

In The Matter Of:
McLEAN COUNTY ZONING BOARD OF APPEALS

APPEALS HEARING
June 1, 2021

Area Wide Reporting and Video Conferencing
www.areawide.net
scheduling@areawide.net
301 W. White Street
Champaign, IL 61820

Original File 0601ZBA.txt

Min-U-Script® with Word Index

1 MCLEAN COUNTY ZONING BOARD OF APPEALS HEARING
 2 IN PERSON AND REMOTE ATTENDEES
 3 Case No. SU-21-03
 4 TUESDAY, JUNE 1, 2021
 5 115 EAST WASHINGTON,
 6 ROOMS 400 and 404,
 7 BLOOMINGTON, ILLINOIS

8 THOSE PRESENT IN PERSON:
 9 DARRELL MITCHELL
 10 JIM FINNIGAN
 11 PHIL DICK

12 STATE'S ATTORNEY'S OFFICE:
 13 MS. SAMANTHA VAZQUEZ AND
 14 MR. CHRISTOPHER SPANOS

15 COUNSEL FOR SAPPHIRE SKY WIND PROJECT:
 16 MR. JIM GRIFFIN
 17 Schain Banks
 18 70 West Madison St.
 19 Suite 5300
 20 Chicago, IL 60602
 21 312-345-5700
 22 jgriffin@schainbanks.com

23 BOARD MEMBERS PRESENT BY ZOOM:
 24 RUTH NOVOSAD
 MICHAEL KURITZ
 RICK DEAN
 BRIAN BANGERT
 DRAKE ZIMMERMAN
 JULIA TURNER

REPORTED IN PERSON BY: Deann K. Parkinson, CSR
 Area Wide Reporting
 301 West White
 Champaign, IL 61820

1 (The time is 7:39)
 2 MR. FINNIGAN: The secretary will call
 3 the case.
 4 MR. DICK: This is case number SU-21-03,
 5 application of Sapphire Sky Wind Energy LLC, by
 6 Invenergy Wind Development North America LLC, for
 7 special use to allow a Wind Energy Conversion
 8 System consisting of up to 64 wind turbine
 9 generators that are up to 591 feet in height, as
 10 well as any access roads, transformers, power
 11 lines, communication lines, interconnection lines,
 12 substation, construction laydown yards and other
 13 ancillary facilities or structures on property in
 14 sections on property in Section 2, 6, 7, 11, 14,
 15 20, 24 through 27, 29 and 32 through 35, of
 16 Township 22 north of West Township and Section 5
 17 of Township 21 north of West Township, Sections 1,
 18 2, 6 through 9, 11, 12, 14 through 16, 18, 19, 22
 19 and 23, 25 through 27, and 29 through 34 of
 20 Township 22 north in Bellflower Township. And
 21 Sections 1, 4, 5, 10 and 12 of Township 21 north
 22 of Bellflower township.
 23 Public notice of this hearing was
 24 published in the Panagraph on May 15, 2021, as

1 INDEX OF SPEAKERS

2

3

4 GREG VANDERKAMP.....page 25

5 MIKE HANKARD.....page 64

6 JOANNE BLANK.....page 82

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

1 provided by law. All of the other required
 2 notifications have been made, and the applicant
 3 has paid publication costs.
 4 I have the following exhibits that are a
 5 part of the application that was distributed to
 6 all the zoning board members in this booklet here.
 7 And it shows plat maps showing where these
 8 properties are located in Bellflower and West
 9 Townships as I just read in the file.
 10 There's a site map showing where the
 11 properties, where the turbines are located and the
 12 ones of adjacent property owners that are also
 13 shown on this map.
 14 I have three different communications
 15 from the Illinois Department of Natural Resources
 16 indicating that they have certain recommendations
 17 that are being incorporated into the staff report
 18 as far as this report. I also sent an e-mail to
 19 the Illinois Department of Natural Resources
 20 because some of the exhibits for the bat and bird
 21 studies were of properties that were in adjacent
 22 counties, and I wanted to know whether they were
 23 agreeable that they should apply still for this
 24 special use application, and the communications

Page 5

1 indicated that they do.
 2 And I have a communication from Aviation
 3 Systems Incorporated, who indicated that their
 4 research shows that there are no private airports
 5 or heliports within nine thousand feet of the edge
 6 of this property where this proposed wind farm is
 7 to be located.
 8 And I have communications from the
 9 Illinois Historic Preservation Agency that the
 10 applicant has submitted a study to them, and they
 11 want to have a report prior to construction that
 12 will be one of the conditions of our special use
 13 request, and my staff report.
 14 We have a resolution from the Blue Ridge
 15 School District Number 18, Board of Education,
 16 indicating whereas the Blue Ridge Board of
 17 Education has been monitoring development
 18 pertaining to a proposed wind project in West and
 19 Bellflower Townships known as Sapphire Sky Wind;
 20 whereas the board has considered the benefits of
 21 the proposed Sapphire Sky wind project to McLean
 22 County; whereas McLean County's experience with
 23 other wind projects has been positive; whereas
 24 Illinois is ranked sixth in the country for wind

Page 6

1 production and McLean County is the top wind
 2 energy producer in the State of Illinois.
 3 Whereas, the development in existence of
 4 wind farms in McLean County not only contributes
 5 to the property tax base, but also provides jobs
 6 to our citizens and ancillary support for local
 7 business opportunities; whereas McLean County has
 8 collected over 52 million in property taxes from
 9 the existing wind farms in the county, with an
 10 estimated benefit to the McLean County schools of
 11 over 34 million dollars; whereas, the board
 12 desires to adopt this resolution setting forth its
 13 support of the proposed Sapphire Sky wind project.
 14 Therefore, the board resolves as follows:
 15 The board acknowledges the economic
 16 benefit afforded to McLean County and Bellflower
 17 and West Townships regarding the 250 megawatt
 18 project given its minimum taxable investment in
 19 the county of 90 million dollars.
 20 Two, the board indicates the support of
 21 the project given this significant investment,
 22 together with the other economic benefits that
 23 will accrue to McLean County, Blue Ridge CUSD No.
 24 18, and the surrounding areas by hosting a wind

Page 7

1 project of this scale in the State of Illinois.
 2 Three, the board indicates that the
 3 burden of educating the students of our district
 4 rests primarily with our property owners, and
 5 while the evidence based funding model is intended
 6 to share the burden between the local school
 7 district and the state, the majority of the burden
 8 lies with the school district, and this stimulus
 9 to our tax base will benefit both our student body
 10 and the property owners in our school district.
 11 Four, by its signature below the board
 12 directs its secretary to provide a copy of this
 13 resolution to the McLean County board and the
 14 Zoning Board of Appeals adopted this 31st May,
 15 2021. And signed by the board president and the
 16 board secretary.
 17 I have another resolution from the Leroy
 18 CUSD No. 2 Board of Education. And I will not
 19 read it all to you. It is in a similar vein. But
 20 they support this resolution as well.
 21 And I have a staff report as follows:
 22 This property, this application is on
 23 approximately 14,268 acres of participating
 24 parcels. The topography is relatively flat to

Page 8

1 sloping in some areas. The drainage is to
 2 multiple drainage patterns. The property is
 3 primarily in crop production with some grass and
 4 trees. It's all in the agriculture district and
 5 the surrounding zoning is all in the agriculture
 6 district.
 7 The analysis of the seven standards of
 8 this ordinance are as follows: The proposed
 9 special use will not be detrimental to or
 10 endanger the health, safety, morals, comfort or
 11 welfare of the public. This standard can be met.
 12 The applicant is proposing to build a
 13 wind energy conversion system, or WECS, consisting
 14 of up to 64 wind turbine generators and up to 591
 15 feet in height that will produce 250 megawatts, or
 16 MW, of electricity.
 17 The applicant intends to use a
 18 combination of the Vestas V150 4.2 megawatt and
 19 Vestas V136 3.6 megawatt turbine models for the
 20 project.
 21 Their site plan shows 89 turbines, but
 22 only 64 of them will be built. The turbines will
 23 be equipped with serrated trailing edge blades to
 24 reduce acoustical impact. The proposed wind

Page 9

1 energy conversion system meets the setback
 2 requirements of the county code. The turbines
 3 will be set back three times the total height of
 4 the turbine to the closest wall of an occupied
 5 residence of non-participating property owners.
 6 1.1 times the height of the turbine from all
 7 property lines of non-participating property
 8 owners. 1.1 times the height from the edge if any
 9 public road right-of-way. 1.1 times the height
 10 from third party transmission lines. And 1.1
 11 times the height from communication towers as
 12 measured from the tip of the blade. Three times
 13 the height is 1,773 feet. 1.1 times the height is
 14 650 feet.

15 A professional engineer shall certify as
 16 part of the building permit application that the
 17 foundation and tower design of the WECS is within
 18 accepted professional standards. After
 19 construction is complete, the professional
 20 engineer will verify that they are built according
 21 to the approved plans.

22 The applicant has submitted a
 23 determination of no hazard for the Federal
 24 Aviation Administration, or FAA, for the proposed

Page 10

1 Sapphire Sky Wind Farm LLC issued by Aviation
 2 Systems for turbines up to 624 feet in height.

3 The study also indicated that there are
 4 no private airports within 9,000 feet of the
 5 boundary of the property. A noise study was
 6 completed and submitted by Hankard Environmental
 7 that shows the project will comply with the
 8 Illinois Pollution Control Board regulations, or
 9 IPCB. That's again, the Illinois Pollution
 10 Control Board. And the county code. If the
 11 applicant changes the type of turbine, an updated
 12 sound impact assessment will need to be provided
 13 to insure compliance with the IPCB noise
 14 regulations.

15 A microwave study was completed and
 16 submitted by ComSearch that shows all proposed
 17 turbines are located outside existing microwave
 18 beam paths. A shadow flicker study was completed
 19 and submitted by Stantec that indicates that no
 20 residence would be affected by over 30 hours of
 21 shadow flicker per year.

22 A market impact analysis was completed
 23 and submitted by MaRous and Company that indicates
 24 the project will not have a negative impact on

Page 11

1 residential or agricultural property values in the
 2 surrounding area.

3 An architectural review entitled the
 4 Phase I Archeological Renaissance for the Sapphire
 5 Sky Wind Farm project in McLean County, Illinois,
 6 and architectural review for the proposed Sapphire
 7 Sky Wind Farm was completed and submitted by the
 8 Public Service Archeology and Architecture Program
 9 at the University of Illinois at Urbana Champaign.

10 This Phase I study was also submitted to
 11 the Illinois State Historic Preservation office,
 12 or IHPA. The IHPA requests a monitoring plan
 13 before any construction can begin. An eagle
 14 survey was completed and submitted by Tetra Tech
 15 found one bald eagle. Bat and avian studies were
 16 completed and submitted from Tetra Tech. These
 17 studies recommends the following in response --
 18 excuse me.

19 The Illinois Department of Natural
 20 Resources recommends the following in response to
 21 these studies: One, complete a full suite of
 22 avian and bat use surveys. Two, share results of
 23 surveys with IDNR. Three, complete a minimum of
 24 three years post-construction mortality surveys at

Page 12

1 turbine sites. Four, provide a minimum of one
 2 half mile setback from the Sangamon River,
 3 Illinois Natural Areas Inventory, or INAI. And
 4 Salt Creek-Farmer City INAI. Five, provide a
 5 minimum of 500 foot setback from perennial streams
 6 with non-forested corridors.

7 Six, provide a minimum 1,000 foot
 8 setback from all forested areas and forested
 9 riparian corridors. Seven, provide a copy of any
 10 post construction mortality monitoring reports on
 11 an annual basis.

12 Eight, if significant bird or bat
 13 mortality is observed, or listed species are
 14 discovered, IDNR recommends further coordination
 15 be engaged immediately, and careful consideration
 16 be given to implementing the best available
 17 technologies to avoid and minimize these impacts.

18 And nine, require the applicant to
 19 curtail wind turbine operations below wind speeds
 20 of five meters per seconds from sunset to sunrise
 21 between July 15th and October 15th to minimize the
 22 risk of quote, "take", unquote, of listed bats and
 23 to minimize mortality of all bat species in
 24 general.

Page 13

1 Wind turbines should also be feathered,
 2 this means non-rotating, during these curtailment
 3 events. An AM/FM radio report was completed and
 4 submitted by ComSearch that recommends no
 5 mitigation techniques are required if turbine
 6 blades are located at least .055 kilometers from
 7 station WEXG. A mobile phone analysis was
 8 completed and submitted by ComSearch that
 9 indicates it is unlikely that mobile phone
 10 carrier's coverage will be compromised. ComSearch
 11 recommends that in the unlikely event of such
 12 compromise, utility towers, meteorological towers
 13 or even the turbine towers within the wind project
 14 area can serve as the platform for a base transmit
 15 site or cell enhancer.

16 A signed Agriculture Impact Mitigation
 17 Agreement, or AIMA, was submitted. A
 18 decommissioning plan was completed and submitted
 19 as part of the application by Sapphire Wind Energy
 20 LLC and is consistent with the AIMA and the county
 21 code. The applicant will work to remedy or
 22 mitigate any problems caused by the project by
 23 maintaining a hotline for 24 hour access once
 24 construction begins.

Page 14

1 After the project is complete, the
 2 applicant will maintain an on-site complaint
 3 resolution process at their local operating and
 4 maintenance facility.

5 The McLean County regional comprehensive
 6 plan approved on November 17th, 2009, proposes
 7 that the project area remain in agricultural land
 8 use and states that wind energy developments are
 9 an opportunity for preserving local farmland and
 10 agricultural heritage.

11 The plan goes on to state in reference
 12 to two wind farms that had already been approved
 13 at that time, quote, "besides adding significant
 14 tax dollars, both projects will assist local
 15 farmers as some take advantage of annual turbine
 16 rental fees for allowing the energy firms to erect
 17 turbines on private property."

18 Second standard, the proposed special
 19 use will not be injurious for the use and
 20 enjoyment of other property in the immediate
 21 vicinity for purposes already permitted which
 22 would substantially diminish property values in
 23 the immediate area. And this standard is met.

24 The surrounding property that currently

Page 15

1 is used for crop production will continue to be
 2 desirable for such use and will continue to be
 3 farmed. The proposed wind farm is compatible with
 4 agricultural operations in the project area and
 5 these agricultural operations will not likely be
 6 negatively impacted. The application meets the
 7 setback requirements of the zoning ordinance.
 8 Compliance with these setback requirements insure
 9 that the project improvements are located at safe
 10 distances from other uses.

11 The application demonstrates that the
 12 project will comply with those standards of the
 13 IPCB.

14 The noise analysis and the turbine
 15 setback requirements from occupied residences show
 16 the project will not injure nearby residents.

17 Site approval for each wind turbine
 18 within the project area needs to be approved by
 19 FAA before construction can begin. Lighting on
 20 turbines shall meet the FAA lighting requirements.
 21 The application states that no more intensive
 22 lighting will be installed than is required to
 23 meet minimum FAA lighting requirements.

24 There may be up to 17 turbines sited

Page 16

1 within one and a half miles of the Village of
 2 Bellflower. The applicant has an agreement with
 3 the village to allow the county to site these wind
 4 turbines. The applicant indicates that it will
 5 follow the recommendations of the IDNR as required
 6 in the zoning ordinance for wildlife.

7 The third standard, the proposed special
 8 use will not impede the orderly development of the
 9 surrounding property for uses permitted in the
 10 district. This standard is met. The agriculture
 11 district is very restrictive for establishing
 12 non-agricultural residential uses. Nearby land
 13 that is suitable for crop production will continue
 14 to be suitable for such use, and the limited area
 15 where residences are located turbines will be set
 16 back three times the turbine height from
 17 non-participating occupied residents.

18 Two turbines will be located closer to
 19 the residences than three times the height, and
 20 they are participating residents. They are
 21 turbine number T-55, which will be approximately
 22 1690 feet away from a participating residence.
 23 And T-98, which will be approximately 1530 feet
 24 away from a participating residence.

Page 17

1 The application meets the requirements
 2 of the zoning ordinance with respect to
 3 decommissioning.
 4 Standard number four, adequate
 5 utilities, access roads, drainage and other
 6 necessary facilities have been or will be
 7 provided, and this standard is met. The applicant
 8 will protect the existing drainage near the
 9 project, and repair any damage made to drain tile
 10 or other drainage improvements. The applicant is
 11 proposing to build gravel access roads to each
 12 tower. Drainage problems have developed along and
 13 through some of these access roads in the already
 14 built Twin Groves wind farm.
 15 It is necessary to install vegetated
 16 strips along the upstream side of access roads
 17 that are prone to washing out, particularly where
 18 the access roads cross waterways. To minimize
 19 erosion along access roads, waterways should be
 20 improved before access roads are installed, or the
 21 crossing will not be installed in a way that
 22 minimizes erosion.
 23 Five, adequate measures have been or
 24 will be taken to provide ingress and egress so

Page 18

1 designed as to minimize traffic congestion in the
 2 public streets. This standard is met. The
 3 applicant has been working with the county and
 4 townships to obtain road use agreements to
 5 maintain the public roads and provide adequate
 6 access during the construction process. A signed
 7 road use agreement with the county for use of
 8 county roads will need to be approved before the
 9 county board takes action on this application. A
 10 written road use agreement with the applicable
 11 township road commissioners will need to be
 12 obtained before construction permits are issued.
 13 Sixth standard, the establishment,
 14 maintenance and operation of the special use will
 15 be in conformance with the intent of the district
 16 in which it is located. This standard is met.
 17 The intent of the agriculture district states,
 18 quote, "provide for the location and govern the
 19 establishment and operation of land uses which are
 20 compatible with agriculture and are of such a
 21 nature that their location away from residential,
 22 commercial and industrial uses or areas is most
 23 desirable", unquote.
 24 And seven, the proposed special use, in

Page 19

1 all other respects, conforms to the applicable
 2 regulations of the agriculture district and this
 3 standard is met.
 4 Staff recommends that this application
 5 meets all of the standards set forth in the
 6 standards for special uses of the zoning ordinance
 7 provided compliance with the following
 8 stipulations:
 9 One, a written road use agreement shall
 10 be obtained with the county before the county
 11 board approves this application.
 12 Two, a written road use agreement shall
 13 be obtained with the applicable township road
 14 commissioners before construction permits are
 15 issued.
 16 Three, the development shall follow the
 17 plans and documents submitted with the application
 18 and with zoning regulations, including Article VI,
 19 Section 350-43.00(2), use standards for WECS.
 20 Four, adequate financial assurance
 21 acceptable to the county shall be -- adequate
 22 financial assurance acceptable to the county shall
 23 be submitted with the county according to the
 24 application. The decommissioning plan submitted

Page 20

1 with the application and the agricultural
 2 mitigation agreement with the Department of
 3 Agriculture.
 4 Five, no residence shall be affected by
 5 over 30 hours of shadow flicker per year.
 6 Six, if decommissioning is triggered,
 7 all facilities will be removed as required under
 8 the county code and the AIMA including the turbine
 9 foundations to a depth of five feet below grade.
 10 Seven, the applicant needs to comply
 11 with the following stipulations as recommended by
 12 IDNR, and those are the same stipulations that I
 13 read earlier recommended by IDNR.
 14 And number eight, Vestas V150 4.2
 15 megawatts and Vestas V136 3.6 megawatt turbine
 16 models shall be installed in this project
 17 according to the project layouts submitted with
 18 the application. If the applicant changes the
 19 type of turbine, an updated sound impact
 20 assessment will need to be provided to insure
 21 compliance with the IPC noise regulations.
 22 Nine, the applicant shall complete
 23 consultation with the Illinois Historic
 24 Preservation Agency before construction can begin.

Page 21

1 Ten, the applicant shall rectify any television,
 2 mobile phone and internet connection problems in
 3 the project area and return them to at least the
 4 level of service that occurred before the turbines
 5 were installed.
 6 11, no lighting shall be installed that
 7 is more intensive than the minimum required by the
 8 FAA.
 9 12, vegetative strips shall be installed
 10 along the upstream side of access roads as I
 11 mentioned earlier.
 12 13, the applicant will coordinate and
 13 provide aid to local fire districts to promote
 14 safety and emergency response procedures. And
 15 that concludes my report.
 16 **MR. FINNIGAN:** Trying to figure out how
 17 the best way to swear everybody in. It would be
 18 kind of nice if we did them all ahead of time, if
 19 you want to bring everybody up and we will do them
 20 one at a time. Probably have to come forward
 21 because you're going to have to speak your name
 22 and address. Why don't you just start with you.
 23 I'm just going to do this one time.
 24 (Group of witnesses sworn.)

Page 22

1 **MR. FINNIGAN:** Start with your name and
 2 address and we're going to move through them.
 3 **MR. GRIFFIN:** My name is James Griffin,
 4 office address is 70 West Madison Street, Chicago,
 5 Illinois, 60602. Griffin is spelled
 6 G-R-I-F-F-I-N.
 7 **MS. STIELOW:** My name is Dee Stielow,
 8 S-T-I-E-L-O-W, my address is 3605 North, 3300 East
 9 Road, Farmer City and Steve Stielow is also on
 10 that too.
 11 **MR. GRIFFIN:** I think that's an
 12 interested party that spoke. It's not part of our
 13 team.
 14 **MR. FINNIGAN:** At this point it's just
 15 going to be the applicants that we are asking to
 16 be sworn in. So, we will get to the rest of them
 17 later.
 18 **MS. McCLOSKEY:** Maeve McCloskey, office
 19 address, 1 South Wacker Drive, Chicago, 60606.
 20 M-A-E-V-E. M-C-C-L-O-S-K-E-Y.
 21 **MR. VANDERKAMP:** My name is Greg
 22 Vanderkamp with Invenergy. And my address is 1
 23 South Wacker Drive, Suite 1800, Chicago, Illinois.
 24 G-R-E-G. Last name V-A-N-D-E-R-K-A-M-P.

Page 23

1 **MR. MAROUS:** My name is Michael MaRous,
 2 MaRous and Company, 1550 North West Highway, Park
 3 Ridge, Illinois, 60068. M-A-R-O-U-S.
 4 **MR. HANKARD:** Good evening. My name is
 5 Mike Hankard. H-A-N-K-A-R-D. Business address is
 6 211 East Verona Avenue, V-E-R-O-N-A, and that's in
 7 Verona, Wisconsin.
 8 **MS. BLANK:** My name is Joanne Blank,
 9 J-O-A-N-N-E. Blank, B-L-A-N-K. Office address is
 10 1165 Scheuring S-C-H-E-U-R-I-N-G, road, DePere,
 11 D-E-P-E-R-E, Wisconsin, 54115.
 12 **MR. LOOMIS:** My name is David Loomis,
 13 L-O-O-M-I-S. My address is 2705 Kolby K-O-L-B-Y
 14 Court, Bloomington, Illinois.
 15 **MR. FINNIGAN:** All right. Go ahead and
 16 put on your case.
 17 **MR. GRIFFIN:** Thank you.
 18 **MS. GIAMPOLI:** This is Andrea Giampoli,
 19 I'm also checking in. I am one of the witnesses,
 20 the environmental witness. I just wanted to check
 21 in as well. I'm calling in remotely. It's
 22 G-I-A-M-P-O-L-I. At 1 South Wacker, Chicago,
 23 Illinois, Suite 1800. Thank you.
 24 **MR. FINNIGAN:** Thank you.

Page 24

1 **MR. GRIFFIN:** Thank you, Mr. Chairman,
 2 members of the zoning board. It's a pleasure to
 3 be here before you tonight on the Sapphire Sky
 4 Wind Energy special use application.
 5 Did you all hear that or should I repeat
 6 it? Thank you, again.
 7 My name is Jim Griffin. I'm the
 8 applicant's attorney here. I'm with the law firm
 9 of Schain Banks in Chicago, Illinois. I'm here on
 10 behalf of the applicant, Sapphire Sky Wind Energy
 11 LLC. We're here before you on our application for
 12 a special use permit.
 13 The applicant has submitted a
 14 comprehensive application containing all of the
 15 materials and reports that are required by the
 16 county zoning ordinance. This evening we will be
 17 presenting additional testimony in support of that
 18 application. Mr. Greg Vanderkamp, the lead
 19 project developer, will be our first witness and
 20 will testify by providing an overview of the
 21 property. After Mr. Vanderkamp testifies, we will
 22 have testimony from several subject matter experts
 23 who were involved with the preparation of the
 24 reports and the planning for the project.

Page 25

1 We do believe that at the conclusion of
 2 our presentation, at the conclusion of these
 3 hearings, you will find that the application meets
 4 all of the standards required for special use
 5 under the county zoning ordinance. Unless there
 6 are any preliminary questions or matters, we are
 7 prepared to call our first witness, Mr. Greg
 8 Vanderkamp. Mr. Vanderkamp does have a power
 9 point presentation, so if that could be uploaded
 10 we would appreciate it.

11 **MR. VANDERKAMP:** Good evening. Can
 12 everybody hear me? All right. My name is Greg
 13 Vanderkamp, I'm the project developer of the
 14 Sapphire Sky wind project.

15 First off, I'd really just like to thank
 16 the zoning board for being here tonight and
 17 hearing all of this information. It is quite a
 18 bit of information. And the application itself
 19 was over a thousand pages. So, we understand the
 20 meticulous nature by which you need to review and
 21 understand the documentation in front of you.

22 So, thank you very much for your time,
 23 specifically Mr. Dick, Mr. Mitchell and Mr. Adams
 24 as well, during their review that they conducted

Page 26

1 over the last few weeks.

2 So, as mentioned earlier by Mr. Griffin,
 3 this project has been developed by Invenergy.
 4 Invenergy has quite a bit of experience across the
 5 State of Illinois, as well as in McLean County.
 6 And we have appeared numerous times in front of
 7 the zoning board, as well as the county board.

8 Just to highlight a little bit about
 9 that experience in Illinois, and in McLean, we've
 10 developed over 16 projects across the state, most
 11 recently our two wind projects in McLean County
 12 were the Blooming Grove wind project, which went
 13 operational in December of last year. And also
 14 our White Oak wind project, which we developed and
 15 went operational in 2011.

16 But both are successful wind projects
 17 and both are still operating to date. So we have
 18 quite a bit of experience in this area, and I
 19 myself have been driving from Chicago down I-55 to
 20 Bloomington Normal numerous times over the last
 21 three years, so I've come to really get to know
 22 this community and this county in general. And
 23 we're excited about this next project which we
 24 hope to build in McLean County.

Page 27

1 By way of introductions, I will just
 2 quickly go through some of the folks who may be
 3 speaking today. I already introduced myself. Jim
 4 Griffin is our lead counsel for the project. Jo
 5 Brunner is the project engineer. Andrea Giampoli
 6 is on the line. She's the director of our
 7 environmental compliance team.

8 In terms of consultants who have worked
 9 to compile some of the documents in the
 10 application, we have Mike Hankard of Hankard
 11 Environmental and Acoustics Consultants. We have
 12 Dr. David Loomis, who is a local native to this
 13 area and a professor at ISU. He will be speaking
 14 a little bit more about the economic impacts of
 15 this project. We also have Joanne Blank with us,
 16 she has conducted the shadow flicker analysis
 17 study. She will be speaking a little bit later.
 18 Then we also have Michael MaRous, who can testify
 19 towards property valuation and questions, if there
 20 are any. Moving on.

21 So, I already highlighted our Illinois
 22 experience as a company, so I won't really dive
 23 into this too much. But I will highlight that
 24 we've built 11 wind projects across the State of

Page 28

1 Illinois particularly. So we have quite a bit of
 2 experience working with local communities and
 3 local counties across the state. And just to
 4 highlight a couple of those; clay County, Henry
 5 County, LaSalle, Lee, McLean and Vermilion
 6 Counties. We have built projects within, and
 7 again we're excited about this third project in
 8 McLean County.

9 So next slide. So, this is a slide that
 10 we reviewed during the recent text amendment
 11 proceedings. But again, we just wanted to go over
 12 some of these items. Why wind? Why wind projects
 13 in McLean County?

14 Well, if you've ever been out in the
 15 field in the middle of winter, you know how wind,
 16 how fast wind blows across that field. This is an
 17 excellent spot for a wind project because of the
 18 wind resource. There's also flat agricultural
 19 landscape and proximity to large load centers;
 20 Chicago, Springfield, Champaign, Bloomington
 21 Normal. All of these large load centers have a
 22 high energy demand, and this is a great spot for a
 23 wind project to be able to service that electrical
 24 demand.

Page 29

1 Since 2007, and we got this information
 2 directly from the tax assessor website, since 2007
 3 McLean has received over 59 million dollars in
 4 property tax collections from wind projects, and
 5 that does not include our most recent Blooming
 6 Grove wind project, which is taxable this year and
 7 will start paying property tax payments next year.
 8 So, McLean County is the largest wind
 9 energy producing county in the State of Illinois,
 10 and it shows in the amount of property tax dollars
 11 that are raised from those wind projects.
 12 Finally, land owners see significant
 13 benefits, economic benefits, from participating in
 14 wind projects, as well as continuing to farm.
 15 Continuing to do what they have always done with
 16 their property. They see that symbiotic nature of
 17 wind projects and also continuing to farm.
 18 To that end, our Sapphire Sky wind
 19 project has over 131 participating land owners,
 20 and that is spread out across about 14,000 acres,
 21 which are hosting some form of project facilities.
 22 So, real briefly, this is the Sapphire
 23 Sky site plan. You can see that this project is
 24 situated in the far southeastern corner of McLean

Page 30

1 County across Bellflower and West Townships. You
 2 will see it's positioned right against the Piatt
 3 County line on the south, and to the east
 4 Champaign County; it goes right up to the county
 5 line on the southeast. But the project is fully
 6 situated within McLean County.
 7 You also see a little dark shaded area,
 8 that's the town of Bellflower, fairly centrally
 9 located within the project footprint. In terms of
 10 roads, you have 136 that bisects the project east
 11 to west and then you have Highway 54 that bisects
 12 diagonally kind of through the center of the
 13 project, on the -- it goes from north to south.
 14 In terms of turbine specifications, as
 15 mentioned, we will build up to 64 turbines.
 16 (Whereupon there was a technical
 17 interruption.)
 18 **MR. VANDERKAMP:** All right. Can you hear
 19 me now? Do I need to go back at all? Or should
 20 we continue with slide six?
 21 **MS. NOVOSAD:** Yes, go back please to the
 22 previous page.
 23 **MR. VANDERKAMP:** Just to reiterate the
 24 site plan, the project site plan for the Sapphire

Page 31

1 Sky wind project. The project is situated in the
 2 far southeastern corner of McLean County. It is
 3 fully within McLean County in the Bellflower and
 4 West Township.
 5 You can see a small village, which is
 6 Bellflower. It's fairly centrally located within
 7 the project footprint right off of 54. And then
 8 you have Highway 136 that bisects the project on
 9 the southern end running from east to west.
 10 In terms of turbine specifications, we
 11 went through this during the text amendment
 12 proceedings. We'd like to build up to 64 turbines
 13 in this project. We have applied for 89 potential
 14 turbine locations, but only 64 will be built. The
 15 rest will remain alternates as we finalize the
 16 project design.
 17 We will be utilizing two different
 18 turbine types. One is the Vestas V150 unit. The
 19 other will be the Vestas 136 unit. For a
 20 perspective, the V150s are 591 feet tall, which is
 21 compliant with the McLean County ordinance. The
 22 Vestas V136 is 568 feet tall.
 23 So, one thing we like to look at during
 24 development. One of the first things we like to

Page 32

1 look at during development, is this a good area
 2 for potential wind projects? And one of the first
 3 tests that we like to conduct is, do these
 4 turbines work in terms of FAA and aerial
 5 navigation of this project vicinity?
 6 So, we submitted to the FAA applications
 7 for a study of each of the 89 turbine locations to
 8 see if the FAA had any issues with those
 9 placements.
 10 The good news for the project, great
 11 news for the project, each turbine location was
 12 approved by the FAA, and provided a DNH or
 13 determination of no hazard.
 14 What that means, and I've summarized
 15 that language on this slide, the language of each
 16 DNH says this aeronautical study revealed that the
 17 structure would have no substantial adverse effect
 18 on the safe and efficient utilization of the
 19 navigable air space by aircraft or of the
 20 operation of air navigation facilities. So that's
 21 the FAA's way of saying hey, we do not have any
 22 issues with these turbine locations from an
 23 aviation perspective.
 24 We also look at noise emissions. Are

Page 33

1 these turbines located in a way to minimize noise
 2 emissions and minimize noise to the surrounding
 3 areas? So we hired Hankard to conduct a noise
 4 study. I won't steal his thunder. He will be
 5 able to speak a little bit more coming up in the
 6 next presentation, but I will summarize the report
 7 and the highlights of that report.

8 Noise levels generated by this project
 9 will comply with Illinois Pollution Control Board
 10 limits. That's important as a way of being a good
 11 neighbor. And that's also important because it's
 12 a requirement in the McLean County ordinance. So,
 13 one of the concluding sentences of that report
 14 states that the validated model demonstrates that
 15 the noise emissions from the normal operation of
 16 the Sapphire Sky wind project will be well below
 17 IPCB standards at all times and under all
 18 atmospheric conditions.

19 We also reviewed telecommunication
 20 studies. We hired ComSearch to look at various
 21 facilities that may be installed at this time and
 22 operating just to make sure that this wind project
 23 doesn't affect any telecommunication signals or
 24 beam paths. So we looked at microwave beam paths

Page 34

1 in a microwave study. ComSearch also looked at
 2 communication towers operating in the project
 3 area. They looked at AM and FM communication
 4 towers. They conducted the land mobile and
 5 emergency services report and study of the project
 6 area. They looked at off air TV signals in the
 7 project area and they also looked at any impacts
 8 or lack thereof for mobile phone carriers in this
 9 project area.

10 All reports conclude that the project is
 11 not expected to result in interference to any of
 12 these systems.

13 Stantec also looked at shadow flicker at
 14 the project site. What impact will there be from
 15 these turbines? We wanted to make sure that again
 16 we're being a good neighbor across our project
 17 site, and not just working with participating land
 18 owners, but also non-participating land owners.
 19 To that effect Stantec modeled all 89 turbine
 20 locations, even though up to only 64 will be
 21 constructed and they assumed the largest possible
 22 unit at each of those sites.

23 The conclusion of this model, which
 24 Joanne will go into a little bit later,

Page 35

1 demonstrated, or I should say the model
 2 demonstrated that all identified receptors or
 3 residences received less than 30 hours of shadow
 4 flicker over the course of an entire year.

5 Furthermore, more than 85 percent of
 6 those residences received less than ten hours over
 7 the course of the entire year. So, this is a good
 8 and responsible site, in terms of shadow flicker
 9 in Sapphire Sky.

10 We also looked at the environmental
 11 impact that this project would have by assessing
 12 the ecology that is within the Sapphire Sky
 13 project area. We conducted a site
 14 characterization study. We conducted an acoustic
 15 monitoring. We actually installed sonar detectors
 16 that could detect bat calls and identify bat
 17 species that were frequenting the area of this
 18 project.

19 We conducted two years of avian surveys.
 20 We conducted Eagle use surveys to identify any
 21 Eagle use in this project area. We conducted an
 22 aerial raptor nest survey trying to identify if
 23 there's any raptor tests scattered throughout the
 24 project area. We have also conducted wetland

Page 36

1 delineations and tried to assess where water
 2 features are, where water bodies are, as well as
 3 where our wetlands are. And made sure our
 4 turbines are sited away from those protected
 5 areas.

6 In pursuit of all of these studies, we
 7 coordinated since 2018 with the Illinois
 8 Department of Natural Resources, as well as the
 9 US Fish and Wildlife Service. And we've been
 10 doing that since 2018. The conclusion of that
 11 coordination with the IDNR resulted in a letter
 12 that was sent to Phil Dick on February 22 of 2021,
 13 confirming the project's commitment to their
 14 recommendations, and stating that the department
 15 has no outstanding concerns regarding the Sapphire
 16 Sky wind project.

17 So I'd like to talk a little bit more
 18 about construction and operations. During
 19 construction of this project, hundreds of jobs
 20 will be created to support that construction
 21 effort. And I want to make a commitment today
 22 that this will be a union job. So you may see
 23 some union members in the audience today. And
 24 we're excited about that partnership and we're

Page 37

1 excited to bring those union jobs here, right here
 2 to McLean County.
 3 In terms of full-time permanent jobs,
 4 there will be eight to nine local personnel that
 5 will work right out of the local O&M building, the
 6 operations and maintenance building, during
 7 operations of this project. And again, those are
 8 full-time well paying jobs that are permanent. I
 9 can't guarantee they will be living in Bellflower
 10 necessarily, but they will be living locally in
 11 this community and in this region.
 12 There will be annual training with local
 13 emergency response personnel. We have already had
 14 a meeting with the Bellflower fire department to
 15 facilitate that relationship and foster that
 16 communication as we move forward to construction
 17 and operations of this project. And we're looking
 18 forward to fostering that relationship further
 19 during operations.
 20 The next slide. One of the most common
 21 questions that I get as a developer from land
 22 owners, well, what happens if Invenergy goes away?
 23 Yeah, I'm talking to you today, Greg, but what
 24 happens if Invenergy goes bankrupt or you start

Page 38

1 working for a different company?
 2 Well, we set aside and we've conducted a
 3 decommissioning plan, which is included in our
 4 SUP application which outlines the process of
 5 decommissioning all project facilities at the end
 6 of their useful life or at whatever that
 7 appropriate time is when the project needs to be
 8 decommissioned.
 9 So, I want to outline a couple of items
 10 in that decommissioning plan. We've outlined
 11 about \$84,000 per turbine, which will be the
 12 requirement to decommission each turbine. And
 13 this decommissioning plan complies with both
 14 McLean County ordinance as well as the AIMA; the
 15 Agricultural Impact Mitigation Agreement which is
 16 governed by the Illinois Department of
 17 Agriculture.
 18 We can commit today that Sapphire Sky
 19 will put cash into escrow, not a letter of credit,
 20 but cash into escrow to provide funds for the
 21 decommissioning of this project. And this
 22 schedule is outlined by the terms of the AIMA
 23 agreement. So ten percent of the total funds to
 24 decommissioning the project will be set aside in

Page 39

1 year one of operations. 50 percent of those costs
 2 will be set aside in year five. And 100 percent
 3 of the cash required to decommission the project
 4 will be set aside in year ten.
 5 Finally, starting on the 10th
 6 anniversary the decommissioning plan will be
 7 updated every five years to determine present day
 8 decommissioning costs. So if there's price
 9 fluctuation in steel prices, if costs increase to
 10 decommission the project, that update, that
 11 decommissioning plan update will be important to
 12 assess what the present day decommission costs are
 13 and make sure the appropriate amount of funds are
 14 set aside for that full decommissioning.
 15 I'd also like to highlight some of the
 16 economic benefits and economic impacts that this
 17 project will have to this area, and McLean County
 18 at large.
 19 Again, Dr. Loomis will be speaking a
 20 little bit later, but I'll just touch on the
 21 highlights if possible.
 22 So multiple taxing jurisdictions will
 23 receive property taxes from this project. The
 24 important thing to note is that those property

Page 40

1 taxes are paid by Invenergy, and not the
 2 underlying land owner. That's a key piece to keep
 3 in mind.
 4 McLean County will be a large
 5 benefactor. Leroy school district. Blue Ridge
 6 school district. Those school districts will be
 7 such large beneficiaries they recognize the
 8 positive benefits of this project, and have
 9 written letters of support, which Mr. Dick
 10 mentioned earlier.
 11 I think Blue Ridge indicated that they
 12 may want to build a new track or some other new
 13 facilities. This project allows them to achieve
 14 those goals, or at least take another step towards
 15 achieving those goals.
 16 Blue Ridge will be the single largest
 17 benefactor of the project, and I'd like to
 18 highlight that the annual average they will be
 19 receiving almost 1.2 million dollars annually over
 20 the life of the project; and over the 30 year life
 21 they will receive over 35 million dollars. So, a
 22 huge, huge benefit to that community and to that
 23 school, and the kids that attend that school.
 24 West Township will be a benefactor.

Page 41

1 Bellflower Township. Parkland Community College.
 2 The fire district. A library district. Parks
 3 department as well as the Bloomington Normal
 4 airport. All of these taxes jurisdictions will
 5 benefit from this project.
 6 Final thing I'll note on this slide, on
 7 an annual average basis approximately 2.4 million
 8 dollars will be paid by the project, and over the
 9 30 year life over 71 million dollars will be paid
 10 from this project in the form of property taxes.
 11 Next slide. So I have two more slides,
 12 so bear with me here. I'm almost at the end.
 13 Another thing we'd like to highlight is our siting
 14 agreement with the town of Bellflower. The town
 15 actually came together and wanted to discuss, do
 16 we want to approve turbines from being sited
 17 within 1.5 miles of our municipal limits? Do we
 18 want to participate in this project, and have
 19 windmills kind of in our vicinity? They actually
 20 took a public referendum and voted as a town to
 21 figure out which way they wanted to go, and there
 22 was a majority of support to participate in the
 23 form of a siting agreement.
 24 So, that went to the Village Board of

Page 42

1 Trustees. The Village Board voted unanimously to
 2 sign the siting agreement, and what that means is
 3 there are up to 17 turbines that may be built
 4 within 1.5 miles of that municipal limit of the
 5 town of Bellflower. But, the town will also
 6 receive four thousand dollars per turbine per year
 7 just for participating in this project.
 8 So, to put that into perspective,
 9 Bellflower's budget annually is roughly \$100,000,
 10 roughly. This project will bring \$50,000 per year
 11 to this town, which is approximately 50 percent of
 12 their budget. Well, which is really exciting and
 13 we're excited about that partnership moving
 14 forward.
 15 So, in conclusion, we just wanted to
 16 highlight all the community engagement that we
 17 have done to date. This project will mean
 18 in-state energy generation, generated locally.
 19 Local investment and long-term stable energy
 20 prices. I already touched on the Leroy and Blue
 21 Ridge resolutions of support and the meaningful
 22 benefits this project will bring to those two
 23 schools. 68 land owners have signed letters of
 24 support. That's a big number. Typically wind

Page 43

1 projects, maybe 20 or 30 letters of support are
 2 written to get behind a project. We have 68 land
 3 owners who are assigned on for letters of support.
 4 The Bellflower siting agreement I
 5 already mentioned. We have a partnership with
 6 McLean County Chamber of Commerce. We sponsored
 7 their advocacy series earlier this year. And we
 8 also have a project office located in downtown
 9 Bellflower where we have two full-time land agents
 10 staff at that office that are meeting locally with
 11 land owners or any interested parties that decide
 12 to stop by the office.
 13 So, thank you again to the ZBA. We're
 14 again, really excited, I keep mentioning that,
 15 about this project. And I hope we can answer any
 16 other questions that the ZBA may have. And that
 17 we can secure a positive recommendation from the
 18 ZBA to bring forth these benefit to the community.
 19 Thanks.
 20 **MR. FINNIGAN:** Thank you. Hang on.
 21 **MS. VAZQUEZ:** Before we go forward, I
 22 noticed there were two comment bubbles on the Go
 23 to Meeting. I don't know what those comments are
 24 for, but they are not going to be part of the

Page 44

1 record. If there are any questions or comments
 2 that will be part of the record, those comments or
 3 questions will be invited by the chair when we get
 4 to it. I just wanted to mention that. I don't
 5 know if IT is able to disable those comments.
 6 But, I just wanted to point that out since I do
 7 see two comment bubbles. Thank you.
 8 **MR. FINNIGAN:** Okay. We're going to
 9 open up the questions from the board.
 10 **MR. ZIMMERMAN:** First, you said that the
 11 TV survey was done with the TV service off. And
 12 I'm trying to figure that out. So that was when
 13 he said, the wireless communication and the AM FM,
 14 and then TV service. Might want to go back to
 15 that slide.
 16 And then the second question is, I
 17 notice that the tax revenues were going to
 18 Parkland College. I thought Parkland was part of
 19 McLean County, and I realize Parkland is over on
 20 that side of the county. But, I was just trying
 21 to figure out whether there might be some
 22 alternate with Parkland? I'm just curious.
 23 **MR. VANDERKAMP:** Sure. With regard to
 24 the question regarding property taxes, I'll

Page 45

1 probably defer to Dr. Loomis, he will be
 2 presenting in a little bit. And he may be able to
 3 speak more coherently on property taxes paid by
 4 the project.
 5 **MR. DICK:** For the record, that was
 6 Drake Zimmerman.
 7 **MR. FINNIGAN:** Just for the record, when
 8 you ask a question, speak your name out first,
 9 that way she knows whose asking the questions.
 10 **MR. ZIMMERMAN:** Thank you very much. I
 11 apologize for that.
 12 **MR. FINNIGAN:** No problem. We'll work
 13 it out.
 14 **MR. FINNIGAN:** Any other questions?
 15 **MR. BANGERT:** This is Brian Bangert. I
 16 guess, I do see on the ten-year anniversary the
 17 decommissioning plan will be updated and
 18 determining present day decommissioning costs.
 19 Does that also mean that it will reflect their
 20 escrow directly? If that should increase they
 21 will automatically up their escrow account if it
 22 doesn't match the plan that's in place?
 23 **MR. VANDERKAMP:** Yes. That is correct.
 24 Those funds will be adjusted accordingly. Now,

Page 46

1 we're anticipating decommissioning costs will go
 2 down as the industry becomes more sophisticated as
 3 more decommissionings occur across the United
 4 States. So we're anticipating those
 5 decommissionings will actually go down. But in
 6 the event they increase, that's why we do periodic
 7 updates to that decommissioning study to adjust
 8 the appropriate funds and put those aside to
 9 protect for that decommissioning event.
 10 **MR. BANGERT:** Brian Bangert again.
 11 Would you also be qualified to answer, you know,
 12 in the event of the decommissioning, let's say it
 13 involves recycling; how do they recycle this? Or
 14 is somebody else going to speak to this later on?
 15 I'm just curious how they're going to recycle that
 16 product that is generated from this type of
 17 technology.
 18 **MR. VANDERKAMP:** Yes. So, numerous
 19 things could happen at the end of the useful life
 20 of a wind project. One, they could be utilized in
 21 a different project. So maybe the tower sections
 22 themselves, those are the large steel tower
 23 sections that rise up from the ground, maybe they
 24 can be utilized at a different project to install

Page 47

1 a new turbine generator at that project. So, it
 2 is possible that they could be re-utilized at
 3 somewhere else.
 4 They could also be recycled or sold for
 5 scrap metal. That is what the decommissioning
 6 plan currently assumes, that we would essentially
 7 scrap the metal, which is structural steel, so
 8 there is some significant value attributed to that
 9 structural steel. And we could send it over to a
 10 recycling facility to recoup some of the value of
 11 that turbine.
 12 So, we don't necessarily know what is
 13 going to be the optimal solution, but we're
 14 assuming kind of a worst case scenarios, which
 15 would be just selling everything for scrap.
 16 **MR. BANGERT:** Okay. So you can assure
 17 us on this board that they will not just bury the
 18 blades in the ground or anything like that? You
 19 can assure us that that will never happen?
 20 **MR. VANDERKAMP:** Yeah. I can't envision
 21 any scenario that would ever result in the blades
 22 being buried in the ground.
 23 **MR. BANGERT:** Thank you.
 24 **A VOICE:** Are non-board members allowed

Page 48

1 to ask questions now?
 2 **MR. FINNIGAN:** We're going to give the
 3 board one more chance. They get first. Then we
 4 will open it up to the audience.
 5 **MS. NOVOSAD:** I have a question. Ruth
 6 Novosad. The decommissioning study, can you walk
 7 me through kind of the process? That's your
 8 responsibility to conduct the study? Does the
 9 zoning board or the county board, do they have to
 10 approve that study or how does that work?
 11 **MR. VANDERKAMP:** We commissioned the
 12 decommissioning study from an independent
 13 engineer. So they conducted it, and that was
 14 submitted as part of our SUP application to the
 15 zoning department.
 16 **MS. NOVOSAD:** I guess at the ten-year
 17 anniversary when it's updated, how is it updated?
 18 **MR. VANDERKAMP:** Sure. It will be a
 19 similar process. The independent engineer will
 20 review the cost estimates at that time. The
 21 decommissioning strategies that are standard
 22 within the industry, they will redo that study and
 23 recalculate what is the appropriate amount on a
 24 per turbine basis to be set aside in the form of

Page 49

1 cash in escrow. And that decommissioning study
 2 will be resubmitted to the county for the county's
 3 review. And then if an adjustment needs to be
 4 made at that time, that will be made to that,
 5 again, to that cash escrow account.
 6 **MS. TURNER:** I have a couple of
 7 questions on location. My name is Julia Turner.
 8 So, you're getting approval for 89, and
 9 you said 60 some, so approximately 20 more than
 10 what you're going to put in.
 11 Tell me how that works? So do you work
 12 to get your maximum number of turbines out there?
 13 Do you work to get those approved and contracts
 14 with people? And then -- or I suppose you can't
 15 back out of a contract. But, how does that work?
 16 Do you have extras out there just so you can look
 17 at where people are living who aren't
 18 participating to make sure you stay further away
 19 from them? What's the purpose behind that?
 20 **MR. VANDERKAMP:** Sure. Well, first
 21 thing I'd like to point out is all studies, all
 22 lease agreements, have been executed for these
 23 turbine locations. All FAA approvals have been
 24 approved and provided by the FAA. So these

Page 50

1 turbines are essentially ready to be constructed.
 2 So that's the first point I wanted to make, all
 3 turbine locations are feasible from a building
 4 perspective, assuming they're approved via SUP.
 5 What we're going to do over the next few
 6 months is optimize the layout. And that can mean
 7 numerous -- or that will mean numerous things.
 8 The final studies that we'll need to do on the
 9 specific turbine locations are called geotechnical
 10 studies. We like to look at soil conditions at
 11 that specific turbine site. Make sure that the
 12 soil conditions are such that they can support a
 13 large turbine foundation and a large turbine. So
 14 that's another area or check-the-box item that we
 15 need to conduct in order to determine that final
 16 feasibility from a construction standpoint.
 17 Then we'll go into optimizing the layout
 18 and keeping it as consolidated as possible to
 19 minimize usage of any county or township roads.
 20 So that's another feasibility study that we're
 21 going through right now. We want to minimize
 22 impact as much as possible, both from a good
 23 neighbor perspective and also just from a cost
 24 perspective. We want to make sure this is a

Page 51

1 consolidated and as close as possible to the point
 2 of interconnect the POI.
 3 So you are correct. There are 25
 4 alternates in the application which may seem
 5 excessive, but in order to truly optimize the
 6 layout we like to keep as much flexibility as
 7 possible before we narrow in that final 64 turbine
 8 layout. I hope that answers your question.
 9 **MS. TURNER:** It does. Very well. Thank
 10 you. I appreciate that.
 11 A follow-up question to that is, so you
 12 have no interests in building, in having 25 more
 13 out there, even though you work to get approval of
 14 that maximum number?
 15 **MR. VANDERKAMP:** Correct. And we stated
 16 numerous times in the SUP application, only up to
 17 64 turbine locations will be constructed. That's
 18 stated numerous times. So, there is no intent,
 19 legal or otherwise, that we would try to build 89
 20 turbine locations.
 21 **MR. FINNIGAN:** Any other questions from
 22 the board? Questions from staff?
 23 **MR. DICK:** No.
 24 **MR. FINNIGAN:** Now, we have questions

Page 52

1 from anyone in the audience or someone on Zoom?
 2 **MS. TAYLOR:** Hi. Carolyn Taylor. I have
 3 a couple of questions about site location and also
 4 about timing of construction. The site location
 5 map.
 6 **MR. FINNIGAN:** Could we have your
 7 address, please.
 8 **MS. TAYLOR:** You mean my farm address?
 9 **MR. FINNIGAN:** Residence.
 10 **MS. TAYLOR:** My residence is out of
 11 state. I am talking from Oregon.
 12 **MR. FINNIGAN:** I think your residence
 13 here, where you live. Your address. You can tell
 14 us if you have a farm later.
 15 **MS. TAYLOR:** Okay. You mean by
 16 residence address where I live? 2111 Shields
 17 Avenue, Eugene, Oregon.
 18 **MR. FINNIGAN:** Go ahead and say it one
 19 more time, please.
 20 **MS. TAYLOR:** 2111 Shields Avenue,
 21 Eugene, Oregon.
 22 **MR. FINNIGAN:** Okay. Go ahead.
 23 **MS. TAYLOR:** On the site map, the legend
 24 was impossibly small to read. Could you explain

Page 53

1 what the moss green colored land areas represent?
 2 The dark green ones are obviously the ones for
 3 inclusion. And on the dark green ones, could you
 4 also indicate, are the little windmill indicators,
 5 turbine indicators, placed on the parts of each
 6 parcel that are roughly where they would be? Or
 7 are they not representative of where they would
 8 be?
 9 Related to that last point, did I
 10 understand correctly from what Phil Dick said that
 11 no turbine will be any closer to a property
 12 boundary than 1.1 times the height of the turbine?
 13 **MR. VANDERKAMP:** Okay. I think there
 14 were three questions there. Let's see if I can
 15 answer those. And good evening, Ms. Taylor. I
 16 think we e-mailed a couple of times and I think
 17 we're trying to connect via phone call.
 18 Let's see if I can answer these
 19 questions. In terms of your questions regarding
 20 the different shades of green on the site plan.
 21 Darker green indicates a parcel that has a turbine
 22 or access road on it. Lighter green is simply a
 23 participating residence. Or sorry, a
 24 participating property that is participating in

Page 54

1 the wind project. So we wanted to highlight
 2 specifically in dark green where turbines
 3 themselves would go, as well as the corresponding
 4 access roads, and the light green are other
 5 participating landowners.
 6 **MS. TAYLOR:** What is the definition of
 7 participating?
 8 **MR. VANDERKAMP:** They have signed a
 9 lease and easement agreement to participate in the
 10 project.
 11 **MS. TAYLOR:** But they wouldn't have a
 12 turbine on their property?
 13 **MR. VANDERKAMP:** Yes, but they will be a
 14 part of the project. They will see some benefits
 15 from it. And there also could be a collection
 16 line, a buried collection line that crosses their
 17 property.
 18 **MS. TAYLOR:** Okay.
 19 **MR. VANDERKAMP:** And then two, your
 20 second question, the turbines as indicated on the
 21 site plan are in the approximate location where
 22 they will be constructed. So, we don't anticipate
 23 those turbine locations moving materially. So,
 24 yes, to answer your question, those are where the

Page 55

1 turbine locations will be.
 2 **MS. TAYLOR:** And will any of them be
 3 closer than 1.1 times the height of the turbine to
 4 somebody else's property line?
 5 **MR. VANDERKAMP:** No. They will not.
 6 And often times they will be significantly farther
 7 than that setback.
 8 **MS. TAYLOR:** Okay. My other set of
 9 questions was about, what times of year do you
 10 envision doing construction? And like from the
 11 time of starting construction on the very first
 12 turbine, until completion of the very 64th
 13 turbine, how many months or years do you imagine
 14 that taking? And again, what times of year will
 15 construction go on?
 16 **MR. VANDERKAMP:** These are all good
 17 questions. We would anticipate construction,
 18 well, assuming SUP approval, we would anticipate
 19 start of construction, limited construction later
 20 this year; late, late this year. And full
 21 construction to happen next year, in 2022. And we
 22 would begin operations probably Q3, latter quarter
 23 of next year. So, think September, October, time
 24 frame.

Page 56

1 **MS. TAYLOR:** When you say later this
 2 year to start, like how later?
 3 **MR. VANDERKAMP:** Post harvest. So
 4 probably around November, late November time
 5 frame.
 6 **MS. TAYLOR:** You know, sometimes harvest
 7 doesn't end until December.
 8 **MR. VANDERKAMP:** We are aware of that.
 9 Yes. So hopefully weather works in our favor this
 10 year.
 11 **MS. TAYLOR:** Okay. So no competition
 12 for the roads with combines and trucks and hauling
 13 and any of that?
 14 **MR. VANDERKAMP:** Believe me, that is the
 15 goal, yes.
 16 **MS. TAYLOR:** Okay. Thank you.
 17 **MR. FINNIGAN:** I think you had a
 18 question in the back, if you want to come forward.
 19 Push the button again and give us your name and
 20 address.
 21 **MR. PETERSON:** My name is Ed Peterson. I
 22 live at 31630 East 500 North Road, Aerosmith,
 23 Illinois. I hear great sums of money. Where are
 24 all of this funding coming from?

Page 57

1 **MR. VANDERKAMP:** It relates to the
 2 project economics. The revenue that will be
 3 generated from this project, in terms of
 4 electrical sales of the energy generated by these
 5 turbines. All of that factors into the project
 6 budget, and we factor in property taxes, as well
 7 as land owner payments, as well as construction
 8 costs, and turbine acquisition costs. All those
 9 are factored in to the overall budget of the wind
 10 project. And that's where you're seeing those
 11 property tax figures coming from. That's been
 12 calculated based on -- state formula property
 13 taxation for wind projects is based on a state
 14 formula.

15 So it's fairly simple based on megawatt
 16 output, how much we would anticipate each tax
 17 jurisdiction to receive.

18 **MR. PETERSON:** How much money does one
 19 turbine generate in electrical sales in one year's
 20 time frame?

21 **MR. VANDERKAMP:** I mean, that's a very
 22 difficult question. It's very dependent on the
 23 specific project. Based on the wind resource.
 24 How energetic a site is? It's based on whoever

Page 58

1 the offtaker is. Whatever the power purchase
 2 agreement is.

3 I may sound like I'm trying to evade the
 4 question, but it is very, very difficult to
 5 estimate how much revenue is generated for one
 6 single turbine for one project.

7 **MR. PETERSON:** With all of the
 8 experience that you said you claim to have had,
 9 I'm sure you have a value of what a turbine
 10 generates per year in McLean County.

11 **MR. VANDERKAMP:** Unfortunately, I don't
 12 have those specific numbers.

13 **MR. PETERSON:** How do you know if your
 14 project will be profitable for Sapphire Energy if
 15 you don't know what it's going to make?

16 **MR. GRIFFIN:** I'm going to object to
 17 that question as not being relevant to any of the
 18 standards that the zoning board has to consider.

19 **MR. FINNIGAN:** I probably agree with
 20 that. We don't -- for our part we don't care if
 21 they make money or not. This is just a project
 22 that we're trying to approve or not approve. It's
 23 not up to us to tell them how to run their
 24 business.

Page 59

1 **MR. PETERSON:** What if they fail to pay
 2 taxes?

3 **MR. FINNIGAN:** Well, I think that they
 4 will have to work that out with somebody else.
 5 That's not something we're going to decide
 6 tonight.

7 **MR. PETERSON:** Who controls the money in
 8 escrow?

9 **MR. GRIFFIN:** The money is deposited
 10 with the county, so the county board would control
 11 that money.

12 **MR. PETERSON:** What is the decibel
 13 allowed by Illinois state pollution?

14 **MR. GRIFFIN:** The Illinois state, the
 15 Pollution Control Board has a number of limits,
 16 it's not a single decibel limit. So it's across
 17 multiple octave bands, and Mr. Mike Hankard will
 18 be our next witness. And during his initial
 19 testimony he will identify what those limits are,
 20 and how the project compares to those limits.

21 **MR. PETERSON:** What is the life of the
 22 project?

23 **MR. VANDERKAMP:** We estimate 30 years
 24 useful life of each of the turbines. Sometimes

Page 60

1 they can operate even longer than 30 years. But
 2 we're using 30 years as the estimate.

3 **MR. PETERSON:** How quick will tile
 4 repairs be done on mains that affect adjacent land
 5 owners that are not participating?

6 **MR. VANDERKAMP:** Typically during
 7 construction we will have I would say the most
 8 impactful part is trenching that will occur to
 9 bury the underground collection lines. There will
 10 be a crew that go behind the trencher to identify
 11 any tile breaks as they happen. And they usually
 12 are repaired almost immediately after, or very
 13 quickly afterwards.

14 Furthermore, if a tile is missed, and
 15 then maybe some water begins to pool in a specific
 16 area, we will quickly send out a tile repair crew
 17 to that specific site to address the issue as soon
 18 as feasibly possible.

19 **MR. PETERSON:** Okay. Thank you.

20 **MR. FINNIGAN:** Anyone else have any
 21 questions of this witness?

22 **MS. ZIEGLER:** Anna Ziegler,
 23 Z-I-E-G-L-ER. I'm with the McLean County Farm
 24 Bureau. The address is 2242 West State Drive,

Page 61

1 Bloomington, Illinois, 61705.
 2 You guys got approval from the Blooming
 3 Grove project in 2018. And at that time the
 4 estimated decommissioning cost per turbine was
 5 \$52,809. And for this project it's \$84,457. So I
 6 just wondered have costs gone up that much in
 7 three years, or is it a function of the taller
 8 turbines?
 9 **MR. VANDERKAMP:** I would say it's
 10 largely a function of the larger turbines. These
 11 units are definitely larger than the ones that we
 12 utilized at Blooming Grove. There was also more
 13 turbines that were able to spread out those costs
 14 at Blooming Grove as opposed to this project.
 15 And also, steel prices may have
 16 fluctuated that would -- that would affect the
 17 total net decommissioning costs and salvage value
 18 of each of the turbines. So largely a function of
 19 the increased size, but also that project was --
 20 that decommissioning plan was adopted three years
 21 ago, so certain things have changed since then.
 22 **MS. ZIEGLER:** And then as part of your
 23 presentation you stated an intention to use cash
 24 escrow for your decommissioning financial

Page 62

1 insurance. Would you object to having that added
 2 as a stipulation of the special use permit? Using
 3 that form of financial insurance?
 4 **MR. GRIFFIN:** That's what the county
 5 ordinance requires right now. So, we're planning
 6 to comply with the county ordinance. We have no
 7 expectation that they will change that. But, on
 8 an ongoing basis we would comply with whatever
 9 funding source the county required. Currently
 10 it's cash.
 11 **MS. ZIEGLER:** There's two layers though,
 12 'cuz there's an AIMA which doesn't specify, and
 13 then the ordinance which does; so just asking for
 14 clarification.
 15 **MR. GRIFFIN:** We have to comply with the
 16 most stringent of either the AIMA or of the county
 17 ordinance. And in this case the AIMA doesn't
 18 specify which one, and so the county's requirement
 19 would control. And we would have to post cash.
 20 For some of the other decommissioning
 21 requirements we will follow AIMA because it's more
 22 stringent and requires that decommissioning be
 23 funded sooner than the county. So, whichever is
 24 the most stringent we would need to comply with.

Page 63

1 **MS. ZIEGLER:** Okay. Thank you.
 2 **MR. FINNIGAN:** Any other questions of
 3 this witness?
 4 **MS. TAYLOR:** I'll ask one more.
 5 Somewhere it said there were 511 operating
 6 windmills in McLean County at present, if I read
 7 and understood that correctly. How many of those
 8 windmills are in the two townships in question?
 9 **MR. VANDERKAMP:** I don't want to speak
 10 out of turn here, but I don't believe any turbines
 11 are constructed in West or Bellflower Townships.
 12 I don't believe any are built at this point.
 13 **MR. FINNIGAN:** Just for the record, we
 14 are only allowing one round of questions for each
 15 person. So, once you've asked your questions, you
 16 can't ask again.
 17 **MS. TAYLOR:** I'm sorry.
 18 **MR. FINNIGAN:** Mr. Dick is kind of a
 19 stickler for that. So, I think we're ready for
 20 the next witness. We are going to take about five
 21 or six minutes for a break and we'll reconvene at
 22 ten after. And we're going to quit at ten
 23 o'clock. That's the witching hour.
 24 (A break was taken at 9:04 p.m.)

Page 64

1 (The time is 9:10 p.m.)
 2 **MR. FINNIGAN:** Call your next witness.
 3 **MR. GRIFFIN:** Yes, we'll call our next
 4 witness, Mr. Mike Hankard. I want to point out
 5 Mr. Hankard has testified as an expert in the
 6 field of noise and noise modeling before this
 7 board and many other boards in the State of
 8 Illinois. Mr. Hankard is going to be testifying
 9 as to the noise model that he prepared for this
 10 project. And Mr. Hankard also has information
 11 about recent measurements that he's conducted on
 12 the existing Blooming Grove project. I know that
 13 was a question several zoning board members had
 14 about, how do you know your model is accurate?
 15 So we, in the interim period between the
 16 time that we were in front of the zoning board on
 17 the next amendment a few months ago, Invenergy
 18 asked Mr. Hankard to go out and do some noise
 19 measurements at Blooming Grove, and I think you
 20 will find that information very informative. So
 21 Mike, go ahead.
 22 **MR. HANKARD:** Thank you. I do have a
 23 power point if that can get que'd up. Perfect.
 24 Thank you. Next slide.

Page 65

1 Just a brief overview, I'll try to go
 2 quickly in the interest of speed, and certainly
 3 happy to answer any questions if I go too quickly.
 4 I'm going to cover my qualifications.
 5 Noise basics; what is a decibel, and the Illinois
 6 Pollution Control Board limits. How do wind
 7 turbines generate noise and the physics involved?
 8 The measurements that Mr. Griffin just
 9 mentioned that we conducted at Blooming Grove and
 10 other measurements that we've conducted to
 11 validate this model that we use. And I'll talk
 12 about the results of our measurements and the
 13 predictions of noise for the Sapphire Sky project.
 14 I've been at this for 30 years, Nothing
 15 But Noise, ever since college. For the last ten
 16 or so I've focused on wind turbines, I've
 17 consulted on project across the country; 17
 18 states. Worked on over 50 projects now.
 19 Measurements I think are the thing that
 20 I try to bring to the table because we can talk
 21 about models and predictions all day long, but
 22 what does it really mean when you go out and
 23 measure?
 24 So we've done more than ten, that's

Page 66

1 already out of date, 'cuz we did two or three yet
 2 this spring. And I have testified before other
 3 boards, and in front of courts as well.
 4 So yeah, noise is measured in a decibel,
 5 using decibels. It's just kind of like degrees
 6 Fahrenheit. We actually hear pressure, but the
 7 range that we hear is pretty significant. So we
 8 compress that, and we speak about decibels.
 9 So then frequency is this other thing.
 10 And the reason I even have to talk to you about
 11 this tonight is because the Illinois Pollution
 12 Control Board regulations are a little more
 13 complicated than your average bear, and need to
 14 involve this discussion of frequency.
 15 So I like to use the piano as an
 16 analogy, which the lowest notes on the piano is
 17 roughly the lowest notes a human ear can detect.
 18 And the highest notes on a piano, around 7900
 19 hertz, is about as high; we can technically hear
 20 up to 20,000. As we get older that number comes
 21 down. So anyway, the piano provides for a nice
 22 analogy.
 23 Now, you often hear A weighted decibels,
 24 DBA, so if I press every key on a piano at the

Page 67

1 same exact time, at the same exact inertia, we
 2 don't actually hear all of the notes the same.
 3 Our ears just have this natural tuning mechanism.
 4 They're tuned to about a thousand hertz, which is
 5 like a baby crying or a chalkboard or a screech or
 6 something that really annoys us. And the lower
 7 frequency sounds were actually much less able to
 8 detect.
 9 So, a DBA is this way to shape what we
 10 measure the same way that the human ear does.
 11 One other thing you'll hear a lot in
 12 wind turbine noise is a low frequency noise, which
 13 the Illinois Pollution Control Board does regulate
 14 because they regulate across the entire frequency
 15 spectrum.
 16 And as Mr. Griffin mentioned earlier --
 17 well, actually the next slide, please. This will
 18 explain this concept. So yeah, Illinois has nine
 19 limits. So you take all those frequencies, if you
 20 were to press those lower keys on the keyboard
 21 down around 31 hertz, you could make no more than
 22 69 decibels. And so on up the frequency spectrum.
 23 So, at 500 hertz, 47 is your limit. At 1,000
 24 hertz, 41 is your limit. Next slide, please.

Page 68

1 So the reason I mention 500 and 1,000 is
 2 because I drew a black line on this chart. And
 3 what the black line represents is when we measure
 4 or predict turbine noise, we tend to come in under
 5 the limit at the low end. So you see the black
 6 line is quite a few decibels below the limit. And
 7 similarly at the upper end of the spectrum, say at
 8 8,000 hertz, we're also well above the limit. The
 9 pinch point tends to come at 500 and 1,000 hertz.
 10 So that's why I tend to focus my discussion on
 11 that.
 12 Next slide. So just briefly, wind
 13 turbines are a big fan. And they produce noise as
 14 the blade cuts through the air. As with all fans,
 15 if you take your house fan and you turn it from
 16 level one to two to three, you will hear it turn
 17 faster and get louder, and the wind turbines are
 18 the same way. But one important thing to know
 19 about wind turbine is they only get up to a
 20 maximum speed. So if the wind keeps blowing
 21 faster, they do not continue to rotate any faster
 22 than their rated speed. And that's an important
 23 distinction.
 24 Lastly, the wind turbine manufacturers

Page 69

1 will rate their turbines. They give, it's called
 2 a power level. It's kind of like a lightbulb; it
 3 has a wattage. So the power level on turbines is
 4 a different scale. It's decibels. But anyway,
 5 those tend to be in the 100 to 104 range, or 110
 6 range. The ones here are 104. Then the levels
 7 that you produce at home, they tend to, it could
 8 be less than 40 dBA if you're really far away, or
 9 as high as 48 for those that are close.

10 Next slide. Just quickly, it was
 11 mentioned earlier that these turbines have these
 12 serrated blades. And it's just -- it allows the
 13 air to flow off the back of the blade in a more
 14 laminar fashion and it creates less noise. It
 15 also helps with just general efficiency of the
 16 turbine. And those types of blades are planned
 17 for this project. And they produce about two
 18 decibel less noise, which is actually quite
 19 significant.

20 All right. So, now to something new. I
 21 know I bored all of you with this discussion
 22 previously. The model validation, so yeah, at the
 23 hearing last month, or what I heard some of the
 24 commission members questioning the model. You're

Page 70

1 coming to us, Mike, with this model. You're
 2 predicting these noise levels and telling us that
 3 the project will comply. How do you know that?
 4 So we've gone out to project after
 5 project now over the years, went out to three
 6 different ones this spring, including Blooming
 7 Grove, and we placed noise monitors at distances
 8 from the turbines that would be similar to what
 9 the residents would experience on a project like
 10 Sapphire. So we measured for many, many weeks,
 11 sometimes months, and then we predict, we use the
 12 model to predict well, what should we be getting?
 13 Does the model I think we get at those measurement
 14 locations? So we have done that across the
 15 industry, and we understand now this model and how
 16 it works and how to make it accurate. We've done
 17 it in McLean County now.

18 So, in the next slide, if you would, so
 19 these are results from the model validation at
 20 Blooming Grove. This is how I'm trying to tell
 21 you that this model is accurate when I'm dealing
 22 with modern turbines in your town.

23 So the tall part of the table, 500
 24 hertz, let's just take M1 for example. We

Page 71

1 predicted at 500 hertz, or excuse me; we measured
 2 a level of 41. We predicted a level of 41. So,
 3 perfect accuracy there. M2, we're actually
 4 under predicting by a decibel, and we don't want
 5 to do that. But interestingly I was before this
 6 board, I don't know, three or four years ago and
 7 we had the same story. That we knew that 500
 8 hertz was our pinch point. We have to be careful.
 9 So my data here in Blooming Grove just confirms
 10 what I already knew. The lower table is 1,000
 11 hertz octa band, and here interestingly we
 12 actually ended up measuring quite a bit less than
 13 predicted. So the model is over predicting, which
 14 is good. That's what we want. And the reason for
 15 that I believe is the serrated trailing edge
 16 blades, and newer turbines are a little slower in
 17 their rotation and produce less 1,000 hertz noise.
 18 So this is good news. The model is accurate to
 19 the point we knew it was, and/or it's over
 20 predicted. Next slide, please.

21 So, okay; another big table and numbers,
 22 but really we can zoom in on that first row, so
 23 that's the receptor that at Sapphire Sky that
 24 according to our model has the highest predicted

Page 72

1 level.

2 So if you bring your eyes over to the
 3 500 hertz column, you see a 40.3. The limit is
 4 47. We know that we gotta be a little careful to
 5 the tune of a decibel, so if you increase that to
 6 41.3 we're still six DB under the limit. That's
 7 considerable. And it just gets better from there.
 8 As the receptor, as you move down the table, it's
 9 basically houses that are more distant from
 10 turbines, and so the levels are getting lower.

11 Back up to the top row, at a thousand
 12 hertz you see a level of 38.6. The limit is 41.
 13 But again, we think the model is greatly over
 14 predicting there. So the bottom line is even at
 15 the very loudest receptors of Sapphire Sky were
 16 under the limit using a model that we know works.
 17 So, I'm hoping that that chain is evident to all.

18 So, these here, this is kind of just --
 19 this is from our report, so this information is
 20 described in more detail in our report. But these
 21 are noise level contours. So those yellow circles
 22 around each turbine show how far out the 1,000
 23 hertz noise level reaches 41. And what you want
 24 is, you don't want that to reach any of the homes.

Page 73

1 And so if you scan this figure, you'll see that
 2 that is indeed the case. The 1,000 hertz level,
 3 the 41, which is the limit, never reaches any of
 4 the homes.
 5 Next slide, please. It's just a
 6 different segment. This is the northeast segment
 7 of the project area. Once again, none of the
 8 yellow circles encroach on any of the homes.
 9 Next slide. And this is the last, or
 10 the central portion of the project. And shows the
 11 same thing.
 12 Next slide. So, yeah, in summary we use
 13 this ISO stands for International Standards
 14 Organization. It's a model that's used by my
 15 company and basically every other acoustical firm
 16 in the country when working on wind turbine
 17 projects. We fully understand the accuracy of
 18 this model on these projects. Recently measured
 19 at Blooming Grove. And have demonstrated I
 20 believe that the Sapphire Sky project will meet
 21 the ordinance, which requires us to meet the
 22 Illinois Pollution Control Board regulations.
 23 That is all I have. And happy to entertain
 24 questions.

Page 74

1 **MR. FINNIGAN:** Questions from the board?
 2 Say your name first, please.
 3 **MS. TURNER:** Julia Turner. Could you
 4 tell us a little bit how you do this study? Over
 5 what period of time, weather conditions, that type
 6 of thing?
 7 **MR. HANKARD:** Certainly. So we picked
 8 four locations, kind of a standard number. We
 9 looked for locations that we had access to; ones
 10 that were along turbine access roads or other
 11 participating residents. We looked for locations
 12 that had predicted levels that were similar to
 13 those that we might experience at Sapphire. And
 14 we placed our noise meters down and left them
 15 running for almost a month.
 16 So we captured basically any and all
 17 weather conditions that one gets within a month in
 18 the month of late April into May. That's pretty
 19 good wind. So, we got a lot of great data that we
 20 were able to then prepare for our model.
 21 **MS. TURNER:** So there were no crops on
 22 the ground?
 23 **MR. HANKARD:** That's correct.
 24 **MS. TURNER:** It wasn't frozen any more,

Page 75

1 April to May?
 2 **MR. HANKARD:** Generally, no.
 3 **MS. TURNER:** But people didn't have
 4 their windows open.
 5 **MR. GRIFFIN:** Could you ask her to
 6 repeat that? I'm not sure if that was a question.
 7 **MS. TURNER:** No, it wasn't.
 8 **MR. FINNIGAN:** That was an observation.
 9 So the crops would actually help you a little bit
 10 with the noise?
 11 **MR. HANKARD:** You know, I don't really
 12 think whether or not the ground is untilled,
 13 planted, crops are a foot high, five feet high,
 14 makes a significant difference, because if you
 15 think about it the turbines are up high so the
 16 sound is coming kind of down at you.
 17 In acoustics, yes, the softer the
 18 ground, the hard packed dirt would allow sound to
 19 travel better across it than tilled earth; and six
 20 feet of corn on top of that would theoretically
 21 help reduce noise as well.
 22 So, I guess from that perspective, we
 23 measured during the worse case conditions. But I
 24 really don't think it makes a ton of difference.

Page 76

1 **MR. FINNIGAN:** That was my observation.
 2 I was just wondering if it was right. You
 3 actually measured at the worse time of the year.
 4 **MR. HANKARD:** Yeah, I like to get good
 5 data. So, I want the turbines running full, which
 6 is worse case. Yeah, we want to go out there when
 7 the wind is blowing, and in the spring and the
 8 fall are the times for that. We captured that
 9 here.
 10 **MR. DEAN:** Do you do much monitoring --
 11 this is Rick Dean. Do you do much monitoring and
 12 testing like you're showing us here of
 13 non-participating land owners that have issues
 14 with noise?
 15 **MR. HANKARD:** Yes; I mean, that is what
 16 my firm does on a regular basis. The measurements
 17 at Blooming Grove were not selected on the basis
 18 of people that had complaints. They were selected
 19 on the basis of getting quality data for the
 20 purpose of validating this. But on many other
 21 projects I have measured at non-participating
 22 residents, yes.
 23 **MR. DEAN:** Okay. Thank you. That was
 24 just something I had a question on. Thanks.

Page 77

1 **MS. NOVOSAD:** This is Ruth Novosad. Did
 2 I understand you to say that the limit for 500
 3 hertz would be 37?
 4 **MR. HANKARD:** No. 47 decibels.
 5 **MS. NOVOSAD:** Okay.
 6 **MR. KURITZ:** This is Mike Kuritz. So,
 7 at the people where you have registered, or have
 8 done the monitoring that have filed complaints or
 9 complained about the noise level, how has your
 10 model stood up at those locations? Have they had
 11 legitimate complaints? Or is the model just
 12 wasn't working there?
 13 **MR. HANKARD:** Legitimate complaints of
 14 course are in the eye of the complainer. So, I
 15 can't comment to that. But, I'll say that in
 16 terms of the accuracy, yes, it's very consistent.
 17 In other words, we don't show up at a site and we
 18 miss the mark by five decibels or something. No.
 19 Routinely the Midwest, New York, wherever we
 20 measure, as long as the modeling was done the way
 21 we do it here, then it generally checks out.
 22 There's a little bit of scatter in the data.
 23 Sometimes you might be a decibel high or low. But
 24 there are no big swings involved here. Does that

Page 78

1 answer your question?
 2 **MR. KURITZ:** Yes. I think it does.
 3 **MR. BANGERT:** Brian Bangert. In prior
 4 cases we've had questions come up of infrasound,
 5 or intrasound. Is there anything you can expand
 6 upon, you know, the sounds that we can't hear, but
 7 we hear about in these meetings? How are they
 8 generated by these different turbines?
 9 **MR. HANKARD:** Sure. Well, wind turbines
 10 do produce infrasound, as do many other things;
 11 driving in a car, or tractor, or whatnot. So it's
 12 not infrasound itself that is necessarily harmful
 13 or annoying.
 14 So, wind turbines produce infrasound at
 15 a much lower level than many other sources. And
 16 it has been demonstrated by health studies, I'm
 17 not a health expert, but I can tell you this; for
 18 example, Health Canada did a study and found no
 19 connection between infrasound. There was a paper
 20 that just came out, I participated in the
 21 International Wind Turbine Conference two weeks
 22 ago. And one of the papers was from Finland in
 23 2021. And they simulated, they had a control
 24 group and a non-control group in a laboratory

Page 79

1 setting, they brought people in and exposed them
 2 to the infrasound from wind turbines and asked
 3 them to do various tasks.
 4 And at the end of it there was no
 5 difference whatsoever with the group that was
 6 exposed to wind turbines and not exposed -- excuse
 7 me; exposed to infrasound and the group that was
 8 not exposed to infrasound. And there have been
 9 many other similar studies. To be honest, I think
 10 it is just something that got started because
 11 people didn't like wind turbines and they were
 12 grasping at straws. But no matter how people have
 13 tried to chase down this infrasound issue, be it
 14 from a medical perspective or a hearing
 15 perspective, humans can't hear it. And so that is
 16 all I can say about that subject, I guess.
 17 **MR. BANGERT:** Okay. Last question,
 18 you're from Verona, Wisconsin. Do you reside in
 19 an area that is dominated by wind turbines at all,
 20 or is it common in Wisconsin for wind turbine
 21 farms that you have come across?
 22 **MR. HANKARD:** Well, Wisconsin --
 23 **MR. BANGERT:** In your territory?
 24 **MR. HANKARD:** Wisconsin is not the

Page 80

1 leader that Illinois is. We just measured last
 2 year at a fairly new 50 or 70 megawatt farm.
 3 There's a six turbine farm about ten miles from my
 4 house. But, no, they're not as prevalent in
 5 southern Wisconsin as they are in Illinois.
 6 **MR. BANGERT:** Okay. Thank you. You
 7 would have no understanding of why that would be?
 8 **MR. HANKARD:** No. I mean, I don't;
 9 politics, economics. Things like that, I suppose.
 10 **MR. BANGERT:** Thank you.
 11 **MR. FINNIGAN:** Any other questions from
 12 the board for this witness?
 13 **MR. KURITZ:** Yes, it's Mike Kuritz
 14 again. Are you a licensed professional engineer?
 15 **MR. HANKARD:** No, I'm not.
 16 **MR. KURITZ:** Is that not a requirement
 17 for your type of studies?
 18 **MR. HANKARD:** Right. I mean, last I
 19 heard there was maybe one question on acoustics on
 20 the entire professional engineering exam. So it's
 21 not going to test your knowledge of acoustics.
 22 And it's certainly not going to test your detailed
 23 knowledge of wind turbine measurements and
 24 modeling and things like that. So, there are some

Page 81

1 professionals in my field that are PEs. But, it's
 2 not a requirement per se.
 3 **MR. KURITZ:** So there's no licensing?
 4 **MR. HANKARD:** Not a required licensing
 5 like you would for structural engineer or
 6 something, no.
 7 **MR. KURITZ:** Okay. Thank you.
 8 **MR. FINNIGAN:** Any other questions from
 9 the board? Staff? Would anyone in the audience
 10 have questions of this witness?
 11 **MR. PETERSON:** Ed Peterson, 31630 East
 12 55 North Road, Aerosmith, Illinois.
 13 Did you provide any consultation to the
 14 county that declared the wind farm a health hazard
 15 in Wisconsin since you're from Wisconsin?
 16 **MR. HANKARD:** Could you reframe the
 17 question? Or say it one more time?
 18 **MR. PETERSON:** A county in Wisconsin
 19 declared the wind farm a health hazard due to the
 20 effects on livestock and people. Did you provide
 21 any data or information to that county?
 22 **MR. HANKARD:** You're referring to Brown
 23 County?
 24 **MR. PETERSON:** Correct.

Page 82

1 **MS. VAZQUEZ:** Questions only.
 2 **MR. HANKARD:** I'm sorry?
 3 **MS. VAZQUEZ:** We want to keep this to
 4 questions only.
 5 **MR. HANKARD:** If you're referring to
 6 Brown County, Wisconsin, yes, sir; I did some
 7 acoustics work for a project in that county. So
 8 as part of that I would have submitted information
 9 to that county, yes.
 10 **MR. PETERSON:** Thank you.
 11 **MR. FINNIGAN:** Any other questions?
 12 **MR. HANKARD:** Thank you.
 13 (Witness excused.)
 14 **MR. GRIFFIN:** We will roll on to the
 15 next witness. Ms. JoAnne Blank. She also has a
 16 power point and she will be testifying concerning
 17 the shadow flicker study that she performed, the
 18 model she performed that's part of the
 19 application.
 20 **MS. BLANK:** Good evening. My name is
 21 Joanne Blank and I work at Stantec Consulting.
 22 And I did the shadow flicker model study for this
 23 project. Next slide, please.
 24 My qualifications are I have two

Page 83

1 Master's of science, one in atmospheric and
 2 oceanic and another one in environmental
 3 monitoring. I have been working 21 years in the
 4 environmental consulting industry, with more than
 5 15 in the wind power industry. I have been doing
 6 shadow flicker model studies for more than ten
 7 years. Next slide.
 8 So just a little bit of a background on
 9 shadow flicker. As this little graphic
 10 demonstrates, shadow flicker can be measured,
 11 actually very precisely we can model how shadow
 12 will fall upon an object. And it changes with
 13 every minute of the day throughout the year. So,
 14 while it's ever changing, it is a very exact
 15 science as to how it will hit an object.
 16 So as you can see in our diagram here,
 17 the sun is going to pass through the area of the
 18 blades, and will then cause shadow flicker on an
 19 object.
 20 However, if you can imagine that as
 21 those blades might turn, if the wind is turning
 22 and is from a different direction, that will
 23 affect that final area that the shadow flicker
 24 falls upon. And as you can also imagine as that

Page 84

1 sun rotates or changes throughout the year and
 2 throughout the day, that will also change how
 3 shadow flicker falls. And I believe the next
 4 slide will give a little bit of a -- well, no, I
 5 lied.
 6 We will have a slide that shows a little
 7 bit of demonstration on how that shadow flicker
 8 changes.
 9 So, a couple of facts. The shadow
 10 flicker will only occur obviously during the
 11 daytime when the skies are not cloudy or overcast.
 12 The sun has to be shining. The turbines must be
 13 operational. So, if that is not enough wind to
 14 cause the blades to turn you will not have shadow
 15 flicker, or if they're down for maintenance.
 16 The model is going to depend on the
 17 alignment of the blades to the sun and the
 18 receptor as we just kind of demonstrated in that
 19 last little diagram. And it also diminishes with
 20 distance between turbine and the receptor.
 21 So, the shadow flicker is going to be
 22 more prominent in the early morning and the late
 23 afternoons, as we all have experienced how shadow
 24 kind of extends out late in the day as the sun

Page 85

1 begins to set. Or rises at the beginning of the
 2 day.
 3 And so that's when you're going to have
 4 more shadow flicker, but however the atmospheric
 5 will diminish that flicker. So it's not going to
 6 go on forever. It diminishes with distance. It
 7 dissipates. Next slide.
 8 It is also diminished by vegetation and
 9 buildings between the turbines and receptors. We
 10 do not take any of that information into account
 11 when we do our shadow flicker model. We assume
 12 that there is nothing that is going to come
 13 between the blades and the buildings. So in that
 14 case it's a worse case scenario. As mentioned, it
 15 is going to change as the sun progresses through
 16 the day, and it's most noticeable in the early
 17 morning and late at night, as we've already talked
 18 about. It's going to change with the seasons.
 19 And as the sun and the angles change, and now I
 20 believe the next slide will show a demonstration
 21 of that.
 22 So, the graphic up in the right is going
 23 to show, it's called the butterfly, and it kind of
 24 shows you how the shadow flicker is going to

Page 86

1 extend in the different seasons of the year. So,
 2 in the summer when the sun rises in the east,
 3 you're going to have your shadow flicker extending
 4 down to the southwest. And then in the afternoon
 5 in the summer we're going to extend down to the
 6 southeast. And then the two smaller butterfly
 7 wings to the north are due to the southern winter
 8 sun and how the shadow flicker extends out. So
 9 that's why you kind of see that butterfly effect.
 10 However, all of our modeling does take
 11 into account all of the turbines being operational
 12 at all times. And so our shadow, our final
 13 analysis includes all of the shadow, all of the
 14 turbines, so you're not going to see a distinct
 15 butterfly at each turbine because they will blend
 16 together.
 17 We use a model called WindPro, and it is
 18 an industry accepted modeling software for shadow
 19 flicker. And it does progress through the year in
 20 one minute increments so it is extremely accurate.
 21 What we do is we calculate the shadow, the
 22 expected shadow. So worse case scenario, which
 23 isn't truly a worse case scenario, it's more of an
 24 impossible scenario, would be that the sun is

Page 87

1 always shining; that the blades are always turned
 2 to the maximum extent, and that they're always
 3 turning.
 4 So, what we use is we use climatological
 5 information. So we know in January and February
 6 the sun, it's just not as sunny as it is in the
 7 middle of summer. So we use 25 to 30 years of
 8 sunshine analysis to average the climatological
 9 amount of sunshine that would occur in each month.
 10 And we also take into account the directions, the
 11 dominant directions that the wind is blowing in.
 12 And so that is called our expected
 13 analysis. And then in our analysis we considered
 14 all inhabited residences, parks, churches,
 15 schools, any what we consider a sensitive
 16 receptor. And as mentioned before, we do not take
 17 any vegetation into effect or other buildings. So
 18 again, there may be some blocking due to those
 19 types of features that we are not considering at
 20 this time.
 21 So the results of the study, as
 22 mentioned several times tonight, there were 89
 23 turbines that we've all assessed, and only 64 of
 24 them will be conducted. Our study used the entire

Page 88

1 89 turbines. And even using all 89 operating, we
 2 have predicted that there will not be more than 30
 3 hours of shadow on any receptor annually.
 4 And as you can see, the statistics that
 5 we're showing here, there's none over 30. There
 6 are 15, and these are non-participating residents.
 7 There are 15 of them that have 20 to 30 hours per
 8 year. 30 residents that would be expected to get
 9 10 to 20 hours per year. And 281 of them that
 10 will have less than ten hours per year. And many
 11 of them zero.
 12 Next slide. I think that's it.
 13 **MR. FINNIGAN:** Any questions from the
 14 board?
 15 **MR. BANGERT:** Brian Bangert. So,
 16 looking at that last slide, for instance, 281 with
 17 less than ten hours, versus the others that have
 18 considerably more, how does that, how is that
 19 handled? I'm going to assume that's more
 20 annoyance for them. How is that handled? Is it
 21 just because the rules say we can? Or is there
 22 any way to rectify that with those particular
 23 people that have to deal with that annoyance?
 24 **MS. BLANK:** Well, specifically that

Page 89

1 question would have to be answered by Invenergy.
 2 However, I can say that 30 hours of annual shadow
 3 per year is an accepted limit, and there are no --
 4 there is no ordinance that states an amount,
 5 although across the US most ordinances, if they do
 6 have a limit, it's generally 30 hours per year.
 7 So Invenergy has voluntarily kept their shadow
 8 limit under 30 hours per year. But you would have
 9 to ask Invenergy as to any further questions as to
 10 how they would handle it.
 11 **MR. BANGERT:** Okay. One other. So, on
 12 the shortest day of the year, what is the distance
 13 from the tip of the tower of these taller
 14 turbines, what is the distance of the shadow
 15 flicker distance that it will reach, versus the
 16 longest day of the year?
 17 **MS. BLANK:** I would have to -- I
 18 wouldn't have that number off the top of my head.
 19 So, if we are talking a specific turbine height,
 20 if we say the V150, I can certainly give you that
 21 number, but I don't have that off the top of my
 22 head.
 23 **MR. BANGERT:** Okay. I'd like to know
 24 that when you get a chance. I'd just like to

Page 90

1 know, we're talking about a 591 foot turbine.
 2 What is the distance that it will reach on the
 3 shortest day of the year and then the longest day
 4 of the year?
 5 **MS. BLANK:** I will look that up.
 6 **MR. KURITZ:** Mike Kuritz. We're up to
 7 30 hours per year maximum; what's the maximum
 8 amount of time that this actually occurs and would
 9 bother someone? Is it like five minutes in a day
 10 and they keep adding up to get to the 30 hours?
 11 Or is it two hours? Is it three hours?
 12 **MS. BLANK:** That is very dependent on
 13 the turbine position in relation to the receptor.
 14 And the number of turbines in relation to the
 15 receptor. So, in some cases it might be five or
 16 ten minutes. In other cases it could be that
 17 they're getting a half an hour in the morning from
 18 a turbine. And a half an hour in the evening from
 19 another turbine.
 20 But, then that would only be for X
 21 number of days. That would certainly not be for
 22 six months at a time. It's very dependent on the
 23 distance, the position. There's a lot of
 24 variables.

Page 91

1 **MR. KURITZ:** Are you saying it's not
 2 very likely that they would have a long period
 3 like hours in any one given day?
 4 **MS. BLANK:** Correct. It is generally
 5 not hours at a time, no. No.
 6 **MR. KURITZ:** Thank you.
 7 **MS. BLANK:** If I could just back up to
 8 the question that Brian had, this might answer
 9 what you were asking. And that is that the
 10 furthest extent that you will generally see shadow
 11 flicker is about a mile.
 12 Again, it's going to depend on the
 13 turbine, however generally at about a mile you
 14 will not see it. And that is only -- that is the
 15 very furthest extent. That is not all day long,
 16 or at all times. That's a worse case that extends
 17 to the very end of the day, just before the sun
 18 sets.
 19 **MR. BANGERT:** Thank you.
 20 **MS. TURNER:** Julia Turner. Do you
 21 measure this flicker only to the residence? Or do
 22 you measure it on to the entire property of the
 23 non-participating?
 24 **MS. BLANK:** We only measure at the

Page 92

1 residence.
 2 **MR. FINNIGAN:** So if you wanted to
 3 eliminate the shadow flicker, you could actually
 4 turn the turbine off for a half an hour?
 5 **MS. BLANK:** If you were to eliminate all
 6 shadow flicker on all residences you would
 7 probably not have a viable project anywhere in the
 8 United States. Well, maybe in the far reaches of
 9 the west.
 10 **MR. FINNIGAN:** Let's just talk about the
 11 15 residences that are 20 to 30 hours. So you
 12 picked those out, and by what you just stated a
 13 little while ago, that was only for 15 or 20
 14 minutes in a morning or evening, that it was going
 15 to affect that house?
 16 **MS. BLANK:** Well, it will vary. It's
 17 not only 15 or 20 minutes. It's going to vary.
 18 It will extend from a few minutes up to 50
 19 minutes, 60 minutes. Again, it's going to depend
 20 on the positioning.
 21 **MR. FINNIGAN:** But let's go back to the
 22 15 residents that are really getting affected, not
 23 all of them, but the ones that are really
 24 affected. If you would cooperate with those, and

Page 93

1 in your modeling know when this is going to
 2 happen, I wouldn't think that turning them off for
 3 a half hour is going to affect your project that
 4 much.
 5 **MS. BLANK:** That would certainly be a
 6 question for Invenergy. That wouldn't be my
 7 decision. We model to a maximum of 30 hours per
 8 year because we believe that that is an acceptable
 9 limit. And so that is what our --
 10 **MR. FINNIGAN:** But you might not think
 11 that if you lived in that house. We get a lot of
 12 feedback from people that really don't like shadow
 13 flicker. We'd like to eliminate it. I mean, I
 14 know you can't eliminate it on the whole project.
 15 That's not feasible. But, if there's some way we
 16 can work on that, I think that would be something
 17 I'm really interested in. I don't know about the
 18 rest of the board.
 19 **MR. BANGERT:** I agree with that. And I,
 20 you know, any given day when a person is -- and
 21 this is a terrible analogy, but just you have a
 22 small bond fire, you're sitting by it and you're
 23 obviously not wanting to sit in the smoke, so you
 24 move around.

Page 94

1 Well, we've all experienced when the
 2 wind changes direction, bear with me here, wind
 3 changes direction, shadow flicker could change
 4 dramatically on a particular house as the wind
 5 changes. It's going to change the direction of
 6 the orientation of that tower. And maybe this is
 7 a stretch. I don't know. But, just that tower is
 8 going to -- is always trying to aim at the most
 9 efficient direction, as I understand, and so it's
 10 potentially turning and could offer more shadow
 11 flicker on any given day just based upon the
 12 change in wind direction. But, how do you handle
 13 that type of modeling?
 14 **MS. BLANK:** So we have wind, we have
 15 average wind direction and velocity; or I'm sorry,
 16 and number of hours for each month. And so that
 17 is part of the calculation, is it again takes kind
 18 of an average of that. So, in the month of
 19 December it is from the northwest. I apologize.
 20 No, it is not -- that is not per month. It is
 21 just annually, is from the direction.
 22 So, in our expected analysis, it assumes
 23 that 25 percent of the time the wind is coming
 24 from a certain direction. And that's based on

Page 95

1 actual wind data that is collected. And that is,
 2 again, it's an average over many years.
 3 And if you take your analogy of the
 4 blades and the blades are at their fullest amount,
 5 keep in mind that the wind isn't going to change
 6 directions -- that turbine turns, those blades
 7 turn very slowly. They're not just going to keep
 8 turning back and forth and changing the amount.
 9 And the sun progresses rather quickly across that
 10 horizon. So, in a half hour's time it will not be
 11 affecting that house from any direction. No
 12 matter which direction the wind is coming from.
 13 **MR. GRIFFIN:** If I could add to that,
 14 and I think that someone addressed Mr. Finnigan's
 15 comment or question; as Mr. Hankard mentioned, the
 16 turbine isn't static. It's going to turn with the
 17 wind. And there's other also other considerations
 18 as to what causes shadow flicker and that's in the
 19 report, the various factors.
 20 So, it does become difficult to try to
 21 sort of chase the shadow flicker, and identify if
 22 it's happening here one minute, somewhere else
 23 five minutes later. And that is what becomes
 24 difficult in trying to say, well, that's -- let's

Page 96

1 prevent shadow flicker, or let's eliminate it at
 2 certain times. Because the model looks at the
 3 annual, your annual weather periods and other
 4 statistics to give you an idea on what the average
 5 year should look like.
 6 But to say what's going to happen on a
 7 particular time of day and a particular receptor,
 8 it becomes very difficult to identify that. And
 9 so that's where the curtailment or shutting off
 10 the turbine becomes very difficult because you
 11 don't always know, you know when the conditions
 12 are right for shadow flicker to occur, but you
 13 don't know if shadow flicker is actually occurring
 14 during that time.
 15 **MS. BLANK:** The potential is
 16 very accurate.
 17 **MS. TURNER:** So this is Julia Turner.
 18 So are you saying that your model really isn't
 19 predictive then?
 20 **MS. BLANK:** No, that's what I was trying
 21 to clarify. The potential for shadow flicker is
 22 extremely accurate. We have the exact position of
 23 the sun, the model considers the exact position of
 24 the sun, the exact position of the turbine, and

Page 97

1 the position of the receptor. And it looks at
 2 that in one minute increments. That is extremely
 3 accurate.
 4 What Jim was referring to is the fact
 5 that then the blades could turn, which could
 6 diminish that amount. The wind could not be
 7 blowing, which would diminish that amount. The
 8 sun could not be shining, which will diminish that
 9 amount. And that is the part that is variable.
 10 But, the model itself is very accurate.
 11 **MS. TURNER:** So, just to clarify, I want
 12 to make sure I have it straight in my head
 13 because I think we have to put this in
 14 perspective.
 15 What you've put out there is a model
 16 that says the most these houses could get is 20 to
 17 30, all conditions being perfect?
 18 **MS. BLANK:** No. The 20 to 30 hours per
 19 year is the expected based on the climatological
 20 averages. So, it does take that climatology into
 21 consideration.
 22 **MS. TURNER:** But it does not take
 23 vegetation or other buildings into consideration?
 24 **MS. BLANK:** Correct.

Page 98

1 **MS. NOVOSAD:** Have you identified
 2 residences that get shadow flicker from more than
 3 one tower?
 4 **MS. BLANK:** Yes.
 5 **MS. NOVOSAD:** And how many are those?
 6 **MS. BLANK:** The model predicts all of
 7 the turbines and all of the receptors. So, there
 8 is -- I would have to do a calculation on that
 9 because there -- many receptors would receive more
 10 than one turbine. But, might only be for a few
 11 minutes a day, for a few days at a time. And
 12 that's how accurate the model is, it's running
 13 down to that, to say turbine 32 is hitting this
 14 house for five minutes in January from the 10th to
 15 the 20th. And then turbine 65 is hitting it in
 16 June and July for 20 minutes for 10 days.
 17 **MS. NOVOSAD:** But that situation is
 18 included in the statement of the 30 hours?
 19 **MS. BLANK:** Absolutely. Yes. That
 20 takes all turbines into consideration.
 21 **MR. FINNIGAN:** Some of that is fairly
 22 predictable, though, if you have a tower on the
 23 west side of a property, and it's in the evening,
 24 you're going to get -- a good chance you're going

Page 99

1 to get some shadow flicker from that tower going
 2 to that house. Same thing in the morning when
 3 you're on the east side of the house, it's going
 4 to have flicker on the east side of the house,
 5 would that be correct?
 6 **MS. BLANK:** That is correct. But you
 7 also have to remember that obviously the horizon,
 8 the sky is very large. And it is only going to
 9 occur when it's lined up perfectly with the sun,
 10 the turbine and that receptor.
 11 So, yes, if you're on the east side
 12 you're going to -- you would hit it, if the
 13 turbine is to your east, you would get it in the
 14 morning. But you're not going to get it every
 15 morning all year long. It's only during that
 16 brief time.
 17 **MR. FINNIGAN:** Right; when the sun is
 18 just right. If it's a cloudy day you won't get
 19 it; if it's a cloudy evening you won't get it.
 20 **MS. BLANK:** But season has a lot to do
 21 with it too. You know, you're just not going to
 22 have it --
 23 **MR. FINNIGAN:** So you're not going to
 24 shut them off very much at all, is that right?

Page 100

1 **MR. GRIFFIN:** Well, Mr. Finnigan, again,
 2 the difficulty becomes, it's difficult to predict
 3 when the shadow flicker is.
 4 **MR. FINNIGAN:** She's already got it
 5 predicted.
 6 **MR. GRIFFIN:** We can predict the time of
 7 the year when the sun is in the right location
 8 relative to the turbine and the residence. But,
 9 what's actually happening on the ground due to the
 10 climate, that becomes much more difficult.
 11 **MR. FINNIGAN:** I think you better get a
 12 bigger calculator.
 13 **MS. BLANK:** Or you have to be able to be
 14 all knowing. Non-human.
 15 **MR. FINNIGAN:** Any other questions from
 16 the board? We're getting about that time. Any
 17 questions, Phil? Anyone in the audience have
 18 questions of this witness?
 19 **MS. TAYLOR:** Hi, Carolyn Taylor. I
 20 confess to ignorance of the term, shadow flicker,
 21 prior to today. And I'm clearer on the shadow
 22 part of it than I am on the flicker part of it.
 23 What are the actual effects that would happen to
 24 the people in the houses besides being in the

Page 101

1 shadow? Or having a shadow cast over them? Maybe
 2 I'm missing something here.
 3 But, it also led me to wonder, are there
 4 vibrations through the soil that transmit from the
 5 turbines that get to houses at all? And I think a
 6 flicker as like electric lights flickering and
 7 stuff like that. What kind of flicker effects,
 8 all of the possible flicker effects that residents
 9 could suffer?
 10 **MS. BLANK:** So when you talk about a
 11 light flickering, you're talking at a much higher
 12 frequency and a difference in light to dark.
 13 If you picture a shadow of an object, I
 14 guess if you think about when you would go slowly
 15 past a picket fence and you would see the shadow
 16 going from light to dark and light to dark. That
 17 would be the kind of effect that it is. However,
 18 the blades turn very slowly, but that's kind of
 19 the effect; is that you're going to have the
 20 shadow going from light to dark as the turbine
 21 blades turn.
 22 **A VOICE:** This is Dee Stielow; Carolyn,
 23 sometimes people with seizure disorders or
 24 epilepsy can also have problems with that. That

Page 102

1 can be an effect from the flicker effect.
 2 **MS. BLANK:** No, I'm sorry, that's not
 3 true. It has been proven --
 4 **MS. STIELOW:** Yes, it actually is true.
 5 But, Carolyn, if you're done, I can just make a
 6 statement, then I can --
 7 **MS. VAZQUEZ:** We don't know who's
 8 speaking. We are only taking questions from
 9 Carolyn Taylor at this time for our witness. So,
 10 please proceed, Ms. Taylor.
 11 **MS. TAYLOR:** My microphone got shut off
 12 and I was testing that. But, so when you talk
 13 about the annoyance for residents, can you give
 14 examples of what that annoyance would look like,
 15 sound like, feel like?
 16 **MS. BLANK:** That would be very
 17 subjective. There are people that have shadow
 18 flicker that are not annoyed by it at all. And
 19 there are studies that show that your level of
 20 annoyance is related to how much you like to have
 21 wind turbines or dislike wind turbines. So, it's
 22 very subjective. You might be -- one person would
 23 be annoyed by something that another person would
 24 not be.

Page 103

1 **MS. TAYLOR:** All right. I feel like
 2 some concrete examples. A typical non-special
 3 health condition people would feel the annoyance
 4 of? I got the impression what you said earlier in
 5 terms of shadow itself, that as far as at sunset
 6 time or before, as far as a mile away somebody's
 7 home could be impacted by this shadow. How would
 8 they know they were being impacted? If they're
 9 inside their house, what would they be perceiving?
 10 **MS. BLANK:** They would get a slight
 11 difference in the light going from darkness -- not
 12 darkness; but like a shadow passing -- I guess if
 13 you picture that you have a tree in front of your
 14 house, and the leaves are rustling, which they
 15 would rustle to a much higher extent and you would
 16 see the differences as light passes through them;
 17 as the sunlight passes through them.
 18 I'm not sure I can -- I don't know how
 19 else to explain it.
 20 **MS. TAYLOR:** The flicker is exclusively
 21 visual?
 22 **MS. BLANK:** Absolutely. Exclusively
 23 visual. And when I say a mile away, we are not
 24 talking extreme shadow flicker a mile away. All

Page 104

1 we're saying is that is about as far as that
 2 shadow can possibly extend before it dissipates
 3 from the atmospheric conditions.
 4 **MS. TAYLOR:** And maybe this isn't your
 5 field, but are there vibrations from the turbines
 6 that transmit through the soil?
 7 **MS. BLANK:** It is not my direct field,
 8 however I have read many studies that have been
 9 done that have found that there's no vibrations
 10 that go through the soil.
 11 **MS. TAYLOR:** Okay. Thank you.
 12 **MR. PETERSON:** Ed Peterson, 31630 East
 13 500 North Road, Aerosmith Illinois.
 14 My personal opinion is, you have no
 15 right to cast a shadow on other people for your
 16 profit.
 17 **MS. VAZQUEZ:** Excuse me, Mr. Peterson.
 18 Are you asking a question?
 19 **MR. FINNIGAN:** Just questions. Can't
 20 give testimony.
 21 **MS. VAZQUEZ:** You can give testimony at
 22 a different time.
 23 **MR. PETERSON:** Do you have a map of the
 24 residents with the hours that will be affected?

1 **MS. BLANK:** The map is included in our
2 shadow study, which is part of the SUP
3 application.

4 **MR. PETERSON:** And I can get a copy of
5 this where?

6 **MS. BLANK:** I would defer to the board
7 as to where he can access that.

8 **MR. PETERSON:** Can I get a copy from the
9 Bellflower office?

10 **MR. GRIFFIN:** A copy of the application
11 including all of the reports including the shadow
12 flicker report are posted on the county's website,
13 correct, Mr. Dick? So you can get on the McLean
14 County website and all those reports are on their
15 website.

16 **MR. PETERSON:** And that will show the
17 residences with the hours that are affected in the
18 study?

19 **MR. GRIFFIN:** It does. The residents
20 are identified by a number, but it does detail
21 each of the residences that were analyzed that
22 will tell you the expected number of hours of
23 shadow flicker per year.

24 **MR. PETERSON:** Thank you.

1 STATE OF ILLINOIS)
2 COUNTY OF CHAMPAIGN) SS

3 I, DEANN K. PARKINSON, a Notary Public
4 in and for the County of Champaign State of
5 Illinois, do hereby certify the foregoing was
6 taken on June 1, 2021.

7 That said hearing was taken down in
8 stenographic notes and afterwards reduced to
9 typewriting under my instruction and said
10 transcription is a true record of the testimony
11 given.

12 I do hereby certify that I am a
13 disinterested person in this cause of action; that
14 I am not a relative of any party or any attorney
15 of record in this cause, or an attorney for any
16 party herein, or otherwise interested in the event
17 of this action, and am not in the employ of the
18 attorneys for either party.

19 In witness whereof, I have hereunto set
20 my hand and affixed my notarial seal June 21,
21 2021.

22
23
24

DEANN K. PARKINSON, CSR
NOTARY PUBLIC

1 **MR. FINNIGAN:** Okay. I think we're
2 going to recess to June 8th at 7 o'clock.

3 **MR. GRIFFIN:** Did we conclude the
4 questions for Ms. Blank?

5 **MR. FINNIGAN:** I think so.

6 **MR. ROUS:** This is Phil Rous and I did
7 have one question for the shadow expert. My farm
8 is on the northwest quadrant of Section 5, and I
9 reside in Peoria.

10 **MR. FINNIGAN:** We have recessed for the
11 night and this witness will come back on June 8th.
12 So we're going to start at this point.

13 **MR. ROUS:** Thank you very much.
14 (The time is 10:09 p.m.)

15
16
17
18
19
20
21
22
23
24

	57:8	56:22;81:12;104:13	32:19,20;34:6;68:14;	annoyance (6)
\$	acres (2)	affect (6)	69:13	88:20,23;102:13,14,
	7:23;29:20	33:23;60:4;61:16;	aircraft (1)	20;103:3
\$100,000 (1)	across (17)	83:23;92:15;93:3	32:19	annoyed (2)
42:9	26:4,10;27:24;28:3,	affected (6)	airport (1)	102:18,23
\$50,000 (1)	16;29:20;30:1;34:16;	10:20;20:4;92:22,24;	41:4	annoying (1)
42:10	46:3;59:16;65:17;	104:24;105:17	airports (2)	78:13
\$52,809 (1)	67:14;70:14;75:19;	affecting (1)	5:4;10:4	annoys (1)
61:5	79:21;89:5;95:9	95:11	alignment (1)	67:6
\$84,000 (1)	action (1)	afforded (1)	84:17	annual (8)
38:11	18:9	6:16	allow (3)	12:11;14:15;37:12;
\$84,457 (1)	actual (2)	afternoon (1)	3:7;16:3;75:18	40:18;41:7;89:2;96:3,3
61:5	95:1;100:23	86:4	allowed (2)	annually (4)
	actually (19)	afternoons (1)	47:24;59:13	40:19;42:9;88:3;
A	35:15;41:15,19;46:5;	84:23	allowing (2)	94:21
	66:6;67:2,7,17;69:18;	afterwards (1)	14:16;63:14	answered (1)
able (8)	71:3,12;75:9;76:3;	60:13	allows (2)	89:1
28:23;33:5;44:5;	83:11;90:8;92:3;96:13;	again (23)	40:13;69:12	anticipate (4)
45:2;61:13;67:7;74:20;	100:9;102:4	10:9;24:6;28:7,11;	almost (4)	54:22;55:17,18;
100:13	Adams (1)	34:15;37:7;39:19;	40:19;41:12;60:12;	57:16
above (1)	25:23	43:13,14;46:10;49:5;	74:15	anticipating (2)
68:8	add (1)	55:14;56:19;63:16;	along (5)	46:1,4
Absolutely (2)	95:13	72:13;73:7;80:14;	17:12,16,19;21:10;	apologize (2)
98:19;103:22	added (1)	87:18;91:12;92:19;	74:10	45:11;94:19
acceptable (3)	62:1	94:17;95:2;100:1	alternate (1)	Appeals (1)
19:21,22;93:8	adding (2)	against (1)	44:22	7:14
accepted (3)	14:13;90:10	30:2	alternates (2)	appeared (1)
9:18;86:18;89:3	additional (1)	Agency (2)	31:15;51:4	26:6
access (16)	24:17	5:9;20:24	although (1)	applicable (3)
3:10;13:23;17:5,11,	address (16)	agents (1)	89:5	18:10;19:1,13
13,16,18,19,20;18:6;	21:22;22:2,4,8,19,	43:9	always (6)	applicant (21)
21:10;53:22;54:4;74:9,	22;23:5,9,13;52:7,8,13,	ago (5)	29:15;87:1,1,2;94:8;	4:2;5:10;8:12,17;
10;105:7	16;56:20;60:17,24	61:21;64:17;71:6;	96:11	9:22;10:11;12:18;
according (4)	addressed (1)	78:22;92:13	AM/FM (1)	13:21;14:2;16:2,4;
9:20;19:23;20:17;	95:14	agree (2)	13:3	17:7,10;18:3;20:10,18,
71:24	adequate (5)	58:19;93:19	amendment (3)	22;21:1,12;24:10,13
accordingly (1)	17:4,23;18:5;19:20,	agreeable (1)	28:10;31:11;64:17	applicants (1)
45:24	21	4:23	America (1)	22:15
account (5)	adjacent (3)	Agreement (15)	3:6	applicant's (1)
45:21;49:5;85:10;	4:12,21;60:4	13:17;16:2;18:7,10;	amount (11)	24:8
86:11;87:10	adjust (1)	19:9,12;20:2;38:15,23;	29:10;39:13;48:23;	application (31)
accrue (1)	46:7	41:14,23;42:2;43:4;	87:9;89:4;90:8;95:4,8;	3:5;4:5,24;7:22;
6:23	adjusted (1)	54:9;58:2	97:6,7,9	9:16;13:19;15:6,11,21;
accuracy (3)	45:24	agreements (2)	analogy (4)	17:1;18:9;19:4,11,17,
71:3;73:17;77:16	adjustment (1)	18:4;49:22	66:16,22;93:21;95:3	24;20:1,18;24:4,11,14,
accurate (10)	49:3	agricultural (8)	analysis (10)	18;25:3,18;27:10;38:4;
64:14;70:16,21;	Administration (1)	11:1;14:7,10;15:4,5;	8:7;10:22;13:7;	48:14;51:4,16;82:19;
71:18;86:20;96:16,22;	9:24	20:1;28:18;38:15	15:14;27:16;86:13;	105:3,10
97:3,10;98:12	adopt (1)	agriculture (9)	87:8,13,13;94:22	applications (1)
achieve (1)	6:12	8:4,5;13:16;16:10;	analyzed (1)	32:6
40:13	adopted (2)	18:17,20;19:2;20:3;	105:21	applied (1)
achieving (1)	7:14;61:20	38:17	ancillary (2)	31:13
40:15	advantage (1)	ahead (5)	3:13;6:6	apply (1)
acknowledges (1)	14:15	21:18;23:15;52:18,	and/or (1)	4:23
6:15	adverse (1)	22;64:21	71:19	appreciate (2)
acoustic (1)	32:17	aid (1)	Andrea (2)	25:10;51:10
35:14	advocacy (1)	21:13	23:18;27:5	appropriate (4)
acoustical (2)	43:7	aim (1)	angles (1)	38:7;39:13;46:8;
8:24;73:15	aerial (2)	94:8	85:19	48:23
Acoustics (5)	32:4;35:22	AIMA (9)	Anna (1)	approval (5)
27:11;75:17;80:19,	aeronautical (1)	13:17,20;20:8;38:14,	60:22	15:17;49:8;51:13;
21;82:7	32:16	22;62:12,16,17,21	anniversary (3)	55:18;61:2
acquisition (1)	Aerosmith (3)	air (5)	39:6;45:16;48:17	approvals (1)

<p>49:23 approve (4) 41:16;48:10;58:22, 22 approved (9) 9:21;14:6,12;15:18; 18:8;32:12;49:13,24; 50:4 approves (1) 19:11 approximate (1) 54:21 approximately (6) 7:23;16:21,23;41:7; 42:11;49:9 April (2) 74:18;75:1 Archeological (1) 11:4 Archeology (1) 11:8 architectural (2) 11:3,6 Architecture (1) 11:8 area (27) 11:2;13:14;14:7,23; 15:4,18;16:14;21:3; 26:18;27:13;30:7;32:1; 34:3,6,7,9;35:13,17,21, 24;39:17;50:14;60:16; 73:7;79:19;83:17,23 areas (8) 6:24;8:1;12:3,8; 18:22;33:3;36:5;53:1 around (5) 56:4;66:18;67:21; 72:22;93:24 Article (1) 19:18 aside (7) 38:2,24;39:2,4,14; 46:8;48:24 assess (2) 36:1;39:12 assessed (1) 87:23 assessing (1) 35:11 assessment (2) 10:12;20:20 assessor (1) 29:2 assigned (1) 43:3 assist (1) 14:14 assume (2) 85:11;88:19 assumed (1) 34:21 assumes (2) 47:6;94:22</p>	<p>assuming (3) 47:14;50:4;55:18 assurance (2) 19:20,22 assure (2) 47:16,19 atmospheric (2) 33:18;104:3 atmospherics (2) 83:1;85:4 attend (1) 40:23 attorney (1) 24:8 attributed (1) 47:8 audience (5) 36:23;48:4;52:1; 81:9;100:17 automatically (1) 45:21 available (1) 12:16 Avenue (3) 23:6;52:17,20 average (8) 40:18;41:7;66:13; 87:8;94:15,18;95:2; 96:4 averages (1) 97:20 avian (3) 11:15,22;35:19 Aviation (4) 5:2;9:24;10:1;32:23 avoid (1) 12:17 aware (1) 56:8 away (10) 16:22,24;18:21;36:4; 37:22;49:18;69:8; 103:6,23,24</p>	<p>47:16,23;78:3,3;79:17, 23;80:6,10;88:15,15; 89:11,23;91:19;93:19 bankrupt (1) 37:24 Banks (1) 24:9 base (3) 6:5;7:9;13:14 based (9) 7:5;57:12,13,15,23, 24;94:11,24;97:19 basically (3) 72:9;73:15;74:16 basics (1) 65:5 basis (7) 12:11;41:7;48:24; 62:8;76:16,17,19 bat (7) 4:20;11:15,22;12:12, 23;35:16,16 bats (1) 12:22 beam (3) 10:18;33:24,24 bear (3) 41:12;66:13;94:2 become (1) 95:20 becomes (6) 46:2;95:23;96:8,10; 100:2,10 begin (4) 11:13;15:19;20:24; 55:22 beginning (1) 85:1 begins (3) 13:24;60:15;85:1 behal (1) 24:10 behind (3) 43:2;49:19;60:10 Bellflower (19) 3:20,22;4:8;5:19; 6:16;16:2;30:1,8;31:3, 6;37:9,14;41:1,14; 42:5;43:4,9;63:11; 105:9 Bellflower's (1) 42:9 below (5) 7:11;12:19;20:9; 33:16;68:6 benefactor (3) 40:5,17,24 beneficiaries (1) 40:7 benefit (6) 6:10,16;7:9;40:22; 41:5;43:18 benefits (8)</p>	<p>5:20;6:22;29:13,13; 39:16;40:8;42:22; 54:14 besides (2) 14:13;100:24 best (2) 12:16;21:17 better (3) 72:7;75:19;100:11 big (4) 42:24;68:13;71:21; 77:24 bigger (1) 100:12 bird (2) 4:20;12:12 bisects (3) 30:10,11;31:8 bit (19) 25:18;26:4,8,18; 27:14,17;28:1;33:5; 34:24;36:17;39:20; 45:2;71:12;74:4;75:9; 77:22;83:8;84:4,7 black (3) 68:2,3,5 blade (3) 9:12;68:14;69:13 blades (19) 8:23;13:6;47:18,21; 69:12,16;71:16;83:18, 21;84:14,17;85:13; 87:1;95:4,4,6;97:5; 101:18,21 BLANK (37) 23:8,8,9;27:15; 82:15,20,21;88:24; 89:17;90:5,12;91:4,7, 24;92:5,16;93:5;94:14; 96:15,20;97:18,24; 98:4,6,19;99:6,20; 100:13;101:10;102:2, 16;103:10,22;104:7; 105:1,6;106:4 B-L-A-N-K (1) 23:9 blend (1) 86:15 blocking (1) 87:18 Blooming (13) 26:12;29:5;61:2,12, 14;64:12,19;65:9;70:6, 20;71:9;73:19;76:17 Bloomington (5) 23:14;26:20;28:20; 41:3;61:1 blowing (4) 68:20;76:7;87:11; 97:7 blows (1) 28:16 Blue (7)</p>	<p>5:14,16;6:23;40:5, 11,16;42:20 board (50) 4:6;5:15,16,20;6:11, 14,15,20;7:2,11,13,14, 15,16,18;10:8,10;18:9; 19:11;24:2;25:16;26:7, 7;33:9;41:24;42:1; 44:9;47:17;48:3,9,9; 51:22;58:18;59:10,15; 64:7,13,16;65:6;66:12; 67:13;71:6;73:22;74:1; 80:12;81:9;88:14; 93:18;100:16;105:6 boards (2) 64:7;66:3 bodies (1) 36:2 body (1) 7:9 bond (1) 93:22 booklet (1) 4:6 bored (1) 69:21 both (6) 7:9;14:14;26:16,17; 38:13;50:22 bother (1) 90:9 bottom (1) 72:14 boundary (2) 10:5;53:12 break (2) 63:21,24 breaks (1) 60:11 Brian (5) 45:15;46:10;78:3; 88:15;91:8 brief (2) 65:1;99:16 briefly (2) 29:22;68:12 bring (7) 21:19;37:1;42:10,22; 43:18;65:20;72:2 brought (1) 79:1 Brown (2) 81:22;82:6 Brunner (1) 27:5 bubbles (2) 43:22;44:7 budget (4) 42:9,12;57:6,9 build (7) 8:12;17:11;26:24; 30:15;31:12;40:12; 51:19</p>
	B			
	<p>baby (1) 67:5 back (13) 9:3;16:16;30:19,21; 44:14;49:15;56:18; 69:13;72:11;91:7; 92:21;95:8;106:11 background (1) 83:8 bald (1) 11:15 band (1) 71:11 bands (1) 59:17 BANGERT (18) 45:15,15;46:10,10;</p>			

<p>building (5) 9:16;37:5,6;50:3; 51:12</p> <p>buildings (4) 85:9,13;87:17;97:23</p> <p>built (8) 8:22;9:20;17:14; 27:24;28:6;31:14;42:3; 63:12</p> <p>burden (3) 7:3,6,7</p> <p>Bureau (1) 60:24</p> <p>buried (2) 47:22;54:16</p> <p>bury (2) 47:17;60:9</p> <p>business (3) 6:7;23:5;58:24</p> <p>butterfly (4) 85:23;86:6,9,15</p> <p>button (1) 56:19</p>	<p>captured (2) 74:16;76:8</p> <p>car (1) 78:11</p> <p>care (1) 58:20</p> <p>careful (3) 12:15;71:8;72:4</p> <p>Carolyn (5) 52:2;100:19;101:22; 102:5,9</p> <p>carriers (1) 34:8</p> <p>carrier's (1) 13:10</p> <p>case (13) 3:3,4;23:16;47:14; 62:17;73:2;75:23;76:6; 85:14,14;86:22,23; 91:16</p> <p>cases (3) 78:4;90:15,16</p> <p>cash (8) 38:19,20;39:3;49:1, 5;61:23;62:10,19</p> <p>cast (2) 101:1;104:15</p> <p>cause (2) 83:18;84:14</p> <p>caused (1) 13:22</p> <p>causes (1) 95:18</p> <p>cell (1) 13:15</p> <p>center (1) 30:12</p> <p>centers (2) 28:19,21</p> <p>central (1) 73:10</p> <p>centrally (2) 30:8;31:6</p> <p>certain (4) 4:16;61:21;94:24; 96:2</p> <p>certainly (6) 65:2;74:7;80:22; 89:20;90:21;93:5</p> <p>certify (1) 9:15</p> <p>chain (1) 72:17</p> <p>chair (1) 44:3</p> <p>Chairman (1) 24:1</p> <p>chalkboard (1) 67:5</p> <p>Chamber (1) 43:6</p> <p>Champaign (3) 11:9;28:20;30:4</p>	<p>chance (3) 48:3;89:24;98:24</p> <p>change (9) 62:7;84:2;85:15,18, 19;94:3,5,12;95:5</p> <p>changed (1) 61:21</p> <p>changes (8) 10:11;20:18;83:12; 84:1,8;94:2,3,5</p> <p>changing (2) 83:14;95:8</p> <p>characterization (1) 35:14</p> <p>chart (1) 68:2</p> <p>chase (2) 79:13;95:21</p> <p>check (1) 23:20</p> <p>checking (1) 23:19</p> <p>checks (1) 77:21</p> <p>check-the-box (1) 50:14</p> <p>Chicago (7) 22:4,19,23;23:22; 24:9;26:19;28:20</p> <p>churches (1) 87:14</p> <p>circles (2) 72:21;73:8</p> <p>citizens (1) 6:6</p> <p>City (2) 12:4;22:9</p> <p>claim (1) 58:8</p> <p>clarification (1) 62:14</p> <p>clarify (2) 96:21;97:11</p> <p>clay (1) 28:4</p> <p>clearer (1) 100:21</p> <p>climate (1) 100:10</p> <p>climatological (3) 87:4,8;97:19</p> <p>climatology (1) 97:20</p> <p>close (2) 51:1;69:9</p> <p>closer (3) 16:18;53:11;55:3</p> <p>closest (1) 9:4</p> <p>cloudy (3) 84:11;99:18,19</p> <p>code (4) 9:2;10:10;13:21;</p>	<p>20:8</p> <p>coherently (1) 45:3</p> <p>collected (2) 6:8;95:1</p> <p>collection (3) 54:15,16;60:9</p> <p>collections (1) 29:4</p> <p>College (3) 41:1;44:18;65:15</p> <p>colored (1) 53:1</p> <p>column (1) 72:3</p> <p>combination (1) 8:18</p> <p>combines (1) 56:12</p> <p>comfort (1) 8:10</p> <p>coming (7) 33:5;56:24;57:11; 70:1;75:16;94:23; 95:12</p> <p>comment (4) 43:22;44:7;77:15; 95:15</p> <p>comments (4) 43:23;44:1,2,5</p> <p>Commerce (1) 43:6</p> <p>commercial (1) 18:22</p> <p>commission (1) 69:24</p> <p>commissioned (1) 48:11</p> <p>commissioners (2) 18:11;19:14</p> <p>commit (1) 38:18</p> <p>commitment (2) 36:13,21</p> <p>common (2) 37:20;79:20</p> <p>communication (7) 3:11;5:2;9:11;34:2, 3;37:16;44:13</p> <p>communications (3) 4:14,24;5:8</p> <p>communities (1) 28:2</p> <p>community (6) 26:22;37:11;40:22; 41:1;42:16;43:18</p> <p>Company (5) 10:23;23:2;27:22; 38:1;73:15</p> <p>compares (1) 59:20</p> <p>compatible (2) 15:3;18:20</p>	<p>competition (1) 56:11</p> <p>compile (1) 27:9</p> <p>complained (1) 77:9</p> <p>complainer (1) 77:14</p> <p>complaint (1) 14:2</p> <p>complaints (4) 76:18;77:8,11,13</p> <p>complete (5) 9:19;11:21,23;14:1; 20:22</p> <p>completed (10) 10:6,15,18,22;11:7, 14,16;13:3,8,18</p> <p>completion (1) 55:12</p> <p>compliance (5) 10:13;15:8;19:7; 20:21;27:7</p> <p>compliant (1) 31:21</p> <p>complicated (1) 66:13</p> <p>complies (1) 38:13</p> <p>comply (9) 10:7;15:12;20:10; 33:9;62:6,8,15,24;70:3</p> <p>comprehensive (2) 14:5;24:14</p> <p>compress (1) 66:8</p> <p>compromise (1) 13:12</p> <p>compromised (1) 13:10</p> <p>ComSearch (6) 10:16;13:4,8,10; 33:20;34:1</p> <p>concept (1) 67:18</p> <p>concerning (1) 82:16</p> <p>concerns (1) 36:15</p> <p>conclude (2) 34:10;106:3</p> <p>concludes (1) 21:15</p> <p>concluding (1) 33:13</p> <p>conclusion (5) 25:1,2;34:23;36:10; 42:15</p> <p>concrete (1) 103:2</p> <p>condition (1) 103:3</p> <p>conditions (10)</p>
C				
<p>calculate (1) 86:21</p> <p>calculated (1) 57:12</p> <p>calculation (2) 94:17;98:8</p> <p>calculator (1) 100:12</p> <p>call (5) 3:2;25:7;53:17;64:2, 3</p> <p>called (5) 50:9;69:1;85:23; 86:17;87:12</p> <p>calling (1) 23:21</p> <p>calls (1) 35:16</p> <p>came (2) 41:15;78:20</p> <p>can (55) 8:11;11:13;13:14; 15:19;20:24;25:11; 27:18;29:23;30:18; 31:5;38:18;43:15,17; 46:24;47:16,19;48:6; 49:16;50:6,12;52:13; 53:14,18;60:1;64:23; 65:20;66:17,19;71:22; 78:5,17;79:16;83:10, 11,16,20,24;88:4,21; 89:2,20;93:16;100:6; 101:24;102:1,5,6,13; 103:18;104:2,21; 105:4,7,8,13</p> <p>Canada (1) 78:18</p>				

5:12;33:18;50:10,12; 74:5,17;75:23;96:11; 97:17;104:3 conduct (4) 32:3;33:3;48:8; 50:15 conducted (15) 25:24;27:16;34:4; 35:13,14,19,20,21,24; 38:2;48:13;64:11;65:9, 10;87:24 Conference (1) 78:21 confess (1) 100:20 confirming (1) 36:13 confirms (1) 71:9 conformance (1) 18:15 conforms (1) 19:1 congestion (1) 18:1 connect (1) 53:17 connection (2) 21:2;78:19 consider (2) 58:18;87:15 considerable (1) 72:7 considerably (1) 88:18 consideration (4) 12:15;97:21,23; 98:20 considerations (1) 95:17 considered (2) 5:20;87:13 considering (1) 87:19 considers (1) 96:23 consistent (2) 13:20;77:16 consisting (2) 3:8;8:13 consolidated (2) 50:18;51:1 constructed (5) 34:21;50:1;51:17; 54:22;63:11 construction (26) 3:12;5:11;9:19; 11:13;12:10;13:24; 15:19;18:6,12;19:14; 20:24;36:18,19,20; 37:16;50:16;52:4; 55:10,11,15,17,19,19, 21;57:7;60:7	consultants (2) 27:8,11 consultation (2) 20:23;81:13 consulted (1) 65:17 Consulting (2) 82:21;83:4 containing (1) 24:14 continue (5) 15:1,2;16:13;30:20; 68:21 continuing (3) 29:14,15,17 contours (1) 72:21 contract (1) 49:15 contracts (1) 49:13 contributes (1) 6:4 Control (11) 10:8,10;33:9;59:10, 15;62:19;65:6;66:12; 67:13;73:22;78:23 controls (1) 59:7 Conversion (3) 3:7;8:13;9:1 cooperate (1) 92:24 coordinate (1) 21:12 coordinated (1) 36:7 coordination (2) 12:14;36:11 copy (5) 7:12;12:9;105:4,8,10 corn (1) 75:20 corner (2) 29:24;31:2 correctly (2) 53:10;63:7 corresponding (1) 54:3 corridors (2) 12:6,9 cost (3) 48:20;50:23;61:4 costs (12) 4:3;39:1,8,9,12; 45:18;46:1;57:8,8; 61:6,13,17 counsel (1) 27:4 counties (3) 4:22;28:3,6 country (3) 5:24;65:17;73:16	County (77) 5:22;6:1,4,7,9,10,16, 19,23;7:13;9:2;10:10; 11:5;13:20;14:5;16:3; 18:3,7,8,9;19:10,10,21, 22,23;20:8;24:16;25:5; 26:5,7,11,22,24;28:4,5, 8,13;29:8,9;30:1,3,4,4, 6;31:2,3,21;33:12; 37:2;38:14;39:17;40:4; 43:6;44:19,20;48:9; 49:2;50:19;58:10; 59:10,10;60:23;62:4,6, 9,16,23;63:6;70:17; 81:14,18,21,23;82:6,7, 9,105:14 County's (4) 5:22;49:2;62:18; 105:12 couple (6) 28:4;38:9;49:6;52:3; 53:16;84:9 course (3) 35:4,7;77:14 Court (1) 23:14 courts (1) 66:3 cover (1) 65:4 coverage (1) 13:10 created (1) 36:20 creates (1) 69:14 credit (1) 38:19 Creek-Farmer (1) 12:4 crew (2) 60:10,16 crop (3) 8:3;15:1;16:13 crops (3) 74:21;75:9,13 cross (1) 17:18 crosses (1) 54:16 crossing (1) 17:21 crying (1) 67:5 curious (2) 44:22;46:15 currently (3) 14:24;47:6;62:9 curtail (1) 12:19 curtailment (2) 13:2;96:9 CUSD (2)	6:23;7:18 cuts (1) 68:14 cuz (2) 62:12;66:1 D damage (1) 17:9 dark (8) 30:7;53:2,3;54:2; 101:12,16,16,20 Darker (1) 53:21 darkness (2) 103:11,12 data (7) 71:9;74:19;76:5,19; 77:22;81:21;95:1 date (3) 26:17;42:17;66:1 David (2) 23:12;27:12 day (22) 39:7,12;45:18;65:21; 83:13;84:2,24;85:2,16; 89:12,16;90:3,3,9;91:3, 15,17;93:20;94:11; 96:7;98:11;99:18 days (3) 90:21;98:11,16 daytime (1) 84:11 DB (1) 72:6 DBA (3) 66:24;67:9;69:8 deal (1) 88:23 dealing (1) 70:21 DEAN (3) 76:10,11,23 December (3) 26:13;56:7;94:19 decibel (8) 59:12,16;65:5;66:4; 69:18;71:4;72:5;77:23 decibels (8) 66:5,8,23;67:22; 68:6;69:4;77:4,18 decide (2) 43:11;59:5 decision (1) 93:7 declared (2) 81:14,19 decommission (4) 38:12;39:3,10,12 decommissioned (1) 38:8 decommissioning (31)	13:18;17:3;19:24; 20:6;38:3,5,10,13,21, 24;39:6,8,11,14;45:17, 18;46:1,7,9,12;47:5; 48:6,12,21;49:1;61:4, 17,20,24;62:20,22 decommissionings (2) 46:3,5 Dee (2) 22:7;101:22 defer (2) 45:1;105:6 definitely (1) 61:11 definition (1) 54:6 degrees (1) 66:5 delineations (1) 36:1 demand (2) 28:22,24 demonstrated (5) 35:1,2;73:19;78:16; 84:18 demonstrates (3) 15:11;33:14;83:10 demonstration (2) 84:7;85:20 Department (10) 4:15,19;11:19;20:2; 36:8,14;37:14;38:16; 41:3;48:15 depend (3) 84:16;91:12;92:19 dependent (3) 57:22;90:12,22 DePere (1) 23:10 D-E-P-E-R-E (1) 23:11 deposited (1) 59:9 depth (1) 20:9 described (1) 72:20 design (2) 9:17;31:16 designed (1) 18:1 desirable (2) 15:2;18:23 desires (1) 6:12 detail (2) 72:20;105:20 detailed (1) 80:22 detect (3) 35:16;66:17;67:8 detectors (1) 35:15
---	--	--	---	--

<p>determination (2) 9:23;32:13</p> <p>determine (2) 39:7;50:15</p> <p>determining (1) 45:18</p> <p>detrimental (1) 8:9</p> <p>developed (4) 17:12;26:3,10,14</p> <p>developer (3) 24:19;25:13;37:21</p> <p>Development (7) 3:6;5:17;6:3;16:8; 19:16;31:24;32:1</p> <p>developments (1) 14:8</p> <p>diagonally (1) 30:12</p> <p>diagram (2) 83:16;84:19</p> <p>DICK (9) 3:4;25:23;36:12; 40:9;45:5;51:23;53:10; 63:18;105:13</p> <p>difference (5) 75:14,24;79:5; 101:12;103:11</p> <p>differences (1) 103:16</p> <p>different (13) 4:14;31:17;38:1; 46:21,24;53:20;69:4; 70:6;73:6;78:8;83:22; 86:1;104:22</p> <p>difficult (8) 57:22;58:4;95:20,24; 96:8,10;100:2,10</p> <p>difficulty (1) 100:2</p> <p>diminish (5) 14:22;85:5;97:6,7,8</p> <p>diminished (1) 85:8</p> <p>diminishes (2) 84:19;85:6</p> <p>direct (1) 104:7</p> <p>direction (11) 83:22;94:2,3,5,9,12, 15,21,24;95:11,12</p> <p>directions (3) 87:10,11;95:6</p> <p>directly (2) 29:2;45:20</p> <p>director (1) 27:6</p> <p>directs (1) 7:12</p> <p>dirt (1) 75:18</p> <p>disable (1) 44:5</p>	<p>discovered (1) 12:14</p> <p>discuss (1) 41:15</p> <p>discussion (3) 66:14;68:10;69:21</p> <p>dislike (1) 102:21</p> <p>disorders (1) 101:23</p> <p>dissipates (2) 85:7;104:2</p> <p>distance (7) 84:20;85:6;89:12,14, 15;90:2,23</p> <p>distances (2) 15:10;70:7</p> <p>distant (1) 72:9</p> <p>distinct (1) 86:14</p> <p>distinction (1) 68:23</p> <p>distributed (1) 4:5</p> <p>District (16) 5:15;7:3,7,8,10;8:4, 6;16:10,11;18:15,17; 19:2;40:5,6;41:2,2</p> <p>districts (2) 21:13;40:6</p> <p>dive (1) 27:22</p> <p>DNH (2) 32:12,16</p> <p>documentation (1) 25:21</p> <p>documents (2) 19:17;27:9</p> <p>dollars (10) 6:11,19;14:14;29:3, 10;40:19,21;41:8,9; 42:6</p> <p>dominant (1) 87:11</p> <p>dominated (1) 79:19</p> <p>done (11) 29:15;42:17;44:11; 60:4;65:24;70:14,16; 77:8,20;102:5;104:9</p> <p>down (13) 26:19;46:2,5;66:21; 67:21;72:8;74:14; 75:16;79:13;84:15; 86:4,5;98:13</p> <p>downtown (1) 43:8</p> <p>Dr (3) 27:12;39:19;45:1</p> <p>drain (1) 17:9</p> <p>drainage (6)</p>	<p>8:1,2;17:5,8,10,12</p> <p>Drake (1) 45:6</p> <p>dramatically (1) 94:4</p> <p>drew (1) 68:2</p> <p>Drive (3) 22:19,23;60:24</p> <p>driving (2) 26:19;78:11</p> <p>due (4) 81:19;86:7;87:18; 100:9</p> <p>during (16) 13:2;18:6;25:24; 28:10;31:11,23;32:1; 36:18;37:6,19;59:18; 60:6;75:23;84:10; 96:14;99:15</p>	<p>81:20;100:23;101:7, 8</p> <p>efficiency (1) 69:15</p> <p>efficient (2) 32:18;94:9</p> <p>effort (1) 36:21</p> <p>egress (1) 17:24</p> <p>Eight (3) 12:12;20:14;37:4</p> <p>either (1) 62:16</p> <p>electric (1) 101:6</p> <p>electrical (3) 28:23;57:4,19</p> <p>electricity (1) 8:16</p> <p>eliminate (5) 92:3,5;93:13,14;96:1</p> <p>else (6) 46:14;47:3;59:4; 60:20;95:22;103:19</p> <p>else's (1) 55:4</p> <p>e-mail (1) 4:18</p> <p>e-mailed (1) 53:16</p> <p>emergency (3) 21:14;34:5;37:13</p> <p>emissions (3) 32:24;33:2,15</p> <p>encroach (1) 73:8</p> <p>end (10) 29:18;31:9;38:5; 41:12;46:19;56:7;68:5, 7;79:4;91:17</p> <p>endanger (1) 8:10</p> <p>ended (1) 71:12</p> <p>energetic (1) 57:24</p> <p>Energy (16) 3:5,7;6:2;8:13;9:1; 13:19;14:8,16;24:4,10; 28:22;29:9;42:18,19; 57:4;58:14</p> <p>engaged (1) 12:15</p> <p>engagement (1) 42:16</p> <p>engineer (7) 9:15,20;27:5;48:13, 19;80:14;81:5</p> <p>engineering (1) 80:20</p> <p>enhancer (1) 13:15</p>	<p>enjoyment (1) 14:20</p> <p>enough (1) 84:13</p> <p>entertain (1) 73:23</p> <p>entire (6) 35:4,7;67:14;80:20; 87:24;91:22</p> <p>entitled (1) 11:3</p> <p>Environmental (7) 10:6;23:20;27:7,11; 35:10;83:2,4</p> <p>envision (2) 47:20;55:10</p> <p>epilepsy (1) 101:24</p> <p>equipped (1) 8:23</p> <p>erect (1) 14:16</p> <p>erosion (2) 17:19,22</p> <p>escrow (8) 38:19,20;45:20,21; 49:1,5;59:8;61:24</p> <p>essentially (2) 47:6;50:1</p> <p>establishing (1) 16:11</p> <p>establishment (2) 18:13,19</p> <p>estimate (3) 58:5;59:23;60:2</p> <p>estimated (2) 6:10;61:4</p> <p>estimates (1) 48:20</p> <p>Eugene (2) 52:17,21</p> <p>evade (1) 58:3</p> <p>even (7) 13:13;34:20;51:13; 60:1;66:10;72:14;88:1</p> <p>evening (9) 23:4;24:16;25:11; 53:15;82:20;90:18; 92:14;98:23;99:19</p> <p>event (4) 13:11;46:6,9,12</p> <p>events (1) 13:3</p> <p>everybody (3) 21:17,19;25:12</p> <p>evidence (1) 7:5</p> <p>evident (1) 72:17</p> <p>exact (6) 67:1,1;83:14;96:22, 23,24</p>
		E		
		<p>eagle (4) 11:13,15;35:20,21</p> <p>ear (2) 66:17;67:10</p> <p>earlier (8) 20:13;21:11;26:2; 40:10;43:7;67:16; 69:11;103:4</p> <p>early (2) 84:22;85:16</p> <p>ears (1) 67:3</p> <p>earth (1) 75:19</p> <p>easement (1) 54:9</p> <p>East (13) 22:8;23:6;30:3,10; 31:9;56:22;81:11;86:2; 99:3,4,11,13;104:12</p> <p>ecology (1) 35:12</p> <p>economic (6) 6:15,22;27:14;29:13; 39:16,16</p> <p>economics (2) 57:2;80:9</p> <p>Ed (3) 56:21;81:11;104:12</p> <p>edge (4) 5:5;8:23;9:8;71:15</p> <p>educating (1) 7:3</p> <p>Education (3) 5:15,17;7:18</p> <p>effect (8) 32:17;34:19;86:9; 87:17;101:17,19; 102:1,1</p> <p>effects (4)</p>		

<p>exam (1) 80:20</p> <p>example (2) 70:24;78:18</p> <p>examples (2) 102:14;103:2</p> <p>excellent (1) 28:17</p> <p>excessive (1) 51:5</p> <p>excited (6) 26:23;28:7;36:24; 37:1;42:13;43:14</p> <p>exciting (1) 42:12</p> <p>exclusively (2) 103:20,22</p> <p>excuse (4) 11:18;71:1;79:6; 104:17</p> <p>excused (1) 82:13</p> <p>executed (1) 49:22</p> <p>exhibits (2) 4:4,20</p> <p>existence (1) 6:3</p> <p>existing (4) 6:9;10:17;17:8; 64:12</p> <p>expand (1) 78:5</p> <p>expectation (1) 62:7</p> <p>expected (7) 34:11;86:22;87:12; 88:8;94:22;97:19; 105:22</p> <p>experience (9) 5:22;26:4,9,18; 27:22;28:2;58:8;70:9; 74:13</p> <p>experienced (2) 84:23;94:1</p> <p>expert (3) 64:5;78:17;106:7</p> <p>experts (1) 24:22</p> <p>explain (3) 52:24;67:18;103:19</p> <p>exposed (5) 79:1,6,6,7,8</p> <p>extend (4) 86:1,5;92:18;104:2</p> <p>extending (1) 86:3</p> <p>extends (3) 84:24;86:8;91:16</p> <p>extent (4) 87:2;91:10,15; 103:15</p> <p>extras (1)</p>	<p>49:16</p> <p>extreme (1) 103:24</p> <p>extremely (3) 86:20;96:22;97:2</p> <p>eye (1) 77:14</p> <p>eyes (1) 72:2</p> <hr/> <p style="text-align: center;">F</p> <hr/> <p>FAA (11) 9:24;15:19,20,23; 21:8;32:4,6,8,12;49:23, 24</p> <p>FAA's (1) 32:21</p> <p>facilitate (1) 37:15</p> <p>facilities (8) 3:13;17:6;20:7; 29:21;32:20;33:21; 38:5;40:13</p> <p>facility (2) 14:4;47:10</p> <p>fact (1) 97:4</p> <p>factor (1) 57:6</p> <p>factored (1) 57:9</p> <p>factors (2) 57:5;95:19</p> <p>facts (1) 84:9</p> <p>Fahrenheit (1) 66:6</p> <p>fail (1) 59:1</p> <p>fairly (5) 30:8;31:6;57:15; 80:2;98:21</p> <p>fall (2) 76:8;83:12</p> <p>falls (2) 83:24;84:3</p> <p>fan (2) 68:13,15</p> <p>fans (1) 68:14</p> <p>far (9) 4:18;29:24;31:2; 69:8;72:22;92:8;103:5, 6;104:1</p> <p>farm (16) 5:6;10:1;11:5,7; 15:3;17:14;29:14,17; 52:8,14;60:23;80:2,3; 81:14,19;106:7</p> <p>farmed (1) 15:3</p> <p>Farmer (1)</p>	<p>22:9</p> <p>farmers (1) 14:15</p> <p>farmland (1) 14:9</p> <p>farms (4) 6:4,9;14:12;79:21</p> <p>farther (1) 55:6</p> <p>fashion (1) 69:14</p> <p>fast (1) 28:16</p> <p>faster (3) 68:17,21,21</p> <p>favor (1) 56:9</p> <p>feasibility (2) 50:16,20</p> <p>feasible (2) 50:3;93:15</p> <p>feasibly (1) 60:18</p> <p>feathered (1) 13:1</p> <p>features (2) 36:2;87:19</p> <p>February (2) 36:12;87:5</p> <p>Federal (1) 9:23</p> <p>feedback (1) 93:12</p> <p>feel (3) 102:15;103:1,3</p> <p>fees (1) 14:16</p> <p>feet (14) 3:9;5:5,8;15:9,13, 14;10:2,4;16:22,23; 20:9;31:20,22;75:13, 20</p> <p>fence (1) 101:15</p> <p>few (7) 26:1;50:5;64:17; 68:6;92:18;98:10,11</p> <p>field (6) 28:15,16;64:6;81:1; 104:5,7</p> <p>figure (5) 21:16;41:21;44:12, 21;73:1</p> <p>figures (1) 57:11</p> <p>file (1) 4:9</p> <p>filed (1) 77:8</p> <p>Final (6) 41:6;50:8,15;51:7; 83:23;86:12</p> <p>finalize (1)</p>	<p>31:15</p> <p>Finally (2) 29:12;39:5</p> <p>financial (4) 19:20,22;61:24;62:3</p> <p>find (2) 25:3;64:20</p> <p>Finland (1) 78:22</p> <p>FINNIGAN (49) 3:2;21:16;22:1,14; 23:15,24;43:20;44:8; 45:7,12,14;48:2;51:21, 24;52:6,9,12,18,22; 56:17;58:19;59:3; 60:20;63:2,13,18;64:2; 74:1;75:8;76:1;80:11; 81:8;82:11;88:13;92:2, 10,21;93:10;98:21; 99:17,23;100:1,4,11, 15;104:19;106:1,5,10</p> <p>Finnigan's (1) 95:14</p> <p>fire (4) 21:13;37:14;41:2; 93:22</p> <p>firm (3) 24:8;73:15;76:16</p> <p>firms (1) 14:16</p> <p>first (13) 24:19;25:7,15;31:24; 32:2;44:10;45:8;48:3; 49:20;50:2;55:11; 71:22;74:2</p> <p>Fish (1) 36:9</p> <p>Five (14) 12:4,20;17:23;20:4, 9;39:2,7;63:20;75:13; 77:18;90:9,15;95:23; 98:14</p> <p>flat (2) 7:24;28:18</p> <p>flexibility (1) 51:6</p> <p>flicker (55) 10:18,21;20:5;27:16; 34:13;35:4,8;82:17,22; 83:6,9,10,18,23;84:3,7, 10,15,21;85:4,5,11,24; 86:3,8,19;89:15;91:11, 21;92:3,6;93:13;94:3, 11;95:18,21;96:1,12, 13,21;98:2;99:1,4; 100:3,20,22;101:6,7,8; 102:1,18;103:20,24; 105:12,23</p> <p>flickering (2) 101:6,11</p> <p>flow (1) 69:13</p> <p>fluctuated (1)</p>	<p>61:16</p> <p>fluctuation (1) 39:9</p> <p>FM (2) 34:3;44:13</p> <p>focus (1) 68:10</p> <p>focused (1) 65:16</p> <p>folks (1) 27:2</p> <p>follow (3) 16:5;19:16;62:21</p> <p>following (5) 4:4;11:17,20;19:7; 20:11</p> <p>follows (3) 6:14;7:21;8:8</p> <p>follow-up (1) 51:11</p> <p>foot (4) 12:5,7;75:13;90:1</p> <p>footprint (2) 30:9;31:7</p> <p>forested (2) 12:8,8</p> <p>forever (1) 85:6</p> <p>form (5) 29:21;41:10,23; 48:24;62:3</p> <p>formula (2) 57:12,14</p> <p>forth (4) 6:12;19:5;43:18; 95:8</p> <p>forward (6) 21:20;37:16,18; 42:14;43:21;56:18</p> <p>foster (1) 37:15</p> <p>fostering (1) 37:18</p> <p>found (3) 11:15;78:18;104:9</p> <p>foundation (2) 9:17;50:13</p> <p>foundations (1) 20:9</p> <p>Four (7) 7:11;12:1;17:4; 19:20;42:6;71:6;74:8</p> <p>frame (3) 55:24;56:5;57:20</p> <p>frequencies (1) 67:19</p> <p>frequency (7) 66:9,14;67:7,12,14, 22;101:12</p> <p>frequenting (1) 35:17</p> <p>front (5) 25:21;26:6;64:16;</p>
--	--	--	--	---

66:3;103:13 frozen (1) 74:24 full (4) 11:21;39:14;55:20; 76:5 fullest (1) 95:4 full-time (3) 37:3,8;43:9 fully (3) 30:5;31:3;73:17 function (3) 61:7,10,18 funded (1) 62:23 funding (3) 7:5;56:24;62:9 funds (5) 38:20,23;39:13; 45:24;46:8 further (4) 12:14;37:18;49:18; 89:9 Furthermore (2) 35:5;60:14 furthest (2) 91:10,15	40:14,15 goes (5) 14:11;30:4,13;37:22, 24 Good (16) 23:4;25:11;32:1,10; 33:10;34:16;35:7; 50:22;53:15;55:16; 71:14,18;74:19;76:4; 82:20;98:24 gotta (1) 72:4 govern (1) 18:18 governed (1) 38:16 grade (1) 20:9 graphic (2) 83:9;85:22 grasping (1) 79:12 grass (1) 8:3 gravel (1) 17:11 great (4) 28:22;32:10;56:23; 74:19 greatly (1) 72:13 green (8) 53:1,2,3,20,21,22; 54:2,4 Greg (5) 22:21;24:18;25:7,12; 37:23 G-R-E-G (1) 22:24 Griffin (25) 22:3,3,5,11;23:17; 24:1,7;26:2;27:4; 58:16;59:9,14;62:4,15; 64:3;65:8;67:16;75:5; 82:14;95:13;100:1,6; 105:10,19;106:3 G-R-I-F-F-I-N (1) 22:6 ground (7) 46:23;47:18,22; 74:22;75:12,18;100:9 Group (5) 21:24;78:24,24;79:5, 7 Grove (13) 26:12;29:6;61:3,12, 14;64:12,19;65:9;70:7, 20;71:9;73:19;76:17 Groves (1) 17:14 guarantee (1) 37:9 guess (6)	45:16;48:16;75:22; 79:16;101:14;103:12 guys (1) 61:2 H half (7) 12:2;16:1;90:17,18; 92:4;93:3;95:10 handle (2) 89:10;94:12 handled (2) 88:19,20 Hang (1) 43:20 Hankard (34) 10:6;23:4,5;27:10, 10;33:3;59:17;64:4,5, 8,10,18,22;74:7,23; 75:2,11;76:4,15;77:4, 13;78:9;79:22,24;80:8, 15,18;81:4,16,22;82:2, 5,12;95:15 H-A-N-K-A-R-D (1) 23:5 happen (7) 46:19;47:19;55:21; 60:11;93:2;96:6; 100:23 happening (2) 95:22;100:9 happens (2) 37:22,24 happy (2) 65:3;73:23 hard (1) 75:18 harmful (1) 78:12 harvest (2) 56:3,6 hauling (1) 56:12 hazard (4) 9:23;32:13;81:14,19 head (3) 89:18,22;97:12 health (7) 8:10;78:16,17,18; 81:14,19;103:3 hear (14) 24:5;25:12;30:18; 56:23;66:6,7,19,23; 67:2,11;68:16;78:6,7; 79:15 heard (2) 69:23;80:19 hearing (4) 3:23;25:17;69:23; 79:14 hearings (1) 25:3	height (15) 3:9;8:15;9:3,6,8,9, 11,13,13;10:2;16:16, 19;53:12;55:3;89:19 heliports (1) 5:5 help (2) 75:9,21 helps (1) 69:15 Henry (1) 28:4 heritage (1) 14:10 hertz (17) 66:19;67:4,21,23,24; 68:8,9;70:24;71:1,8,11, 17;72:3,12,23;73:2; 77:3 hey (1) 32:21 Hi (2) 52:2;100:19 high (7) 28:22;66:19;69:9; 75:13,13,15;77:23 higher (2) 101:11;103:15 highest (2) 66:18;71:24 highlight (8) 26:8;27:23;28:4; 39:15;40:18;41:13; 42:16;54:1 highlighted (1) 27:21 highlights (2) 33:7;39:21 Highway (3) 23:2;30:11;31:8 hired (2) 33:3,20 Historic (3) 5:9;11:11;20:23 hit (2) 83:15;99:12 hitting (2) 98:13,15 home (2) 69:7;103:7 homes (3) 72:24;73:4,8 honest (1) 79:9 hope (3) 26:24;43:15;51:8 hopefully (1) 56:9 hoping (1) 72:17 horizon (2) 95:10;99:7 hosting (2)	6:24;29:21 hotline (1) 13:23 hour (6) 13:23;63:23;90:17, 18;92:4;93:3 hours (26) 10:20;20:5;35:3,6; 88:3,7,9,10,17;89:2,6, 8;90:7,10,11,11;91:3,5; 92:11;93:7;94:16; 97:18;98:18;104:24; 105:17,22 hour's (1) 95:10 house (12) 68:15;80:4;92:15; 93:11;94:4;95:11; 98:14;99:2,3,4;103:9, 14 houses (4) 72:9;97:16;100:24; 101:5 huge (2) 40:22,22 human (2) 66:17;67:10 humans (1) 79:15 hundreds (1) 36:19
G				I
general (3) 12:24;26:22;69:15 Generally (6) 75:2;77:21;89:6; 91:4,10,13 generate (2) 57:19;65:7 generated (7) 33:8;42:18;46:16; 57:3,4;58:5;78:8 generates (1) 58:10 generation (1) 42:18 generator (1) 47:1 generators (2) 3:9;8:14 geotechnical (1) 50:9 gets (2) 72:7;74:17 Giampoli (3) 23:18,18;27:5 G-I-A-M-P-O-L-I (1) 23:22 given (6) 6:18,21;12:16;91:3; 93:20;94:11 goal (1) 56:15 goals (2)				I-55 (1) 26:19 idea (1) 96:4 identified (3) 35:2;98:1;105:20 identify (7) 35:16,20,22;59:19; 60:10;95:21;96:8 IDNR (6) 11:23;12:14;16:5; 20:12,13;36:11 ignorance (1) 100:20 IHPA (2) 11:12,12 Illinois (42) 4:15,19;5:9,24;6:2; 7:1;10:8,9;11:5,9,11, 19;12:3;20:23;22:5,23; 23:3,14,23;24:9;26:5, 9;27:21;28:1;29:9; 33:9;36:7;38:16;56:23; 59:13,14;61:1;64:8; 65:5;66:11;67:13,18; 73:22;80:1,5;81:12; 104:13 imagine (3) 55:13;83:20,24

immediate (2) 14:20,23	indicates (7) 6:20;7:2;10:19,23; 13:9;16:4;53:21	interest (1) 65:2	28:12;38:9	100:14
immediately (2) 12:15;60:12	indicating (2) 4:16;5:16	interested (3) 22:12;43:11;93:17	J	knowledge (2) 80:21,23
impact (10) 8:24;10:12,22,24; 13:16;20:19;34:14; 35:11;38:15;50:22	indicators (2) 53:4,5	interestingly (2) 71:5,11	James (1) 22:3	known (1) 5:19
impacted (3) 15:6;103:7,8	industrial (1) 18:22	interests (1) 51:12	January (2) 87:5;98:14	knows (1) 45:9
impactful (1) 60:8	industry (6) 46:2;48:22;70:15; 83:4,5;86:18	interference (1) 34:11	Jim (3) 24:7;27:3;97:4	Kolby (1) 23:13
impacts (4) 12:17;27:14;34:7; 39:16	inertia (1) 67:1	interim (1) 64:15	Jo (1) 27:4	K-O-L-B-Y (1) 23:13
impede (1) 16:8	information (10) 25:17,18;29:1;64:10, 20;72:19;81:21;82:8; 85:10;87:5	International (2) 73:13;78:21	Joanne (5) 23:8;27:15;34:24; 82:15,21	KURITZ (12) 77:6,6;78:2;80:13, 13,16;81:3,7;90:6,6; 91:1,6
implementing (1) 12:16	informative (1) 64:20	internet (1) 21:2	J-O-A-N-N-E (1) 23:9	L
important (6) 33:10,11;39:11,24; 68:18,22	infrasonic (9) 78:4,10,12,14,19; 79:2,7,8,13	interruption (1) 30:17	job (1) 36:22	laboratory (1) 78:24
impossible (1) 86:24	ingress (1) 17:24	into (16) 4:17;27:23;34:24; 38:19,20;42:8;50:17; 57:5;74:18;85:10; 86:11;87:10,17;97:20, 23;98:20	jobs (5) 6:5;36:19;37:1,3,8	lack (1) 34:8
impossibly (1) 52:24	inhabited (1) 87:14	intrasound (1) 78:5	Julia (4) 49:7;74:3;91:20; 96:17	laminar (1) 69:14
impression (1) 103:4	initial (1) 59:18	introduced (1) 27:3	July (2) 12:21;98:16	land (18) 14:7;16:12;18:19; 29:12,19;34:4,17,18; 37:21;40:2;42:23;43:2, 9,11;53:1;57:7;60:4; 76:13
improved (1) 17:20	injure (1) 15:16	introductions (1) 27:1	jurisdiction (1) 57:17	landowners (1) 54:5
improvements (2) 15:9;17:10	injurious (1) 14:19	Invenergy (12) 3:6;22:22;26:3,4; 37:22,24;40:1;64:17; 89:1,7,9;93:6	jurisdictions (2) 39:22;41:4	landscape (1) 28:19
INAI (2) 12:3,4	inside (1) 103:9	Inventory (1) 12:3	K	language (2) 32:15,15
include (1) 29:5	install (2) 17:15;46:24	investment (3) 6:18,21;42:19	keep (7) 40:2;43:14;51:6; 82:3;90:10;95:5,7	large (9) 28:19,21;39:18;40:4, 7;46:22;50:13,13;99:8
included (3) 38:3;98:18;105:1	installed (9) 15:22;17:20,21; 20:16;21:5,6,9;33:21; 35:15	invited (1) 44:3	keeping (1) 50:18	largely (2) 61:10,18
includes (1) 86:13	instance (1) 88:16	involve (1) 66:14	keeps (1) 68:20	larger (2) 61:10,11
including (5) 19:18;20:8;70:6; 105:11,11	in-state (1) 42:18	involved (3) 24:23;65:7;77:24	kept (1) 89:7	largest (3) 29:8;34:21;40:16
inclusion (1) 53:3	insurance (2) 62:1,3	involves (1) 46:13	key (2) 40:2;66:24	LaSalle (1) 28:5
incorporated (2) 4:17;5:3	insure (3) 10:13;15:8;20:20	IPC (1) 20:21	keyboard (1) 67:20	Last (13) 22:24;26:1,13,20; 53:9;65:15;69:23;73:9; 79:17;80:1,18;84:19; 88:16
increase (4) 39:9;45:20;46:6; 72:5	intended (1) 7:5	IPCB (4) 10:9,13;15:13;33:17	keys (1) 67:20	Lastly (1) 68:24
increased (1) 61:19	intends (1) 8:17	ISO (1) 73:13	kids (1) 40:23	late (7) 55:20,20;56:4;74:18; 84:22,24;85:17
increments (2) 86:20;97:2	intensive (2) 15:21;21:7	issue (2) 60:17;79:13	kilometers (1) 13:6	later (10) 22:17;27:17;34:24; 39:20;46:14;52:14; 55:19;56:1,2;95:23
indeed (1) 73:2	intent (3) 18:15,17;51:18	issued (3) 10:1;18:12;19:15	kind (19) 21:18;30:12;41:19; 47:14;48:7;63:18;66:5; 69:2;72:18;74:8;75:16; 84:18,24;85:23;86:9; 94:17;101:7,17,18	latter (1) 55:22
independent (2) 48:12,19	intention (1) 61:23	issues (3) 32:8,22;76:13	knew (3) 71:7,10,19	
indicate (1) 53:4	interconnect (1) 51:2	ISU (1) 27:13	knowing (1)	
indicated (5) 5:1,3;10:3;40:11; 54:20	interconnection (1) 3:11	item (1) 50:14		
		items (2)		

<p>law (2) 4:1;24:8</p> <p>laydown (1) 3:12</p> <p>layers (1) 62:11</p> <p>layout (4) 50:6,17;51:6,8</p> <p>layouts (1) 20:17</p> <p>lead (2) 24:18;27:4</p> <p>leader (1) 80:1</p> <p>lease (2) 49:22;54:9</p> <p>least (3) 13:6;21:3;40:14</p> <p>leaves (1) 103:14</p> <p>led (1) 101:3</p> <p>Lee (1) 28:5</p> <p>left (1) 74:14</p> <p>legal (1) 51:19</p> <p>legend (1) 52:23</p> <p>legitimate (2) 77:11,13</p> <p>Leroy (3) 7:17;40:5;42:20</p> <p>less (10) 35:3,6;67:7;69:8,14, 18;71:12,17;88:10,17</p> <p>letter (2) 36:11;38:19</p> <p>letters (4) 40:9;42:23;43:1,3</p> <p>level (14) 21:4;68:16;69:2,3; 71:2,2;72:1,12,21,23; 73:2;77:9;78:15; 102:19</p> <p>levels (5) 33:8;69:6;70:2; 72:10;74:12</p> <p>library (1) 41:2</p> <p>licensed (1) 80:14</p> <p>licensing (2) 81:3,4</p> <p>lied (1) 84:5</p> <p>lies (1) 7:8</p> <p>life (7) 38:6;40:20,20;41:9; 46:19;59:21,24</p> <p>light (8) 54:4;101:11,12,16, 16,20;103:11,16</p> <p>lightbulb (1) 69:2</p> <p>Lighter (1) 53:22</p> <p>Lighting (5) 15:19,20,22,23;21:6</p> <p>lights (1) 101:6</p> <p>likely (2) 15:5;91:2</p> <p>limit (17) 42:4;59:16;67:23,24; 68:5,6,8;72:3,6,12,16; 73:3;77:2;89:3,6,8; 93:9</p> <p>limited (2) 16:14;55:19</p> <p>limits (7) 33:10;41:17;59:15, 19,20;65:6;67:19</p> <p>line (10) 27:6;30:3,5;54:16, 16;55:4;68:2,3,6;72:14</p> <p>lined (1) 99:9</p> <p>lines (6) 3:11,11,11;9:7,10; 60:9</p> <p>listed (2) 12:13,22</p> <p>little (22) 26:8;27:14,17;30:7; 33:5;34:24;36:17; 39:20;45:2;53:4;66:12; 71:16;72:4;74:4;75:9; 77:22;83:8,9;84:4,6, 19;92:13</p> <p>live (3) 52:13,16;56:22</p> <p>lived (1) 93:11</p> <p>livestock (1) 81:20</p> <p>living (3) 37:9,10;49:17</p> <p>LLC (5) 3:5,6;10:1;13:20; 24:11</p> <p>load (2) 28:19,21</p> <p>local (13) 6:6;7:6;14:3,9,14; 21:13;27:12;28:2,3; 37:4,5,12;42:19</p> <p>locally (3) 37:10;42:18;43:10</p> <p>located (13) 4:8,11;5:7;10:17; 13:6;15:9;16:15,18; 18:16;30:9;31:6;33:1; 43:8</p> <p>location (8) 18:18,21;32:11;49:7; 52:3,4;54:21;100:7</p> <p>locations (16) 31:14;32:7,22;34:20; 49:23;50:3,9;51:17,20; 54:23;55:1;70:14;74:8, 9,11;77:10</p> <p>long (5) 65:21;77:20;91:2,15; 99:15</p> <p>longer (1) 60:1</p> <p>longest (2) 89:16;90:3</p> <p>long-term (1) 42:19</p> <p>look (9) 31:23;32:1,24;33:20; 49:16;50:10;90:5;96:5; 102:14</p> <p>looked (9) 33:24;34:1,3,6,7,13; 35:10;74:9,11</p> <p>looking (2) 37:17;88:16</p> <p>looks (2) 96:2;97:1</p> <p>LOOMIS (5) 23:12,12;27:12; 39:19;45:1</p> <p>L-O-O-M-I-S (1) 23:13</p> <p>lot (5) 67:11;74:19;90:23; 93:11;99:20</p> <p>louder (1) 68:17</p> <p>loudest (1) 72:15</p> <p>low (3) 67:12;68:5;77:23</p> <p>lower (5) 67:6,20;71:10;72:10; 78:15</p> <p>lowest (2) 66:16,17</p>	<p>location (8) 14:2;18:5</p> <p>maintaining (1) 13:23</p> <p>maintenance (4) 14:4;18:14;37:6; 84:15</p> <p>majority (2) 7:7;41:22</p> <p>makes (2) 75:14,24</p> <p>manufacturers (1) 68:24</p> <p>many (14) 55:13;63:7;64:7; 70:10,10;76:20;78:10, 15;79:9;88:10;95:2; 98:5,9;104:8</p> <p>map (6) 4:10,13;52:5,23; 104:23;105:1</p> <p>maps (1) 4:7</p> <p>mark (1) 77:18</p> <p>market (1) 10:22</p> <p>MaRous (5) 10:23;23:1,1,2;27:18</p> <p>M-A-R-O-U-S (1) 23:3</p> <p>Master's (1) 83:1</p> <p>match (1) 45:22</p> <p>materially (1) 54:23</p> <p>materials (1) 24:15</p> <p>matter (3) 24:22;79:12;95:12</p> <p>matters (1) 25:6</p> <p>maximum (7) 49:12;51:14;68:20; 87:2;90:7,7;93:7</p> <p>May (16) 3:24;7:14;15:24; 27:2;33:21;36:22; 40:12;42:3;43:16;45:2; 51:4;58:3;61:15;74:18; 75:1;87:18</p> <p>maybe (9) 43:1;46:21,23;60:15; 80:19;92:8;94:6;101:1; 104:4</p> <p>McCloskey (2) 22:18,18</p> <p>M-C-C-L-O-S-K-E-Y (1) 22:20</p> <p>McLean (37) 5:21,22;6:1,4,7,10, 16,23;7:13;11:5;14:5; 26:5,9,11,24;28:5,8,13;</p> <p>29:3,8,24;30:6;31:2,3, 21;33:12;37:2;38:14; 39:17;40:4;43:6;44:19; 58:10;60:23;63:6; 70:17;105:13</p> <p>mean (12) 42:17;45:19;50:6,7; 52:8,15;57:21;65:22; 76:15;80:8,18;93:13</p> <p>meaningful (1) 42:21</p> <p>means (3) 13:2;32:14;42:2</p> <p>measure (7) 65:23;67:10;68:3; 77:20;91:21,22,24</p> <p>measured (10) 9:12;66:4;70:10; 71:1;73:18;75:23;76:3, 21;80:1;83:10</p> <p>measurement (1) 70:13</p> <p>measurements (8) 64:11,19;65:8,10,12, 19;76:16;80:23</p> <p>measures (1) 17:23</p> <p>measuring (1) 71:12</p> <p>mechanism (1) 67:3</p> <p>medical (1) 79:14</p> <p>meet (4) 15:20,23;73:20,21</p> <p>meeting (3) 37:14;43:10,23</p> <p>meetings (1) 78:7</p> <p>meets (5) 9:1;15:6;17:1;19:5; 25:3</p> <p>megawatt (6) 6:17;8:18,19;20:15; 57:15;80:2</p> <p>megawatts (2) 8:15;20:15</p> <p>members (6) 4:6;24:2;36:23; 47:24;64:13;69:24</p> <p>mention (2) 44:4;68:1</p> <p>mentioned (12) 21:11;26:2;30:15; 40:10;43:5;65:9;67:16; 69:11;85:14;87:16,22; 95:15</p> <p>mentioning (1) 43:14</p> <p>met (7) 8:11;14:23;16:10; 17:7;18:2,16;19:3</p> <p>metal (2)</p>
	M
<p>M1 (1) 70:24</p> <p>M2 (1) 71:3</p> <p>Madison (1) 22:4</p> <p>Maeve (1) 22:18</p> <p>M-A-E-V-E (1) 22:20</p> <p>mains (1) 60:4</p> <p>maintain (2)</p>	

47:5,7 meteorological (1) 13:12 meters (2) 12:20;74:14 meticulous (1) 25:20 Michael (2) 23:1;27:18 microphone (1) 22:11 microwave (4) 10:15,17;33:24;34:1 middle (2) 28:15;87:7 Midwest (1) 77:19 Might (10) 44:14,21;74:13; 77:23;83:21;90:15; 91:8;93:10;98:10; 102:22 Mike (9) 23:5;27:10;59:17; 64:4,21;70:1;77:6; 80:13;90:6 mile (6) 12:2;91:11,13;103:6, 23,24 miles (4) 16:1;41:17;42:4; 80:3 million (8) 6:8,11,19;29:3; 40:19,21;41:7,9 mind (2) 40:3;95:5 minimize (9) 12:17,21,23;17:18; 18:1;33:1,2;50:19,21 minimizes (1) 17:22 minimum (7) 6:18;11:23;12:1,5,7; 15:23;21:7 minute (4) 83:13;86:20;95:22; 97:2 minutes (12) 63:21;90:9,16;92:14, 17,18,19,19;95:23; 98:11,14,16 miss (1) 77:18 missed (1) 60:14 missing (1) 101:2 Mitchell (1) 25:23 mitigate (1) 13:22 mitigation (4)	13:5,16;20:2;38:15 mobile (5) 13:7,9;21:2;34:4,8 model (40) 7:5;33:14;34:23; 35:1;64:9,14;65:11; 69:22,24;70:1,12,13, 15,19,21;71:13,18,24; 72:13,16;73:14,18; 74:20;77:10,11;82:18, 22;83:6,11;84:16; 85:11;86:17;93:7;96:2, 18,23;97:10,15;98:6,12 modeled (1) 34:19 modeling (7) 64:6;77:20;80:24; 86:10,18;93:1;94:13 models (3) 8:19;20:16;65:21 modern (1) 70:22 money (6) 56:23;57:18;58:21; 59:7,9,11 monitoring (8) 5:17,11;12:12;10; 35:15;76:10,11;77:8; 83:3 monitors (1) 70:7 month (8) 69:23;74:15,17,18; 87:9;94:16,18,20 months (5) 50:6;55:13;64:17; 70:11;90:22 morals (1) 8:10 more (37) 15:21;21:7;27:14; 33:5;35:5;36:17;41:11; 45:3;46:2,3;48:3;49:9; 51:12;52:19;61:12; 62:21;63:4;65:24; 66:12;67:21;69:13; 72:9,20;74:24;81:17; 83:4,6;84:22;85:4; 86:23;88:2,18,19; 94:10;98:2,9;100:10 morning (7) 84:22;85:17;90:17; 92:14;99:2,14,15 mortality (4) 11:24;12:10,13,23 moss (1) 53:1 most (11) 18:22;26:10;29:5; 37:20;60:7;62:16,24; 85:16;89:5;94:8;97:16 move (4) 22:2;37:16;72:8;	93:24 Moving (3) 27:20;42:13;54:23 much (20) 25:22;27:23;45:10; 50:22;51:6;57:16,18; 58:5;61:6;67:7;76:10, 11;78:15;93:4;99:24; 100:10;101:11;102:20; 103:15;106:13 multiple (6) 8:2;39:22;59:17 municipal (2) 41:17;42:4 must (1) 84:12 MW (1) 8:16 myself (2) 26:19;27:3 N name (18) 21:21;22:1,3,7,21, 24;23:1,4,8,12;24:7; 25:12;45:8;49:7;56:19, 21;74:2;82:20 narrow (1) 51:7 native (1) 27:12 Natural (6) 4:15,19;11:19;12:3; 36:8;67:3 nature (3) 18:21;25:20;29:16 navigable (1) 32:19 navigation (2) 32:5,20 near (1) 17:8 nearby (2) 15:16;16:12 necessarily (3) 37:10;47:12;78:12 necessary (2) 17:6,15 need (10) 10:12;18:8,11;20:20; 25:20;30:19;50:8,15; 62:24;66:13 needs (4) 15:18;20:10;38:7; 49:3 negative (1) 10:24 negatively (1) 15:6 neighbor (3) 33:11;34:16;50:23 nest (1)	35:22 net (1) 61:17 new (6) 40:12,12;47:1;69:20; 77:19;80:2 newer (1) 71:16 news (3) 32:10,11;71:18 next (31) 26:23;28:9;29:7; 33:6;37:20;41:11;50:5; 55:21,23;59:18;63:20; 64:2,3,17,24;67:17,24; 68:12;69:10;70:18; 71:20;73:5,9,12;82:15, 23;83:7;84:3;85:7,20; 88:12 nice (2) 21:18;66:21 night (2) 85:17;106:11 nine (5) 5:5;12:18;20:22; 37:4;67:18 noise (35) 10:5,13;15:14;20:21; 32:24;33:1,2,3,8,15; 64:6,6,9,18;65:5,7,13, 15;66:4;67:12,12;68:4, 13;69:14,18;70:2,7; 71:17;72:21,23;74:14; 75:10,21;76:14;77:9 non-agricultural (1) 16:12 non-board (1) 47:24 non-control (1) 78:24 none (2) 73:7;88:5 non-forested (1) 12:6 Non-human (1) 100:14 non-participating (8) 9:5,7;16:17;34:18; 76:13,21;88:6;91:23 non-rotating (1) 13:2 non-special (1) 103:2 Normal (4) 26:20;28:21;33:15; 41:3 North (12) 3:6,16,17,20,21; 22:8;23:2;30:13;56:22; 81:12;86:7;104:13 northeast (1) 73:6 northwest (2)	94:19;106:8 note (2) 39:24;41:6 notes (4) 66:16,17,18;67:2 notice (2) 3:23;44:17 noticeable (1) 85:16 noticed (1) 43:22 notifications (1) 4:2 November (3) 14:6;56:4,4 NOVOSAD (10) 30:21;48:5,6,16; 77:1,1,5;98:1,5,17 number (18) 3:4;5:15;16:21;17:4; 20:14;42:24;49:12; 51:14;59:15;66:20; 74:8;89:18,21;90:14, 21;94:16;105:20,22 numbers (2) 58:12;71:21 numerous (7) 26:6,20;46:18;50:7, 7;51:16,18 O O&M (1) 37:5 Oak (1) 26:14 object (6) 58:16;62:1;83:12,15, 19;101:13 observation (2) 75:8;76:1 observed (1) 12:13 obtain (1) 18:4 obtained (3) 18:12;19:10,13 obviously (4) 53:2;84:10;93:23; 99:7 occupied (3) 9:4;15:15;16:17 occur (6) 46:3;60:8;84:10; 87:9;96:12;99:9 occurred (1) 21:4 occurring (1) 96:13 occurs (1) 90:8 oceanic (1) 83:2
---	--	--	---	--

<p>o'clock (2) 63:23;106:2</p> <p>octa (1) 71:11</p> <p>octave (1) 59:17</p> <p>October (2) 12:21;55:23</p> <p>off (12) 25:15;31:7;34:6; 44:11;69:13;89:18,21; 92:4;93:2;96:9;99:24; 102:11</p> <p>offer (1) 94:10</p> <p>office (8) 11:11;22:4,18;23:9; 43:8,10,12;105:9</p> <p>oftaker (1) 58:1</p> <p>often (2) 55:6;66:23</p> <p>older (1) 66:20</p> <p>once (3) 13:23;63:15;73:7</p> <p>one (44) 5:12;11:15,21;12:1; 16:1;19:9;21:20,23; 23:19;31:18,23,24; 32:2;33:13;37:20;39:1; 46:20;48:3;52:18; 57:18,19;58:5,6;62:18; 63:4,14;67:11;68:16, 18;74:17;78:22;80:19; 81:17;83:1,2;86:20; 89:11;91:3;95:22;97:2; 98:3,10;102:22;106:7</p> <p>ones (9) 4:12;53:2,2,3;61:11; 69:6;70:6;74:9;92:23</p> <p>ongoing (1) 62:8</p> <p>only (21) 6:4;8:22;31:14; 34:20;51:16;63:14; 68:19;82:1,4;84:10; 87:23;90:20;91:14,21, 24;92:13,17;98:10; 99:8,15;102:8</p> <p>on-site (1) 14:2</p> <p>open (3) 44:9;48:4;75:4</p> <p>operate (1) 60:1</p> <p>operating (6) 14:3;26:17;33:22; 34:2;63:5;88:1</p> <p>operation (4) 18:14,19;32:20; 33:15</p> <p>operational (4)</p>	<p>26:13,15;84:13; 86:11</p> <p>operations (10) 12:19;15:4,5;36:18; 37:6,7,17,19;39:1; 55:22</p> <p>opinion (1) 104:14</p> <p>opportunities (1) 6:7</p> <p>opportunity (1) 14:9</p> <p>opposed (1) 61:14</p> <p>optimal (1) 47:13</p> <p>optimize (2) 50:6;51:5</p> <p>optimizing (1) 50:17</p> <p>order (2) 50:15;51:5</p> <p>orderly (1) 16:8</p> <p>ordinance (16) 8:8;15:7;16:6;17:2; 19:6;24:16;25:5;31:21; 33:12;38:14;62:5,6,13, 17;73:21;89:4</p> <p>ordinances (1) 89:5</p> <p>Oregon (3) 52:11,17,21</p> <p>Organization (1) 73:14</p> <p>orientation (1) 94:6</p> <p>others (1) 88:17</p> <p>otherwise (1) 51:19</p> <p>out (35) 17:17;21:16;28:14; 29:20;37:5;41:21;44:6, 12,21;45:8,13;49:12, 15,16,21;51:13;52:10; 59:4;60:16;61:13; 63:10;64:4,18;65:22; 66:1;70:4,5;72:22; 76:6;77:21;78:20; 84:24;86:8;92:12; 97:15</p> <p>outline (1) 38:9</p> <p>outlined (2) 38:10,22</p> <p>outlines (1) 38:4</p> <p>output (1) 57:16</p> <p>outside (1) 10:17</p> <p>outstanding (1)</p>	<p>36:15</p> <p>over (31) 6:8,11;10:20;20:5; 25:19;26:1,10,20; 28:11;29:3,19;35:4,6; 40:19,20,21;41:8,9; 44:19;47:9;50:5;65:18; 70:5;71:13,19;72:2,13; 74:4;88:5;95:2;101:1</p> <p>overall (1) 57:9</p> <p>overcast (1) 84:11</p> <p>overview (2) 24:20;65:1</p> <p>owner (2) 40:2;57:7</p> <p>owners (15) 4:12;7:4,10;9:5,8; 29:12,19;34:18,18; 37:22;42:23;43:3,11; 60:5;76:13</p>	<p>49:18;53:23,24,24; 54:5,7;60:5;74:11</p> <p>particular (4) 88:22;94:4;96:7,7</p> <p>particularly (2) 17:17;28:1</p> <p>parties (1) 43:11</p> <p>partnership (3) 36:24;42:13;43:5</p> <p>parts (1) 53:5</p> <p>party (2) 9:10;22:12</p> <p>pass (1) 83:17</p> <p>passes (2) 103:16,17</p> <p>passing (1) 103:12</p> <p>past (1) 101:15</p> <p>paths (3) 10:18;33:24,24</p> <p>patterns (1) 8:2</p> <p>pay (1) 59:1</p> <p>paying (2) 29:7;37:8</p> <p>payments (2) 29:7;57:7</p> <p>people (16) 49:14,17;75:3;76:18; 77:7;79:1,11,12;81:20; 88:23;93:12;100:24; 101:23;102:17;103:3; 104:15</p> <p>Peoria (1) 106:9</p> <p>per (22) 10:21;12:20;20:5; 38:11;42:6,6,10;48:24; 58:10;61:4;81:2;88:7, 9,10;89:3,6,8;90:7; 93:7;94:20;97:18; 105:23</p> <p>perceiving (1) 103:9</p> <p>percent (6) 35:5;38:23;39:1,2; 42:11;94:23</p> <p>perennial (1) 12:5</p> <p>Perfect (3) 64:23;71:3;97:17</p> <p>perfectly (1) 99:9</p> <p>performed (2) 82:17,18</p> <p>period (3) 64:15;74:5;91:2</p> <p>periodic (1)</p>	<p>46:6</p> <p>periods (1) 96:3</p> <p>permanent (2) 37:3,8</p> <p>permit (3) 9:16;24:12;62:2</p> <p>permits (2) 18:12;19:14</p> <p>permitted (2) 14:21;16:9</p> <p>person (4) 63:15;93:20;102:22, 23</p> <p>personal (1) 104:14</p> <p>personnel (2) 37:4,13</p> <p>perspective (10) 31:20;32:23;42:8; 50:4,23,24;75:22; 79:14,15;97:14</p> <p>pertaining (1) 5:18</p> <p>PEs (1) 81:1</p> <p>Peterson (24) 56:21,21;57:18;58:7, 13;59:1,7,12,21;60:3, 19;81:11,11,18,24; 82:10;104:12,12,17,23; 105:4,8,16,24</p> <p>Phase (2) 11:4,10</p> <p>Phil (4) 36:12;53:10;100:17; 106:6</p> <p>phone (5) 13:7,9;21:2;34:8; 53:17</p> <p>physics (1) 65:7</p> <p>piano (5) 66:15,16,18,21,24</p> <p>Piatt (1) 30:2</p> <p>picked (2) 74:7;92:12</p> <p>picket (1) 101:15</p> <p>picture (2) 101:13;103:13</p> <p>piece (1) 40:2</p> <p>pinch (2) 68:9;71:8</p> <p>place (1) 45:22</p> <p>placed (3) 53:5;70:7;74:14</p> <p>placements (1) 32:9</p> <p>plan (20)</p>
P				
<p>packed (1) 75:18</p> <p>page (1) 30:22</p> <p>pages (1) 25:19</p> <p>paid (5) 4:3;40:1;41:8,9;45:3</p> <p>Panagraph (1) 3:24</p> <p>paper (1) 78:19</p> <p>papers (1) 78:22</p> <p>parcel (2) 53:6,21</p> <p>parcels (1) 7:24</p> <p>Park (1) 23:2</p> <p>Parkland (5) 41:1;44:18,18,19,22</p> <p>Parks (2) 41:2;87:14</p> <p>part (20) 4:5;9:16;13:19; 22:12;43:24;44:2,18; 48:14;54:14;58:20; 60:8;61:22;70:23;82:8, 18;94:17;97:9;100:22, 22;105:2</p> <p>participate (3) 41:18,22;54:9</p> <p>participated (1) 78:20</p> <p>participating (16) 7:23;16:20,22,24; 29:13,19;34:17;42:7;</p>	<p>packed (1) 75:18</p> <p>page (1) 30:22</p> <p>pages (1) 25:19</p> <p>paid (5) 4:3;40:1;41:8,9;45:3</p> <p>Panagraph (1) 3:24</p> <p>paper (1) 78:19</p> <p>papers (1) 78:22</p> <p>parcel (2) 53:6,21</p> <p>parcels (1) 7:24</p> <p>Park (1) 23:2</p> <p>Parkland (5) 41:1;44:18,18,19,22</p> <p>Parks (2) 41:2;87:14</p> <p>part (20) 4:5;9:16;13:19; 22:12;43:24;44:2,18; 48:14;54:14;58:20; 60:8;61:22;70:23;82:8, 18;94:17;97:9;100:22, 22;105:2</p> <p>participate (3) 41:18,22;54:9</p> <p>participated (1) 78:20</p> <p>participating (16) 7:23;16:20,22,24; 29:13,19;34:17;42:7;</p>	<p>packed (1) 75:18</p> <p>page (1) 30:22</p> <p>pages (1) 25:19</p> <p>paid (5) 4:3;40:1;41:8,9;45:3</p> <p>Panagraph (1) 3:24</p> <p>paper (1) 78:19</p> <p>papers (1) 78:22</p> <p>parcel (2) 53:6,21</p> <p>parcels (1) 7:24</p> <p>Park (1) 23:2</p> <p>Parkland (5) 41:1;44:18,18,19,22</p> <p>Parks (2) 41:2;87:14</p> <p>part (20) 4:5;9:16;13:19; 22:12;43:24;44:2,18; 48:14;54:14;58:20; 60:8;61:22;70:23;82:8, 18;94:17;97:9;100:22, 22;105:2</p> <p>participate (3) 41:18,22;54:9</p> <p>participated (1) 78:20</p> <p>participating (16) 7:23;16:20,22,24; 29:13,19;34:17;42:7;</p>	<p>packed (1) 75:18</p> <p>page (1) 30:22</p> <p>pages (1) 25:19</p> <p>paid (5) 4:3;40:1;41:8,9;45:3</p> <p>Panagraph (1) 3:24</p> <p>paper (1) 78:19</p> <p>papers (1) 78:22</p> <p>parcel (2) 53:6,21</p> <p>parcels (1) 7:24</p> <p>Park (1) 23:2</p> <p>Parkland (5) 41:1;44:18,18,19,22</p> <p>Parks (2) 41:2;87:14</p> <p>part (20) 4:5;9:16;13:19; 22:12;43:24;44:2,18; 48:14;54:14;58:20; 60:8;61:22;70:23;82:8, 18;94:17;97:9;100:22, 22;105:2</p> <p>participate (3) 41:18,22;54:9</p> <p>participated (1) 78:20</p> <p>participating (16) 7:23;16:20,22,24; 29:13,19;34:17;42:7;</p>	<p>packed (1) 75:18</p> <p>page (1) 30:22</p> <p>pages (1) 25:19</p> <p>paid (5) 4:3;40:1;41:8,9;45:3</p> <p>Panagraph (1) 3:24</p> <p>paper (1) 78:19</p> <p>papers (1) 78:22</p> <p>parcel (2) 53:6,21</p> <p>parcels (1) 7:24</p> <p>Park (1) 23:2</p> <p>Parkland (5) 41:1;44:18,18,19,22</p> <p>Parks (2) 41:2;87:14</p> <p>part (20) 4:5;9:16;13:19; 22:12;43:24;44:2,18; 48:14;54:14;58:20; 60:8;61:22;70:23;82:8, 18;94:17;97:9;100:22, 22;105:2</p> <p>participate (3) 41:18,22;54:9</p> <p>participated (1) 78:20</p> <p>participating (16) 7:23;16:20,22,24; 29:13,19;34:17;42:7;</p>

<p>8:21;11:12;13:18; 14:6,11;19:24;29:23; 30:24,24;38:3,10,13; 39:6,11;45:17,22;47:6; 53:20;54:21;61:20</p> <p>planned (1) 69:16</p> <p>planning (2) 24:24;62:5</p> <p>plans (2) 9:21;19:17</p> <p>planted (1) 75:13</p> <p>plat (1) 4:7</p> <p>platform (1) 13:14</p> <p>please (10) 30:21;52:7,19;67:17, 24;71:20;73:5;74:2; 82:23;102:10</p> <p>pleasure (1) 24:2</p> <p>POI (1) 51:2</p> <p>point (15) 22:14;25:9;44:6; 49:21;50:2;51:1;53:9; 63:12;64:4,23;68:9; 71:8,19;82:16;106:12</p> <p>politics (1) 80:9</p> <p>Pollution (9) 10:8,9;33:9;59:13, 15;65:6;66:11;67:13; 73:22</p> <p>pool (1) 60:15</p> <p>portion (1) 73:10</p> <p>position (6) 90:13,23;96:22,23, 24;97:1</p> <p>positioned (1) 30:2</p> <p>positioning (1) 92:20</p> <p>positive (3) 5:23;40:8;43:17</p> <p>possible (9) 34:21;39:21;47:2; 50:18,22;51:1,7;60:18; 101:8</p> <p>possibly (1) 104:2</p> <p>post (3) 12:10;56:3;62:19</p> <p>post-construction (1) 11:24</p> <p>posted (1) 105:12</p> <p>potential (4) 31:13;32:2;96:15,21</p>	<p>potentially (1) 94:10</p> <p>power (8) 3:10;25:8;58:1; 64:23;69:2,3;82:16; 83:5</p> <p>precisely (1) 83:11</p> <p>predict (5) 68:4;70:11,12;100:2, 6</p> <p>predictable (1) 98:22</p> <p>predicted (8) 71:1,2,13,20,24; 74:12;88:2;100:5</p> <p>predicting (4) 70:2;71:4,13;72:14</p> <p>predictions (2) 65:13,21</p> <p>predictive (1) 96:19</p> <p>predicts (1) 98:6</p> <p>preliminary (1) 25:6</p> <p>preparation (1) 24:23</p> <p>prepare (1) 74:20</p> <p>prepared (2) 25:7;64:9</p> <p>present (4) 39:7,12;45:18;63:6</p> <p>presentation (4) 25:2,9;33:6;61:23</p> <p>presenting (2) 24:17;45:2</p> <p>Preservation (3) 5:9;11:11;20:24</p> <p>preserving (1) 14:9</p> <p>president (1) 7:15</p> <p>press (2) 66:24;67:20</p> <p>pressure (1) 66:6</p> <p>pretty (2) 66:7;74:18</p> <p>prevalent (1) 80:4</p> <p>prevent (1) 96:1</p> <p>previous (1) 30:22</p> <p>previously (1) 69:22</p> <p>price (1) 39:8</p> <p>prices (3) 39:9;42:20;61:15</p> <p>primarily (2)</p>	<p>7:4;8:3</p> <p>prior (3) 5:11;78:3;100:21</p> <p>private (3) 5:4;10:4;14:17</p> <p>Probably (6) 21:20;45:1;55:22; 56:4;58:19;92:7</p> <p>problem (1) 45:12</p> <p>problems (4) 13:22;17:12;21:2; 101:24</p> <p>procedures (1) 21:14</p> <p>proceed (1) 102:10</p> <p>proceedings (2) 28:11;31:12</p> <p>process (5) 14:3;18:6;38:4;48:7, 19</p> <p>produce (7) 8:15;68:13;69:7,17; 71:17;78:10,14</p> <p>producer (1) 6:2</p> <p>producing (1) 29:9</p> <p>product (1) 46:16</p> <p>production (4) 6:1;8:3;15:1;16:13</p> <p>professional (5) 9:15,18,19;80:14,20</p> <p>professionals (1) 81:1</p> <p>professor (1) 27:13</p> <p>profit (1) 104:16</p> <p>profitable (1) 58:14</p> <p>Program (1) 11:8</p> <p>progress (1) 86:19</p> <p>progresses (2) 85:15;95:9</p> <p>project (136) 5:18,21;6:13,18,21; 7:1;8:20;10:7,24;11:5; 13:13,22;14:1,7;15:4,9, 12,16,18;17:9;20:16, 17;21:3;24:19,24; 25:13,14;26:3,12,14, 23;27:4,5,15;28:7,17, 23;29:6,19,21,23;30:5, 9,10,13,24;31:1,1,7,8, 13,16;32:5,10,11;33:8, 16,22;34:2,5,7,9,10,14, 16;35:11,13,18,21,24; 36:16,19;37:7,17;38:5,</p>	<p>7,21,24;39:3,10,17,23; 40:8,13,17,20;41:5,8, 10,18;42:7,10,17,22; 43:2,8,15;45:4;46:20, 21,24;47:1;54:1,10,14; 57:2,3,5,10,23;58:6,14, 21;59:20,22;61:3,5,14, 19;64:10,12;65:13,17; 69:17;70:3,4,5,9;73:7, 10,20;82:7,23;92:7; 93:3,14</p> <p>projects (19) 5:23;14:14;26:10,11, 16;27:24;28:6,12;29:4, 11,14,17;32:2;43:1; 57:13;65:18;73:17,18; 76:21</p> <p>project's (1) 36:13</p> <p>prominent (1) 84:22</p> <p>promote (1) 21:13</p> <p>prone (1) 17:17</p> <p>properties (3) 4:8,11,21</p> <p>property (41) 3:13,14;4:12;5:6;6:5, 8;7:4,10,22;8:2;9:5,7, 7;10:5;11:1;14:17,20, 22,24;16:9;24:21; 27:19;29:4,7,10,16; 39:23,24;41:10;44:24; 45:3;53:11,24;54:12, 17;55:4;57:6,11,12; 91:22;98:23</p> <p>proposed (13) 5:6,18,21;6:13;8:8, 24;9:24;10:16;11:6; 14:18;15:3;16:7;18:24</p> <p>proposes (1) 14:6</p> <p>proposing (2) 8:12;17:11</p> <p>protect (2) 17:8;46:9</p> <p>protected (1) 36:4</p> <p>proven (1) 102:3</p> <p>provide (12) 7:12;12:1,4,7,9; 17:24;18:5,18;21:13; 38:20;81:13,20</p> <p>provided (7) 4:1;10:12;17:7;19:7; 20:20;32:12;49:24</p> <p>provides (2) 6:5;66:21</p> <p>providing (1) 24:20</p> <p>proximity (1)</p>	<p>28:19</p> <p>Public (7) 3:23;8:11;9:9;11:8; 18:2,5;41:20</p> <p>publication (1) 4:3</p> <p>published (1) 3:24</p> <p>purchase (1) 58:1</p> <p>purpose (2) 49:19;76:20</p> <p>purposes (1) 14:21</p> <p>pursuit (1) 36:6</p> <p>Push (1) 56:19</p> <p>put (7) 23:16;38:19;42:8; 46:8;49:10;97:13,15</p>
Q				
<p>Q3 (1) 55:22</p> <p>quadrant (1) 106:8</p> <p>qualifications (2) 65:4;82:24</p> <p>qualified (1) 46:11</p> <p>quality (1) 76:19</p> <p>quarter (1) 55:22</p> <p>que'd (1) 64:23</p> <p>quick (1) 60:3</p> <p>quickly (7) 27:2;60:13,16;65:2, 3;69:10;95:9</p> <p>quit (1) 63:22</p> <p>quite (7) 25:17;26:4,18;28:1; 68:6;69:18;71:12</p> <p>quote (3) 12:22;14:13;18:18</p>				
R				
<p>radio (1) 13:3</p> <p>raised (1) 29:11</p> <p>range (3) 66:7;69:5,6</p> <p>ranked (1) 5:24</p> <p>raptor (2) 35:22,23</p>				

<p>rate (1) 69:1</p> <p>rated (1) 68:22</p> <p>rather (1) 95:9</p> <p>reach (3) 72:24;89:15;90:2</p> <p>reaches (3) 72:23;73:3;92:8</p> <p>read (6) 4:9;7:19;20:13; 52:24;63:6;104:8</p> <p>ready (2) 50:1;63:19</p> <p>real (1) 29:22</p> <p>realize (1) 44:19</p> <p>really (16) 25:15;26:21;27:22; 42:12;43:14;65:22; 67:6;69:8;71:22;75:11, 24;92:22,23;93:12,17; 96:18</p> <p>reason (3) 66:10;68:1;71:14</p> <p>recalculate (1) 48:23</p> <p>receive (5) 39:23;40:21;42:6; 57:17;98:9</p> <p>received (3) 29:3;35:3,6</p> <p>receiving (1) 40:19</p> <p>recent (3) 28:10;29:5;64:11</p> <p>recently (2) 26:11;73:18</p> <p>receptor (11) 71:23;72:8;84:18,20; 87:16;88:3;90:13,15; 96:7;97:1;99:10</p> <p>receptors (5) 35:2;72:15;85:9; 98:7,9</p> <p>recess (1) 106:2</p> <p>recessed (1) 106:10</p> <p>recognize (1) 40:7</p> <p>recommendation (1) 43:17</p> <p>recommendations (3) 4:16;16:5;36:14</p> <p>recommended (2) 20:11,13</p> <p>recommends (6) 11:17,20;12:14;13:4, 11;19:4</p> <p>reconvene (1)</p>	<p>63:21</p> <p>record (5) 44:1,2;45:5,7;63:13</p> <p>recoup (1) 47:10</p> <p>rectify (2) 21:1;88:22</p> <p>recycle (2) 46:13,15</p> <p>recycled (1) 47:4</p> <p>recycling (2) 46:13;47:10</p> <p>redo (1) 48:22</p> <p>reduce (2) 8:24;75:21</p> <p>reference (1) 14:11</p> <p>referendum (1) 41:20</p> <p>referring (3) 81:22;82:5;97:4</p> <p>reflect (1) 45:19</p> <p>reframe (1) 81:16</p> <p>regard (1) 44:23</p> <p>regarding (4) 6:17;36:15;44:24; 53:19</p> <p>region (1) 37:11</p> <p>regional (1) 14:5</p> <p>registered (1) 77:7</p> <p>regular (1) 76:16</p> <p>regulate (2) 67:13,14</p> <p>regulations (7) 10:8,14;19:2,18; 20:21;66:12;73:22</p> <p>reiterate (1) 30:23</p> <p>Related (2) 53:9;102:20</p> <p>relates (1) 57:1</p> <p>relation (2) 90:13,14</p> <p>relationship (2) 37:15,18</p> <p>relative (1) 100:8</p> <p>relatively (1) 7:24</p> <p>relevant (1) 58:17</p> <p>remain (2) 14:7;31:15</p>	<p>remedy (1) 13:21</p> <p>remember (1) 99:7</p> <p>remotely (1) 23:21</p> <p>removed (1) 20:7</p> <p>Renaissance (1) 11:4</p> <p>rental (1) 14:16</p> <p>repair (2) 17:9;60:16</p> <p>repaired (1) 60:12</p> <p>repairs (1) 60:4</p> <p>repeat (2) 24:5;75:6</p> <p>report (15) 4:17,18;5:11,13; 7:21;13:3;21:15;33:6, 7,13;34:5;72:19,20; 95:19;105:12</p> <p>reports (6) 12:10;24:15,24; 34:10;105:11,14</p> <p>represent (1) 53:1</p> <p>representative (1) 53:7</p> <p>represents (1) 68:3</p> <p>request (1) 5:13</p> <p>requests (1) 11:12</p> <p>require (1) 12:18</p> <p>required (11) 4:1;13:5;15:22;16:5; 20:7;21:7;24:15;25:4; 39:3;62:9;81:4</p> <p>requirement (5) 33:12;38:12;62:18; 80:16;81:2</p> <p>requirements (8) 9:2;15:7,8,15,20,23; 17:1;62:21</p> <p>requires (3) 62:5,22;73:21</p> <p>research (1) 5:4</p> <p>reside (2) 79:18;106:9</p> <p>residence (13) 9:5;10:20;16:22,24; 20:4;52:9,10,12,16; 53:23;91:21;92:1; 100:8</p> <p>residences (11) 15:15;16:15,19;35:3,</p>	<p>6;87:14;92:6,11;98:2; 105:17,21</p> <p>residential (3) 11:1;16:12;18:21</p> <p>residents (13) 15:16;16:17,20;70:9; 74:11;76:22;88:6,8; 92:22;101:8;102:13; 104:24;105:19</p> <p>resolution (6) 5:14;6:12;7:13,17, 20;14:3</p> <p>resolutions (1) 42:21</p> <p>resolves (1) 6:14</p> <p>resource (2) 28:18;57:23</p> <p>Resources (4) 4:15,19;11:20;36:8</p> <p>respect (1) 17:2</p> <p>respects (1) 19:1</p> <p>response (4) 11:17,20;21:14; 37:13</p> <p>responsibility (1) 48:8</p> <p>responsible (1) 35:8</p> <p>rest (3) 22:16;31:15;93:18</p> <p>restrictive (1) 16:11</p> <p>rests (1) 7:4</p> <p>resubmitted (1) 49:2</p> <p>result (2) 34:11;47:21</p> <p>resulted (1) 36:11</p> <p>results (4) 11:22;65:12;70:19; 87:21</p> <p>return (1) 21:3</p> <p>re-utilized (1) 47:2</p> <p>revealed (1) 32:16</p> <p>revenue (2) 57:2;58:5</p> <p>revenues (1) 44:17</p> <p>review (6) 11:3,6;25:20,24; 48:20;49:3</p> <p>reviewed (2) 28:10;33:19</p> <p>Rick (1) 76:11</p>	<p>Ridge (8) 5:14,16;6:23;23:3; 40:5,11,16;42:21</p> <p>right (21) 23:15;25:12;30:2,4, 18;31:7;37:1,5;50:21; 62:5;69:20;76:2;80:18; 85:22;96:12;99:17,18, 24;100:7;103:1;104:15</p> <p>right-of-way (1) 9:9</p> <p>riparian (1) 12:9</p> <p>rise (1) 46:23</p> <p>rises (2) 85:1;86:2</p> <p>risk (1) 12:22</p> <p>River (1) 12:2</p> <p>road (14) 9:9;18:4,7,10,11; 19:9,12,13;22:9;23:10; 53:22;56:22;81:12; 104:13</p> <p>roads (16) 3:10;17:5,11,13,16, 18,19,20;18:5,8;21:10; 30:10;50:19;54:4; 56:12;74:10</p> <p>roll (1) 82:14</p> <p>rotate (1) 68:21</p> <p>rotates (1) 84:1</p> <p>rotation (1) 71:17</p> <p>roughly (4) 42:9,10;53:6;66:17</p> <p>round (1) 63:14</p> <p>Rous (3) 106:6,6,13</p> <p>Routinely (1) 77:19</p> <p>row (2) 71:22;72:11</p> <p>rules (1) 88:21</p> <p>run (1) 58:23</p> <p>running (4) 31:9;74:15;76:5; 98:12</p> <p>rustle (1) 103:15</p> <p>rustling (1) 103:14</p> <p>Ruth (2) 48:5;77:1</p>
--	--	--	---	---

S	<p>season (1) 99:20</p> <p>seasons (2) 85:18;86:1</p> <p>Second (3) 14:18;44:16;54:20</p> <p>seconds (1) 12:20</p> <p>secretary (3) 3:2;7:12,16</p> <p>Section (4) 3:14,16;19:19;106:8</p> <p>sections (5) 3:14,17,21;46:21,23</p> <p>secure (1) 43:17</p> <p>seeing (1) 57:10</p> <p>seem (1) 51:4</p> <p>segment (2) 73:6,6</p> <p>seizure (1) 101:23</p> <p>selected (2) 76:17,18</p> <p>selling (1) 47:15</p> <p>send (2) 47:9;60:16</p> <p>sensitive (1) 87:15</p> <p>sent (2) 4:18;36:12</p> <p>sentences (1) 33:13</p> <p>September (1) 55:23</p> <p>series (1) 43:7</p> <p>serrated (3) 8:23;69:12;71:15</p> <p>serve (1) 13:14</p> <p>Service (6) 11:8;21:4;28:23; 36:9;44:11,14</p> <p>services (1) 34:5</p> <p>set (11) 9:3;16:15;19:5;38:2, 24;39:2,4,14;48:24; 55:8;85:1</p> <p>setback (8) 9:1;12:2,5,8;15:7,8, 15;55:7</p> <p>sets (1) 91:18</p> <p>setting (2) 6:12;79:1</p> <p>seven (4) 8:7;12:9;18:24; 20:10</p>	<p>several (3) 24:22;64:13;87:22</p> <p>shaded (1) 30:7</p> <p>shades (1) 53:20</p> <p>shadow (68) 10:18,21;20:5;27:16; 34:13;35:3,8;82:17,22; 83:6,9,10,11,18,23; 84:3,7,9,14,21,23;85:4, 11,24;86:3,8,12,13,18, 21,22;88:3;89:2,7,14; 91:10;92:3,6;93:12; 94:3,10;95:18,21;96:1, 12,13,21;98:2;99:1; 100:3,20,21;101:1,1, 13,15,20;102:17;103:5, 7,12,24;104:2,15; 105:2,11,23;106:7</p> <p>shall (13) 9:15;15:20;19:9,12, 16,21,22;20:4,16,22; 21:1,6,9</p> <p>shape (1) 67:9</p> <p>share (2) 7:6;11:22</p> <p>Shields (2) 52:16,20</p> <p>shining (3) 84:12;87:1;97:8</p> <p>shortest (2) 89:12;90:3</p> <p>show (7) 15:15;72:22;77:17; 85:20,23;102:19; 105:16</p> <p>showing (4) 4:7,10;76:12;88:5</p> <p>shown (1) 4:13</p> <p>shows (9) 4:7;5:4;8:21;10:7, 16;29:10;73:10;84:6; 85:24</p> <p>shut (2) 99:24;102:11</p> <p>shutting (1) 96:9</p> <p>side (7) 17:16;21:10;44:20; 98:23;99:3,4,11</p> <p>sign (1) 42:2</p> <p>signals (2) 33:23;34:6</p> <p>signature (1) 7:11</p> <p>signed (5) 7:15;13:16;18:6; 42:23;54:8</p> <p>significant (8) 6:21;12:12;14:13; 29:12;47:8;66:7;69:19; 75:14</p>	<p>significantly (1) 55:6</p> <p>similar (5) 7:19;48:19;70:8; 74:12;79:9</p> <p>similarly (1) 68:7</p> <p>simple (1) 57:15</p> <p>simply (1) 53:22</p> <p>simulated (1) 78:23</p> <p>single (3) 40:16;58:6;59:16</p> <p>sit (1) 93:23</p> <p>site (21) 4:10;8:21;13:15; 15:17;16:3;29:23; 30:24,24;34:14,17; 35:8,13;50:11;52:3,4, 23;53:20;54:21;57:24; 60:17;77:17</p> <p>sited (3) 15:24;36:4;41:16</p> <p>sites (2) 12:1;34:22</p> <p>siting (4) 41:13,23;42:2;43:4</p> <p>sitting (1) 93:22</p> <p>situated (3) 29:24;30:6;31:1</p> <p>situation (1) 98:17</p> <p>Six (8) 12:7;20:6;30:20; 63:21;72:6;75:19;80:3; 90:22</p> <p>sixth (2) 5:24;18:13</p> <p>size (1) 61:19</p> <p>skies (1) 84:11</p> <p>Sky (23) 3:5;5:19,21;6:13; 10:1;11:5,7;24:3,10; 25:14;29:18,23;31:1; 33:16;35:9,12;36:16; 38:18;65:13;71:23; 72:15;73:20;99:8</p>	<p>16</p> <p>slides (1) 41:11</p> <p>slight (1) 103:10</p> <p>sloping (1) 8:1</p> <p>slower (1) 71:16</p> <p>slowly (3) 95:7;101:14,18</p> <p>small (3) 31:5;52:24;93:22</p> <p>smaller (1) 86:6</p> <p>smoke (1) 93:23</p> <p>softer (1) 75:17</p> <p>software (1) 86:18</p> <p>soil (5) 50:10,12;101:4; 104:6,10</p> <p>sold (1) 47:4</p> <p>solution (1) 47:13</p> <p>somebody (3) 46:14;55:4;59:4</p> <p>somebody's (1) 103:6</p> <p>someone (3) 52:1;90:9;95:14</p> <p>sometimes (5) 56:6;59:24;70:11; 77:23;101:23</p> <p>somewhere (3) 47:3;63:5;95:22</p> <p>sonar (1) 35:15</p> <p>soon (1) 60:17</p> <p>sooner (1) 62:23</p> <p>sophisticated (1) 46:2</p> <p>sorry (5) 53:23;63:17;82:2; 94:15;102:2</p> <p>sort (1) 95:21</p> <p>sound (6) 10:12;20:19;58:3; 75:16,18;102:15</p> <p>sounds (2) 67:7;78:6</p> <p>source (1) 62:9</p> <p>sources (1) 78:15</p> <p>South (5) 22:19,23;23:22;30:3,</p>
----------	--	--	--	---

<p>13 southeast (2) 30:5;86:6 southeastern (2) 29:24;31:2 southern (3) 31:9;80:5;86:7 southwest (1) 86:4 space (1) 32:19 speak (7) 21:21;33:5;45:3,8; 46:14;63:9;66:8 speaking (5) 27:3,13,17;39:19; 102:8 special (13) 3:7;4:24;5:12;8:9; 14:18;16:7;18:14,24; 19:6;24:4,12;25:4;62:2 species (3) 12:13,23;35:17 specific (7) 50:9,11;57:23;58:12; 60:15,17;89:19 specifically (3) 25:23;54:2;88:24 specifications (2) 30:14;31:10 specify (2) 62:12,18 spectrum (3) 67:15,22;68:7 speed (3) 65:2;68:20,22 speeds (1) 12:19 spelled (1) 22:5 spoke (1) 22:12 sponsored (1) 43:6 spot (2) 28:17,22 spread (2) 29:20;61:13 spring (3) 66:2;70:6;76:7 Springfield (1) 28:20 stable (1) 42:19 staff (7) 4:17;5:13;7:21;19:4; 43:10;51:22;81:9 standard (13) 8:11;14:18,23;16:7, 10;17:4,7;18:2,13,16; 19:3;48:21;74:8 standards (10) 8:7,9;18;15:12;19:5,</p>	<p>6,19;25:4;33:17;58:18; 73:13 standpoint (1) 50:16 stands (1) 73:13 Stantec (4) 10:19;34:13,19; 82:21 start (7) 21:22;22:1;29:7; 37:24;55:19;56:2; 106:12 started (1) 79:10 starting (2) 39:5;55:11 State (17) 6:2;7:1,7;11:11; 14:11;26:5,10;27:24; 28:3;29:9;52:11;57:12, 13;59:13,14;60:24; 64:7 stated (4) 51:15,18;61:23; 92:12 statement (2) 98:18;102:6 states (8) 14:8;15:21;18:17; 33:14;46:4;65:18;89:4; 92:8 static (1) 95:16 stating (1) 36:14 station (1) 13:7 statistics (2) 88:4;96:4 stay (1) 49:18 steal (1) 33:4 steel (5) 39:9;46:22;47:7,9; 61:15 step (1) 40:14 Steve (1) 22:9 stickler (1) 63:19 Stielow (5) 22:7,7,9;101:22; 102:4 S-T-I-E-L-O-W (1) 22:8 still (3) 4:23;26:17;72:6 stimulus (1) 7:8 stipulation (1)</p>	<p>62:2 stipulations (3) 19:8;20:11,12 stood (1) 77:10 stop (1) 43:12 story (1) 71:7 straight (1) 97:12 strategies (1) 48:21 straws (1) 79:12 streams (1) 12:5 Street (1) 22:4 streets (1) 18:2 stretch (1) 94:7 stringent (3) 62:16,22,24 strips (2) 17:16;21:9 structural (3) 47:7,9;81:5 structure (1) 32:17 structures (1) 3:13 student (1) 7:9 students (1) 7:3 studies (15) 4:21;11:15,17,21; 33:20;36:6;49:21;50:8, 10;78:16;79:9;80:17; 83:6;102:19;104:8 study (29) 5:10;10:3,5,15,18; 11:10;27:17;32:7,16; 33:4;34:1,5;35:14; 46:7;48:6,8,10,12,22; 49:1;50:20;74:4;78:18; 82:17,22;87:21,24; 105:2,18 stuff (1) 101:7 SU-21-03 (1) 3:4 subject (2) 24:22;79:16 subjective (2) 102:17,22 submitted (22) 5:10;9:22;10:6,16, 19,23;11:7,10,14,16; 13:4,8,17,18;19:17,23, 24;20:17;24:13;32:6;</p>	<p>48:14;82:8 substantial (1) 32:17 substantially (1) 14:22 substation (1) 3:12 successful (1) 26:16 suffer (1) 101:9 suitable (2) 16:13,14 suite (3) 11:21;22:23;23:23 summarize (1) 33:6 summarized (1) 32:14 summary (1) 73:12 summer (3) 86:2,5;87:7 sums (1) 56:23 sun (19) 83:17;84:1,12,17,24; 85:15,19;86:2,8,24; 87:6;91:17;95:9;96:23, 24;97:8;99:9,17;100:7 sunlight (1) 103:17 sunny (1) 87:6 sunrise (1) 12:20 sunset (2) 12:20;103:5 sunshine (2) 87:8,9 SUP (6) 38:4;48:14;50:4; 51:16;55:18;105:2 support (13) 6:6,13,20;7:20; 24:17;36:20;40:9; 41:22;42:21,24;43:1,3; 50:12 suppose (2) 49:14;80:9 sure (15) 33:22;34:15;36:3; 39:13;44:23;48:18; 49:18,20;50:11,24; 58:9;75:6;78:9;97:12; 103:18 surrounding (6) 6:24;8:5;11:2;14:24; 16:9;33:2 survey (3) 11:14;35:22;44:11 surveys (5) 11:22,23,24;35:19,</p>	<p>20 swear (1) 21:17 swings (1) 77:24 sworn (2) 21:24;22:16 sympiotic (1) 29:16 System (3) 3:8;8:13;9:1 Systems (3) 5:3;10:2;34:12</p> <hr/> <p style="text-align: center;">T</p> <hr/> <p>T-55 (1) 16:21 T-98 (1) 16:23 table (5) 65:20;70:23;71:10, 21;72:8 talk (7) 36:17;65:11,20; 66:10;92:10;101:10; 102:12 talked (1) 85:17 talking (6) 37:23;52:11;89:19; 90:1;101:11;103:24 tall (3) 31:20,22;70:23 taller (2) 61:7;89:13 tasks (1) 79:3 tax (10) 6:5;7:9;14:14;29:2,4, 7,10;44:17;57:11,16 taxable (2) 6:18;29:6 taxation (1) 57:13 taxes (9) 6:8;39:23;40:1;41:4, 10;44:24;45:3;57:6; 59:2 taxing (1) 39:22 Taylor (28) 52:2,2,8,10,15,20,23; 53:15;54:6,11,18;55:2, 8;56:1,6,11,16;63:4,17; 100:19,19;102:9,10,11; 103:1,20;104:4,11 team (2) 22:13;27:7 Tech (2) 11:14,16 technical (1) 30:16</p>
---	--	--	---	--

<p>technically (1) 66:19</p> <p>techniques (1) 13:5</p> <p>technologies (1) 12:17</p> <p>technology (1) 46:17</p> <p>telecommunication (2) 33:19,23</p> <p>television (1) 21:1</p> <p>telling (1) 70:2</p> <p>Ten (13) 21:1;35:6;38:23; 39:4;63:22,22;65:15, 24;80:3;83:6;88:10,17; 90:16</p> <p>tend (4) 68:4,10;69:5,7</p> <p>tends (1) 68:9</p> <p>ten-year (2) 45:16;48:16</p> <p>term (1) 100:20</p> <p>terms (12) 27:8;30:9,14;31:10; 32:4;35:8;37:3;38:22; 53:19;57:3;77:16; 103:5</p> <p>terrible (1) 93:21</p> <p>territory (1) 79:23</p> <p>test (2) 80:21,22</p> <p>testified (2) 64:5;66:2</p> <p>testifies (1) 24:21</p> <p>testify (2) 24:20;27:18</p> <p>testifying (2) 64:8;82:16</p> <p>testimony (5) 24:17,22;59:19; 104:20,21</p> <p>testing (2) 76:12;102:12</p> <p>tests (2) 32:3;35:23</p> <p>Tetra (2) 11:14,16</p> <p>Thanks (2) 43:19;76:24</p> <p>theoretically (1) 75:20</p> <p>Therefore (1) 6:14</p> <p>thereof (1) 34:8</p>	<p>third (3) 9:10;16:7;28:7</p> <p>though (4) 34:20;51:13;62:11; 98:22</p> <p>thought (1) 44:18</p> <p>thousand (5) 5:5;25:19;42:6;67:4; 72:11</p> <p>three (18) 4:14;7:2;9:3,12; 11:23,24;16:16,19; 19:16;26:21;53:14; 61:7,20;66:1;68:16; 70:5;71:6;90:11</p> <p>throughout (4) 35:23;83:13;84:1,2</p> <p>thunder (1) 33:4</p> <p>tile (5) 17:9;60:3,11,14,16</p> <p>tilled (1) 75:19</p> <p>times (25) 9:3,6,8,9,11,12,13; 16:16,19;26:6,20; 33:17;51:16,18;53:12, 16;55:3,6,9,14;76:8; 86:12;87:22;91:16; 96:2</p> <p>timing (1) 52:4</p> <p>tip (2) 9:12;89:13</p> <p>today (6) 27:3;36:21,23;37:23; 38:18;100:21</p> <p>together (3) 6:22;41:15;86:16</p> <p>ton (1) 75:24</p> <p>tonight (5) 24:3;25:16;59:6; 66:11;87:22</p> <p>took (1) 41:20</p> <p>top (5) 6:1;72:11;75:20; 89:18,21</p> <p>topography (1) 7:24</p> <p>total (3) 9:3;38:23;61:17</p> <p>touch (1) 39:20</p> <p>touched (1) 42:20</p> <p>towards (2) 27:19;40:14</p> <p>tower (10) 9:17;17:12;46:21,22; 89:13;94:6,7;98:3,22;</p>	<p>99:1</p> <p>towers (6) 9:11;13:12,12,13; 34:2,4</p> <p>town (8) 30:8;41:14,14,20; 42:5,5,11;70:22</p> <p>Township (14) 3:16,16,17,17,20,20, 21,22;18:11;19:13; 31:4;40:24;41:1;50:19</p> <p>Townships (7) 4:9;5:19;6:17;18:4; 30:1;63:8,11</p> <p>track (1) 40:12</p> <p>tractor (1) 78:11</p> <p>traffic (1) 18:1</p> <p>trailing (2) 8:23;71:15</p> <p>training (1) 37:12</p> <p>transformers (1) 3:10</p> <p>transmission (1) 9:10</p> <p>transmit (3) 13:14;101:4;104:6</p> <p>travel (1) 75:19</p> <p>tree (1) 103:13</p> <p>trees (1) 8:4</p> <p>trencher (1) 60:10</p> <p>trenching (1) 60:8</p> <p>tried (2) 36:1;79:13</p> <p>triggered (1) 20:6</p> <p>trucks (1) 56:12</p> <p>true (2) 102:3,4</p> <p>truly (2) 51:5;86:23</p> <p>Trustees (1) 42:1</p> <p>try (4) 51:19;65:1,20;95:20</p> <p>Trying (11) 21:16;35:22;44:12, 20;53:17;58:3,22; 70:20;94:8;95:24; 96:20</p> <p>tune (1) 72:5</p> <p>tuned (1) 67:4</p>	<p>tuning (1) 67:3</p> <p>turbine (88) 3:8;8:14,19;9:4,6; 10:11;12:1,19;13:5,13; 14:15;15:14,17;16:16, 21;20:8,15,19;30:14; 31:10,14,18;32:7,11, 22;34:19;38:11,12; 42:6;47:1,11;48:24; 49:23;50:3,9,11,13,13; 51:7,17,20;53:5,11,12, 21;54:12,23;55:1,3,12, 13;57:8,19;58:6,9; 61:4;67:12;68:4,19,24; 69:16;72:22;73:16; 74:10;78:21;79:20; 80:3,23;84:20;86:15; 89:19;90:1,13,18,19; 91:13;92:4;95:6,16; 96:10,24;98:10,13,15; 99:10,13;100:8;101:20</p> <p>turbines (67) 4:11;8:21,22;9:2; 10:2,17;13:1;14:17; 15:20,24;16:4,15,18; 21:4;30:15;31:12;32:4; 33:1;34:15;36:4;41:16; 42:3;49:12;50:1;54:2, 20;57:5;59:24;61:8,10, 13,18;63:10;65:7,16; 68:13,17;69:1,3,11; 70:8,22;71:16;72:10; 75:15;76:5;78:8,9,14; 79:2,6,11,19;84:12; 85:9;86:11,14;87:23; 88:1;89:14;90:14;98:7, 20;101:5;102:21,21; 104:5</p> <p>turn (11) 63:10;68:15,16; 83:21;84:14;92:4;95:7, 16;97:5;101:18,21</p> <p>turned (1) 87:1</p> <p>TURNER (15) 49:6,7;51:9;74:3,3, 21,24;75:3,7;91:20,20; 96:17,17;97:11,22</p> <p>turning (5) 83:21;87:3;93:2; 94:10;95:8</p> <p>turns (1) 95:6</p> <p>TV (4) 34:6;44:11,11,14</p> <p>Twin (1) 17:14</p> <p>Two (23) 6:20;11:22;14:12; 16:18;19:12;26:11; 31:17;35:19;41:11; 42:22;43:9,22;44:7;</p>	<p>54:19;62:11;63:8;66:1; 68:16;69:17;78:21; 82:24;86:6;90:11</p> <p>type (6) 10:11;20:19;46:16; 74:5;80:17;94:13</p> <p>types (3) 31:18;69:16;87:19</p> <p>typical (1) 103:2</p> <p>Typically (2) 42:24;60:6</p> <hr/> <p style="text-align: center;">U</p> <hr/> <p>unanimously (1) 42:1</p> <p>under (8) 20:7;25:5;33:17; 68:4;71:4;72:6,16;89:8</p> <p>underground (1) 60:9</p> <p>underlying (1) 40:2</p> <p>understood (1) 63:7</p> <p>Unfortunately (1) 58:11</p> <p>union (3) 36:22,23;37:1</p> <p>unit (3) 31:18,19;34:22</p> <p>United (2) 46:3;92:8</p> <p>units (1) 61:11</p> <p>University (1) 11:9</p> <p>Unless (1) 25:5</p> <p>unlikely (2) 13:9,11</p> <p>unquote (2) 12:22;18:23</p> <p>untilled (1) 75:12</p> <p>up (37) 3:8,9;8:14,14;10:2; 15:24;21:19;30:4,15; 31:12;33:5;34:20;42:3; 44:9;45:21;46:23;48:4; 51:16;58:23;61:6; 64:23;66:20;67:22; 68:19;71:12;72:11; 75:15;77:10,17;78:4; 85:22;90:5,6,10;91:7; 92:18;99:9</p> <p>update (2) 39:10,11</p> <p>updated (6) 10:11;20:19;39:7; 45:17;48:17,17</p> <p>updates (1)</p>
---	---	--	---	--

<p>46:7 uploaded (1) 25:9 upon (4) 78:6;83:12,24;94:11 upper (1) 68:7 upstream (2) 17:16;21:10 Urbana (1) 11:9 usage (1) 50:19 use (36) 3:7;4:24;5:12;8:9, 17;11:22;14:8,19,19; 15:2;16:8,14;18:4,7,7, 10,14,24;19:9,12,19; 24:4,12;25:4;35:20,21; 61:23;62:2;65:11; 66:15;70:11;73:12; 86:17;87:4,4,7 used (3) 15:1;73:14;87:24 useful (3) 38:6;46:19;59:24 uses (6) 15:10;16:9,12;18:19, 22;19:6 using (5) 60:2;62:2;66:5; 72:16;88:1 usually (1) 60:11 utilities (1) 17:5 utility (1) 13:12 utilization (1) 32:18 utilized (3) 46:20,24;61:12 utilizing (1) 31:17</p>	<p>27:19 value (4) 47:8,10;58:9;61:17 values (2) 11:1;14:22 VANDERKAMP (34) 22:21,22;24:18,21; 25:8,8,11,13;30:18,23; 44:23;45:23;46:18; 47:20;48:11,18;49:20; 51:15;53:13;54:8,13, 19;55:5,16;56:3,8,14; 57:1,21;58:11;59:23; 60:6;61:9;63:9 V-A-N-D-E-R-K-A-M-P (1) 22:24 variable (1) 97:9 variables (1) 90:24 various (3) 33:20;79:3;95:19 vary (2) 92:16,17 VAZQUEZ (6) 43:21;82:1,3;102:7; 104:17,21 vegetated (1) 17:15 vegetation (3) 85:8;87:17;97:23 vegetative (1) 21:9 vein (1) 7:19 velocity (1) 94:15 verify (1) 9:20 Vermilion (1) 28:5 Verona (3) 23:6,7;79:18 V-E-R-O-N-A (1) 23:6 versus (2) 88:17;89:15 Vestas (7) 8:18,19;20:14,15; 31:18,19,22 VI (1) 19:18 via (2) 50:4;53:17 viable (1) 92:7 vibrations (3) 101:4;104:5,9 vicinity (3) 14:21;32:5;41:19 Village (5) 16:1,3;31:5;41:24; 42:1</p>	<p>visual (2) 103:21,23 VOICE (2) 47:24;101:22 voluntarily (1) 89:7 voted (2) 41:20;42:1</p> <hr/> <p style="text-align: center;">W</p> <hr/> <p>Wacker (3) 22:19,23;23:22 walk (1) 48:6 wall (1) 9:4 washing (1) 17:17 water (3) 36:1,2;60:15 waterways (2) 17:18,19 wattage (1) 69:3 way (14) 17:21;21:17;27:1; 32:21;33:1,10;41:21; 45:9;67:9,10;68:18; 77:20;88:22;93:15 weather (4) 56:9;74:5,17;96:3 website (4) 29:2;105:12,14,15 WECS (3) 8:13;9:17;19:19 weeks (3) 26:1;70:10;78:21 weighted (1) 66:23 welfare (1) 8:11 West (16) 3:16,17;4:8,5;18; 6:17;22:4;23:2;30:1, 11;31:4,9;40:24;60:24; 63:11;92:9;98:23 wetland (1) 35:24 wetlands (1) 36:3 WEXG (1) 13:7 whatnot (1) 78:11 What's (4) 49:19;90:7;96:6; 100:9 whatever (1) 79:5 whereas (7) 5:16,20,22,23;6:3,7, 11</p>	<p>Whereupon (1) 30:16 wherever (1) 77:19 whichever (1) 62:23 White (1) 26:14 whole (1) 93:14 who's (1) 102:7 whose (1) 45:9 wildlife (2) 16:6;36:9 Wind (105) 3:5,6,7,8;5:6,18,19, 21,23,24;6:1,4,9,13,24; 8:13,14,24;10:1;11:5, 7;12:19,19;13:1,13,19; 14:8,12;15:3,17;16:3; 17:14;24:4,10;25:14; 26:11,12,14,16;27:24; 28:12,12,15,16,17,18, 23;29:4,6,8,11,14,17, 18;31:1;32:2;33:16,22; 36:16;42:24;46:20; 54:1;57:9,13,23;65:6, 16;67:12;68:12,17,19, 20,24;73:16;74:19; 76:7;78:9,14,21;79:2,6, 11,19,20;80:23;81:14, 19;83:5,21;84:13; 87:11;94:2,2,4,12,14, 15,23;95:1,5,12,17; 97:6;102:21,21 windmill (1) 53:4 windmills (3) 41:19;63:6,8 windows (1) 75:4 WindPro (1) 86:17 wings (1) 86:7 winter (2) 28:15;86:7 wireless (1) 44:13 Wisconsin (11) 23:7,11;79:18,20,22, 24;80:5;81:15,15,18; 82:6 witching (1) 63:23 within (16) 5:5;9:17;10:4;13:13; 15:18;16:1;28:6;30:6, 9;31:3,6;35:12;41:17; 42:4;48:22;74:17 witness (16)</p>	<p>23:20;24:19;25:7; 59:18;60:21;63:3,20; 64:2,4;80:12;81:10; 82:13,15;100:18; 102:9;106:11 witnesses (2) 21:24;23:19 wonder (1) 101:3 wondered (1) 61:6 wondering (1) 76:2 words (1) 77:17 work (13) 13:21;32:4;37:5; 45:12;48:10;49:11,13, 15;51:13;59:4;82:7,21; 93:16 worked (2) 27:8;65:18 working (7) 18:3;28:2;34:17; 38:1;73:16;77:12;83:3 works (4) 49:11;56:9;70:16; 72:16 worse (7) 75:23;76:3,6;85:14; 86:22,23;91:16 worst (1) 47:14 written (5) 18:10;19:9,12;40:9; 43:2</p> <hr/> <p style="text-align: center;">Y</p> <hr/> <p>yards (1) 3:12 year (47) 10:21;20:5;26:13; 29:6,7;35:4,7;39:1,2,4; 40:20;41:9;42:6,10; 43:7;55:9,14,20,20,21, 23;56:2,10;58:10;76:3; 80:2;83:13;84:1;86:1, 19;88:8,9,10;89:3,6,8, 12,16;90:3,4,7;93:8; 96:5;97:19;99:15; 100:7;105:23 years (17) 11:24;26:21;35:19; 39:7;55:13;59:23;60:1, 2;61:7,20;65:14;70:5; 71:6;83:3,7;87:7;95:2 year's (1) 57:19 yellow (2) 72:21;73:8 York (1) 77:19</p>
---	--	--	---	--

	13 (1) 21:12	21 (3) 3:17,21;83:3		624 (1) 10:2
Z	131 (1) 29:19	211 (1) 23:6	4	64 (10) 3:8;8:14,22;30:15; 31:12,14;34:20;51:7, 17;87:23
ZBA (3) 43:13,16,18	136 (3) 30:10;31:8,19	2111 (2) 52:16,20	4 (1) 3:21	64th (1) 55:12
zero (1) 88:11	14 (2) 3:14,18	22 (4) 3:16,18,20;36:12	4.2 (2) 8:18;20:14	65 (1) 98:15
Ziegler (5) 60:22,22;61:22; 62:11;63:1	14,000 (1) 29:20	2242 (1) 60:24	40 (1) 69:8	650 (1) 9:14
Z-I-E-G-L-ER (1) 60:23	14,268 (1) 7:23	23 (1) 3:19	40.3 (1) 72:3	68 (2) 42:23;43:2
ZIMMERMAN (3) 44:10;45:6,10	15 (8) 3:24;83:5;88:6,7; 92:11,13,17,22	24 (2) 3:15;13:23	41 (6) 67:24;71:2,2;72:12, 23;73:3	69 (1) 67:22
zoning (18) 4:6;7:14;8:5;15:7; 16:6;17:2;19:6,18; 24:2,16;25:5,16;26:7; 48:9,15;58:18;64:13, 16	1530 (1) 16:23	25 (5) 3:19;51:3,12;87:7; 94:23	41.3 (1) 72:6	
Zoom (2) 52:1;71:22	1550 (1) 23:2	250 (2) 6:17;8:15	47 (3) 67:23;72:4;77:4	7
0	15th (2) 12:21,21	27 (2) 3:15,19	48 (1) 69:9	7 (2) 3:14;106:2
055 (1) 13:6	16 (2) 3:18;26:10	2705 (1) 23:13	5	7:39 (1) 3:1
1	1690 (1) 16:22	281 (2) 88:9,16	5 (3) 3:16,21;106:8	70 (2) 22:4;80:2
1 (5) 3:17,21;22:19,22; 23:22	17 (3) 15:24;42:3;65:17	29 (2) 3:15,19	50 (5) 39:1;42:11;65:18; 80:2;92:18	71 (1) 41:9
1,000 (8) 12:7;67:23;68:1,9; 71:10,17;72:22;73:2	17th (1) 14:6	3	500 (11) 12:5;56:22;67:23; 68:1,9;70:23;71:1,7; 72:3;77:2;104:13	7900 (1) 66:18
1,773 (1) 9:13	18 (3) 3:18;5:15;6:24	3.6 (2) 8:19;20:15	511 (1) 63:5	8
1.1 (7) 9:6,8,9,10,13;53:12; 55:3	1800 (2) 22:23;23:23	30 (25) 10:20;20:5;35:3; 40:20;41:9;43:1;59:23; 60:1,2;65:14;87:7; 88:2,5,7,8;89:2,6,8; 90:7,10;92:11;93:7; 97:17,18;98:18	52 (1) 6:8	8,000 (1) 68:8
1.2 (1) 40:19	2	31 (1) 67:21	54 (2) 30:11;31:7	85 (1) 35:5
1.5 (2) 41:17;42:4	2 (3) 3:14,18;7:18	31630 (3) 56:22;81:11;104:12	54115 (1) 23:11	89 (9) 8:21;31:13;32:7; 34:19;49:8;51:19; 87:22;88:1,1
10 (3) 3:21;88:9;98:16	2.4 (1) 41:7	31st (1) 7:14	55 (1) 81:12	8th (2) 106:2,11
10:09 pm (1) 106:14	20 (11) 3:15;43:1;49:9;88:7, 9:92:11,13,17;97:16, 18;98:16	32 (2) 3:15;98:13	568 (1) 31:22	9
100 (2) 39:2;69:5	20,000 (1) 66:20	3300 (1) 22:8	59 (1) 29:3	9 (1) 3:18
104 (2) 69:5,6	2007 (2) 29:1,2	34 (2) 3:19;6:11	591 (4) 3:9;8:14;31:20;90:1	9,000 (1) 10:4
10th (2) 39:5;98:14	2009 (1) 14:6	35 (2) 3:15;40:21	6	9:04 pm (1) 63:24
11 (4) 3:14,18;21:6;27:24	2011 (1) 26:15	350-43.002 (1) 19:19	6 (2) 3:14,18	9:10 pm (1) 64:1
110 (1) 69:5	2018 (3) 36:7,10;61:3	3605 (1) 22:8	60 (2) 49:9;92:19	90 (1) 6:19
1165 (1) 23:10	2021 (4) 3:24;7:15;36:12; 78:23	37 (1) 77:3	60068 (1) 23:3	
12 (3) 3:18,21;21:9	2022 (1) 55:21	38.6 (1) 72:12	60602 (1) 22:5	
	20th (1) 98:15		60606 (1) 22:19	
			61705 (1) 61:1	