

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA**

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**IN THE MATTER OF THE  
APPLICATION BY PREVAILING WIND  
PARK, LLC FOR A PERMIT OF A  
WIND ENERGY FACILITY IN BON  
HOMME COUNTY, CHARLES MIX  
COUNTY AND HUTCHINSON  
COUNTY, SOUTH DAKOTA, FOR THE  
PREVAILING WIND PARK PROJECT**

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**STAFF’S POST-HEARING BRIEF**

**EL18-026**

COMES NOW Commission Staff by and through its attorneys of record and hereby files this post-hearing brief in the above-captioned siting proceeding.

**I. Preliminary Statement**

For purposes of this brief, the South Dakota Public Utilities Commission is referred to as “Commission”; Commission Staff is referred to as “Staff”; Prevailing Wind Park, LLC is referred to as “Prevailing Winds” or “Applicant”. Reference to the transcript of the Evidentiary Hearing will be “EH”, followed by the appropriate page number. Prefiled testimony that was accepted into the record will be referred to by the exhibit number.

**II. Jurisdictional Statement**

The Applicant filed for a permit to construct a wind energy facility. The Commission has jurisdiction over siting permits for wind facilities pursuant to SDCL Chapter 49-41B. SDCL 49-41B-25 requires the Commission to make complete findings in rendering a decision on whether the permit should be granted, denied, or granted with conditions within six months of receipt of the initial application for a wind energy facility. Because the transmission line is not in excess of 115 kV, it does not require a siting permit from the Commission.

### **III. Statement of the Case and Facts**

On May 30, 2018, Prevailing Wind Park, LLC filed an application to construct the Prevailing Wind Park Project (Project), a wind energy facility located on approximately 50,364 acres of land in Bon Homme, Charles Mix and Hutchinson counties, South Dakota, between the towns of Avon, Tripp, and Wagner, South Dakota. The total installed capacity of the Project would not exceed 219.6 MW nameplate capacity. The proposed Project includes up to 61 wind turbine generators, access roads to turbines and associated facilities, underground electrical power collector lines connecting the turbines to the collection substation, an operation and maintenance facility, and temporary construction areas, including crane paths, public road improvements, a laydown yard, and a concrete batch plant(s) (as needed), and four permanent meteorological towers. The Project would interconnect at Western Area Power Administration's existing Utica Junction Substation, located approximately 27 miles east of the Project. A public input meeting was held on July 12, 2018. On August 9, 2018, the Commission issued an order granting intervention to six individuals and one county government. On August 28, 2018, one individual filed a late application for party status, which was granted by the Commission in a divided vote.

On September 13, 2018, Reece Almond, representing certain intervenors, filed a Motion to have Witnesses Appear Telephonically, requesting that three expert witnesses be permitted to testify via telephone at the evidentiary hearing. That Motion was granted by a vote of two to one by the Commission, allowing Intervenors' witnesses to testify via video conferencing.

On September 14, 2018, Applicant filed Applicant's Motion to Exclude Lay Testimony, to Quash Subpoenas, and to Require Further Disclosures. With one Commissioner dissenting, the Commission voted to deny the motion to exclude and quash.

#### **IV. Statement of the Issues**

The issue to be decided in this matter is whether pursuant to SDCL 49-41B and ARSD 20:10:22, the permit requested by the Applicant for a wind energy facility should be granted, denied, or granted upon such terms, conditions or modifications of the construction, operation or maintenance as the Commission finds appropriate. Specifically, the Commission must determine whether the Applicant met its burden of proof with respect to each element of SDCL 49-41B-22 for the requested permit. If the Commission finds that the Applicant has met its burden and the permit is granted, the next issue the Commission must address is what, if any, conditions should be added to the permit.

#### **V. Burden of Proof**

SDCL 49-41B-22 provides that the Applicant has the burden of proof to establish that:

- (1) The proposed facility will comply with all applicable laws and rules;
- (2) The facility will not pose a threat of serious injury to the environment nor to the social and economic condition of inhabitants or expected inhabitants in the siting area;
- (3) The facility will not substantially impair the health, safety or welfare of the inhabitants; and
- (4) The facility will not unduly interfere with the orderly development of the region with due consideration having been given the views of governing bodies of affected local units of government.

In addition, the administrative rules state that the Applicant “has the burden of going forward with presentation of evidence...” ARSD 20:10:01:15.01.

Therefore, the next question is: What standard shall be applied to determine if the Applicant has met the burden of proof? The general standard of proof for administrative hearings is by preponderance, or the greater weight of the evidence. *In re Setliff*, 2002 SD 58,

¶13, 645 NW2d 601, 605. It is erroneous to require a showing by clear and convincing evidence. *Dillingham v. North Carolina Dept. of Human Resources*, 132 N.C. App. 704, 513 S.E.2d 823 (1999). “Preponderance of the evidence is defined as the greater weight of evidence.” *Pieper v. Pieper*, 2013 SD 98, ¶22, 841 NW2d 787 (citation omitted). Black’s Law Dictionary defines preponderance of the evidence as:

The greater weight of the evidence, not necessarily established by the greater number of witnesses testifying to a fact but by evidence that has the most convincing force; superior evidentiary weight that, though not sufficient to free the mind wholly from all reasonable doubt, is still sufficient to incline a fair and impartial mind to one side of the issue rather than the other. This is the burden of proof in most civil trials, in which the jury is instructed to find for the party that, on the whole, has the stronger evidence, however slight the edge may be.

*Black’s Law Dictionary* (10th ed. 2014).

Each element must be established by reliable, probative, and substantial evidence of such sufficient quality and quantity that a reasonable administrative law judge could conclude that the existence of facts supporting the claim are more probable than their nonexistence.

*U.S. Steel Min. Co., Inc. v. Director, Office of Worker's Compensation Programs, U.S. Dept. of Labor*, 187 F. 3d 384 (4th Cir. 1999).

If the Applicant meets its burden of proof, South Dakota code does not give the Commission any discretion regarding whether to grant a permit. The siting chapter provides no authority for the Commission to search outside of the four elements listed in SDCL 49-41B-22 for additional burdens of proof in deciding whether to grant or deny an application.

However, the Legislature has clearly indicated that it intended for the Commission to very carefully and thoroughly scrutinize applications for siting permits. This is evidenced by its passage of SDCL 49-41B-12, which provides for a deposit and a filing fee to investigate,

review, process, and notice the application. Because the Legislature established a fee to support the investigation into permit applications, it is apparent that the Legislature intended for an extensive and complete review of the application. It would not have done so if it did not expect this to be a high bar. Such a high bar protects the land and the citizens of this state, as well as adds legitimacy to all applications that are granted.

## **VI. Argument and Analysis of SDCL 49-41B-22**

Wind energy facilities "may not be constructed or operated in this state without first obtaining a permit from the Public Utilities Commission." SDCL 49-41B-1. The Project is greater than 100 MWs and is therefore a wind energy facility for the purposes of the SDCL 49-41B.

As discussed above, the Applicant has the burden of proof to establish that four specific elements are met. Those elements are provided in SDCL 49-41B-22. Staff will address each element individually.

### **a. Compliance with all applicable laws and rules.**

There was no evidence proffered that Applicant would not comply with all applicable laws and rules. Applicant has agreed to obtain all required governmental permits.<sup>1</sup>

### **b. Risk of serious injury to the environment or social and economic condition of inhabitants in the siting area**

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<sup>1</sup> Exhibit A32, Condition 1.

### **Environmental Condition**

Because the Project has a Western Area Power Authority (WAPA) interconnection, a National Environmental Policy Act (NEPA) process was required and an environmental assessment (EA) is being completed.<sup>2</sup> Applicant has agreed to comply with all recommendations and requirements of the EA.<sup>3</sup>

During the hearing, there was particular interest in the Project's potential threats to the whooping crane. Staff is comfortable that compliance with Condition 3 of Exhibit A32 will sufficiently protect the whooping crane. That condition reads:

Applicant shall complete the Western Area Power Administration (WAPA) environmental review process as required by the National Environmental Policy Act. Further, Applicant shall comply with and implement any requirements or commitments set forth in the WAPA NEPA review. The Applicant expects environmental review to be composed of an Environmental Assessment and that Applicant would be required to comply with applicable mitigation measures set forth in the Upper Great Plains Wind Energy Programmatic Environmental Impact Statement.

Because of the EA and the Applicant's agreement to implement any requirements or commitments that arise during the NEPA review process, the Project does not pose a risk of serious injury to the environment.

### **Social Condition**

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<sup>2</sup> Exhibit S1, pages 7-8.

<sup>3</sup> Exhibit A32, paragraph 3.

The social condition of the inhabitants in the siting area was the subject of much discussion during the hearing and in the comments filed by the public. It is clear that this Project has a divisive effect on the members of the community. One witness testified that it has put a strain on relationships and caused business owners to be wary of speaking about the Project. Another witness testified that he has noticed “high levels of anxiety”, neighbors unable to look each other in the eye, conflicts, and “people brought to tears.”<sup>4</sup> Further, a review of the map included in Exhibit I-29 indicates a greater amount of non-participating land within the project area than has been present in past dockets.

Intervenor witness Jerome Powers testified that “the local community is walking on egg shells. You don’t know how to address someone.”<sup>5</sup> He stated that he feels the people who are a part of the Project are attacking his wellbeing and way of life. Mr. Powers blames the Project for causing a feud in his family between him and his son that has led to a loss of relationship between Mr. Powers, his son and at least one of his grandchildren.<sup>6</sup>

Applicant witness Dustin Brandt testified that the community reception for the Project has been “very well.”<sup>7</sup> Mr. Brandt acknowledged that there are some people who do not like the project.<sup>8</sup> He stated that “there’s a lot of people who just don’t want any change.” Mr. Brandt did not quantify what he meant by “a lot of people” in this statement but did opine that life will go on in the end.

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<sup>4</sup> EH 934:1-12

<sup>5</sup> EH 1013:21-23

<sup>6</sup> EL 1015:15-19

<sup>7</sup> EH 402:12

<sup>8</sup> EH 403

The record is lacking with respect to whether the chasm that exists within the community will endure in a significant manner for the future.

SDCL Chapter 49-41B does not clearly define impairment to the social wellbeing of the community. With the information in the record at this time, it is clear that the Project has had a divisive impact on the community, but the extent of the division is unclear as is whether it will persist long term. The record does not indicate by a preponderance of the evidence whether a strife within the community will persist over time. Further, there is conflicting testimony on whether the strife is significant. However, Staff witness David Hessler, who has significant experience with wind projects, testified that compared to other projects he has worked on, there is a high level of apprehension about the project.<sup>9</sup>

It is truly regrettable that this community has suffered a strain on its social relations. It is even more regrettable that a project could cause family discord like that testified to at the hearing. However, there is no concrete evidence in the record upon which to conclude that the community is irreparably divided or that any division that exists will persist long term. For this reason, the record does not demonstrate that the Project will pose a threat of serious injury to the social condition of inhabitants in the siting area.

### **Economic Condition of Inhabitants**

Applicant presented testimony and included information in the Application regarding economic benefit to the community through taxes and purchase of goods and supplies.<sup>10</sup>

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<sup>9</sup> EH 782:10-11

<sup>10</sup> Exhibit A1, Section 20.0



At least two witnesses testified that they have or intend to have a business in the siting area. Jerome Powers testified that he operates a hunting guide business in the project area.<sup>11</sup> Paul Schoenfelder testified that he is currently working on building two businesses in the siting area.<sup>12</sup>

Because the latter businesses are planned for the future, there is no way to measure whether the Project would have an effect on those businesses. To make that determination would require knowledge of whether those businesses will actually be established and be profitable, and to what extent. For that reason, Staff limits its analysis on this issue to the existing business, which is Mr. Powers' hunting guide operation.

Mr. Powers testified that he believes his guide business will suffer as a result of the wind farm.<sup>13</sup> He testified that he has seen a decrease in wildlife as a result of existing turbines.<sup>14</sup> However, Applicant rebutted that assertion with a study conducted by Iowa State University that showed that displacement of upland gamebirds, including the ring-necked pheasant, "is not biologically significant; therefore the economic impact, if any, is expected to be low."<sup>15</sup>

Mr. Powers also testified there will be a negative aesthetic effect on the lodge where his hunters stay.<sup>16</sup> The hunting lodge is located on the same property as his residence. Currently, there are seven turbines within two miles to the north of this property as part of a different existing wind farm.<sup>17</sup> This Project would add twelve more turbines within two miles of Mr.

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<sup>11</sup> EH 1012:16-19

<sup>12</sup> EH 922:5-6

<sup>13</sup> EH 1012-1013

<sup>14</sup> EH 1021-1023

<sup>15</sup> Exhibit S1, page 189.

<sup>16</sup> EH 1019:6-19.

<sup>17</sup> EH 10:2-3

Powers' home and hunting lodge.<sup>18</sup> The result would be effectively surrounding his home and business.

**c. Health, safety, and welfare of inhabitants**

The issue of health, safety, and welfare was the overarching theme throughout the evidentiary hearing. A number of witnesses testified to sound, annoyance, sleep deprivation, and the links between the three.

The testimony of Intervenor witness Vicki May was compelling. While the wind farm near Ms. May's home is not the same wind farm at issue and may not completely mirror any effects, based upon Ms. May's testimony and the sound study provided for the Project, audible noise effects should be similar. Ms. May has suffered sleep deprivation which has caused her home-based business to suffer. She also testified that the shadow flicker on the road has caused difficulty for her when driving. Staff notes that Applicant's shadow flicker maps show that this Project will result in shadow flicker on public roads.<sup>19</sup> However, shadow flicker will be discussed later in this brief.

As discussed above, the Applicant has the burden to prove all elements by a preponderance of the evidence. Because the proffered testimony from the Intervenors was stricken, the only expert testimony in the record relating to direct health impacts was that from Applicant witnesses Mark Roberts and Jeffrey Ellenbogen.

Dr. Ellenbogen testified that the results of a study on potential health impacts of wind, of which he was a part, concluded that wind turbines do not pose a risk to human health.<sup>20</sup> Absent

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<sup>18</sup> S4, page 9

<sup>19</sup> Exhibit A3-2, page 41 of 67

<sup>20</sup> Exhibit A18, lines 107-109.

any testimony to the contrary, the preponderance of evidence in the record establishes that the Project will not pose a significant risk to the health of the inhabitants of the project area based on what is known today. This does not preclude an injured party from bringing a civil suit for damages in the future should unforeseen harm occur. Because the Commission cannot predict and weigh unforeseen issues, civil remedies in a court of competent jurisdiction are the more appropriate remedy as compared to denial of a permit for reasons unproven.

### **Shadow Flicker**

The record contains ample testimony about how the Applicant will comply with a shadow flicker maximum of thirty hours per year and/or thirty minutes per day at non-participating residences. However, the record lacks any evidence as to why that threshold protects the inhabitants. It also lacks any evidence as to whether the welfare of the inhabitants could be impacted by shadow flicker on locations other than inhabited residences.

Aaron Anderson testified that the shadow flicker analysis is modeled at the residence, which is based upon industry standard.<sup>21</sup> The analysis does not take into consideration time spent outside the residence, such as working in a garden or field. Mr. Anderson testified that in order to produce results, the modeling needs to be done at a specific location, and the specific location, by industry standard is a residence. The model fails to even take into consideration whether the shadow flicker will be on an often-utilized room, such as a classroom, or a rarely utilized room such as a bathroom or garage.<sup>22</sup> Thus, the model is of little assistance in determining actual and practical effects of shadow flicker. The fact that Applicant was

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<sup>21</sup> EH 60-61

<sup>22</sup> EH 56:1-2

dismissive of the concept of modeling shadow flicker for outside of the residence shows a lack of consideration for South Dakotans' way of life and issues unique to this area.

The record establishes that with utilization of mitigation tools, specifically turbine shutdown devices, no non-participating residence will experience more than thirty hours per year or thirty minutes per day of shadow flicker. What the record does not show is that thirty hours and thirty minutes is safe or why it is more or less safe than any other amount. The record also does not show whether any person will experience an unsafe or disruptive level of shadow flicker outside their home, in an area in which that person spends a great deal of time.

For this reason, Staff cannot opine on whether the shadow flicker will have a significant impact on the health, safety, and welfare of the inhabitants. Staff can only rely on past precedent<sup>23</sup>, which is a maximum of thirty hours per year or thirty minutes per day at non-participating residences.

Several receptors exceed the thirty-hour limit.<sup>24</sup> Applicant's chosen mitigation method was to install shut-off equipment rather than shift any turbines.<sup>25</sup> This is a method that has not been previously employed by sPower.<sup>26</sup>

### **Audible Noise**

The burden was on Applicant to prove that the Project would not have a significant negative impact on the community, as provided in SDCL 49-41B-22. Applicant chose not to

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<sup>23</sup> See dockets EL17-055 and EL18-003

<sup>24</sup> EH 56

<sup>25</sup> EH 54

<sup>26</sup> EH 55:13

perform a community response analysis.<sup>27</sup> There is no past Commission precedent or rule explicitly requiring Applicant to do so. However, if noise can cause annoyance and annoyance can cause sleep disruption, Applicant may have been wise to support its position with such a study.

Applicant's sound study focused entirely on compliance with the Bon Homme County noise limit, and Applicant did not provide any evidence to otherwise support a 45 dBA limit.<sup>28</sup> Applicant in no way assessed the meaning behind the limits.<sup>29</sup> The testimony of Staff witness David Hessler is the only testimony that speaks to the actual meaning behind the noise level or offers up any explanation other than precedent.

David Hessler testified that in his experience

45 dBA is an appropriate and reasonably fair regulatory noise limit for wind projects at non-participating residences generally balancing the interests of [sic] both the community and developers; however, it does not guarantee that everyone will be completely satisfied with the sound emissions from the turbines or rule out the small potential for adverse health effects, such as sleep disturbance or vertigo.<sup>30</sup>

Mr. Hessler went on to explain that

45 is a fair limit for most projects just based on our experience and seeing how many complaints there are and what the levels are at those houses. But, at the same time, we've recommended for many years that every project should shoot for an ideal design goal of 40. That would serve to much better protect the community against complaints and annoyance. ... [It] wouldn't be inconceivable to modify the project slightly ... to achieve the 40 here.<sup>31</sup>

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<sup>27</sup> EH 478:14-21

<sup>28</sup> EH 715:8-9

<sup>29</sup> Id.

<sup>30</sup> See, page 4:6-20

<sup>31</sup> EH 721:3-722:1

Mr. Hessler's recommendation of 40 dBA is the best evidence on the record to mitigate the chance of impact on human health.

Applicant should not suffer difficulty in achieving 40 dBA at non-participating residences. Only three non-participating receptors are currently at or above 40 dBA. REC-098 is at 40.3, REC-105 is at 40.1; REC-042 is at 40.0.<sup>32</sup> Preferably, all applicants should aim for a design goal of 40 dBA for the entire project. At a minimum, the Project should meet the 40 dBA maximum for non-participating receptors. This would require only very slight modifications and is, therefore, exceptionally achievable.

At this point, it is Staff's concern that Applicant is placing concern over creating precedent above the welfare of the community and protecting landowners.

### **Infrasound**

Over 90,000 MWs of wind power has been installed in the United States, with more than 50,00 wind turbines.<sup>33</sup> Thus far, only a small number of health effects have been noted.<sup>34</sup> "If a large proportion of the population were susceptible to [negative health effects] it would be a major issue disrupting the entire industry, but [these issues] are quite rare. There is a risk here at Prevailing Winds but the evidence suggests that it is very small."<sup>35</sup>

By the admission of one of Intervenor's own experts, "there are currently no scientifically-valid studies providing numerical data on 'safe-distances' that can effectively protect families against ILFN-contaminated homes."<sup>36</sup>

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<sup>32</sup> Exhibit A10-2, pages 30-31

<sup>33</sup> S3, Page 4

<sup>34</sup> Id.

<sup>35</sup> Id.

<sup>36</sup> S5, Page 7, Intervenor's Response to Staff Data Request 2-7

Because no party was able to provide a condition or a science-based limit, there is no evidence in the record upon which Staff can formulate a condition to address this concern.

### Ice Throw

The proper setbacks to account for ice throw remain unclear. Various methods and theories were put forth during the hearing. Exhibit I28 identifies a setback distance of 1.1 x tip height, which equals a 650-foot setback for the Project. Exhibit I15 identifies a setback distance of 1.5 x (hub height + rotor diameter), which amounts to a 1,223-foot setback. Mr. Creech testified this calculation is for turbines without ice detection.<sup>37</sup>

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It is reasonable to assume that icing weather conditions will occur at the site, and there is potential for ice throw even with the ice detection and mitigation system. Mr. Creech testified that "...we expect to see about 15 icing events during the year."<sup>38</sup> He also testified that ice will accumulate to some extent on blades before the detection system shuts the turbine down.<sup>39</sup>

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<sup>37</sup> EH 531:20-21

<sup>38</sup> EH 525:12-13

<sup>39</sup> EH 557:23-25, 558:1-2, 15-21

[BEGIN CONFIDENTIAL] [REDACTED]

[REDACTED]

[REDACTED].” [END

CONFIDENTIAL]

Notably, all turbines are setback from residences at distances greater than the most conservative ice-throw protection, which is 1,223 feet. This applies to residences, not property lines. However, the record lacks sufficient information upon which Staff could recommend a setback from property lines.

**d. Interference with orderly development of the region**

There is no testimony in the record to indicate that the region was likely to experience any development or expansion with which the Project would interfere. Thus, the preponderance of the evidence suggests that the impact, if any, on the orderly development of the region will be positive.

**VII. Recommendation**

Each issue must be weighed using the preponderance of evidence standard. Is it more likely than not that Applicant has satisfied each requirement of SDCL 49-41B-22?

SDCL 49-41B-25 authorizes the Commission to grant the permit, deny, or grant upon conditions. To Staff’s knowledge, no permit has ever been granted without conditions. Absent conditions, this project could pose a serious threat to the health, safety, and welfare of the environment and inhabitants in the area.

**A. Recommended Conditions**



If the Commission ultimately grants the permit, Staff recommends the conditions attached as Exhibit A32.

Additionally, Staff requests the Commission place the following conditions on any permit issued for the Project.

1. As stated in the rebuttal testimony of Peter Pawlowski, Applicant shall remove and decommission any wind turbine that is not operated for a consecutive twelve-month period.<sup>40</sup>
2. The Project, exclusive of all unrelated background noise, shall not generate a long-term average sound pressure level (equivalent continuous sound level, Leq), as measured over a period of at least two weeks, defined by Commission staff, that includes all integer wind speeds from cut in to full power, of more than 40 dBA within 25 feet of any residence, or 50 dBA if the owner of the residence has signed a waiver or granted an easement. Applicant shall, upon Commission formal request, conduct field surveys or provide post-construction monitoring data verifying compliance with specified noise level limits using applicable American National Standards Institute (ANSI) methods. If the long-term average level exceeds 40 dBA at any residence, or 50 dBA where the owner of the residence has signed a waiver or easement, then the Applicant shall take whatever steps are necessary in accordance with prudent operating standards to rectify the situation. Sound monitoring will not be repeated in a representative area during any five-year period unless operational or maintenance changes result in a reasonable assumption of higher turbine sound levels.

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<sup>40</sup> EH 1154:2-4

3. If Applicant chooses to utilize smaller turbines for a small number of locations, as discussed during the evidentiary hearing, turbine locations for the smaller turbines should be selected by giving the most weight to lessening impacts on non-participating landowners. Applicant shall obtain Commission approval for the locations. At the time Applicant seeks approval, Applicant shall provide, at a minimum, updated sound and shadow flicker analyses for those locations.

**Conclusion**

With the conditions agreed to and those recommended by Staff, Staff recommends the permit be granted.

Respectfully submitted this 13th day of November 2018.



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