22, 74:18, 76:1, 77:7, 77:18, 80:20, 85:8, 88:18, 100:7, 100:13, 103:18, 104:3, 104:7, 104:13, 106:3, 106:8, 108:13, 110:5, 110:14, 110:16</p> <p>ultimately ^[4] - 60:21, 63:18, 76:9, 84:10</p> <p>ultrasonic ^[3] - 53:11, 71:21, 72:5</p> <p>ultrasound ^[2] - 72:11, 72:12</p> <p>unable ^[1] - 15:23</p> <p>unanticipated ^[1] - 14:20</p> <p>under ^[3] - 4:9, 64:12, 79:1</p> <p>undergrad ^[1] - 7:2</p> <p>underneath ^[1] - 19:3</p> <p>understood ^[4] - 49:7, 49:22, 68:10, 96:12</p> <p>undertake ^[1] - 26:24</p> <p>unfortunately ^[2] - 5:13, 72:15</p> <p>units ^[2] - 38:18, 79:20</p> <p>University ^[2] - 7:3, 7:5</p> <p>unknown ^[2] - 50:12, 52:10</p> <p>unless ^[1] - 101:18</p> <p>unlikely ^[5] - 33:24, 34:16, 34:20, 101:18, 103:10</p> <p>Unlimited ^[1] - 17:3</p> <p>up ^[62] - 8:7, 15:11, 17:13, 19:14, 20:6, 21:4, 23:6, 24:12, 27:24, 28:3, 30:20, 35:24, 36:4, 36:8, 37:7, 38:24, 40:4,</p>	<p>41:12, 42:4, 42:12, 43:1, 43:12, 43:22, 44:22, 44:23, 47:1, 48:4, 48:16, 49:10, 50:23, 53:10, 55:22, 57:4, 58:14, 59:15, 62:23, 63:24, 73:17, 74:15, 80:2, 81:24, 82:2, 83:15, 84:19, 84:20, 87:8, 88:18, 88:20, 89:4, 91:12, 93:2, 95:19, 96:23, 97:22, 98:14, 100:2, 101:20, 104:2, 105:21, 109:19, 110:2, 113:3</p> <p>up-listed ^[1] - 74:15</p> <p>Upland ^[11] - 12:9, 13:4, 27:24, 30:2, 34:17, 35:10, 59:21, 60:16, 61:21, 62:10, 63:2</p> <p>urban ^[1] - 74:4</p> <p>USE ^[1] - 1:3</p> <p>uses ^[1] - 52:15</p> <p>USGS ^[1] - 40:16</p>	<p>V</p> <p>value ^[3] - 103:12, 103:13, 103:15</p> <p>values ^[2] - 7:21, 16:7</p> <p>variability ^[1] - 53:7</p> <p>variables ^[1] - 96:17</p> <p>varies ^[1] - 96:14</p> <p>variety ^[4] - 15:12, 31:4, 36:16, 58:23</p> <p>various ^[6] - 7:7, 8:15, 9:20, 15:4, 16:3, 16:19</p> <p>vary ^[1] - 111:1</p> <p>verbal ^[2] - 45:2, 45:3</p> <p>version ^[3] - 67:20, 67:21, 68:6</p> <p>versus ^[3] - 50:11, 52:16, 52:24</p> <p>vet ^[1] - 69:14</p> <p>veterinarian ^[1] - 84:13</p> <p>vibration ^[3] - 83:24, 84:7, 84:14</p> <p>vibrations ^[1] - 84:3</p> <p>Vice ^[1] - 1:10</p> <p>Victor ^[1] - 80:7</p> <p>violate ^[1] - 46:16</p> <p>Virginia ^[1] - 99:6</p> <p>visit,s ^[1] - 110:6</p> <p>voluntary ^[1] - 16:13</p> <p>vulnerable ^[1] - 102:4</p>
--	---	--	---	---	--	---

W			
<p>wait [2] - 66:9, 98:9 walk [2] - 7:17, 59:9 warblers [1] - 82:2 watching [1] - 110:4 Water [3] - 15:3, 16:1, 46:19 water [8] - 15:19, 16:3, 29:1, 44:10, 45:24, 82:11, 88:15, 93:24 waterbodies [5] - 15:5, 15:8, 15:22, 51:2, 73:11 waterfowl [6] - 42:4, 42:12, 70:6, 70:7, 102:7, 102:8 waterways [2] - 62:5, 93:24 WAX [21] - 3:1, 3:6, 3:14, 4:1, 4:19, 4:23, 5:8, 5:11, 18:3, 18:5, 20:6, 20:9, 20:11, 21:9, 21:16, 22:14, 35:22, 49:13, 78:19, 78:21, 79:14 Wax [1] - 1:10 wax [2] - 3:13, 5:7 ways [2] - 108:21, 108:22 weather [1] - 4:9 web [1] - 104:8 website [1] - 107:24 week [1] - 93:18 week's [1] - 67:22 weeks [1] - 75:22 weigh [1] - 63:16 welcome [3] - 3:6, 4:3, 5:20 west [4] - 23:6, 58:8, 71:11, 73:1 West [4] - 2:8, 57:16, 89:14, 99:6 western [1] - 58:7 wet [1] - 62:13 wetland [7] - 15:19, 15:21, 23:23, 51:1, 61:2, 61:3, 62:13 wetlands [8] - 15:4, 15:8, 15:14, 29:1, 29:4, 47:5, 62:12, 62:14 whereas [1] - 80:21 WHEREUPON [7] - 3:4, 6:7, 17:21, 48:19, 57:10, 57:23, 114:2 whip [1] - 19:15 whisper [1] - 31:14 whistle [1] - 72:15</p>	<p>white [1] - 74:16 whole [9] - 24:23, 33:6, 40:15, 40:23, 75:4, 76:14, 95:6, 96:8, 112:2 wide [1] - 58:23 wider [2] - 27:9, 27:11 widespread [1] - 102:22 wildlife [42] - 7:2, 7:16, 7:23, 8:23, 13:12, 18:6, 20:15, 23:13, 23:22, 24:21, 25:12, 27:2, 29:16, 39:13, 39:16, 41:1, 43:10, 47:4, 58:10, 58:16, 62:18, 63:22, 66:6, 71:6, 85:20, 85:23, 86:1, 86:22, 88:9, 88:13, 89:17, 90:19, 92:18, 94:8, 94:15, 95:9, 95:12, 95:23, 102:22, 103:1, 104:5, 104:10 Wildlife [54] - 2:7, 7:13, 8:18, 9:13, 9:14, 9:16, 10:1, 10:7, 10:24, 11:11, 12:16, 18:7, 18:14, 18:16, 19:13, 21:18, 21:19, 22:4, 23:21, 26:3, 28:16, 31:12, 31:19, 31:21, 32:17, 32:19, 33:1, 34:2, 34:6, 39:23, 40:5, 40:16, 46:17, 55:15, 59:11, 60:7, 60:23, 76:1, 77:7, 77:18, 85:8, 88:18, 100:7, 100:14, 103:18, 104:3, 104:7, 104:13, 106:4, 106:8, 108:13, 110:6, 110:14, 110:16 Will's [1] - 68:18 William [1] - 1:11 willing [1] - 88:3 wind [44] - 7:10, 7:11, 10:3, 19:3, 19:5, 19:6, 19:9, 20:18, 21:2, 31:8, 36:13, 40:23, 42:5, 43:16, 43:20, 50:7, 50:21, 54:23, 55:12, 58:10, 58:20, 60:2, 60:7, 70:12, 71:10, 71:12, 71:18, 79:1, 80:21, 84:3, 89:12, 89:15, 90:18, 93:16, 95:16,</p>	<p>99:5, 99:12, 102:4, 102:9, 103:17, 106:23, 108:14, 109:1 WIND [1] - 1:2 Wind [13] - 2:7, 4:4, 10:8, 10:15, 12:6, 14:15, 17:1, 17:4, 31:12, 31:19, 31:21, 33:13, 103:14 window [1] - 90:16 windows [3] - 56:5, 80:19 wing [1] - 101:9 winter [8] - 11:7, 29:19, 35:20, 42:7, 73:13, 81:21, 88:15, 107:8 wintertime [2] - 42:7, 63:8 witness [31] - 5:18, 6:3, 6:7, 17:13, 17:19, 18:2, 31:16, 38:23, 41:11, 41:20, 42:23, 44:6, 44:18, 45:1, 46:4, 46:8, 47:21, 48:6, 48:17, 56:7, 56:20, 57:4, 57:14, 57:23, 59:7, 68:16, 75:14, 78:2, 93:8, 93:18, 98:13 WITNESS [13] - 19:18, 19:20, 20:1, 20:3, 20:8, 20:10, 21:12, 31:15, 31:21, 31:24, 45:14, 45:18, 47:24 WITNESSES [1] - 2:2 witnesses [4] - 5:15, 112:11, 113:12, 113:23 wondered [2] - 82:16, 102:18 wondering [1] - 82:13 wood [2] - 13:11, 61:10 word [1] - 52:19 words [3] - 65:9, 70:10, 83:20 works [2] - 7:15, 53:22 worry [2] - 86:13, 86:14 worth [1] - 65:9 write [1] - 19:23 Wyoming [1] - 72:20</p>	<p>80:21, 80:22, 92:16, 102:17, 104:6, 104:11, 107:15, 107:16, 107:18 years [34] - 7:6, 7:9, 10:15, 10:16, 14:3, 24:4, 24:7, 39:22, 58:10, 58:18, 60:6, 60:18, 63:9, 64:8, 64:9, 69:17, 71:8, 76:16, 76:21, 77:3, 82:18, 89:6, 89:9, 89:10, 89:17, 89:18, 94:14, 94:21, 95:17, 106:13, 106:16, 107:7, 107:10 yellow [1] - 49:2 yesterday [1] - 90:16</p>
			Z
			<p>ZBA [6] - 32:7, 46:15, 48:2, 48:15, 48:17, 57:7 zones [1] - 91:11 Zoning [9] - 4:4, 18:1, 22:24, 38:16, 54:16, 74:8, 109:7, 111:6, 115:9 ZONING [3] - 1:1, 1:6, 1:9 zoning [20] - 4:10, 4:11, 4:15, 6:1, 6:2, 8:3, 32:12, 37:2, 48:24, 49:8, 50:18, 51:16, 55:9, 55:22, 68:15, 78:18, 79:18, 112:5, 112:8, 112:16</p>
		Y	
		<p>year [17] - 10:23, 62:6, 63:15, 64:4, 64:7, 69:21, 77:7, 77:19,</p>	