

**BEFORE  
THE OHIO POWER SITING BOARD**

<b>In the Matter of the Application of</b>	)	
<b>Champaign Wind LLC for a Certificate</b>	)	
<b>to Construct a Wind Powered Electric</b>	)	<b>Case No. 12-160-EL-BGN</b>
<b>Generating Facility in Champaign</b>	)	
<b>County, Ohio</b>	)	

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**POST-HEARING REPLY BRIEF OF INTERVENORS UNION NEIGHBORS  
UNITED, INC., ROBERT AND DIANE MCCONNELL, AND JULIA F. JOHNSON**

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**I. A WIND PROJECT DOES NOT SERVE THE PUBLIC INTEREST, CONVENIENCE, AND NECESSITY IF ITS WIDESPREAD SOCIOECONOMIC AND ENVIRONMENTAL DETRIMENTS OUTWEIGH ITS LIMITED ECONOMIC BENEFITS.**

In an apparent attempt to persuade the Ohio Power Siting Board (“Board” or “OPSB”) that the Buckeye Wind II (“BW II”) project serves the public interest, convenience, and necessity under R.C. § 4906.10(A)(6), Champaign Wind (“CW”) and the Staff boast about the employee salaries, lease payments, and taxes that the wind developer will pay to construct and operate the wind project. However, BW II is no more than a subsidized project whose construction and operation the electricity ratepayers will be forced to fund.

If wind power were an economically competitive means to produce energy, free enterprise would have spawned numerous wind farms without preferential tax treatment from the government such as Payments in Lieu of Taxes (PILOT) and the recently renewed federal production tax credit under 26 U.S.C. § 45. Under the PILOT program, wind companies can obtain exemptions from real and personal property taxation in exchange for making substantially lower PILOT payments to the local governments. R.C. § 5727.75; Speerschneider, Tr. II 207:5-9. Moreover, the Ohio General Assembly would not have enacted an edict for power distribution companies to utilize “alternative energy resources” under R.C. § 4928.64(B) if these resources were economically competitive without government mandates to use them.

But the extra costs of this so-called “green” energy must be paid for somehow. To recite a popular adage, “there is no such thing as a free lunch.” To the extent those extra costs are not defrayed by public subsidies, the ratepayers ultimately pay for the wind projects’ employee salaries, lease payments, and taxes in the form of higher electricity rates. Consequently, this project is in the best interest of only those few, including CW’s foreign parent companies, who earn income from the wind project at the greater expense of the vast majority of the public.

In addition, there are three other reasons why the Board should not find that BW II serves the public interest, convenience, and necessity. First, because Champaign Wind (“CW”) failed to produce witnesses with actual knowledge of the supposed benefits of the project, the Board has no admissible evidence that the project offers such benefits. Second, even if the Board considers the unverified information offered by CW, the benefits of this project are negligible. Third, the project’s socioeconomic detriments far outweigh its benefits. Each of these points is discussed below.

**A. Champaign Wind Did Not Introduce Any Admissible Evidence About The Supposed Socioeconomic Benefits Of BW II.**

CW did not provide admissible evidence to support its claims that BW II will provide any socioeconomic benefit. While CW's consultant, Camiros, prepared a report purporting to describe the project's wages, taxes, and other socioeconomic benefits, no one from Camiros testified in support of this report or its contents. The Staff was particularly uncooperative on this issue, refusing to voluntarily produce as a witness the Staff member who had written the discussion of the project's socioeconomic benefits in the Staff Report. The Staff even opposed a subpoena for that witness that Champaign County and the townships requested in an attempt to obtain some meaningful economic information about the project.

The subpoenaed Staff member, Richard Huckleberry, testified that he did no independent research on the project's socioeconomic impacts, and that he simply copied the economics discussion in the Staff Report from the Camiros' study. Huckleberry, Tr. XI 2637:19 – 2638:6.<sup>1</sup> Mr. Huckleberry said that he accepted Camiros' conclusions without question based on his familiarity with the consultant. *Id.* at 2679:25 – 2680:4. However, Mr. Huckleberry obviously was not familiar with Camiros prior to reviewing its report, since he had to perform research just to obtain basic background information about the company and its principals. *Id.* at 2638:12-23. Consequently, his blind trust in Camiros provides no reliable basis for evaluating the benefits of the BW II project.

Camiros generated the statistics for economic benefit in CW's application by running the Job and Economic Development Impact (JEDI) Wind Model developed by the National Renewable Energy Laboratory (NREL). Applic. Exh. G, p. 11. The Staff did not re-run the model to test Camiros' representations, because the Staff has not purchased the necessary modeling software. Huckleberry, Tr. XI 2656:13-25. Mr. Huckleberry merely read Camiros' report. *Id.* at 2656:21-25. He has never used the model, was not aware of the model's limitations, was not familiar with its inputs, has never seen the outputs from a JEDI model, and did not even know whether it is the most accurate model to use. *Id.* at 2657:3-11, 2673:19-25, 2677:6, 2681:18-23. Mr. Huckleberry further betrayed his ignorance of the model by stating that the JEDI statistics for economic benefits are not estimates or overly simplified assumptions (*id.*

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<sup>1</sup> Testimony in the hearing transcript is cited with the witness' last name, the transcript volume, the page number, and the line numbers.

at 2654:14-25), whereas the model's creator, NREL, has cautioned that these statistics are only estimates. *Id.* at 2683:21 – 2684:16. He also did not know that the Environmental Protection Agency has found that the JEDI model has “overly simplified assumptions” and is to be used only for “high level preliminary analysis.” *Id.* at 2701:24 – 2702:5. Most importantly, Mr. Huckleberry did not know what data Camiros used to calculate the economic benefits, and thus could not determine the data's reliability. *Id.* at 2696:13-16, 2697:3-5.

CW did not document even the most basic of economic facts during the hearing. Although CW contends that it will pay \$950,000 to landowners who lease their land for turbine sites and other project facilities, it produced no witness to testify about that figure. This figure simply appears in the application with no explanation as to how it was calculated or what evidence supports that figure. *Applic.*, p. Exh. G, p. 14. CW did not even offer any evidence that the majority of its leaseholders are residents of Champaign County or the seven county area that Camiros characterizes as “local.” Consequently, this figure is inadmissible. Moreover, this figure should be viewed with suspicion, since CW blocked all attempts to test its validity during discovery. CW refused to produce its leases or any information about them in discovery, and the Administrative Law Judges (“ALJs”) declined to order CW to do so in response to the motion of Union Neighbors United, Robert and Diane McConnell, and Julia Johnson (collectively, “UNU”) to compel this information. The Board should not accept at face value any such assertion that has not been tested by discovery or cross-examination.

**B. The Supposed Socioeconomic Benefits Of BW II Are A Mirage.**

Closer scrutiny of the supposed benefits from BW II shows that they are a mirage. An examination of the details of CW's claimed benefits shows that even its biggest ticket purchases may not benefit Ohio to any significant extent. None of the manufacturers of the turbine models under CW's consideration have any production facilities in Ohio. Speerschneider, Tr. I 202:15-19. Mr. Speerschneider could only speculate that maybe smaller parts of the turbines might be produced in Ohio. *Id.* at 202:15-23. The most expensive turbine components, including the blades, generators, and towers, will be produced elsewhere. *Id.* at 202:24 – 203:15. Substantial portions of the turbine components used in EverPower's other wind projects have been manufactured in other countries. *Id.* at 205:12 – 206:3.

CW's application claims that 86 construction workers will be employed to install the wind turbines. *Applic.*, p. 139. However, a closer scrutiny of this number shows that this is not

a significant benefit for Ohio. First, the number of workers has been greatly exaggerated by including every worker who sets foot on the project, even if working on the project for only one day. When asked about the duration of the employment period for the 86 construction workers, Michael Speerschneider testified: “Depending on what they’re specifically working on, could be one day; it could be all 12 months.” Speerschneider, Tr. I 187:17-21. While CW has to hire at least 50% of its construction workers from Ohio to take advantage of state tax breaks, as many as 50% of the construction workers may be imported from out of state. *Id.* at 188:5-19. Moreover, even if any of the construction jobs provide meaningful employment for any Ohioans, their jobs are fleeting. These positions last only as long as construction is ongoing, and construction is expected to take only about nine months. *Applic.*, p. 18.

Only seven employees will be hired to operate BW II. Speerschneider, Tr. I 188:20-24. The application makes no commitment about hiring Ohio residents for these positions. *Applic.*, p. 139. Thus, as summarized by CW’s application, the project’s construction jobs are “short term in nature” and its permanent jobs are “more limited in number.” *Applic.*, p. 142.

CW’s estimates of the jobs and income that may be indirectly produced by BW II through its “ripple effects” are even more tenuous. *Applic.*, pp. 140-41. This information was generated by Camiros using the JEDI model. *Applic.*, p. 138. Moreover, Camiros’ calculation of benefits assumed facts that have not been demonstrated to be true, including the assumption that all leaseholders and construction workers are “local” and will spend their lease earnings locally. *Applic. Exh. G*, pp. 12-14. As explained above, the record contains no evidence of the accuracy of the statistics used by Camiros to calculate its modeled benefits.

Nor do CW’s anticipated taxes provide any actual benefit to Ohioans. First of all, CW has dramatically bloated its estimate of local taxes by basing them on its maximum estimate of 140 megawatts (“MW”) of electricity from the wind farm, whereas the project may not produce any more than 89 MW. *Applic.*, p. 140; *Applic., Exh. Q*, p. 4. Moreover, as explained above, the ratepayers are actually footing this bill by paying higher electricity prices. Furthermore, unless the Champaign County commissioners provide CW with huge tax breaks under the PILOT program, CW will probably abandon its Champaign County project and take its turbines to other states where it can obtain higher tax breaks. Speerschneider, Tr. I 65:10 - 69:19.



Finally, the Staff brief represents (at 9)<sup>2</sup> that there is “significant local public support” for the project. Perhaps this imagined public support is a reference to the form letters submitted to the docket in response to an EverPower letter soliciting anyone and everyone to submit letters of support. Only about 5% of the supporting letters were submitted by residents of Champaign County. Many of these letters were submitted by union members from Indiana, Kentucky, and Michigan in response to EverPower’s solicitation. However, anyone can submit such a form letter with little thought, especially if EverPower writes it for them. And non-resident letter signers will not have to live with the turbines, so they have little incentive to investigate the harmful effects of the turbines.

Notably, these non-residents were not interested enough in the project to even show up for the public hearing on BW II, in which the audience was dominated by the project’s opponents in yellow hats and in which 35 of the 46 witnesses testified against the project. *See* the transcript of the public hearing on October 25, 2012. Consequently, among those people who live in the project area and will be directly affected by it, there is overwhelming opposition to the project.

Even Kim Wissman tacitly acknowledged the widespread public opposition to the project when she promised to prevent the siting of a second wind project in the area. Johnson Dir., UNU Exh. 17, p. 12:13-21. *See* also the testimony of Tom Stacy at the public hearing, recounting a public statement by Ms. Wissman that the OPSB would never authorize overlapping wind projects. Tr. of Public Hearing, Vol. I, p. 25. The vast majority of the citizens in eastern Champaign County hope that OPSB will keep this promise.

C. **Although The “Footprint” Of The Turbines’ Foundations May Be Small, The Turbines’ Enormous Towers And Blades Will Cause Widespread Damage Throughout Half Of An Entire County.**

1. **Rather Than Preserving Agriculture, BW II Will Cause Widespread Damage To All Of Eastern Champaign County While Producing Relatively Little Energy.**

CW touts the small “footprint” of BW II, noting that the concrete foundations for its turbines will not occupy much land. However, the turbines’ foundations are not the primary source of the turbines’ destructive qualities. The turbines’ damage will emanate from their

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<sup>2</sup> These parentheticals refer to the page numbers of the other parties’ opening briefs on which their statements appear.

goliath-like towers and blades that tower over the countryside, and the noise, shadow flicker, ice, and other hazards caused by their blades and rotors. The turbines' towers and blades will impact the entire eastern half of Champaign County and parts of Union, Madison, and Clark Counties. Applic., Exh. Q, pp. 10, 29 (identifying the area of the turbines' visual impact); Applic. Exh. G, p. 3 (showing the same area on a map of the counties). Consequently, while a traditional power plant such as the Board-approved American Municipal Power facility impacts only its immediately surrounding area to produce 960 MW of electricity, BW II will impair the quality of life in half of a county to produce a mere 89 to 140 MW of electricity. *See* Opinion, Order and Certificate, *In the Matter of American Municipal Power-Ohio, Inc.*, Case No. 06-1358-EL-BGN (Mar. 3, 2008).

While the Staff brief asserts (at 7) that BW II will preserve agricultural land use and culture, this project will actually destroy the peaceful rural character of the area. Even the application acknowledges that BW II will “alter the cultural landscape of the area” and will “likely impact the historic character” of the area. Applic., p. 148. Regrettably, this project cannot be built in a manner that will avoid this damage. The application admits that visual “[m]itigation measures are limited, given the nature of the Project and its siting criteria (tall structures located in open fields).” *Id.* at p. 151.

Moreover, the project is not necessary to preserve agriculture in eastern Champaign County. Although the Staff brief notes (at 7) that agriculture is not compatible with dense housing, commercial strip malls, and industrial development, the project area is not threatened with that type of development, except for BW I and BW II. In fact, the application characterizes the project area as one that is dominated by agriculture with residential development that “consists almost entirely of single-family homesteads along rural roads.” Applic., p. 136. Nor, contrary to the Staff's brief (at 9), does UNU “desire to promote urban sprawl,” since its members and the community value the “beauty and open space of the area.” Johnson Dir., UNU Exh. 17, p. 2:21-23. Consequently, the wind turbines are the only threat of damaging development in eastern Champaign County.

Contrary to the rhetoric in the Staff's brief (at 9), it is not the “unknown” about the future quality of life with a landscape full of wind turbines that troubles UNU. What troubles UNU and the rest of the community are the known hazards and detriments of CW's poorly designed project that are thoroughly documented in the evidentiary record of this proceeding. Regardless

of the conceptual merits of green energy, wind power can be a singularly inefficient and destructive means to produce it if, as is the case here, the wind farm is sited with no regard for its neighbors' health and comfort.

Unlike solar power and other forms of green energy, a wind project can have a profound negative impact on the entire surrounding countryside. CW's visual impact study reveals that the BW II turbines will be visible during daytime from 84% of the land within 234 square miles of Champaign, Union, Madison, and Clark Counties. Applic., Exh. Q, pp. 10, 29. Within this area, 107 acres will be afflicted with daytime views of 43 to 56 BW II turbines at a time. *Id.*, p. 28, Table 2. No other form of green energy can aggravate its neighbors with annoying noise in their homes and yards, bombard its neighbors with infrasound waves that cause nausea and other sickness, cast flashing shadows across yards and into windows, propel pieces of metal blades and ice into the countryside, destroy property values, kill bats and birds, and destroy the visual landscape to the degree that poorly sited wind turbines do. In short, wind power can be utterly destructive of the human and natural environment if, as with BW II, its facilities are irresponsibly sited.

Given these destructive tendencies, it is no wonder that the Staff has emphasized the need for liability insurance for BW II. Ironically, the Staff brief (at 8) treats CW's promises to obtain millions of dollars in liability insurance as a benefit for the facility. Of course, adequate insurance is a necessity for any facility. However, the fact that the Staff feels compelled to highlight the facility's millions of dollars in insurance coverage simply emphasizes its expectations about the hazardous and damaging nature of BW II.

## **2. BW II Will Damage The Public Roads In Eastern Champaign County.**

The Staff brief (at 2, 8) also touts CW's promises to repair and rebuild the public roads after it damages them. Public roads are seriously damaged by heavy loads of concrete and turbine components during turbine construction, as well as by trenching pavement to lay cable across the roads. Schaffner Dir., UNU Exh. 21, p. 2, A5; Schaffner, Tr. VI 1296:21 – 1297:18. The disassembled turbine components will again travel the roads during decommissioning. A photograph in UNU Exh. 22X shows why this damage occurs, depicting the typical mammoth size of the turbine blades that travel the roads to and from the turbine sites during construction and decommissioning.

The negative experiences of the motorists and township trustees with the Blue Creek Wind Farm in Hoaglin Township, Paulding County illustrate the damage and danger posed by wind farm construction. Prior to construction, the township's roads had been smooth with no potholes or pothole patches. Schaffner Dir., UNU Exh. 21, p. 2, A5. During construction of the wind farm, the concrete trucks and the trucks hauling turbine parts caused damage to the township's roads. *Id.* The wind farm owner patched the road, but road patches cause unpleasant, bumpy rides. *Id.* Patched potholes also are prone to rapid deterioration as water freezes in them and reopens the holes. Schaffner, Tr. VI 1326:19 – 1327:12. The drivers of vehicles and farm equipment, especially combines and loaded grain wagons, can lose control by hitting patches in the roads. *Id.* at 1297:5 – 1298:13.

Consequently, the Paulding County engineer asked the wind farm's owner to resurface the roads to restore them to the same condition as prior to wind farm construction, but the owner of the wind farm refused to do so. Schaffner Dir., UNU Exh. 21, p. 2, A5. Subsequently, the county engineer tired of the fight with the wind developer and gave in, leaving the township without a remedy. Schaffner, Tr. VI 1309:18-25.

CW does not dispute (at 15) the fact that its activities will seriously damage the public roads. While OPSB must compel CW to fix the roads it damages, this is hardly a net benefit to the community. Without the wind turbines, the county's and townships' roads would not need repair or rebuilding in the first place. The negative experiences of the motorists near Blue Creek Wind Farm reveal that the motorists in eastern Champaign County will also have to drive roads with dangerous potholes during the project's nine-month construction period. The Paulding County experience shows that, even after completion of construction, Champaign County's roads are likely to remain in an inferior condition.

**3. Champaign Wind's Study Of The Socioeconomic Impacts Of BW II Ignored Its Socioeconomic Detriments.**

Mr. Huckleberry admitted that Camiros' study did not examine the economic losses resulting from this project. Huckleberry, Tr. XI 2722:21 - 2725:20. Thus, while CW brags about the mere seven permanent jobs its project might create, neither CW nor the Staff considered the jobs that this project may eliminate. *Id.* For example, they did not determine whether the jobs of any workers at traditional coal-fired power plants may be eliminated as consumers are forced to pay for wind-generated electricity as a replacement for some of the

traditional power plants' electricity. *Id.* at 2722:21 – 2724:17. Nor did they identify or quantify job losses from departing companies whose owners leave eastern Champaign County to avoid the turbines, or the lost job creation opportunities as employers are discouraged from siting new facilities in the area due to the turbines' presence.

Cameros did not quantify or mention the direct or indirect jobs and income that may be lost through the “ripple effect” from losing the socially and economically important functions of Grimes Field. Mr. Huckleberry had not even heard of Grimes Field prior to being asked about the airfield during the hearing, and had not considered the socioeconomic effect of BW II on the airport. Huckleberry, Tr. XI 2720:11 – 2721:3. The project's interference with air flights threaten the socially beneficial and economically profitable activities at Grimes Field, including the Hot Air Balloon Festival, the Mid Eastern Regional Fly-In of vintage and experimental aircraft, World War II pilot reunions, two museums including the Champaign Aviation Heritage Museum, the airport restaurant patronized by recreational pilots and people who enjoy watching aircraft during their meals, and commercial transactions by local businesses that depend on the airport. Hall Dir., Urbana Exh. 13, pp. 2-3, A7, A10, A11; Bean Dir., Urbana Exh. 18, pp. 2-4; Bean, Tr. VIII 1980:5-23, 1983:3 – 1984:16. In the case of the balloon festival, the balloons tend to drift to the east where the turbines will be located. Bean, Tr. VIII 1984:6-16. Pilots who patronize airports also purchase fuel, food, and lodging, and pay taxes on these purchases, so these activities at Grimes Field have “a big impact” on Urbana's retailers. Rademacher, Tr. VIII 1927:4 – 1929:9; Bean, Tr. VIII 1985:3-5. CW's and the Staff's briefs ignore these losses. But the loss of these activities would “decimate” Urbana. Bean, Tr. VIII 1985:11-23.

Nor did Cameros or CW's and the Staff's briefs quantify or even mention other economic losses that BW II will cause. Neighboring property owners will lose value in their land and homes as the turbines' presence brings down the neighborhood's property values. This will cause local governments to lose substantial income from property taxes. The Staff failed to examine the loss of property values. Huckleberry, Tr. XI 2721:10-14. Nor did the Staff evaluate economic losses from damage to cultural or wildlife resources. *Id.* at 2721:15-21. Unless the Board adopts protective setbacks for noise and infrasound, the citizenry will incur medical expenses and loss of productivity from illness. Neither the Staff nor Cameros determined whether the consumers' electrical costs will increase from absorbing the costs of the wind project. *Id.* at 2717:19-22. Neither Cameros nor the Staff evaluated the net economic impact of

the project, and nothing in the record indicates that its socioeconomic benefits exceed its socioeconomic losses. In fact, the record indicates the opposite is true.

Transparently acknowledging the substantial combined damage that BW I and BW II will cause, the Staff's brief (at 2) asks the Board to consider only the "incremental impacts" of BW II. Not even CW advocates this extreme position. Instead, CW's application acknowledges that the Board must address the cumulative effects of the two projects where they combine to cause greater harm to the neighborhood, especially noise and shadow flicker.

The Staff brief (at 1-2) contends that this project should be approved, because the Ohio General Assembly has found wind power to be desirable. Seeking to deflect attention from the specific damage that this ill-advised project will cause, the Staff brief (at 2) portrays the intervenors' concerns as mere attempts to stop wind power altogether. However, the General Assembly has not instructed OPSB to blindly approve every wind project regardless of the costs to the community. Instead, R.C. § 4906.20(B)(2) commands OPSB to employ measures to mitigate aesthetic damage, ice throw, blade shear, shadow flicker, noise, and the other detriments of wind projects as conditions for approving them. This is a duty that the Staff has sadly abdicated in deference to CW's positions in this proceeding.

If a project's poor design defies all efforts to protect the community through mitigating certificate conditions, the Board may not issue the certificate. In this case, there is no evidence that the BW II project serves the public interest, convenience, and necessity under R.C. § 4906.10(A)(6). The Board should deny this certificate.

**II. THE BUCKEYE WIND PROJECT, AS CURRENTLY PROPOSED, DOES NOT CONSTITUTE THE MINIMUM ENVIRONMENTAL IMPACT AND DOES NOT SERVE THE PUBLIC INTEREST, CONVENIENCE AND NECESSITY.**

**A. A Wind Energy Utility That Lacks The Setbacks Necessary To Prevent High Audible Sound And Infrasound Levels From Causing Discomfort, Annoyance, Sleep Deprivation, And Health Disorders Among The Utility's Neighbors Does Not Represent The Minimum Adverse Impact As Required By R.C. 4906.10(A)(3).**

**1. To Determine The Intrusiveness Of Wind Turbine Noise, The Ambient Background Sound Level Must Be Measured Accurately To Determine Existing Noise Levels.**

The Staff's opinions on noise must be viewed with a healthy dose of skepticism due to its bias and utter lack of acoustical expertise. The Staff relied on Raymond Strom to formulate its

positions on noise, even though he has no expertise in acoustics. Strom, Tr. XI 2757:21 – 2758:11. He has degrees in zoology and botany, not acoustical engineering. *Id.* He has no specialized training in acoustics and has never performed a noise model. *Id.* at 2758:7-11. Staff member Mark Bellamy assisted Mr. Strom in his noise review of the application, but Mr. Bellamy is similarly untrained in acoustics. *Id.* at 2759:18 – 2760:7.

Nevertheless, the Staff's utter lack of acoustic qualifications has not dissuaded the Staff from expressing its uninformed opinions about the noise impacts of BW II. The Staff brief opines (at 20) that David Hessler's average background nighttime sound measurement of 39 dBA Leq is reasonable. The Staff brief also contends (at 19) that Richard James' background measurements were derived from the employment of a different sound measurement standard, although the brief does not draw any conclusions from that fact.

Mr. James did use a different sound measurement procedure, but his results are no less accurate as a consequence. James, Tr. V 1151:6-9; 1241:19 – 1243:12. Mr. James was present during the sound measurements, so he could make sure no contaminating noise spikes occur during the measurements. *Id.* at 1151:19-23; 1241:19 – 1243:12. This enabled him to obtain an accurate reading of the community's background sound level in a short time in accordance with standard acoustic protocol. *Id.* at 1151:6-23; 1241:19 – 1243:12.

On the other hand, Mr. Hessler set up his sound measuring equipment and left it unattended. *Id.* at 1241:19 – 1243:12. Because he was not present during recording to make sure no atypical noise spikes contaminated his measurements, he had to record sound levels over a longer period of time to average out the atypical noises. *Id.*

The Staff apparently seeks to distinguish, and thus disregard, Mr. James' background L90 sound level of 27 dBA in favor of accepting Mr. Hessler's background level for this project. What the Staff fails to do, and cannot do, is to distinguish Mr. Hessler's own L90 background level of 29 dBA measured for BW I in the same project area. James Dir., UNU Exh. 19, p. 20.

Nor does the Staff mention that Mr. Hessler's average L90 background level for BW II was 33 dBA. Neither the Staff nor Mr. Hessler has attempted to explain why his BW II background measurement was 4 dBA higher than his BW I measurement for the same area. However, UNU's opening brief explains in detail the tricks he used to skew his background measurements in BW II to make the community sound level appear to be higher. The Staff apparently does not care that Mr. Hessler is attempting to dupe them into accepting an inaccurate

background number and refuses to hold him accountable for violating the acoustical standards of conduct. The Board should not make the same mistake. Instead, the Board should find that the actual background sound level for the project is no higher than an L90 of 29 dBA.

**2. The Noise Standard For CW's Project Must Be Based On A Meaningful Calculation Of The Background Sound Level Utilizing The L90 Metric, Not The Leq Metric.**

The Staff also falls for another trick devised by Mr. Hessler to underestimate the noise impacts of this project, even though Mr. Hessler frankly admits that his position is wrong. The Staff accepts (at 22) Mr. Hessler's use of the Leq metric to calculate an Leq background level of 39 dBA at the most critical wind speed of six meters per second, instead of using the L90 metric for background that Mr. Hessler admits should have been employed. Applic., Exh. O, pp. 31-32. Based on its indefensible use of the Leq, CW contends that a design goal of 44 dBA for BW II would represent five dBA above the background sound level. Applic., p. 76.

The Staff agrees (at 21), as it must, with the testimony of both Mr. Hessler and Mr. James that a noise standard must not exceed five dBA above the community's normal background level. As explained in UNU's opening brief, Mr. Hessler admits that the Leq may not be used to establish this background level, and that he has never previously used the Leq for this purpose. The Staff acknowledges Mr. Hessler's admissions, even quoting some of them in its brief (at 21).

The Staff brief recites (at 22) the Staff Report for the proposition that the Board has applied a noise standard for other wind projects of five dBA above the background Leq, "noting a policy paper issued by the New York State Department of Environmental Conservation that espoused a similar conclusion." This statement mischaracterizes New York's practice. New York uses the L90 background level to set noise standards, not the Leq. James Dir., UNU Exh. 19, pp. 18-19. Notwithstanding this misrepresentation, the Staff finally acknowledges (at 22) that the Board's prior use of an Leq background level to set noise standards for other wind projects does not dictate the use of the Leq for that purpose for BW II.

Having acknowledged that the appropriate standard for a wind project is five dBA over the L90 background level, the Staff brief then inexplicably recommends (at 22-23) a standard of 44 dBA for BW II. The Staff brief unquestioningly accepts (at 23) Mr. Hessler's representation that noise complaints are minimal at turbine noise levels below 45 dBA. UNU's opening brief explains why Mr. Hessler's position is wrong.



In addition, while CW asserts (at 23) that few noise complaints have occurred at Ohio's two operating wind projects, no credible evidence has been adduced to that effect. CW bases this statement on the testimony of Mr. Strom that he knew of few noise complaints about these facilities. However, Mr. Strom is not responsible for monitoring noise at the Timber Road II wind project, nor did he talk to the staffer who had that responsibility. Strom, Tr. XI 2799:13-24. In fact, Mr. Strom did not even know which staffer was responsible for monitoring noise compliance at Timber Road, but instead obtained his information about that facility's noise complaints from another staffer with general oversight over the facility. *Id.* at 2798:22 – 2799:17. Mr. Strom stated that he had not heard about any noise complaints against Blue Creek Wind Farm, but his testimony again indicated that he had no first hand knowledge of that topic. *Id.* at 2831:20 – 2832:1. Nor, apparently, had he been informed prior to the hearing that township trustee Milo Schaffner is experiencing discomfort from the noise of Blue Creek Wind Farm from a mile away. Schaffner, Tr. VI 1305:23 - 1306:13.

Mr. Strom also alluded to the noise complaints that Milo Schaffner has heard about the Blue Creek Wind Farm. Strom, Tr. XI at 2831:23 – 2832:1. At CW's requests, the ALJs struck Mr. Schaffner's testimony about these many complaints and quashed UNU's subpoenas of wind farm operators for evidence of noise complaints at the two operating Ohio facilities. Having prevented UNU from obtaining and introducing evidence of the wind farms' noise problems, CW now argues that there are no such problems. The Board should not allow CW's gamesmanship to conceal the noise problems at Ohio's operating wind facilities. Nor should the Board accept CW's invitation to accept a 44 dBA standard based on inaccurate representations as to the number of complaints at other wind projects.

Moreover, the acceptance of a 45 dBA standard for this project would be contrary to the testimony of both Mr. Hessler and Mr. James that neighborhood annoyance reaches unacceptable levels starting at five dBA above the L90 background level. CW's proposed 44 dBA standard would be 11 dBA higher than Mr. Hessler's bloated L90 background level of 33 dBA for BW II, and 15 dBA higher than Mr. Hessler's L90 background level of 29 dBA for BW I. Since the odds of noticing turbine noise increase by 30% for every dBA increase in noise (Mundt, Tr. XI 2969:5-6), an 11 dBA or 15 dBA increase in noise is a certain invitation to widespread community discomfort.

Moreover, Mr. Hessler's 45 dBA recommendation contradicts his prior practice, including the turbine siting guidelines he wrote for the Minnesota Public Utilities Commission advising the state not to exceed 40 dBA. Hessler, Tr. IV 803:4-18; James Dir., UNU Exh. 19, p. 16. Mr. Hessler's 45 dBA recommendation is also inconsistent with his position in BW I, for which he recommended a design goal of 34 dBA. James Dir., UNU Exh. 19, p. 20.

CW attempts to defuse this inconsistency by representing (at 22) that the "majority" of nonparticipants will experience noise levels under 40 dBA, while the "remaining" nonparticipants will be exposed to levels between 40 and 43 dBA. However, as stated in CW's brief (at 22, 1<sup>st</sup> paragraph), these are Mr. Hessler's findings for the noise from BW II alone, not for the cumulative noise from BW I and BW II. *See* the application, page 76. CW's brief and the application's narrative conveniently refrain from identifying the number of nonparticipants who will be exposed to more than 40 dBA from the combined projects. However, as described in UNU's opening brief, a noise plot buried in the application's appendix discloses that more than 200 nonparticipating residences will suffer from noise levels in excess of 40 dBA from the combined projects. Applic., Exh. O, Plot 5 (see the black dots within the red and green areas of Plot 5). Consequently, while a wind project's noise level should not exceed 35 dBA, more than 200 families will be exposed to turbine noise from the combined BW I / BW II projects that will exceed even the 40 dBA standard that Mr. Hessler has previously advocated.

3. **The Wind Project Must Comply With The Noise Standards At The Property Lines Of Nonparticipating Neighbors, Not Just At The Residences.**

The Staff brief states (at 23) that the Board has not previously adopted a 50 dBA noise standard for non-participants' property lines, and the Staff makes no recommendation to do so for this project. However, the Board has ruled in its rulemaking for wind turbines that "[i]t is imperative that the noise level be evaluated at the boundary of the project site." *In re Adoption of Chapter 4906-17 to Implement Certification Requirements for Electric Generating Wind Facilities*, Case No. 08-1024-EL-ORD, ¶¶ 120-21 (Oct. 28, 2008). Since there is little utility in evaluating the noise level at the boundary if the Board does nothing with the information, it is clear that the Board's rule contemplates and requires a noise standard for the property line. CW implicitly admits as much by proposing such a standard. The Board should set a noise limit for

nonparticipants' property lines, and it should be just as protective as the standard that protects nonparticipants' residences.

4. **The BW II Turbines Should Be Located At Least 0.87 Mile From The Properties Of All Nonparticipating Neighbors To Minimize Health Disorders.**

Both the Staff brief (at 24) and CW's brief (at 25-26) argue that Dr. Kenneth Mundt's testimony neutralizes Dr. Jerry Punch's expert opinion that the infrasound from wind turbines causes health disorders. However, in contrast to Dr. Punch's considerable expertise on this issue as described in UNU's opening brief, Dr. Mundt is unqualified to address this issue. Dr. Mundt has no training in acoustics. Mundt, Tr. XII 2863:22-23. His experience with wind projects appears to be limited to visiting two wind farms in California and Ontario. *Id.* at 2863:24 – 2864:11. He has never interviewed anyone to determine whether they were suffering health disorders from wind turbines, because he has “had no reason” to do so. *Id.* at 2864:12-16.

CW's primary attempt (at 25-26) to discredit Dr. Michael Nissenbaum's study of health disorders from wind turbines is based on the title of the questionnaire that it says Dr. Nissenbaum provided to the subjects of his study. However, Dr. Mundt could have accepted, but did not accept, the invitation in Dr. Nissenbaum's report to request an authentic copy of Dr. Nissenbaum's questionnaire directly from Dr. Nissenbaum. Mundt, Tr. XII 2873:15-23. Instead, Dr. Mundt reviewed a questionnaire received from some undisclosed source and said that he had an “understanding” that Dr. Nissenbaum had presented that questionnaire in another undisclosed matter. *Id.* at 2874:4-13. Dr. Mundt did not produce this questionnaire during his testimony. In short, there is no evidence that Dr. Mundt had an authentic copy of the questionnaire that was actually provided to the subjects of Dr. Nissenbaum's study. In fact, Dr. Mundt did not even know whether a paper copy of the questionnaire was provided to the study's subjects, or whether Dr. Nissenbaum's assistants used the questionnaire to question the subjects verbally. *Id.* at 2872:17 – 2873:3 (saying that he merely “understood” that the questionnaire was given out).

CW also contends (at 24) that the World Health Organization (“WHO”) has found that audible noise (as distinguished from inaudible infrasound) causes adverse health effects at the levels of 40 to 55 dB. That is, CW is asking the Board to approve a noise level (44 dBA) that the WHO has already determined to cause health problems. While the OPSB may appreciate the

candor of CW's admission, the Board should not abdicate its responsibility to protect public health by allowing CW to impose this harm on eastern Champaign County.

While Dr. Mundt offered the self-interested opinion that only epidemiologists can prove that turbines cause health disorders, scientists have produced considerable evidence of that link. UNU's opening brief discusses this evidence in more detail. The Board should heed that evidence, and interpose a setback of at least 0.87 mile between the BW II turbines and nonparticipants' property lines and homes to prevent the turbines from damaging the community's health. Otherwise, the disaster at Shirley Wind will be repeated in eastern Champaign County.

**5. The Staff's Recommended Noise Condition Would Eviscerate Any Protection Of The Public Against Harmful Noise Levels.**

At CW's urging, the Staff is recommending a condition that abandons all semblance of public protection against noise, in six respects. First, the condition allows nighttime noise levels equivalent to an ambient nighttime Leq (39 dBA) plus five dBA at nonparticipants' residences. Second, it allows exceedances of "short-term durations" from the foregoing lenient standard. Third, it contains no noise protection for nonparticipants' yards and land. Fourth, it bases the daytime standard on the Leq background level instead of the L90. Fifth, it contains no standard for low frequency noise ("LFN"). And sixth, it does not identify the averaging period for calculating the Leq limits. The following is the language of the Staff's recommended condition:

(46) [Staff Report No. 49]. Except for short-term durations of time, the facility shall be operated so that the facility noise contribution does not result in noise levels at the exterior of any currently existing non-participating occupied sensitive receptor that exceed the project area ambient nighttime Leq (39 dBA) plus five dBA. During daytime operation only (7:00 a.m. to 10:00 p.m.), the facility may operate at the greater of: (a) the project area ambient nighttime Leq (39 dBA) plus five dBA; or, (b) the validly measured ambient Leq plus five dBA at the location of the currently existing non-participating occupied sensitive receptor. After the commencement of commercial operation, the Applicant shall conduct further review of the impact and possible mitigation of all project-related noise complaints through its complaint resolution process.

Staff brief, Attachment A, pp. 8-9.

Initially, UNU would note that the use of the term “sensitive receptor” in the draft condition is unambiguous and appropriate, notwithstanding CW’s protest (at 56) to the contrary. While Mr. Speerschneider claimed that the term “sensitive receptor” is “sort of ambiguous,” he concurred that nonparticipants’ homes, churches, and schools are commonly considered to be sensitive receptors. Speerschneider, Tr. II 397:12-13, 398:2-21. In fact, CW’s application uses a similar term, “noise-sensitive areas,” to describe libraries, nursing homes, hospitals, churches, schools, and recreational areas that should be protected from noise. Applic., p. 78. So it is apparent that CW knows what a “sensitive receptor” is.

CW’s actual agenda is betrayed by its proposal (at 56) to substitute “non-participating residence” for “sensitive receptor.” CW’s motive for eliminating “sensitive receptor” is not for clarity of language. Instead, CW’s objection is designed to do away with the protection of libraries, nursing homes, hospitals, churches, schools, and recreational areas from noise. The Board should protect all receptors that can be harmed by high noise levels.

Turning to the problems with the Staff’s recommended condition, the first problem with the language is its nighttime standard, which is equivalent to an ambient nighttime Leq (39 dBA) plus five dBA at nonparticipants’ residences. UNU, and even Mr. Hessler, have already explained why the Board should not utilize the Leq as background to set this standard. The nighttime standard should be a Leq of 35 dBA at nonparticipants’ residences, which is slightly higher than the ambient nighttime L90 of 29 dBA plus five dBA. While the 35 dBA standard should be based on five dBA above the ambient L90, the 35 dBA standard itself is a Leq average based on standard acoustical protocol. James, Tr. V 1231:17 - 1232:8.

CW opposes (at 56) the foregoing noise limit altogether, arguing that it does not accommodate periods of wind higher than six meters per second. However, UNU agrees with Mr. Strom’s testimony that CW’s argument is unfounded, since CW’s own noise study shows that the noise level increases only slightly during high wind. Strom, Tr. XI 2825:9 – 2827:8.

The second problem with the Staff condition is that it allows exceedances of “short-term durations” from the foregoing lenient standard. The Staff’s proposed language does not state how long the noise level is allowed to exceed the standard, but leaves that uncertainty to be resolved in the complaint resolution process. Therefore, this exception makes the standard

impossible to reliably enforce. While the Staff brief contends (at 33) that Dr. Punch referred to the complaint resolution process as reasonable and appropriate, this does not mean that the process is effective or adequate to solve noise problems. As revealed by Milo Schaffner's testimony about the noise problem at the Blue Creek Wind Farm, a dispute resolution procedure is a poor substitute for enforceable and acoustically valid noise limits.

The exception is also entirely unnecessary, and reflects the Staff's lack of understanding about acoustic principles. The nighttime standard, even as requested by UNU, is a Leq standard. That is, short-term exceedances of the desired sound level are averaged with lower sound intervals during the averaging period. This accommodates the Applicant's desire to avoid liability for reasonable short-term exceedances.

The third problem with the Staff condition is that it contains no noise protection for nonparticipants' yards and land. UNU's opening and reply briefs already discuss this deficiency in more detail.

The fourth problem with the Staff condition is that it bases the daytime standard on the Leq background level instead of the L90. The draft Staff condition as worded allows CW to raise the noise level to the greater of the ambient nighttime Leq (39 dBA) plus five dBA or the validly measured ambient Leq plus five dBA. In both cases, the daytime standard should be five dBA above the L90 ambient level, not the Leq, in accordance with the standard acoustic protocol ordinarily utilized by both Mr. James and Mr. Hessler.

The fifth problem with the Staff condition is that it contains no standard for low frequency noise ("LFN"). As explained in UNU's opening brief, the Board should employ a standard of 50 dBC to avoid the plague of LFN.

The sixth problem with the Staff condition is that it does not identify the averaging period for calculating the certificate's Leq limits for the BW II turbine noise. The Leq sound level is the average sound level during a specified measurement period. Applic., p. 68. But the draft condition does not specify the measurement period for the averaging. The Leq limits for turbine noise should be averaged over a time period not to exceed 20 minutes, since sleep disturbance can be caused by short interruptions. James, Tr. V 1231:17 - 1232:8 (recommending an averaging period of no more than one hour, and preferably 10 or 20 minutes).

In summary, UNU recommends the following language for this condition:

(46) [Staff Report No. 49]. ~~Except for short-term durations of time, the~~ The facility shall be operated so that the facility noise contribution does not result in noise levels at the exterior of any currently existing non-participating occupied sensitive receptor or non-participating land that exceed an LAeq(20 minute averaging) of 35 dBA. ~~the project area ambient nighttime Leq (39 dBA) plus five dBA.~~ During daytime operation only (7:00 a.m. to 10:00 p.m.), the facility may operate at the greater of: (a) an LAeq(20 minute averaging) of 35 dBA ~~the project area ambient nighttime Leq (39 dBA) plus five dBA~~; or, (b) the validly measured ~~ambient Leq~~ LA90(daytime) plus five dBA at the location of the currently existing non-participating occupied sensitive receptor or non-participating land. During daytime and nighttime operation, the facility noise contribution at the location of the currently existing non-participating occupied sensitive receptor or non-participating land shall not exceed a LCEq (20 minute averaging) of 50 dBC. After the commencement of commercial operation, the Applicant shall conduct further review of the impact and possible mitigation of all project-related noise complaints through its complaint resolution process.

This language is reasonable and comports with accepted acoustic principles. UNU urges the Board to adopt it.

**6. As Recommended By The Staff, The Board Should Prohibit Night Construction, Except For Construction That Does Not Disturb The Community's Sleep.**

The Staff recommended Condition 31 (which is numbered 35 in the Staff Report) to avoid construction activities at night that would disrupt the community's relaxation and sleep. CW objects (at 55), contending that high winds during the day might make some construction activities unsafe until the wind dies down at night. Speerschneider, Tr. II 391:5-12. CW has proposed (at 55) new language that would allow construction at night for any activities that require low wind conditions. However, Mr. Speerschneider acknowledged that another solution would be to simply perform these activities during the next day on which wind conditions are suitable. *Id.* at 392:2-16, 393:8-18.

The Staff has included language in the draft condition that would allow night construction that does not increase noise levels at sensitive receptors. This would allow CW to perform night construction without depriving the community of sleep. This is a reasonable compromise, and the Board should adopt Condition 31 as recommended by the Staff.

**B. BW II Will Cause The Visual Degradation Of The Landscape.**

CW's visual impact consultant stated that "in most cases the Project appears compatible with the working agricultural landscape that makes up the majority of the visual study area." Applic., Exh. Q, p. 83. The statement appears to be nonsensical, and the consultant did not explain what it is supposed to mean. Perhaps the consultant is expressing the obviously inaccurate opinion that farmers do not care whether their open views are despoiled.

But turbines can be seen as far as 10 miles away, with the worst visual impact occurring within 3.5 miles from the turbines. Applic., Exh. Q, p. 83. The BW II turbines will be visible during daytime from 84% of the area of 242 square miles of Champaign, Union, Madison, and Clark Counties, even if the land screened from the turbines by vegetation and existing structures are subtracted from the total. Applic., Exh. Q, pp. 10, 29. Within this area, 107 acres will be afflicted during daytime with views of 43 to 56 BW II turbines at a time, even if the land screened by vegetation and existing structures is subtracted from the total. *Id.*, p. 28, Table 2. Turbine night lighting can be distracting and adversely affect rural residents who are accustomed to dark nighttime skies. Applic., Exh. Q, p. 84.

Although the consultant referenced one study finding that "some viewers" consider turbines to be attractive, the consultant apparently overlooked the turbine studies cited by CW consultant Kenneth Mundt. Those studies show that the visual intrusion from turbines may cause annoyance and stress that inhibits restful recovery from the day's activities. Mundt, Tr. XII 2959:5-7; Mundt Dir., CW Exh. 29, p. 36, A29. These adverse effects from turbine intrusion are hardly compatible with rest and relaxation, or even the "working agricultural landscape" of the area.

**C. The Board Should Expand The BW II Setbacks To Protect The Public From The Hazards Of Blade Throw That Are So Prevalent In The Wind Industry.**

**1. The Board Should Not Wait Until Someone Is Killed Or Maimed Before Implementing Proper Precautions To Protect The Public From Blade Throw.**

CW's and the Staff's most prominent, and most irresponsible, argument in opposition to adequate setbacks for blade throw is that no member of the public has been killed or injured by a flying blade part yet. Apparently, CW and the Staff are not concerned that wind farm neighbors



must live in homes, work in fields, recreate and relax in yards, and drive on public roads within the striking range of a wind turbine debris. Instead, they want to wait until someone is killed or maimed before adopting a protective setback for blade throw. This is tantamount to a military commander deciding not to build defenses to protect his troops until at least one of them is killed by enemy fire.

William Palmer, a veteran in the industrial safety field, testified that this approach is contrary to the accepted practices of both industry experts and government regulators in industrial safety. Palmer Dir., UNU Exh. 22, p. 19:6 – p. 20:4. Safety practices must be implemented before someone is harmed, not afterwards. *Id.* Moreover, while more deaths may result from some other risks such as automobile accidents, that fact hardly justifies a decision to ignore known safety risks that could cause additional deaths. *Id.*, p. 19:30 – p. 20:4.

CW's and the Staff's assertion about the lack of deaths and injuries from blade throw is based solely on the testimony from CW's witnesses that they have not heard of any such incident. Relying on what CW's witnesses have not heard is hardly credible evidence that such an event has not occurred. Even CW's blade safety expert testified that he had not heard about the many incidents in which flying blade parts have narrowly missed members of the public or have caused serious property damage. Poore, Tr. III 579:16 – 589:6. The wind industry's concealment of their blade safety problems has kept even CW's expert ignorant of the extent of the wind industry's blade safety problem.

While CW and the Staff characterize blade throw as a rare occurrence, four blade throws have already occurred in Ohio. On two occasions, turbines at the Perkins High School in Sandusky have thrown their blades. Conway, Tr. X 2509:25 - 2510:16. Timber Road II threw two of its blades. During that incident, a Paulding County family experienced a near hit on their home after blade debris landed in their yard and along a road in front of their yard. Schaffner Dir., UNU Exh. 21, p. 3, A9 and p. 4, A11; Schaffner, Tr. VI 1319:2-7. These incidents are wake up calls that the Board ignores at its, and the public's, peril. The Board should not wait until someone is killed or maimed before the Board uses protective setbacks for blade throw.

**2. The Board Should Not Rely On The Same Applicant Promises That Proved To Be Illusory At The Timber Road II Wind Farm.**

The Board has already failed once to protect the State's citizens from the threat of wind turbine blade throw. At Timber Road II, the Board blithely accepted the applicant's representations about the safety of its blades and its supposedly foolproof safety systems to prevent blade throw. Relying on these representations without questioning them, the Board allowed Timber Road II to install wind turbines as close as 1400 feet to nonparticipants' residences and as close as 505 feet to nonparticipants' property lines. UNU Exh. 22I-2. But the representations in the Timber Road application, Staff report, and certificate proved to be inaccurate, resulting in blade pieces landing in a neighboring yard.

CW's and the Staff's responses to this damaging evidence in the instant proceeding are twofold. Both responses reveal that that Staff has not learned from its mistakes at Timber Road II.

Instead, the Staff's first response to this blade throw incident is to accept exactly the same representations about the safety of BW II that have been proven ineffective by the Timber Road II incident. The same safety systems that failed at Timber Road II are proposed for BW II. Like Timber Road II, CW contends that its turbines will be certified pursuant to international engineering standards and meet all applicable codes. The Staff's rendition of CW's representations on page 17 of the Staff's brief are a repeat of the applicant's, the Staff's, and the Board's assurances for Timber Road II. UNU Exhs. 22H-5 to H-6, 22I-2, and 22J-2.

The Staff brief (at 16) cites the following language on page 83 of CW's Application for the proposition that human error is mostly to blame for blade throw, and that the risk of this problem has been reduced:

Evidence suggests that the most common cause of blade failure is human error in interfacing with control systems. Manufacturers have reduced that risk by limiting human adjustments that can be made in the field.

Interestingly, the following language appears in the application for Timber Road II:

Evidence suggests that the most common cause of blade failure is human error in interfacing with control systems. Manufacturers have reduced that risk by limiting human adjustments that can be made in the field.

The language from the two applications is identical. Yet, even though this assurance proved to be illusory in Timber Road II, the Staff still relies on it for BW II. Even more troubling is the fact that EverPower's operators will have the ability to turn on the turbines from a remote operations center after they have been shut down (Speerschneider, Tr. I 197:23 – 198:8), just as the Vestas' remote operator overrode the automatic shutdown devices at Timber Road II (UNU Exh. 22A-2). CW has done nothing to prevent the repetition of the Timber Road II mistakes at BW II, and the Staff is acquiescing in that failure.

3. **The Board Should Not Tolerate CW's And The Staff's Efforts To Suppress Evidence About The Timber Road II Blade Throw.**

The Staff's second response to the Timber Road II blade throw incident is to conceal as much of the evidence of the incident as it can in this proceeding. CW contributed heavily to this effort, and some of the ALJs' rulings assisted CW and the Staff in this strategy. To their credit, the ALJs admitted the publicly available information about the Timber Road II incident over CW's objections. However, the ALJs erroneously quashed UNU's subpoena to the Timber Road II operator for evidence about the incident and erroneously sustained the Staff's objections that blocked UNU's inquiries at the hearing about the findings of the Staff's on-site investigation of the incident. These rulings prevented UNU from finding out how far the blade pieces had traveled from the malfunctioning turbine at Timber Road II, and from learning more about the causes of the blade failure. This information is central to an evaluation of the setbacks at BW II, and the Board should reopen the record to discover and present this evidence.

4. **Because Blade Shear Is Common, The Board Must Institute Setbacks That Prevent Broken Blade Parts From Striking Nonparticipants And Their Properties.**

Ignoring the lessons of Timber Road II, the Staff has agreed with CW's proposed setbacks of 1000 feet and 541 feet from nonparticipants' homes and property lines, respectively. Staff Report, p. 31. These recommendations are about the same as the property line setback of 505 feet and substantially less than the residential setback of 1400 feet that were inadequate for Timber Road II. UNU Exh. 22I-2. CW's and the Staff's recommendations for setbacks of 541 feet and 1000 feet are in no way adequate to protect against flying blade parts that can travel as

far as 1,640 feet, and even in Ohio, have been propelled at least 1,561 feet at Timber Road II. Schaffner, Dir., pp. 3-4, A11; Schaffner, Tr. VI 1331:7 - 1332:1.

Neither CW nor the Staff disputes that broken blade parts can be propelled as far as 1640 feet (500 meters). In fact, they do not dispute that blade parts have been propelled in high wind as far as a mile. Palmer Dir., UNU Exh. 22, p. 24:7-9. Instead, they argue that blade throws are rare, so there is no need for setbacks of 1640 feet.

Mr. Speerschneider agreed that safety manuals and other manufacturers' safety procedures are relevant for establishing protective measures for blade throw. Speerschneider, Tr. II 300:17 – 301:4. CW further admits (at 43) that manufacturer recommended setbacks are relevant to establishing setbacks for turbines. The Nordex safety manual included in the application instructs the wind operators to keep all persons farther than 500 meters (1640 feet) from a burning turbine. Applic., Exh. R, Nordex Safety Manual, p. 52. RePower's safety manual for the MM92 turbine model being considered by CW instructs wind farm operators to cordon off an area of 1640 feet around a turbine afflicted with blade overspeed or fire. UNU Exh. 29, pp. 76, 77. The manual warns that rapidly rotating rotors presents "danger of life due to components and parts flying around!" *Id.*, p. 77. The manual further warns that "[t]here must not be any persons within the area of 1640 feet around!" *Id.*

As stated by CW witness Don Bauer, a retailer of wood burning stoves, it is only "common sense" to observe the safety precautions provided for products in the manufacturers' safety manuals, and he would never advise a consumer to disregard these precautions. Bauer, Tr. VI 1547:1-20. Yet both CW and the Staff are advising the Board to disregard the turbine manufacturers' safety precautions for their turbines. The Board should adopt a common sense setback of 1640 feet as recommended by safety expert William Palmer and the turbine manufacturers.

CW argues that CW witness Robert Poore opined that CW's proposed setbacks are typical for the wind industry. But Mr. Poore's exhibits show otherwise. One compilation of setback distances from occupied structures based on questionnaires to wind developers showed that, in the absence of government guidelines, the developers voluntarily used setbacks of 1500 feet for 40% of the time, setbacks of 2000 feet for 10% of the time, and setbacks of more than 2000 feet for 10% of the time. Poore, Tr. III 614:6-22. That is, the wind industry employs voluntary setbacks of 1500 feet or more from occupied structures in the absence of government

regulation at least 60% of the time. *Id.* Moreover, the industry trend is toward larger setbacks. *Id.* at 615:4-13.

Nevertheless, CW resists the concept of safe setbacks based on its supposition that blade accidents are rare. This position is based primarily on the self-serving assertions by CW's employees and consultant that they have not heard about many blade throws. But CW has offered no statistics to show that blade throw is rare. The wind industry does not maintain a comprehensive database of blade failures. Speerschneider, Tr. II 321:15 – 322:2; Poore, Tr. III 577:17 – 578:4; Shears, Tr. IV 925:11-22. While Mr. Speerschneider claims that the public would have heard about any blade detachments (Speerschneider, Tr. II 322:17-25, 323:18-25, 325:2-6), CW's blade safety expert had not heard about even the most serious of the blade incidents reported by the Caithness database. Poore, Tr. III 579:16 – 589:6. Moreover, CW and the ALJs have blocked UNU's attempts to subpoena evidence about the incidents of blade throw in the industry. However, despite the wind industry's lack of communication about blade failure, Mr. Shears is aware of about 50 incidents of blade detachment that have occurred at wind projects since 1994. Shears, Tr. IV 927:19 – 928:7. Blade throw is hardly a rare occurrence, even if limited to the number of incidents that CW is willing to reveal.

CW also contends (at 17) that blade throw is rare, because automobile deaths are more common. This is not a comforting statistic. Automobile deaths are anything but rare. CW further argues (at 18) that blade throws must be rare, because Mr. Palmer is not aware of a blade failure at a wind farm near his home. But even if that wind project had experienced a blade throw, it is not likely that the operator would publicize that fact. Nor would Mr. Palmer necessarily be aware of a blade throw at the wind farm just because one of its 115 turbines is located within three miles of his home. Palmer, Tr. VI 1466:4-12. More importantly, the fact that one wind farm may not have experienced a blade throw during its short three-year existence (Palmer, Tr. VI 1466:21-25) is not probative of the likelihood of blade throw over the 20-year proposed life of the BW II facility

The Staff's supposition about the rarity of blade throw is further expressed in its brief's mischaracterization (at 17) of William Palmer's setback recommendation as an "extreme '1 in 10 million' standard." Mr. Palmer testified that the normal failure rate allowed by the nuclear power industry is 1 times 10 to the minus 6, or one in one million. Palmer, Tr. VI 1468:12-20; Palmer Dir., UNU Exh. 22, p. 28:18-19. The conventional power industry allows a failure rate

of 10 times 10 to the minus 6, or 10 in one million. *Id.* at p. 28:17-18. In contrast, the current turbine blade detachment rate is 125 times larger than the failure rate that government agencies allow in the conventional power industry and 1250 times higher than the government standard for the nuclear industry. *Id.* at p. 28:15-19, p. 29:6-9. This failure rate does not even account for the blade failures that the wind industry is concealing.

Even the limited experience of EverPower and its employees with wind farm operation shows that something is very wrong with blade reliability in the wind industry. Mr. Speerschneider testified that EverPower has found “minor defects on blades” at its wind projects that, if unrepaired, could have developed into a “major problem.” Speerschneider, Tr. II 318:8 – 319:15. Mr. Speerschneider stated that CW has dropped its consideration of the Vestas V100 model, because of the fear that there may be a “systematic manufacturing error or fault” in the blades. Speerschneider, Tr. II 326:14 – 327:9.

The Staff was only slightly better informed than CW’s witnesses about the widespread incidents of blade throw. Andrew Conway, the staffer entrusted to evaluate the risk of blade throw, looked at only three of the blade throw incidents listed in the Caithness database. Conway, Tr. X 2508:17 – 2510:22. He was not familiar with even the most notorious of the blade throw incidents, in which blades have crashed into homes and narrowly missed people inside and outside of their residences. 2515:22 – 2516:25, 2518:17 – 2520:19. But he did provide some useful statistics on the frequency of blade failure based on his review of data from two comprehensive studies of turbines in operation in Germany and Denmark from the 1980s to 2001. *Id.* at 2493:13 – 2494:2, 2524:2-9. This review revealed that failures of the turbine’s blade tips or pieces of blades occurred at a rate of one in 4,000 turbines per year. *Id.* at 2493:20-22, 2523:1-18. A full blade failure at nominal rotor speed was found to occur at a rate of one in 2,400 turbines per year. *Id.* at 2493:13-16. Mr. Conway characterized these high blade shear rates as “an extremely rare phenomenon.” *Id.* at 2493:13-14. Not surprisingly, neither the Staff’s nor CW’s brief cited these blade shear statistics, because they are decidedly unfavorable to their position that blade throws rarely happen.

Undoubtedly, CW would argue that blade safety has improved since the studies in Germany and Denmark. Mr. Speerschneider stated that he did not know exactly when the wind industry started to include safety control features for its blades, but that “it’s safe to say in the last decade the types of controls and safety have been evolving and included as part of the

turbine operations.” Speerschneider, Tr. II 338:7-15. But William Palmer testified that the rate of blade throw has not decreased during recent years and that the blade failure rate has remained “stubbornly high.” Palmer Dir., UNU Exh. 22, p. 13:23-25, p. 28:10-11, 14-15. Neither CW nor the Staff has presented any evidence to the contrary. The persistently high, presently known blade failure rates are based solely on the blade throw incidents that are within the public knowledge, and may be found to be even higher if the wind industry were forthcoming about its safety record. Consequently, blade throw is a real threat to public safety, as the residents of Paulding County have discovered. As shown by Mr. Conway’s own research, broken blade parts can travel 500 meters (1640 feet). Conway, Tr. X 2526:16-19. The Board has a duty to establish such a setback to prevent deaths, injuries, and property damage if blade throws occur.

**D. The Board Needs To Re-examine And Expand The Turbines’ Setbacks To Prevent The Blades From Throwing Ice Onto Public Roads And Nonparticipants’ Land.**

CW contends (at 18-19) that ice throw is rare and has never injured anyone. Mr. Palmer’s comments that safety must be observed before someone is harmed by blade throw, rather than afterwards, apply equally to ice throw.

CW points out (at 19) that a GE Energy safety manual recommends a setback of 1.5 times the hub height plus rotor diameter when an ice detector is not used. Conway, Tr. X 2581:8-23; Applic. Exh. R, GE Energy Turbine Safety Manual, p. 50. For the largest turbine under CW’s consideration, this works out to a setback of 991 feet (Staff Report, p. 31), which Mr. Palmer rounds off to 1000 feet (Palmer Dir., UNU Exh. 22, p. 32:30-31). Nevertheless, CW argues (at 19) that this setback is not necessary for its turbines, since they will have ice detectors. However, ice detectors do not reliably shut down turbines when they collect ice. Palmer Dir., UNU Exh. 22, p. 33:12-24. The GE Energy safety manual notes that “ice may form on the rotor blades considerably more quickly than on the ice sensor on the nacelle. As a result, there is a residual risk for the reliable detection of ice build-up on the rotor blades.” *Id.* The safety manual further advises the operators to set the ice detector to a more sensitive setting to reduce the time lag between ice accumulation and detection, but warns that this may result in “spurious” shutdowns that reduce the operator’s profits. *Id.* Therefore, not only is it impossible to detect ice as soon as it starts to accumulate, but the operator has every incentive to set the ice detectors at less sensitive settings to keep the turbines operating longer. This confirms Mr. Palmer’s

testimony that setbacks are necessary to protect the public notwithstanding the use of ice detectors. Consequently, a setback is necessary whether or not CW promises to install ice detectors.

The Staff's brief advocates (at 31) the employment of a 1000-foot setback for nonparticipants' residences and arterial roads, which will necessitate the relocation or resizing turbines 87 and 91. Staff Report, p. 32. CW agrees (at 20) to adhere to this setback between its turbines and nonparticipants' homes, but its brief is silent as to the Staff's application of the setback to arterial roads. Neither the Staff nor CW has applied this setback to other public roads.

The position in the Staff brief that the setback need not apply to any roads other than arterial roads does not comport with the Staff's testimony or Staff Report. Mr. Conway testified that the Board in the past has used this setback not just for arterials, but also for "interstates, and U.S. routes." Conway, Tr. X 2492:1-4. In addition, the Staff Report advocates the setback for any "heavily travelled road." Staff Report, p. 31.

Furthermore, the GE safety manual does not limit its setback advisory to the protection of residences and arterial roads. Instead, it advises the establishment of this setback "to ensure that individuals are not endangered by pieces of ice thrown off during operation." Applic. Exh. R, GE Energy Turbine Safety Manual, p. 50.

Even using the Staff's criterion for the ice throw setback, four turbines besides turbines 87 and 91 are located too close to heavily traveled roads. Turbine sites 101 and 127 are closer than 1000 (or 991) feet to Township Road 205. Palmer Dir., UNU Exh. 22, p. 33:4, 9. Township Road 205 was the location of Mr. Hessler's monitoring station 6 (Applic. Exh. O, p. 11), which is a heavily traveled road (Johnson Dir., UNU Exh. 17, p. 10:1-2). Turbine site 106 is closer than 1000 (or 991) feet to County Road 167. Palmer Dir., UNU Exh. 22, p. 33:6. County Road 167 was the site for Hessler's monitoring station 1 (Applic. Exh. O, p. 6), which also is a heavily traveled road (Johnson Dir., UNU Exh. 17, p. 10:1-2). Turbine site 130 is closer than 1000 (or 991) feet to State Route 161. Palmer Dir., UNU Exh. 22, p. 33:10. State Route 161 was the location of Hessler's monitoring station 8 (Applic. Exh. O, p. 13), which also is a heavily traveled road (Johnson Dir., UNU Exh. 17, p. 10:1-2). The Board should not allow these four turbines to be sited in their currently proposed locations closer than 991 feet to busy public roads.



More importantly, the 1000-foot setback should be applied to all public roads. No motorist should be exposed to ice throw, whether occurring on a heavily traveled or lightly traveled road. To prevent ice from crashing through motorists' windshields, the Board should apply the 1000-foot setback to all public roads.

**E. Where CW Has Failed To Demonstrate Compliance With the 30 Hour Per Year Shadow Flicker Standard At The Hearing, The Project Should Not Be Approved.**

CW states (at 26) that “modeling shadow flicker is not complex,” yet its shadow flicker modeling was fundamentally flawed and unreliable by using a default “receptor” size of one square meter while modeling topography and shadow obstacles at actual size. *See* UNU’s opening brief at 57-59. CW’s witnesses on shadow flicker should have recognized this basic error in the modeling, but did not. Therefore, as discussed in UNU’s initial brief, CW’s witnesses on shadow flicker cannot be considered experts, their testimony should be stricken from the record, and the portions of the Application addressing shadow flicker should likewise be stricken as hearsay. UNU Opening Brief at 52-59.

Notwithstanding his lack of expertise on shadow flicker, Mr. Speerschneider claimed that a standard of 30 hours per year is adequate based on the fact that other wind developers have not told him that they have had shadow flicker problems at their developments. Speerschneider, Tr. II 264:20 – 266:1. Similarly, Mr. Speerschneider stated that the turbine models listed in CW’s application control shadow flicker in the same manner as other turbine models at existing wind projects, “[s]o it doesn’t really matter what turbine you’re looking at.” Speerschneider, Tr. II 342:7-15. However, the Board and CW have colluded to block UNU’s attempt to obtain evidence of shadow flicker problems at other wind farms even while the Staff and CW claim that the shadow flicker standard should be based on what they have heard about the success of that standard at other wind projects. Notwithstanding their attempt to suppress evidence of shadow flicker problems at other wind farms, the testimony at the hearing revealed that OPSB’s shadow flicker standard is a failure. Milo Schaffner testified that he experiences annoying shadow flicker at his home located a mile away from the nearest Blue Creek Wind Farm turbine. Schaffner, Tr. VI 1306:14-25. The wind developer offered to pay for blinds on the Schaffners’ windows to block the flicker, but only if they signed a “good neighbor agreement” waiving all claims of any nature against the wind project. *Id.* at 1323:15 – 1324:1. Thus, the Board should

reopen the record to reissue the subpoenas for shadow flicker records from the wind developers and to admit that evidence at the hearing. Without that information, the Board has no evidence to say that its 30-hour shadow flicker standard is effective.

Where the record is devoid of any admissible, reliable, and accurate evidence concerning shadow flicker impacts from the BW II project, alone and in combination with the BW I project, the application must be denied. UNU objects strongly to the Staff's recommended Condition 50 to the extent it would allow CW to submit new shadow flicker modeling for Staff review and approval after issuance of a Certificate for the project. Where neither CW nor the Staff recognized a fundamental flaw in the original shadow flicker modeling, the Board should not permit CW to amend and resubmit its modeling without subjecting it to scrutiny by UNU and the other intervenors. To the extent that the Board requires additional shadow flicker modeling, it should reopen the evidentiary hearing to admit the new modeling into evidence and should allow the parties to submit evidence (including cross-examination) regarding that evidence. Finally, if the Board elects to issue a certificate for this project upon receipt of adequate shadow flicker modeling, the Board should prohibit the siting of any turbine predicted to cause shadow flicker on any affected property in excess of 30 hours per year and should further require the facility to be operated in full compliance with the predicted output of the approved shadow flicker modeling and all other conditions. In the event of noncompliance, the operation of the turbine should be curtailed or prohibited to the degree necessary to comply.

**F. The Board Should Adopt Conditions That Protect Aviation.**

**1. The Board Should Require CW To Fully Comply With R.C. 4906.10(A)(5).**

R.C. 4906.10(A)(5) requires CW's turbines to comply with the rules and standards promulgated by the Ohio Department of Transportation pursuant to R.C. 4561.32. To determine whether the project complies with these aviation standards, the Board must consult with the Department's Office of Aviation. R.C. 4906.10(A)(5). The Staff Report (at p. 44) represents that the Staff engaged in this consultation. Application Exhibit S contains correspondence from the Office of Aviation documenting this consultation and listing the necessary precautions for protecting aviation. *See* the first and second pages of Applic. Exh. S. However, UNU agrees with the arguments in Urbana's brief that there are two deficiencies in this review.

First, while R.C. 4906.10(A)(5) requires consultation about the entire project, there is no evidence that this occurred. Instead, the correspondence from the Office of Aviation indicates that only 28 of the 56 turbine sites were reviewed. The Board cannot issue a certificate for the remaining turbine sites unless and until the necessary aviation review has been completed.

Second, the Office of Aviation's determination that BW II complies with the state's aviation rules expired on November 1, 2012. Applic., Exh. S, first page. Consequently, the Board cannot issue a certificate for any turbine in the project unless and until the Office of Aviation makes a determination that the project still complies with the aviation rules and the hearing record is reopened to admit evidence of this determination.

## **2. Condition 65 (Submittal of FAA Form 7460-2)**

CW opposes the Staff's recommended Condition 65 (Condition 68 in the Staff Report), which would require CW to file a Form 7460-2 for a turbine at least 42 days prior to construction. CW argues (at 61) that the 42-day deadline prior to construction "contradicts" the FAA's instructions to submit the forms "within 5 days after the construction reaches its highest height." Mr. Speerschneider testified that the FAA is requiring CW to submit the form "five days after construction reaches its greatest height." Speerschneider, Tr. II 409:6-7.

CW's and Mr. Speerschneider's statements misrepresent the law and FAA's position. Although the FAA has directed CW to submit a supplemental notice "[w]ithin 5 days after the construction reaches its greatest height," the FAA has not prohibited CW from submitting an earlier notice of its intent to start construction. Accordingly, the Staff's recommended condition would not "contradict" the FAA's directive, as explained below.

The notice requirements of 14 CFR 77.7 require CW to submit a Form 7460-1 to the FAA to obtain a determination of hazard for a tall structure. Apparently, CW has submitted these forms for some of its proposed turbines, resulting in the FAA responses compiled in Exhibit S of the Application. However, FAA regulations also provide for supplemental notices to notify the FAA about construction activities for the structures. Under 14 CFR 77.5(b), the FAA may require CW to submit a supplemental notice prior to the start date and/or after completion of construction. The FAA form letters in Application Exhibit S provide the FAA with options to checkmark the instructions to submit either or both supplemental notices on a Form 7460-2. The FAA checked the instruction to submit a supplemental notice "[w]ithin 5 days after the construction reaches its greatest height (7460-2, Part II)." For some unexplained

reason, the FAA did not checkmark the instruction to submit a supplemental notice “[a]t least 10 days prior to the start of construction (7460-2, Part I).”

Consequently, unless the Board acts, unsuspecting pilots will have no warning about the turbines’ presence while they are being erected and for as many as five days after installation is complete. This could endanger the lives of the pilots, their passengers, the crane operators who are erecting the turbines, and any construction workers working on installation.

In light of the seriousness of the risk, surely it is reasonable for CW to submit both supplemental notices on a Form 7460-2: one supplemental notice announcing CW’s intent to start construction and another to confirm completion of construction. UNU recommends the following language to clarify the intent of Condition 65:

At least 10 days prior to starting construction on each turbine, Applicant shall submit a Form 7460-2 notice to the FAA notifying the FAA of Applicant’s intent to start construction on that turbine. Within five days after completing construction of a turbine, the Applicant shall submit another Form 7460-2 notice to the FAA notifying the FAA that construction of that turbine has been completed. The Applicant shall file all 7460-2 forms with the FAA at least 42 days prior to construction and submit copies of all such notices to Staff for confirmation of compliance with this condition.

This condition is not an onerous requirement, the Board has the authority to adopt it, and it could save lives. The Board should adopt it.

### **3. Condition 67 (Protection of Emergency Air Flight)**

UNU agrees with the provision in the Staff’s recommended Condition 67 (Condition 70 in the Staff Report) that requires CW to coordinate with CareFlight to work out a medical needs service plan for emergency air flight in the area of the wind project. Based on CW’s suggested language change in its suggested draft of the condition, CW has requested (at 62) that the plan be worked out with “local emergency life flight services,” rather than solely with CareFlight. UNU concurs that CW should work with all applicable local life flight services, if any others service the project area. Accordingly, UNU suggests the following language for Condition 67:

The Applicant shall submit to Staff, for review and confirmation that it complies with this condition, a medical needs service plan for construction, testing, and operation of this facility, in coordination with CareFlight and any other the local emergency life flight service CareFlight that provides services within the vicinity of the facility. This plan shall incorporate measures that assure immediate shut downs

of any portion of the facility necessary to allow direct routes for emergency life flight services within the vicinity of the facility.

The foregoing language change will accommodate the positions of both the Staff and CW as to whom CW will consult about the plan.

CW professes to be “very troubl[ed]” about the recommended requirement for shutting off the turbines during an emergency life flight evacuation. CW’s position on this issue is symptomatic of its overall callous attitude towards the welfare of the community that it is invading. Certainly, the loss of a few dollars of income is not too high a price to pay during the rare instances in which life flight is necessary in the vicinity of the wind project. After all, it is CW’s wind project that will delay the emergency air flight if its turbines are spinning in the helicopter’s route while the helicopter is trying to rescue someone. Moreover, CW’s own employees or lessors could be among the patients that need to be air lifted, including wind farm employees who suffer injuries on the job or lessors who are injured by farm machinery.

While CW relies on the testimony of Frank Marcotte to contend that shutting off the turbines in the helicopters’ routes is unnecessary and infeasible, his testimony was not credible. Mr. Marcotte opined that (1) pilots already have to fly around buildings and other hazards; (2) pilots can be trained about the added hazards from turbines; (3) large areas of undisturbed air exist in front and on the sides of a turbine; (4) a helicopter can fly over U.S. Highway 36 to go through the wind project; and (5) night vision goggles can be used to see the turbines. Marcotte Dir., CW Exh. 10, pp. 3-6. He also stated that a remote landing zone could be set up for a helicopter that could not land next to a rotating turbine. Marcotte, Tr. IV 691:14-22. Incredibly, he also said that a “very quick aircraft” might arrive before a turbine can be shut off, and “you would actually be delaying responses by doing so.” *Id.* at 6911-4.

There are a host of problems with Mr. Marcotte’s position. First, while he stated that there are safe landing zones in front of and at the sides of spinning turbines, he has never landed an aircraft near an industrial turbine. *Id.* at 689:9-13. More importantly, he admitted that the wake from a wind turbine extends for about a half mile (*id.* at 710:10-20), thus contradicting his opinion that safe landing zones exist around operating turbines. Second, seeing a turbine with night vision goggles does not shut off the turbine’s wake, not to mention that Mr. Marcotte has never used night goggles for flying, that night goggles narrow a pilot’s field of vision, and that he could not say they would detect obstacles under all conditions. *Id.* at 679:21-25, 682:2-3.

Third, flying over U.S. Highway 36 does not provide a helicopter with access to most of the project area, which encompasses a leased area of 13,500 acres. *Applic.*, p. 2; Marcotte, Tr. IV 699:11-22. Fourth, driving the victim to a remote aircraft landing spot will increase the critical transportation time for the victim. Fifth, because he was not familiar with the process for switching off a turbine (*id.* at 719:4-14), he had no basis for speculating that a helicopter can ever reach a turbine before it is shut off. Sixth, while operating a helicopter undoubtedly can be challenging and dangerous at times, it makes no sense to add an unnecessary hazard to the flight when a turbine can simply be switched off during the emergency. There are few patients who believe the unnecessary additional risk of death is worth the miniscule additional income that CW will collect by running its turbines during a medical emergency.

Mr. Marcotte's speculation that it would take so long to turn off the turbines that a helicopter might be able to arrive before they are shut down does not comport with the evidence. Rick James testified that wind operators have readily switched off their turbines to thwart his measurements of their noise emissions. James Dir., UNU Exh. 19, p. 32. It is not unreasonable to ask them to do the same to save a person's life.

CW also notes (at 62) that it is significant that neither CareFlight nor any other life flight service have intervened into this proceeding. However, intervening in a legal proceeding can be an expensive undertaking, and it is unknown as to whether these companies have the resources to intervene. Furthermore, the members of UNU have a critical stake in protecting emergency services, since they or their families may have a critical need for timely air transportation in future medical emergencies. The Board should require CW to shut off its turbines when necessary to decrease the delay in medical response that CW's own turbines are causing.

**G. Michael McCann's Assessment Of Repeat Sales Of Identical Properties Proves Conclusively That Wind Power Projects Diminish Property Values.**

CW incorrectly states (at 40) that UNU expert Michael McCann's opinions were based largely on an Illinois paired sales analysis, then disparages that work by arguing, "[t]he flaw in Mr. McCann's approach is that no two residential properties are ever truly alike." *Id.* The flaw in CW's argument is that while Mr. McCann's opinion was based in part on paired sales studies of properties in Illinois and Massachusetts, it was also based on case studies of at least seven houses that sold and then resold--and therefore were "truly alike." In the case of five

Melancthon, Ontario houses purchased and resold by a wind developer, those houses lost on average 38% of their value on resale -- *even after adjusting for changes in the market*. See UNU's opening brief at 62; McCann, Tr. V 1085:10-14. Mr. McCann testified that repeat sales of the same property are "the cleanest sales as far as measuring [turbine] impact that I'm aware of." *Id.* at 1086.

Remarkably, however, the LBNL study touted by CW witness Mark Thayer deliberately excluded similar repeat sales data on four Pennsylvania homes that were bought by a wind developer, who then resold two of them only several months later at prices that were 30% and 86% lower than the initial purchase price. McCann Dir., UNU Exh. 18, p. 11:10-14. In fact, the LBNL study omitted 34 properties which sold and resold within six months. McCann Dir., UNU Exh. 18 at 12:21-23. Mr. McCann was invited to peer-review the LBNL study, but the authors refused his requests to provide the raw data on those repeat sales during the peer review process. *Id.* at 13:1-3. Therefore, while CW boasts (at 40) that the LBNL study was peer reviewed, that review was meaningless, since the authors withheld relevant data from the reviewers and ultimately made no changes to the study report as a result of the review. McCann Dir., UNU Exh. 18, pp. 6:17-18, 13:1-3.

In summary, Mr. McCann provided solid evidence of numerous repeat sales showing the dramatic negative effect of wind projects on the very same properties. In some cases, overall market changes were taken into account in determining value diminution, while in other cases that was not necessary because the properties resold within a matter of months. Based in part on that simple demonstrative evidence, Mr. McCann concluded that the BW II project would reduce neighboring property values by 25 % to 40%. McCann Dir., UNU Exh. 18, p. 23:1-5. On the other hand, as discussed above and in UNU's initial brief at 63-64, the LBNL study diluted its data set with thousands of property sales unaffected by turbines, excluded data on sales clearly affected by turbines, and withheld relevant data from its peer reviewers. Given the statistical sleight of hand inherent in that study, the Board should place greater reliance on Mr. McCann's testimony and should protect the values of properties in eastern Champaign County as described in UNU's initial brief at page 64.

**III. UNU IS NOT COLLATERALLY ESTOPPED FROM ASSERTING ISSUES ALSO ADDRESSED IN THE BW I PROCEEDINGS.**

In its brief, CW repeatedly points out that the Board considered shadow flicker, blade throw, property value impacts, and other important issues in the context of the BW I case. Given CW's persistence on this point, UNU expects that CW may again invoke the doctrine of collateral estoppel, as it did in the context of its November 2, 2012 Motion to Strike, in an attempt to bind the intervenors to the Board's decisions in BW I. As UNU explained in detail in its November 5, 2012 memorandum in opposition to that motion, to do so under these circumstances would be contrary to the principles of collateral estoppel and would work a profound injustice to the intervenors in these proceedings. The ALJs properly rejected CW's collateral estoppel arguments during the evidentiary hearing. Tr. II 249:6-7. The Board should not entertain any similar arguments that CW may raise in its reply brief. In anticipation of any such arguments, however, UNU's discussion of collateral estoppel in its November 5, 2012 memorandum in opposition is incorporated fully into this reply brief.

**IV. IF THE BOARD ISSUES A CERTIFICATE FOR BW II, THE BOARD SHOULD WORD THE LANGUAGE OF THE CERTIFICATE'S CONDITIONS IN A MANNER THAT PROTECTS THE PUBLIC.**

As explained above and in UNU's opening brief, the BW II project does not qualify for approval under R.C. § 4906.10 and thus should not be approved. However, if the Board grants this certificate, it should include language in its conditions that protect the public as described below. The discussed conditions are identified by the number assigned to them in the Attachment A of the Staff's opening brief. Where this number differs from the number assigned to the condition by the Staff Report, that number is provided in brackets.

**A. Condition 17 (Protection Of Historic Resources)**

While CW agrees to submit an historic preservation mitigation plan, the company wants to add a condition that the plan may not limit or affect turbine operation or any other activities authorized by the certificate. This exception would give CW an unacceptable veto over mitigation measures that may be necessary to protect the area's historic resources. The Board should not agree to an exception that will eviscerate this condition.



**B. Former Condition 20 (Protection Of Trees And Other Vegetation In Streams And Wooded Corridors).**

CW contends (at 48-49) that its collector lines will not harm streams and vegetated areas, because the turbines will be built on farm fields. Thus, the company and the Staff conclude that the vegetation management plan recommended in Condition 20 of the Staff Report is not necessary.

Even a casual glance at the aerial photographs in Figures 05-04 and 08-01 of the application shows that the project's collector lines and access roads will cross a substantial number of streams and wooded areas. As expressed in the formerly proposed condition, it is necessary to minimize the destruction of trees, shrubs, and other woody vegetation while constructing these facilities. While the formerly proposed condition inaccurately referred to transmission lines instead of collector lines, the language of that condition can be and should be used after correcting this typographical error.

**C. Former Condition 22 (The Indiscriminate Use Of Herbicides)**

CW failed to inform the Staff as to whether herbicides will be used to kill vegetation for maintenance activities. Rostofer, Tr. VIII 2150:14-24. While CW represents that the control of herbicide practices is unnecessary because the turbines and collector lines are in fields, the aerial photographs in Figures 05-04 and 08-01 of the application show that the project's collector lines and access roads will cross a substantial number of streams and wooded areas. Consequently, a condition to prevent indiscriminate use of herbicides in natural vegetated areas is essential for their protection. As Mr. Rostofer noted, "just spraying [herbicides] anywhere is probably not the best practice." Rostofer, Tr. VIII 2152:23 – 2153:1.

Apparently, CW does not share this sensible principle, as it has asked the Board to remove this condition. The Staff, for its part, has again deferred to CW's preferences and has withdrawn its request for this condition. Mr. Rostofer had little justification for this change in position, saying that dispute resolution could be used if herbicides are abused. Rostofer, Tr. VIII 2153:16-23. He could not explain how dispute resolution can compel CW to use herbicides responsibly if the certificate does not require it. *Id.* at 2153:24 – 2154:25. Consequently, UNU requests the Board to include Condition 22 of the Staff Report in the certificate.

**D. Condition 24 (28) (Bats And Birds)**

Jennifer Norris, a wildlife expert from the Ohio Department of Natural Resources (ODNR), testified that daily carcass searches during the first two years of a wind project's operation are standard protocol for ODNR. Norris Dir., Staff Exh. 1, p. 4, A9; Norris, Tr. VIII 2022:12 – 2023:7. Since predators can devour the carcasses, it is necessary to search for them daily before they are removed. Other Ohio wind projects, including Blue Creek Wind Farm, are required to perform these daily searches. *Id.* at 2022:23 – 2023:12. Accordingly, this requirement has been included in the Staff's recommended condition. The Board should deny CW's request to remove this requirement from the condition.

**E. Conditions 29 and 30 (33 and 34) (Road Repair)**

In Paulding County, the Board's certificate for Blue Creek Wind Farm requires the wind developer to post a bond for road repair only with the county engineer, leaving the township trustees powerless to force the wind developer to fully fix the township's roads. Schaffner, Tr. VI 1308:4-22. This was a curious provision, since the township trustees in Ohio are responsible for township roads and the county engineer is not.

Mr. Wendel admits that some of the county's roads still have patches on them even today, even though the Board's condition requires the wind developer to restore the roads to their pre-construction condition. Wendel, Tr. IX 2311:19-23. Mr. Wendel testified that the wind developer milled the patches in March 2012 to smooth them out. *Id.* at 2314:7-16, 2346:16 – 2347:5. Subsequently, Mr. Wendel sent a letter on June 6, 2012 to the developer documenting the fact that the roads in Hoaglin Township did not provide the same quality of ride as before they were damaged and then patched by the wind developer. *Id.* at 2347:14 – 2349:13. The letter requested that the developer remove the patches by installing an overlay on (i.e., resurfacing) the roads. *Id.* Mr. Wendel then sent a letter to OPSB on September 27, 2012 stating that the roads had been fully restored to their pre-construction condition, even though no overlay had occurred. *Id.* at 2322:17 – 2325:13. Confronted with this inconsistency on the witness stand, Mr. Wendel recanted his testimony in response to leading questions from CW's counsel and stated that the milling had actually occurred after his June 2012 letter and that the milling had restored the roads to their pre-construction condition. *Id.* at 2356:4-17. Needless to say, the Hoaglin Township Trustees vigorously dispute these assertions. Schaffner Dir., UNU Exh. 21, p. 2, A5; Schaffner, Tr. VI 1309:18-25. And, in fact, the county engineer admitted that the

township roads did not have patches before turbine construction, but they do now. *Id.* at 2350:1-7. The county engineer clearly just wanted to wash his hands of the problem with the wind developer, and his retreat left the townships without a remedy and with damaged roads.

However, there is one point on which the county engineer and the township trustees agree: the condition should not thrust the responsibility for township roads on the county engineer, since he has no authority over these roads. *Id.* at 2319:13 – 2320:9, 2336:4-18. Mr. Wendel described the process for obtaining township concurrence on the road agreement with the wind developer in Paulding County as a nightmare, due to disputes between the county engineer and the township trustees over how the townships should protect their own roads. *Id.* at 2335:8 – 2337:6.

Apparently learning from the debacle in Paulding County, the Staff has proposed language in Conditions 29 and 30 that would require CW to enter into road use agreements with the county engineer or “other appropriate public authority.” UNU supports this change to these conditions. However, these conditions still require CW to provide financial assurance only to the county commissioners for restoring county and township roads. This financial assurance should be provided to the county commissioners for county roads and to the township trustees for township roads.

**F. Condition 43 (46) (Relocation Of Turbines)**

This condition as worded in the Staff’s brief would allow CW to relocate Turbines 87 and 91 without a further Board hearing as long as they are placed at a distance from occupied structures that is at least equal to 150 percent of the sum of the turbines’ hub height and rotor diameter. CW proposes a similar relocation condition on page 14 of its brief for Turbines 79 and 95, except that it wants to be allowed to move them to any location that satisfies the “minimum property line and residential setbacks,” whatever that means.

Both of these proposals have the same problem: they would allow CW to locate these turbines anywhere it wants, as long as they meet certain minimum setbacks, without review in an adjudicatory hearing. The proposed language even allows CW to relocate the turbines to different parcels of land than currently proposed. These provisions would deprive the citizens affected by the new turbine locations of their right to contest the turbine locations or to have any voice in the conditions that apply to these new turbine locations. The Board should exclude

these turbines from the certificate, but it should not allow CW to site any new turbine locations without a hearing on them.

**G. Condition 52 (55) (Decommissioning)**

Mr. Speerschneider acknowledged that CW has no basis for limiting its financial assurance for the first year to \$5000, other than the fact that the Board allowed Buckeye Wind to get away with this minimal financial assurance for BW I. Speerschneider, Tr. II 406:18-25. The Staff's project manager, Donald Rostofer, testified that \$5000 is not an adequate sum to guarantee decommissioning if it occurs during the first year. Rostofer, Tr. VIII 2091:5-25. The Board should not agree to CW's suggestion that it be required to provide only \$5000 of financial assurance per turbine during the first year.

**H. Condition 40 (43) (Street Numbers For Turbine Sites)**

UNU agrees with the positions of Urbana (at 5) and the Staff (at 41) that CW should be required to obtain street addresses for each turbine to expedite the use of the 911 mapping system and emergency responses.

**I. Television Reception**

The application admits that the turbines might interfere with television reception, including reduced picture quality and signal interruption. Applic., p. 154. The application commits to offer cable hookups or direct broadcast satellite reception systems to neighbors whose televisions are so affected. *Id.* However, the application does not commit CW to paying the monthly fees for subscribing to these services necessitated by CW's turbine interference.

The Staff has not proposed a condition to protect the neighbors' television reception, instead relying on the mitigation commitments in the application that are enforceable under Condition 3. However, since the application contains no requirement for CW to pay for the monthly subscription fees that the neighbors would not have incurred but for the turbines' interference with television reception, the Board should add a condition providing for that remedy.

**J. "Good Neighbor Agreements"**

As Milo Schaffner testified, wind developers have been known to insist that nonparticipating neighbors victimized by wind farm damage sign "Good Neighbor Agreements" as a pre-condition for the developers' mitigation of the damage. Schaffner, Tr. VI 1323:15 –

1324:1. These agreements require the victims to waive all legal rights they have to address future harm of any nature from the wind farms. *Id.* Because such a ploy defeats the OPSB's dispute resolution process, the Board should add a condition to the certificate prohibiting CW from demanding any such agreement from the inevitable victims of the damage that BW II will cause.

## **V. CONCLUSION**

For all the many reasons described in UNU's opening and reply briefs, the Board should deny the certificate for BW II. If OPSB chooses to issue the certificate for the project notwithstanding its destruction of the public interest, the Board should adopt the conditions that UNU has recommended.

Respectfully submitted,

*s/ Jack A. Van Kley*

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### CERTIFICATE OF SERVICE

I hereby certify that, on January 28, 2013, a copy of the foregoing was served by electronic mail on M. Howard Petricoff ([mhpetricoff@vorys.com](mailto:mhpetricoff@vorys.com)); Michael J. Settineri ([mjsettineri@vorys.com](mailto:mjsettineri@vorys.com)); Miranda Leppla ([mrleppla@vorys.com](mailto:mrleppla@vorys.com)); Chad Endsley ([cendsley@ofbf.org](mailto:cendsley@ofbf.org)); Jane Napier ([jnapier@champaignprosecutor.com](mailto:jnapier@champaignprosecutor.com)), Stephen Reilly ([Stephen.Reilly@puc.state.oh.us](mailto:Stephen.Reilly@puc.state.oh.us)); Werner Margard ([werner.margard@puc.state.oh.us](mailto:werner.margard@puc.state.oh.us)); Devin Parram ([Devin.Parram@puc.state.oh.us](mailto:Devin.Parram@puc.state.oh.us)); Sarah Bloom Anderson ([sarah.anderson@ohioattorneygeneral.gov](mailto:sarah.anderson@ohioattorneygeneral.gov)); Summer Koladin Plantz ([summer.plantz@ohioattorneygeneral.gov](mailto:summer.plantz@ohioattorneygeneral.gov)); Kurt P. Helfrich ([Kurt.Helfrich@ThompsonHine.com](mailto:Kurt.Helfrich@ThompsonHine.com)); Philip B. Sineneng ([Philip.Sineneng@ThompsonHine.com](mailto:Philip.Sineneng@ThompsonHine.com)); Ann B. Zallocco ([Ann.Zallocco@ThompsonHine.com](mailto:Ann.Zallocco@ThompsonHine.com)); G.S. Weithman ([diroflaw@ctcn.net](mailto:diroflaw@ctcn.net)); and Breanne Parcels ([breanne.parcels@ci.urbana.oh.us](mailto:breanne.parcels@ci.urbana.oh.us)).

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**Case No(s). 12-0160-EL-BGN**

Summary: Reply Brief electronically filed by Mr. Jack A Van Kley on behalf of Union Neighbors United and Johnson, Julia Ms. and McConnell, Robert Mr. and McConnell, Diane Ms.