BEFORE
THE OHIO POWER SITING BOARD

In the Matter of the Application of Champaign Wind LLC, for a Certificate to Construct a Wind-Powered Electric Generating Facility in Champaign County, Ohio	)))))	**Case No. 12-0160-EL-BGN**

INITIAL BRIEF OF CHAMPAIGN WIND LLC

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I. INTRODUCTION

Champaign Wind LLC's application for a certificate of environmental compatibility and public need for a wind-powered electric generation facility is the 9th application for a wind farm submitted to the Ohio Power Siting Board. Champaign Wind's sister company, Buckeye Wind LLC, submitted the first application in March 2009 for a wind farm. After extensive litigation, the Board approved Buckeye Wind's application, ruling on many of the same issues raised by the intervenors in this proceeding. For example, Union Neighbors United disputed the facility's impact on property values and the impacts of shadow flicker and operational noise. The City of Urbana disputed the facility's impact on local airports and life flight services. The intervenors were not successful on their claims before the Board or in their appeal before the Supreme Court of Ohio. (*In re Buckeye Wind, LLC*, Case No. 08-666-EL-BGN, Opinion, Order, and Certificate, March 22, 2010; *In re Application of Buckeye Wind, L.L.C.*, 131 Ohio St. 3d 449, 2012-Ohio-8978, 966 N.E.2d 869.)

With the Buckeye I Wind project approved, the Board may also proceed to approve the Champaign Wind project, also known as the Buckeye II Wind Farm. The Board's Staff conducted a detailed review of Champaign Wind's application for a certificate, resulting in the Staff Report of Recommendation filed on October 10, 2012. In that report, Staff recommended that the Board grant the certificate subject to 70 conditions. The conditions cover a range of

topics such as decommissioning, the submittal of detailed engineering drawings, requirements to have ice detection equipment on the turbines and additional setback lengths based on one manufacturer's recommendations. Champaign Wind is generally agreeable with Staff's recommended conditions, as many are similar to the conditions in the Buckeye I Wind Farm certificate and other certificates issued by the Board. Champaign Wind believes that some conditions can be clarified, some deleted as redundant and others revised to better reflect actual operations. Specifically, as more fully discussed in this brief, Champaign Wind requests clarification of the following conditions in addition to condition revisions agreed to by Staff: (15), (17), (28), (35), (47), (49), (53), (55), (67), (68) and (70).

Both Staff's recommended conditions and the conditions as revised by Champaign Wind support the issuance of a certificate. The proposed condition on shadow flicker is in line with Board precedent, limiting shadow flicker to no more than 30 hours per year at non-participating residences. Operational noise must be limited to no more than 44 dBA at nighttime hours, a level found to not lead to widespread complaints. Decommissioning with financial assurances is required under Condition 55, and roads will be protected through the implementation of Conditions 31, 32, 33 and 34. No impacts to aviation exist as all turbine locations have been approved by the FAA and the Office of Aviation at the Ohio Department of Transportation. As well, life flight services will be able to operate in and among the turbines, as the Board found in the Buckeye I proceeding. Condition 55(c) allows the Board to require decommissioning of individual wind turbines due to health concerns, even though the record does not support a finding that turbines cause adverse health effects. Property values also will not be impacted, as found in the Buckeye I proceeding and as stated by Dr. Mark Thayer in his testimony.

The record in the matter at bar also shows that the facility will have many positive attributes. The facility can assist electric distribution utilities in Ohio meet the alternative energy mandates of Ohio Amended Substitute Senate Bill 221 (SB 221). SB 221, as codified, in part, at Section 4928.64(B), Revised Code, requires electric distribution utilities in Ohio to provide 12.5 percent of their generation from renewable energy resources by 2024. Section 4928.64(B), Revised Code, also mandates that 6.5 percent of that generation come from renewable energy resources sited in Ohio, which would include generation from a wind-powered generation facility. The facility will also create emission free power and offset emissions from other generation facilities (Co. Ex. 1 at 8.) and will create approximately 7 permanent jobs to operate the facility and a construction workforce of approximately 86 employees over 12 months. (Co. Ex. 1 at 139.) The estimated local benefit for construction jobs alone is estimated to be $14,500,000 while the remaining employment opportunities during the construction phase is estimated to create over $60,000,000 in local benefits. (Co. Ex. 1 at Exhibit G at 13.) Lease payments to landowners are estimated to total approximately $950,000 a year. (*Id.* at 14.) The facility would also result in an increase in local tax revenues in an amount between $840,000 to $1,260,000 based on a 140 MW installation. (Co. Ex. 1 at 140.)

Taking into account the statutory criteria under Section 4906.10(A), Revised Code and the facts in the record, Champaign Wind has met its burden of proof in the matter at bar. The Board may grant the certificate in accordance with Staff's recommendations.

II. PROPOSED FACILITY

In its application, Champaign Wind seeks certification for construction of a wind-powered electric generation facility located in Champaign County. (Co. Ex. 1 at 2.) The energy generated at the facility will collect to the Urbana – Mechanicsburg – Darby 138 kilovolt (kV) Transmission Line in Champaign County, Ohio. (*Id.*) The facility is proposed to consist of 56

wind turbine generators, along with access roads, underground and overhead electric collection cables, a facility substation, up to 3 laydown yards for construction staging, an operations and maintenance (O&M) facility, and up to 4 meteorological towers. (Co. Ex. 1 at 2.) The facility is located within approximately 13,500 acres of leased private land in the townships of Goshen, Rush, Salem, Union, Urbana, and Wayne. (*Id.*)

As indicated above, the facility will consist of 56 wind turbine generators and associated infrastructure. Each turbine will have a name plate capacity rating of 1.6 to 2.5 megawatts, depending on the final turbine model selected. (*Id.*) The resulting generating capacity will be 89.6 to 140 megawatts. (*Id.*) The facility is expected to operate at an average annual capacity factor greater than 30-35% and, therefore, the 56 turbines will collectively generate approximately 235,000 to 429,000 megawatt hours (MWh) of electricity each year. (*Id.*) Facility construction is scheduled to begin in 2013. (Co. Ex. 1 at 9.)

III. ARGUMENT

A. The Record in this Proceeding Supports Findings and Determinations Under Section 4906.10(A), Revised Code

Pursuant to Section 4906.10(A), Revised Code, the Board cannot grant a certificate for the construction, operation, and maintenance of a major utility facility, either as proposed or as modified by the Board unless it makes findings and determinations as to the eight statutory criteria listed under the statute. The record in this proceeding supports findings and determinations under all eight of the statutory criteria. Supporting evidence includes Staff's findings in the Staff Report of Investigation and the direct testimony of both Staff's and Champaign Wind's witnesses. A summary of the supporting evidence applied to each of the eight statutory criteria follows.

1. Basis of Need – Section 4906.10(A)(1), Revised Code

As noted in the Staff Report of Investigation, the basis of need for the proposed facility is not applicable to an electric generating project. (Staff Rpt. at 19.) Under Section 4906.10(A)(1), Revised Code, the basis of need for the facility only applies if the facility is an electric transmission line or a gas pipeline. Given that the application in this case is for a wind-powered electric generation facility, Section 4906.10(A)(1), Revised Code, is not applicable.

2. Nature of Probable Environmental Impact – Section 4906.10(A)(2), Revised Code, and Minimum Adverse Environmental Impact – Section 4906.10(A)(3), Revised Code

Staff considered the proposed facility's socioeconomic impacts, ecological impacts, construction impacts and operational impacts as "environmental impacts" in the Staff Report of Investigation. (Staff Rpt. at 20-37.) After summarizing the impacts, Staff recommended to the Board that it make a finding of determination as to the nature of the probable environmental impact and that the facility will have a minimum adverse environmental impact, subject to Staff's recommended conditions. The record supports Staff's recommendations, under either Staff's recommended conditions or the revised conditions as proposed by Champaign Wind.

a. Socioeconomic Impacts

Staff first looked at the socioeconomic impacts of the facility, considering the proposed facility's impact on demographics, land use, cultural and archaeological resources, aesthetics and economics. (Staff Rpt. at 20-23.) Reviewing population information, Staff concluded that the project is unlikely to limit future population growth or have a significant impact on the demographics of the region. (Staff Rpt. at 20.) From 1990 to 2010, Champaign County experienced an 11.3 percent increase in population or just over 1% per year on average. (Co. Ex. 1 at 66.) In 2010, Champaign County had a population of 40,097, indicating its rural nature. (Co. Ex. 1 at 66.) Champaign County's rural nature is reflected by its population density of

approximately 93 persons per square mile, compared to 282 persons per square mile statewide. (Co. Ex. 1 at 67.) These facts support Staff's finding that the facility will not impede future population growth in the area.

The primary use of the Project Area for agricultural purposes will also not be impacted by the facility. As noted by Staff, "[a]griculture is the predominant land use within the project area, which consists primarily of croplands, farmsteads, meadows, and scattered woodlots." (Staff Rpt. at 20.) Table 08-13 in Champaign Wind's application notes that 460.7 acres of land will be disturbed by the project, of which 392.6 acres will be temporary disturbances. Only 68.1 acres of land will be permanently lost. (Co. Ex. 1 at 137.) This equates to approximately 0.5% of the 13,500 acres of leased land for the project. (Co. Ex. 1 at 137.) Table 08-16 of the application notes that 445.7 acres of agricultural land will be disturbed, of which 381.1 acres will consist of temporary disturbances with only 64.6 acres being permanently lost. (Co. Ex. 1 at 160.) This evidence shows that the facility, while being spread out over several townships, will have minimal impact on the use of land for agricultural purposes.

Witness testimony supports that conclusion. Staff witness Timothy Burgener concluded that only a small amount of land would be taken out of production, and that agricultural activities could continue on the rest of the land. (Staff Ex. 5, Direct Testimony of Timothy Burgener at 2.) Champaign Wind witness Mark Westfall testified that he had been farming for nearly 40 years in Champaign County and that in his opinion, wind power would help preserve the agricultural and rural character of the community. (Co. Ex. 17 at 8.) Julie Johnson, witness for the opposition group Union Neighbors United, agreed that farmland preservation is a good way to preserve the beauty of the landscape in Champaign County. (TR 983.) Dale Arnold, Director of Energy, Utility and Local Government Policy for the Ohio Farm Bureau Federation, testified that wind

towers impose a small footprint that if properly constructed will not hamper agricultural development. (OFBF Ex. 1, Direct Testimony of Dale Arnold at A.8.) On cross examination, Mr. Arnold also testified that agricultural ground can be put back into viable agricultural production after construction. (TR 1560.)

The proposed facility also fits within regional land use plans that call for conservation of farmland and economic diversity. (Staff Rpt. at 21.) Staff witness Timothy Burgener testified that he reviewed the Champaign County Comprehensive Plan, particularly the sections on land use. (TR 2449-2450.) As a result of that review, he concluded that "[t]he development of a wind farm in the region is consistent with key issues identified in the Champaign County Comprehensive Plan, including the conservation of farm land and developing new industry." (Staff Ex. 5, Direct Testimony of Timothy Burgener at 2.)

The proposed facility will also have minimal impact on cultural and archaeological resources. Champaign Wind identified registered landmarks of historic, religious, archaeological, scenic, natural, or other cultural significance within 5 miles of the proposed facility. (Co. Ex. 1 at 145.) Champaign Wind's consultant, Cultural Resources Analysts, Inc., then identified which structures or sites, if any, were within or adjacent to land leased for the facility. (*Id.*) As a result of its review, CRA concluded that the proposed facility would not have direct impacts on unknown cultural resources within the study area. (Co. Ex. 1 at 146.) Champaign Wind has proposed an additional level of protection for cultural and archaeological resources, and will survey the study area prior to construction. (Co. Ex. 1 at 147.) Any sites identified through that survey would be avoided during construction. (*Id.*) Staff agrees with Champaign Wind's proposal, and has recommended two conditions (Condition 15 and 16)

requiring a Phase I cultural resources survey program for archaeological work and requiring a cultural avoidance plan for use during construction. (Staff Rpt. at 52-53).

Champaign Wind also considered the visual impact of the facility on architectural sites, relying in part on a draft Phase I Archeological and Architectural Survey compiled to comply with Section 106 of the National Historic Preservation Act of 1966. (Co. Ex. 1 at 147.) The draft report indicated that the proposed facility will alter the cultural landscape of the area, and Champaign Wind has proposed a mitigation plan to take into consideration the cumulative visual impacts of both the Buckeye I and Buckeye II wind farms. (Co. Ex. 1 at 148.) Staff has formalized the mitigation requirement, recommending a condition (Condition 17) that would require Champaign Wind to develop a historic preservation mitigation plan to promote the continued meaningfulness of the survey area's rural history. (Staff Rpt. at 53.)

As a general matter, the facility's turbines will be visible throughout much of the five mile study area. (Co. Ex. 1 at 42.) Field reviews, however, indicated that in many areas a significant number of the turbines will be at least partially screened by trees and structures. (*Id.*) Champaign Wind's application discussed the various contrasts between the turbines and the existing landscape, with the conclusion that the facility was compatible with the working agricultural landscape that makes up the majority of the visual study area. (Co. Ex. 1 at 42.) Champaign Wind also considered cumulative visual impacts of the Buckeye I and Buckeye II facilities concluding that the cumulative effects of both projects generally result in similar levels of contrast and visual impact. (Co. Ex. 1 at 43.) Staff summarized these findings in the Staff Report of Investigation. (Staff Rpt. at 22.)

Staff also summarized the economics of the proposed facility in the Staff Report of Investigation. (Staff Rpt. at 22.) Staff found that the proposed facility would have an overall

positive impact on the local economy because of the increase in construction spending, wages, purchasing of goods and services, annual lease payments to the local landowners and local tax revenues. (*Id.*) This finding is correct, as an estimated 86 workers will be required to construct the project, with an additional 512 jobs created in the surrounding regions as a result of the construction. (Co. Ex. 1, Exhibit G at 13.) The estimated local benefit for construction jobs alone is estimated to be $14,500,000 while the remaining employment opportunities lead to over $60,000,000 in local benefits during the construction phase. (*Id.*) Lease payments to landowners are estimated to total approximately $950,000 a year. (*Id.*) Wages for the facility's estimated 7 full-time workers will be approximately $400,000 per year. (Co. Ex. 1 at 139.) The facility would also result in an increase in local tax revenues in an amount between $840,000 to $1,260,000 based on a 140 MW installation. (Co. Ex. 1 at 140.) All of these facts support a finding that the facility will have a positive impact on the local economy of not just Champaign County, but surrounding counties as well.

b. Ecological Impacts

Champaign Wind identified the ecological impacts of the proposed facility in its application and through direct testimony at the evidentiary hearing. Ecological impacts may be divided into three categories: surface waters, threatened and endangered species, and vegetation. Champaign Wind's application, the Staff Report of Investigation and the direct testimony in this proceeding provide sufficient evidence to allow for a finding that the facility will have a minimum ecological impact.

First, the proposed facility will have little impact on surface waters. No wetlands will be impacted by facility construction and operation. (Co. Ex. 1 at 116.) Facility collection lines will cross 31 streams within the Project Area. (Staff Rpt. at 23.) Mitigation measures will be used to minimize temporary impacts and permanent impacts to streams, such as using horizontal

directional drilling (HDD) for buried collection lines crossing perennial streams and utilizing arched bridge structures and other methods to avoid work below the ordinary high water mark. (Co. Ex. 1 at 120; Staff Rpt. at 23.) Champaign Wind intends to conduct as much work as possible in intermittent and ephemeral streams when the streams are dry. (Co. Ex. 1 at 121; Staff Rpt. at 23.) A Stormwater Pollution and Prevention Plan will also be developed to control potential sedimentation, siltation and run-off. (Co. Ex. 1 at 122; Staff Rpt. at 23.) This information along with the direct testimony of environmental scientist Hugh Crowell in which he discussed the permits necessary for construction disturbance near streams is sufficient for the Board to determine the facility's impact on surface waters and find that it will be minimal. (*See* Co. Ex. 19, Direct Testimony of Hugh Crowell at 7-13.)

The facility's impact on threatened and endangered species will also be minimal. Champaign Wind's environmental consultant, Hull & Associates, conducted a desktop and field screening for the potential presence of endangered or threatened species within the Project Area. (Co. Ex. 19, Direct Testimony of Hugh Crowell at 4; *see also* Co. Ex. 1 at 108-112.) Only one federally endangered species, the Indiana bat, was found to have a presence in the Project Area. (Staff Rpt. at 24.) Suitable habitat was found for the rayed bean mussel (endangered species) and the eastern massasauga rattlesnake (candidate species). (Co. Ex. 1 at 108.) Any impact on the rayed bean mussel habitat will be minimal given the lack of any living rayed bean mussels within the Project Area's streams, the use of mitigation measures in and around stream work and the siting of facility components away from sensitive habitats. (Co. Ex. 1 at 121.) Likewise, potential impacts on the eastern massasauga rattlesnake will be minimal, given that the facility will avoid a 20 acre wetland in Urbana Township which is the only suitable habitat area for the rattlesnake in the Project Area. In addition, Staff has recommend a presence/absence survey near

the wetland. (Staff Rpt. at 55.) If the rattlesnake is not detected, there would be no potential impact. If the rattlesnake is detected, avoidance and minimization measures approved by the United States Fish and Wildlife Service (USFWS) and ODNR would be required to protect the species. (Staff Rpt. at 55.)

The proposed facility's impact on the Indiana bat will also be appropriately addressed through the implementation of a Habitat Conservation Plan (HCP) and issuance of an Incidental Take Permit (ITP). As noted by Staff, the primary threat to the Indiana bat would be during operation of the turbines due to the risk of collision. (Staff Rpt. at 27.) Tree clearing would be addressed by imposing seasonal tree cutting dates, November 1st to March 31st which Terry VanDeWalle, a biologist, testified is a common method to minimize construction impacts to Indiana bats. (Staff Rpt. at 27; *see also* Co. Ex. 7, Direct Testimony of Terry VanDeWalle at A.15.) Operational impacts will be minimized and mitigated through the implementation of a HCP and the issuance of an ITP by the USFWS to Champaign Wind's sister company, Buckeye Wind LLC.[1] (TR 178; Staff Rpt. at 26.) As explained by Staff, "[t]he HCP is a comprehensive plan for ecological preservation and considers all aspects of the Indiana bat's habitat, including surface water quality, vegetation, and other ecosystem components and also includes measures to minimize impacts and ensure long term conservation of endangered species." (Staff Rpt. at 26.) Champaign Wind witness Terry VanDeWalle also stated that "the conservation measures described within both the HCP and EIS adequately provide for the protection of federally–listed species." (Co. Ex. 7, Direct Testimony of Terry VanDeWalle, at A.9.)

[1] Champaign Wind intends to transfer ownership of the facility to its sister company, Buckeye Wind LLC, in order for the proposed facility's turbines to be covered under the Buckeye Wind ITP and HCP (TR 178) and in order to demonstrate that the facility has complied with Condition 26 as recommended at page 54 of the Staff Report of Investigation.

The proposed facility will also have minimal impact on other wildlife species. Siting of facility components will be away from sensitive habitats, such as forestland, streams and wetlands, to minimize impacts to wildlife. (Co. Ex. 1 at 121.) The majority of facility components will be located in agriculturally active areas, further minimizing the impact to existing species. (*Id.*) Habitat loss will be minimal, as only 12.7 acres of forest and 1.7 acres of scrub-shrub habitat will be directly impacted by facility construction, with most impacts being temporary. (Co. Ex. 1 at 122.) Operational impacts to avian species should not be significant given that prior studies show that bird collisions are relatively infrequent events at wind farms. (Co. Ex. 1 at 131.) Champaign Wind estimated that worst case, the annual collision mortality would be 504 birds, which is a tiny fraction of the population that migrates through the area, and is not considered a biologically significant impact. (Co. Ex. 1 at 132.) As noted above, operational impacts to the Indiana bat will be minimized and mitigated through the implementation of measures in the HCP. Those measures are expected to minimize and mitigate impacts to other bat species as well.

Staff also recommended a post-construction monitoring program to help assess impacts to avian and bat species. (Staff Rpt. at 55.) Champaign Wind suggested such a post-construction avian and bat fatality monitoring plan in its application. (Co. Ex. 1 at 134.) Staff has drafted a recommended condition (Condition 28) that provides for monitoring and possible mitigation for avian and bat species. (Staff Rpt. at 55.) Champaign Wind has proposed minor revisions to the condition, as discussed later in this brief. The point to be made in this section is that both Staff's recommended version of Condition 28 and Champaign Wind's version of Condition 28 provide additional assurances that impacts to avian and bat species will be minimized and, if appropriate, mitigated.

Lastly, the facility's impact on surrounding vegetation will be minimal. Hull & Associates conducted a vegetative survey on all plant communities within a quarter mile of the proposed facility. Results of this survey were included in the application (page 90) and in Exhibit H to the application. (Co. Ex. 1.) In addition, as noted in the Staff Report of Investigation, 97 percent of the land that will be impacted is agricultural land. The other 3 percent includes 12.7 acres of forested land, with a permanent loss of 2.9 acres and 1.7 acres of scrub-shrub habitat with a permanent loss of 0.4 acres. (Staff Rpt. at 28.) As summarized by Champaign Wind in its application, "it is not anticipated that any plant species occurring in the Project Area will be extirpated or significantly reduced in abundance as a result of construction activities." (Co. Ex. 1 at 113.)

c. Public Services, Facilities and Safety

Other considerations of the facility's impact on the environmental surroundings include setbacks, the local transportation system, water supplies, safety issues such as blade shear, high winds, ice throw, construction and operational noise, shadow flicker, communications and decommissioning of the facility. Staff considered all of these issues in the Staff Report of Investigation. (Staff Rpt. at 28-37.) A discussion on each issue follows.

i. Setbacks

Champaign Wind designed the project to satisfy the minimum statutory setbacks requirements to property lines and residential structures. Taking into account the tallest turbine and the longest rotor blade, the property line setback is 541 feet for the project and the residential structure setback is 919 feet. (Co. Ex. 1 at 136.) As currently sited, the distance between proposed turbines and the nearest non-participating property line ranges from 561 to 3,403 feet, and averages 1,170 feet. (*Id.*) The distance between proposed turbines and the nearest residential structure ranges from 934 to 2,642 feet, and averages 1,512 feet. (*Id.*)

All turbines satisfy these minimum statutory setbacks with the exception of two turbines (turbines 95 and 79) as noted by Staff at the evidentiary hearing. (TR 2031-2032.) Turbine 95 is not within the minimum statutory property line setback due to a neighboring parcel owner no longer being interested in participating in the project. (TR 2031.) Turbine 79 is not within the minimum statutory residential setback because a new residence was constructed on the neighboring property. (TR 414-415; TR 2032.) As Michael Speerschneider, an officer of Champaign Wind and Senior Director of Permitting and Government Affairs for Everpower Wind Holdings Inc. testified, Champaign Wind would attempt to work with neighboring landowners to secure the necessary lease rights or microsite the turbines to a location outside the minimum setback distances. (TR 415.) To allow Champaign Wind to complete leasing or perform micrositing, it proposes the following additional condition to the certificate:

> Champaign Wind shall not construct Turbines 79 and 95 as proposed unless Staff confirms that the turbines satisfy the minimum property line and residential setbacks. If Champaign Wind elects to modify the location of proposed Turbines 79 or 95, Champaign Wind shall provide Staff a hard copy of the geographically referenced electronic data, all changes in relation to the proposed relocation of Turbine 79 or 95, and nay associated facilities. All changes will be subject to staff review and approval prior to construction to ensure compliance with the conditions set forth in this opinion, order, and certificate.

This condition will ensure that the two turbines can only be constructed if the statutory minimum setbacks are met. A similar condition was recommended by Staff and approved by the Board in the Buckeye I proceeding. *(In re Buckeye Wind, LLC*, Case No. 08-666-EL-BGN, Opinion, Order, and Certificate at 91.)

As the Board has sufficient information to determine the turbine setbacks for the project, and as more fully discussed in the Public Interest section below, it may find that the setbacks are sufficient to minimize impacts to the surroundings.

ii. Roads and Bridges

Once operational, the proposed facility will not significantly contribute to traffic on local roads. (Co. Ex. 1 at 78.) State and local roads in the vicinity of the Project Area will experience increased traffic during facility construction due to the delivery of materials and equipment. (Co. Ex. 1 at 156.) A preliminary route evaluation study was performed for the project by Hull & Associates. (*Id.*) Interstate 70 and U.S. Route 33 will be the primary roads to access the Project Area vicinity. (Co. Ex. 1 at 157.) Roadways used to deliver facility equipment will be video documented prior to commencement of construction, and roads returned to pre-construction condition after construction is completed. (Co. Ex. 1 at 159.)

In addition to Champaign Wind's commitments in its application, Staff has recommended a number of conditions to protect local roads. (Staff Rpt. at 56-57.) Condition 33 requires in part that Champaign Wind repair damage to government-maintained roads and bridges caused by construction activity. (Staff Rpt. at 33.) Condition 34 provides similar requirements during decommissioning, requiring Champaign Wind to repair damage to local roads and bridges caused by decommissioning activity. (Staff Rpt. At 57.) It also requires Champaign Wind to provide financial assurance to the counties that it will restore the public roads and bridges it uses to their pre-decommissioning condition. (*Id.*) The condition calls for a road use maintenance agreement that will detail the process and standard for repairs. (*Id.*) Condition 32 requires Champaign Wind to provide the final delivery route plan to both Staff and the County Engineer prior to construction, and to perform a study as to any necessary route improvements. Condition 31, in part, requires Champaign Wind to obtain all required transportation permits.

These conditions provide thorough protection for local counties and townships that roads and bridges will be improved and repaired as necessary during the construction of the facility. Notably, such a process was successful in Van Wert County, where the County Engineer found

that roads after construction were in as good or better condition than before construction. (TR 2320-2321.) With Staff's recommended conditions, the Board may conclude that the proposed facility will have minimal adverse impacts to local roads and bridges.

iii. Water Supplies

As noted by Staff, the Project Area lies outside of the water service area of the City of Urbana. (Staff Rpt. at 30.) Private wells exist in the Project Area, but blasting is not anticipated for this project. (Co. Ex. 1 at 60.) In the event blasting occurs, turbine setbacks from residences help to ensure that private wells would not likely be damaged or suffer reduced well yields, since private wells are typically located close to residences. (*Id.* at 60-61.) Both Staff and Champaign Wind also concluded that Source Water Protection Areas as defined and approved by the Ohio EPA for the protection of drinking water sources will not be affected by the proposed facility. (Staff Rpt. at 30; Co. Ex. 1 at 32-33.) Accordingly, the Board may find that the proposed facility will have a minimal impact on local water supplies.

iv. Blade Shear

Blade shear is a rare event, where a turbine blade or part of a blade separates and is thrown a distance from a tower. (Staff Rpt. at 31; Co. Ex. 5, Direct Testimony of Michael Speerschneider at 9.) Champaign Wind put on three witnesses to discuss this topic and their experience with the frequency of blade throw. Michael Speerschneider testified that "[t]here are hundreds of thousands of wind turbines operating throughout the world and there has been very low rate of blade failures and throw debris, and no cases of harm to the public." (Co. Ex. 5 at 9.) He also testified that he was not aware of any blade throw incidents at any of Champaign Wind's parent company's operating wind farms. (TR 318.) Christopher Shears, an officer of Champaign Wind and Everpower's Senior Vice President as well as a former Chairman of the British Wind Energy Association with over 18 years in the industry, testified that he was not

aware of any incident where a member of the general public has been injured by a blade failure. (Co. Ex. 12, Direct Testimony of Christopher Shears at 3.) Robert Poore, from DNV KEMA testified that in his 30 years working in the wind industry, "I have never known a blade throw to injure anyone." (Co. Ex. 9, Direct Testimony of Robert Poore at A.10.) He also testified that "[b]lade failures are rare but do occur, and blade throws are rarer yet. Despite over 200,000 turbines installed worldwide, it is unusual for even those of us embedded in the industry to hear about blade throw." (*Id.* at A.11.)

At the hearing, Union Neighbors United submitted a docketed incident report relating to a Vestas' blade throw incident at the Ohio Timber Road II Wind Farm (Case No. 10-369-EL-BGN). (*See* UNU Ex. 22, Direct Testimony of William Palmer, Exhibit A-2.) In that incident, a blade vibration sensor was triggered when a blade broke as the result of an apparent blade defect. (*Id.*) A remote operator for the manufacturing company reset the automatic shutdown, resulting in a second blade break and a wide-spread debris field. (*Id.*) One piece over 3 kg travelled 762 feet while other smaller pieces were found beyond that distance. (*Id.* at Exhibit A-9, p. 4/23.) Staff witness Andrew Conway visited the site the day after the incident occurred and stated that smaller pieces may have blown outside 762 feet. (TR 2568.) The Vestas incident shows that blade failures do occur, and can be magnified by operator error. However, despite the Vestas incident, blade failures remain rare instances. Mitigation measures such as factory inspections can further minimize a rare occurrence. (*See* Co. Ex. 9, Direct Testimony of Robert Poore at A.13-A.14.)

As to the rarity of blade throw, UNU's own witness William Palmer noted that "the failure rate is relatively low as human experience dictates" and that "one is no doubt more likely to be killed in an automobile accident[.]" (UNU Ex. 22, Direct Testimony of William Palmer at

19.) It also should be noted that Mr. Palmer lives near an operating wind farm, and was not aware of any incidents of blade throw at that wind farm. (TR 1466.) Mr. Palmer's testimony supports the testimony of Champaign Wind's witnesses that blade throw is a rare event. His testimony with the testimony of Champaign Wind's witnesses provides adequate assurance to the Board that impacts as a result of blade throw on the surrounding environment will be minimal.

v. Winds

Staff also considered whether high winds would affect the turbines. (Staff Rpt. at 31.) Staff found that the turbines are designed to withstand high winds, and that all turbines under consideration would be designed to meet international engineering standards. (*Id.*) The turbines with the lowest tolerance to wind extremes are still designed to withstand an extreme 10-minute average wind speed of 84 mph, and 50-year return gust of 117 mph. All turbines proposed for the facility are rated to withstand wind speeds well in excess of those likely to occur in the Project Area. (Co. Ex. 1 at 32.) This information along with the minimum setbacks to property lines of 541 feet and to residential structures of 919 feet, allows the Board to find that high wind events will not have an adverse impact as a result of the turbines on the surrounding environment.

vi. Ice Throw

Another area Staff addressed in its Staff Report of Investigation was ice dropping from turbine blades. Ice shedding occurs when ice accumulates on rotor blades, and subsequently breaks free and falls to the ground. (Co. Ex. 1 at 81.) In certain conditions, ice can build-up on the rotor blades and/or sensors, slowing the rotational speed, and potentially creating an imbalance in the weights of the individual blades. (*Id.*) Significantly, ice throw is a rare event, and there has been no reported injury caused by ice throw from a turbine. (*Id.*)

Champaign Wind witnesses Michael Speerschneider and Christopher Shears both testified on ice throw. Michael Speerschneider noted that there are hundreds of thousands of wind turbines operating throughout the world and that events such as ice throw are rare compared to the more common event of ice dropping off rotors . (Co. Ex. 5, Direct Testimony of Michael Speerschneider at 9-10; TR 316.) He also noted that modern turbines are equipped with many control features that will stop the turbine when icing occurs. (Co. Ex. 5, Direct Testimony of Michael Speerschneider at 10.) Christopher Shears, the former Chairman of the British Wind Energy Association with over 18 years in the industry, testified that he was not aware of any incident where a member of the general public has been injured by ice throw. (Co. Ex. 12, Direct Testimony of Christopher Shears at 3.)

Staff witness Andrew Conway also provided testimony on ice throw. He testified that GE has a recommended setback recommendation of 1.5 times the sum of the hub height plus the rotor diameter to residences, public roads that are more than lightly traveled, parking lots, public buildings and office buildings. (TR 2499.) He agreed that the GE safety manual only recommends use of this setback if ice detectors are not used on a turbine. (TR 2581). All of Champaign Wind's turbines will have ice detectors along with vibration monitors, negating the use of the GE setback. (Co. Ex. 1 at 82.) Nevertheless, Champaign Wind is agreeable to Staff's application of that setback as described in the Staff Report of Investigation. (Staff Rpt. at 32.)

Staff has also recommended conditions related to ice throw. Condition 44 requires Champaign Wind to instruct workers on the potential hazards of ice conditions on wind turbines. (Staff Rpt. at 58.) Condition 45 requires Champaign Wind to install and utilize an ice warning system that may include ice detectors, ice detection software or an ice sensor alarm that would trigger an automatic turbine shutdown. (Staff Rpt. at 58.) Condition 46 requires Champaign

Wind to relocate and/or resize turbines 87 and 91 to conform to the GE setback distance from occupied structures. All of these conditions, which are agreeable to Champaign Wind, will act to minimize the already negligible risk to the general public of ice throw. With the testimony and conditions, the Board may find, as it did in the Buckeye Wind I proceeding, that the impact of ice throw on the surroundings is minimal. (*In re Buckeye Wind, LLC*, Case No. 08-666-EL-BGN, Opinion, Order, and Certificate at 43.)

vii. Construction Noise

Champaign Wind also presented information on construction noise in its application. (Co. Ex. 1 at 70-72.) Noise from construction activities associated with the facility will be temporary in nature. (*Id.* at 70.) At the very worst, sound levels ranging from 56 to 63 dBA might temporarily occur over several weeks at the nearest homes to turbine construction sites. (Co. Ex. 1 at 71.) Notably, other equipment such as farming equipment and grain dryers are utilized in and around the Project Area. (TR 982; TR 1133-1134.) Although existing noise sources exist in the area, Champaign Wind proposes mitigation measures such as using mufflers and limiting construction hours to normal working hours which should be sufficient to minimize any impacts of construction noise on the surrounding environment. (*See* Co. Ex. 1 at 79.) This information coupled with Staff's recommended Condition 35 which in part limits construction activities between 7:00 a.m. to 7:00 p.m., or until dusk provide sufficient evidence that the impact from construction noise will be minimal on the surrounding environment.

viii. Operational Noise

The Board may also make a finding that operational noise from the facility will have a minimal impact on the surroundings. When designing the facility, Champaign Wind sited turbines in an attempt to keep the modeled sound level at all non-participating residences to below the average Leq sound level for the site plus 5 dBA. (Co. Ex. 1 at 72-73.) This design

goal was used because the Board has accepted noise conditions in many wind certificates that require the operator to maintain levels below the average Leq sound level plus 5 dBA. (*See e.g. In re Paulding Wind Farm II*, Case No. 10-369-EL-BGN, Opinion, Order and Certificate, November 18, 2010 at page 32; *In re Paulding Wind*, Case No. 09-980-EL-BGN, Opinion, Order and Certificate, August 23, 2010 at pages 30–31; *In re Blue Creek*, Case No. 11-3644-EL-BGA, Order on Certificate Amendment, November 28, 2011 at page 5.)

Champaign Wind's noise consultant, David Hessler of Hessler Associates, Inc., conducted the modeling for the project. Using meteorological tower data on wind speeds at specific times, Mr. Hessler was able to correlate background sound levels to wind speeds that would be seen by the turbine rotors. (Co. Ex. 11, Amended Direct Testimony of David Hessler at 4; Co. Ex. 1 at Exhibit O.) Using that information, Mr. Hessler was able to determine the wind speed that would lead to the biggest differential between turbine sound power output and average background sound levels. (*Id.*) The result was a wind speed of 6 meters per second, known as the critical wind speed. (Co. Ex. 1 at 74.) At that critical wind speed, the measured average nighttime Leq sound in the Project Area was 39 dBA leading to a design goal of 44 dBA for the project. (Co. Ex. 1 at 73.) Modeling was then performed using the worst case turbine (the Nordex N100) which had the highest sound power output at the critical wind speed. Cumulative modeling was also done for both the Buckeye I and Buckeye II project, using the RePower MM92 for the Buckeye I project and the Nordex N100 for the Buckeye II project. (TR 350.) The RePower MM92 was used to model the Buckeye I project because the noise condition in that certificate requires noise levels to stay within the modeled contours of the RePower MM92. (TR 351-352.)

The modeling results for the Buckeye II project are contained in the application. (Co. Ex. 1 at 75-76, Exhibit O.) To achieve the 44 dBA design goal for the Buckeye II project, using the worst case turbine described above, 16 of the Nordex turbines (72, 75, 81-83, 86, 91, 95, 105-108, 114, 117, 130 and 131) had to be operated in low noise modes. (Co. Ex. 1 at 76.) The majority of non-participating structures are projected to experience levels less than 40 dBA and the remaining non-participating residences will experience sound levels in the 40 to 43 dBA range. (Co. Ex. 1 at 76.) Sound levels at the majority of non-participating property boundaries will be below 50 dBA with only a few corners of non-participating parcels experiencing levels in the 50-52 range. (*Id.*) No substantive impacts are anticipated at property boundaries. (*Id.*) Mr. Hessler also testified that the small overage at the corners of the non-participating properties will be negligible as 52 dBA sounds essentially the same as 50 dBA. (Co. Ex. 11 at 7.)

Cumulative modeling resulted in all non-participating homes remaining outside the 44 dBA contour, with the outcome being based on operating the same worst case Buckeye II turbines in low noise mode. (Co. Ex. 1 at 76.) With both projects operating in a worst case situation, additional non-participating residences would be exposed to sound levels in the 40 to 43 dBA range, still below 45 dBA. (Co. Ex. 1 at 77.) Likewise, only in a few instances would sound levels exceed 50 dBA at property lines of non-participating parcels, and no substantive adverse impact is anticipated. (*Id.*)

Staff considered the modeling when drafting the Staff Report of Investigation, concluding that operational sound levels will not likely generate unacceptable levels of noise for non-participating residents. (Staff Rpt. at 33.) As a precaution, Staff has recommended a condition (Condition 49) requiring Champaign Wind to operate its turbines at no more than 44 dBA during nighttime hours and no more than the greater of 44 dBA or the actual measured ambient Leq plus

5 dBA at the location of the receptor during daytime hours. (Staff Rpt. at 59.) This condition, as discussed below, is generally agreeable to Champaign Wind with minor revisions. One such revision that Staff witness Raymond Strom agreed to is that short-term excursions over the 44 dBA limit would not be considered a violation of the certificate. (TR 2805, 2823-2824.)

Staff's recommended condition is not an untested condition. Staff witness Raymond Strom testified that very few noise complaints had been received from the two operating wind farms in Ohio, both of which use a similar noise condition as proposed for this project. (TR 27908-2799; TR 2831.) Those projects are known as the Timber Road II Wind Farm and the Blue Creek Wind Farm. The Timber Road project in Paulding County Ohio utilizes a condition that requires the operator to satisfy a condition of the greater of 41 dBA plus 5 dBA or the actual measured ambient background plus 5 dBA. (TR 2813.) Mr. Strom testified that only two complaints on noise have been received from that project, one due to a turbine bushing issue and the other was noise coming from a pool pump and not a turbine. (TR 2798-2799.) The Blue Creek project uses a condition of the greater of 43.6 dBA plus 5 dBA or the actual measured ambient background plus 5 dBA. (TR 2821.) Mr. Strom testified that he was not aware of any noise complaints from that facility. (TR 2831.)

David Hessler explained why few complaints are received when sound levels are below 45 dBA. In his direct testimony, he stated that:

> ...a mean sound level of 45 dBA is a fair and reasonable regulatory noise limit for wind projects in rural areas. Our study of operating projects suggests that the rate of complaints for a project sound level between 40 and 45 dBA is about 2% of the total population (i.e. those within 2,000 ft. of a turbine), meaning, inversely, that the apparent acceptance rate is on the order of 98%.

(Co. Ex. 11, Amended Direct Testimony of David Hessler at 7.) As he testified on cross examination, "I am saying if the project level is 45 DB or less, what we found is that the

overwhelming majority of people appear to have no issue with it whatsoever." (TR 738.) Even with the presence of wind shear and stable atmospheric conditions which can make a project more audible, Mr. Hessler testified that "...those things happen all the time, but what we're finding is as long as the long-term level is less than 45, there's surprisingly to us, few complaints." (TR 811-812.) Mr. Hessler reiterated that "[a]s I mentioned, if it's under 45, there's very, very few complaints. Irrespective of the background level, by the way." (TR 830.)

Recommended guidelines from the World Health Organization support Mr. Hessler's testimony. The 2009 World Health Organization Night Noise Guidelines for Europe state that a L-night, outside noise level of 40 dB is equivalent to the lowest observed adverse effect level (LOAEL) for night noise. For levels at 40 to 55 dB, "[a]dverse health effects are **observed** among the exposed population. Many people have to adapt their lives to cope with the noise at night. Vulnerable groups are more severely affected." (TR 1742, emphasis added.) UNU witness Rick James agreed that this is an increasing range, "as the level is higher, the percentage of people goes up." (TR 1221.) Notably, the level utilized by the WHO is L-night, outside which is the A-weighted long-term average sound level determined over all the night periods of a year. (TR 1739.) In other words, a one year average. Also worth noting is that the WHO's recommendations are guidelines only, and that the WHO has recommended an interim target level of 55 dBA L-night, outside. (TR 1738; TR 1817-1818.)

Mr. Hessler's study also addressed low frequency noise from turbines. As noted in his study, modern wind turbines do not generate low frequency or infrasonic noise to any significant extent and no impact of any kind, whether related to annoyance or health, is expected from the project. (Co. Ex. 1, Ex. O at 39.) On cross examination, Mr. Hessler testified about hearing witnesses in a Wisconsin wind turbine proceeding testify about health concerns. (TR 865.) He

stated that he testified in the Wisconsin proceeding immediately after the witnesses, and in that testimony stated that infrasound below the level of hearing might have been an issue. (TR 866.) He recommended during his Wisconsin testimony that the issue at the witnesses' residences should be looked into further. (TR 865.) He concluded his discussion of his Wisconsin testimony by noting that he did not know for certain that the homeowners that testified in the Wisconsin proceeding were bothered by infrasound. (TR 866.)

The infrasound issue is one that will be raised by Union Neighbors United in this proceeding. UNU called an audiologist, Dr. Jerry Punch, to give testimony that infrasound caused adverse health effects, even though his cross examination revealed he was not qualified to link infrasound to adverse health effects. (*See e.g.* TR 1662-1663, 1684-1694.) The one person who is qualified to testify on causal links was Dr. Kenneth Mundt, an experienced epidemiologist. Dr. Mundt testified that:

> Based on my review of the relevant published, peer-reviewed scientific literature, I found no consistent or well-substantiated epidemiological evidence that could validly lead to a conclusion of a causal connection between residential proximity to industrial wind turbines and human disease or other serious harm to human health. It should be noted that some degree of noise is consistently perceived by residents living near wind turbines depending on number of turbines, time of day, season, and level of background noise, and to a lesser extent shadow flicker, again, depending on time of day, season, and position of the turbine blades. However, exposures to turbine noise or shadows, while potentially distracting or annoying to some people, have not been scientifically or epidemiologically demonstrated to harm human health.

(Co. Ex. 29 at A.28.) Dr. Mundt also testified that he had found no convincing or consistent evidence to support the claim that noise from wind turbines causes adverse health effects. (*Id.* at A29.) Dr. Mundt further explained that one of the primary studies relied on by Dr. Punch for his theory on infrasound was deficient, especially as the questionnaire used in the Nissenbaum study

was suggestively titled "Adverse health effects associated with industrial wind turbine installations questionnaire." (TR 2874.)

With modeling performed under a worst case scenario, the Board may determine the impact of operational noise from the facility. The Board may also find that the impact of operational noise from the facility on the surrounding environment will not rise to the level of having an adverse impact.

ix. Shadow Flicker

As an initial point, the Board has previously found that a level of 30-hours per year of shadow flicker at non-participating residences is acceptable. (*See e.g. In re Buckeye Wind, LLC*, Case No. 08-666-EL-BGN, Opinion, Order, and Certificate at 47.) As Champaign Wind witness Michael Speerschneider testified, this is a typical level acceptable for shadow flicker used in the industry that has resulted in few complaints at wind projects, including other projects of Champaign Wind's parent company, Everpower Wind Holdings, Inc. (TR 265.) Robert Poore, from DNV KEMA with over 30 years in the wind industry, testified that the 30-hour per year standard was a reasonable threshold for acceptability. (TR 640.)

In order to determine how many residential structures exceeded 30 hours of shadow flicker per year, Champaign Wind's consultant edr modeled the amount of shadow flicker predicted from both the proposed facility and the cumulative shadow flicker effects if both the Buckeye I and Buckeye II wind farms were constructed. Modeling shadow flicker is not complex, and as Champaign Wind witness Michael Speerschneider testified, calculating shadow flicker is essentially a basic physics problem based on the exact known location of the sun, the height of the turbine blades and the location of the structures. (TR 263.) The model for the

proposed facility relied on the GE 2.5-103 turbine which represented a worst case source of shadow flicker.

Champaign Wind provided the results of the modeling in its application. (Co. Ex. 1 at 85-89.) Modeling for the Buckeye II wind farm resulted in 11 non-participating residential structures predicted to exceed a total of 30 hours of shadow flicker per year. (Co. Ex. 1 at 85.) Field analysis of existing land features at the residential structures and remodeling resulted in only 8 residential structures predicted to exceed a total of 30-hours of shadow flicker per year. (*Id.* at 87) Cumulative modeling taking into account existing site-specific features resulted in an estimate of 7 non-participating structures predicted to exceed 30-hours per year of shadow flicker. (*Id.* at 88-89.)

Final shadow flicker levels at these structures will not be known until a turbine model is selected. As Champaign Wind noted in its application, the GE 2.5-103 turbine was a worst case scenario. Selecting a turbine with smaller dimensions than the GE 2.5-103 turbine would result in less levels of shadow flicker at the residential structures. (Co. Ex. 1 at 87.) Methods of mitigation of shadow flicker include tree plantings, window treatments or curtailment of turbine operation during periods of shadow flicker. (Co. Ex. 1 at 87.)

To ensure levels do not exceed 30 hours per year at non-participating residences, Staff has recommended Condition 50. (Staff Rpt. at 59.) That condition requires further modeling by Champaign Wind and if necessary, mitigation to reduce the amount of shadow flicker levels at all structures to less than 30 hours per year. Champaign Wind's modeling of shadow flicker coupled with Staff's recommended Condition 50 support a finding by the Board that the impact of shadow flicker will be minimal and at acceptable levels.

x. Communications

Champaign Wind's application also provided sufficient information to establish that the facility will not impact communications in the surrounding area. Typical communication signals to consider when siting a wind farm project are off-air television signals, AM/FM radio signals, microwave paths and civilian and military radar facilities. Mobile phone signals are typically not affected by physical structures because the beam of the radiated signal is wide and the wavelength of the signal is long enough to wrap around objects. (Staff Rpt. at 35.)

Champaign Wind evaluated these types of communications in its application. Comsearch conducted an analysis of off-air television reception, AM/FM broadcast station operations, licensed microwave paths, and mobile phone carrier services in the vicinity of the Project Area (Co. Ex. 1, Exhibit T; Co. Ex. 1 at 153.) Comsearch determined that full power channels in some nearby communities could suffer some degradation of off-air television signal reception when the turbines are installed. (Co. Ex. 1 at 154.) However, the nearest full power station is 29 miles away from the facility, making it more likely that the primary mode of television services in nearby communities is through cable or satellite services. (*Id.*) Champaign Wind proposes mitigating any demonstrated issues with off-air television coverage on an individual basis by offering cable television hookups or satellite systems. (Co. Ex. 1 at 154.)

Comsearch found no expected degradation for AM radio stations and only a slight reduction in the range of one FM station, W279BB. (Co. Ex. 1 at 155.) The area of impact for the FM station, however, was in the middle of farming fields, and not at any residences. (Co. Ex. 1 at 155.) Comsearch also determined that no turbines would affect any licensed microwave paths, mobile phone connections and military radar systems. (Co. Ex. 1 at 155-156.)

Staff reviewed all of this information when compiling its Staff Report of Investigation. (Staff Rpt. at 35-36.) Staff recommended that Champaign Wind be required to mitigate any

impacts to communications systems. (Staff Rpt. at 36.) Staff then recommended Conditions 52 and 53 requiring Champaign Wind to conduct studies of any potential impacts to any known microwave path or system, and to avoid or mitigate any impacts. As noted at the hearing, Champaign Wind is agreeable to Condition 52 as written by Staff and Condition 53 as revised by the Pioneer Electric Company. (TR 1888-1889; *see also* Pioneer Rural Electric, Ex. 1, Direct Testimony of Thomas J. Musick.)

xi. Decommissioning

To support its application, Champaign Wind included details on how it will decommission the facility. The typical life for a wind generation facility is 20 to 25 years, and it is extremely rare for a facility to be decommissioned. (Co. Ex. 1 at 159; TR 121.) Champaign Wind initially proposed that it would decommission the facility at the end of its life, removing below-ground structures to a minimum depth of 36 inches, re-grading disturbed areas, restoring slopes and contours, and removing roads, buildings and any other structures unless the landowner requests otherwise. (Co. Ex. 1 at 159.) Champaign Wind also proposed posting and maintaining financial assurance of $5,000 for the first year of operation, and then increasing that amount on a per-turbine basis using the difference between the salvage value of the equipment and the cost to remove the equipment. (*Id.* at 159-160.) An independent engineer would then update the decommissioning amount every three years throughout the life of the project. (*Id.*)

Staff disagreed with the $5,000 amount proposed by Champaign Wind, even though that is the amount set forth in the Buckeye Wind I certificate. (*In re Buckeye Wind, LLC*, Case No. 08-666-EL-BGN, Opinion, Order, and Certificate at 95.) Staff did agree with Champaign Wind's general plan for equipment removal, as can be seen by reading Condition 55(d) of the Staff Report of Investigation. (Staff Rpt. at 61.)

Champaign Wind's position is that no decommissioning funds are necessary in the beginning of turbine operation because as Mr. Speerschneider stated, "the possibility that a project in a newly built state would be decommissioned is practically zero." (TR 133.) He also noted that a turbine "... especially when newly installed, meaning the technology is still useful and could be used in other places and has sort of the intrinsic value of the turbine itself, not just the raw materials." (TR 128) "And that, in our experience and from what we've looked at ... would far outweigh the cost of taking it down, which would be relatively ... much lower than the cost of the actual equipment itself, which ... is a fairly expensive piece of equipment." (*Id.*) The high value of a newly installed turbine warrants revision to Staff's recommended Condition 55. Champaign Wind's plan for decommissioning coupled with Condition 55 as revised by Champaign Wind provides assurance to the Board that the facility will be dismantled at the end of its life and that funds are available to ensure the dismantling in the event Champaign Wind or its successor is unable to complete decommissioning.

All of the above facts in evidence support a finding by the Board that the probable nature environmental impact of the proposed facility has been determined, and that the proposed facility represents the minimum adverse environmental impact.

3. Electric Grid – Section 4906.10(A)(4), Revised Code

Champaign Wind proposes to use one point of interconnect to connect the facility to the bulk transmission grid. Electricity will flow from the turbines through a low voltage (34.5 kV) collection system to a single interconnecting transmission substation. The substation will be located in the Dayton Power and Light control area of the transmission grid, and will interconnect to the local and regional grid near the Givens to Mechanicsburg section of the Urbana-Mechanicsburg-Darby 138 kV transmission line.

Section 4906.10(A)(4), Revised Code mandates that the proposed facility "...is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems and that the facility will serve the interests of electric system economy and reliability[.]" To address this requirement, Champaign Wind caused various studies to be performed. Specifically, PJM, a regional transmission organization, conducted a Feasibility Study and System Impact Study for the proposed project, including local and regional transmission system impacts. (Co. Ex. 1, Exhibits C and D.)

The PJM studies included a review of reliability impacts related to the North American Electric Reliability Corporation (NERC) standards, a short circuit analysis, a stability analysis, a previously identified overload analysis, and a previously identified system reinforcement analysis. (Co. Ex. 1 at Exhibits C and D; *see also* Staff Rpt. at 41-42.) The result of the PJM analysis showed concerns in the event of multiple contingent events that could be alleviated by, reconductoring short stretches of 69 kV lines and upgrading a line drop and a line trap in Urbana. (*Id.*) Three circuit breakers and a set of transformer fuses and holders would also need to be replaced at the Logan Substation in order to support the project. (*Id.*)

Staff reviewed the PJM studies and found that "[w]ith the upgrades identified in the PJM studies, the proposed facility is expected to provide reliable generation to the bulk electric transmission system." (Staff Rpt. at 42.) This finding is supported by the studies as well as the results of PJM's deliverability testing which showed no deliverability or transmission system congestion problems associated with the facility. (Co. Ex. 1 at 52.) Accordingly, the Board may find that the proposed facility, with the required upgrades per the PJM studies, will be consistent with regional plans for expansion of the electric power grid of the electric systems serving this

state and interconnected utility systems and that the facility will serve the interests of electric system economy and reliability.

4. Air, Water, Solid Waste and Aviation – Section 4906.10(A)(5), Revised Code

The proposed facility will comply with Chapters 3704 (air pollution control), 3734 (solid and hazardous waste control), and 6111 (water pollution control) of the Revised Code, and all rules and standards adopted under those chapters. The proposed facility will also comply with Section 4561.32 (aeronautics), Revised Code. Sections 1501.33 (water consumption permit) and 1501.34 (water consumption determination) are not applicable to this facility. A discussion of each of these areas follows.

a. Chapter 3704, Revised Code – Air Pollution Controls

Fugitive dust will be generated during construction and, therefore, the fugitive dust rules set forth in Chapter 3704, Revised Code, may be applicable. Champaign Wind will use best management practices to prevent emission. Those practices will include maintaining construction vehicles in good working condition, minimizing and restoring exposed/disturbed areas as soon as possible, using a water or dust suppressant on unpaved roads, and possibly using temporary paving. (Co. Ex. 1 at 59.)

Since the proposed facility will generate electricity without releasing pollutants into the atmosphere, air-related regulations are not triggered during operation. For instance, New Source Performance Standards are not applicable to the proposal and a permit to install will not be required. Similarly, the facility will not require an acid rain permit and will not be subject to Prevention of Significant Deterioration requirements. Moreover, the facility does not require any air permits. (*Id.* at 58.)

Staff concluded that both construction and operation of the facility, as described and as subject to the conditions set forth by the Staff, will be in compliance with air emission regulations in Chapter 3704, Revised Code, and the rules and laws adopted thereunder. (Staff Rpt. at 43.) Accordingly, the Board may find that the proposed facility will comply with the requirements of Chapter 3704, Revised Code and the regulations adopted under that chapter.

b. Chapter 3734, Revised Code – Solid and Hazardous Waste Control

Champaign Wind stated that it is not aware of any debris or solid waste that would require removal before construction. (Co. Ex. 1 at 64-65.) During construction, some solid waste will be generated, but it will be minimal. (*Id.*) Primarily, the waste will be plastic, wood, cardboard, metal packaging/packing, construction scrap and general refuse. (*Id.*) The construction waste will be collected and disposed in dumpsters located at the laydown yards, and a private contractor will dispose of the refuse at a licensed solid waste disposal facility. (Co. Ex. 1 at 64-65.)

During operation, little debris or solid waste will be generated. (*Id.*) Most will likely occur at the operations and maintenance facilities and could include wood, cardboard, metal packing/packaging, used oil, general refuse, universal refuse, used antifreeze, and typical small office waste. (*Id.*) Champaign Wind will use a local solid waste disposal and recycling services. Used oil, used antifreeze, and universal waste will be disposed of in accordance with federal, state and local regulations. No licenses or permits will be required for waste generation, storage, treatment, transportation and disposal. (*Id.* at 65)

The Staff concluded that, with Champaign Wind's planned measures, all solid waste generated will comply with solid waste disposal requirements in ORC Chapter 3734, and the

rules and laws adopted under that chapter. (Staff Rpt. at 44.) The Board may conclude that the facility will comply with all solid waste disposal requirements.

c. Chapter 6111, Revised Code – Water Pollution Control

Neither construction nor operation of the facility will require significant amounts water, but the facility will affect water to some extent. Eight streams are within the project area. Also, the facility is within the drainages of the Upper Scioto River Basin and the Upper Greater Miami River Basin. The proposed facility will not convert a significant amount of land to built/impervious surfaces, but the tower bases, crane pads, access roads, O&M facilities, and substations will total approximately 68 acres, and of the 13,500 acres of leased land, the conversion will be only approximately 0.5 percent. Therefore, Champaign Wind anticipates no significant changes to the rate, make-up, or volume of surface water or storm water run-off. (Co. Ex. 1 at 59-60.)

Champaign Wind will obtain two Ohio National Pollutant Discharge Elimination System ("NPDES") permits for general storm water and construction discharge, and a Stormwater Pollution Prevention Plan ("SWP3"). If after final engineering it becomes necessary, Champaign Wind will also obtain a permit under the Clean Water Act, a Water Quality Certification, an Ohio Isolated Wetland Permit, and an Ohio Permit to Install on-site sewage treatment. (*Id.* at 59-60.)

Groundwater impacts will be minimal. Due to the depth of bedrock in the area, no blasting is anticipated for the turbine foundations. (Co. Ex. 1 at 60.) If blasting were to occur, it will be designed with charge weights and delays to localize the already unlikely change of an impact to residential wells. (*Id.* at 61.) Moreover, Champaign Wind does not anticipate any negative impact to private wells because of the setback of the turbines from private wells as they

are typically located within 100 feet of residences. (*Id.*) Any groundwater encountered during excavation will be removed using best management practices identified in the application.

Soil compaction from the construction equipment could limit the efficiency of surface water infiltration to groundwater because water percolation is reduced when soils are compressed. (Co. Ex. 1 at 61.) Top soil removal can also affect groundwater. (*Id.*) However, soil restoration and limiting the work area in the field prior to construction will mitigate impacts. Construction of access roads will also result in increases in storm water runoff that would typically infiltrate into the ground, but that impact will be an extremely small amount since so little ground is involved and therefore will not have a noticeable impact. (Co. Ex. 1 at 61.) There is also the possibility of introducing pollutants to groundwater during construction from minor leaks from fuel and hydraulic systems or spills. (Co. Ex. 1 at 61.) Champaign Wind will prepare a Spill Prevention, Control, and Countermeasure ("SPCC") Plan, in addition to the SWP3, to prevent such from occurring and respond if it occurs. (Co. Ex. 1 at 62.)

In regard to wetlands and surface waters, Champaign Wind intends to avoid or minimize crossing locations. It will also upgrade under-maintained or undersized crossing locations whenever possible during construction. This will keep farm equipment and other vehicles out of surface waters thereafter. In addition, special crossing techniques, equipment restrictions, herbicide use restrictions, and erosion/sediment control measures will avoid adverse impacts. Any vegetation clearing along stream banks and in proximity to wetland areas will be kept to an absolute minimum. (*Id.* at 63.)

While in operation, the facility will generate sewage and wastewater and use water at a rate much like a small business office. Either a septic tank or municipal sewage treatment

system will be used for disposal. A Permit to Install an on-site sewage treatment system will be obtained, if necessary. No water conservation practices are applicable. (Co. Ex. 1 at 63-64.)

The Staff found that significant amounts of water will not be used during construction or operation and, therefore, Sections 1501.33 and 1501.34, Revised Code, are not applicable to this project. The Staff further found that the facility will not significantly alter flow patters or erosion. With that and the small increase in impervious ground within the leased lands, no significant modifications in the direction, quality or flow patterns of stormwater run-off are anticipated. With the permit measures and mitigation efforts planned by Champaign Wind, the Staff concluded that construction and operation of the facility will comply with the requirements of Chapter 6111, and the rules and laws adopted under this chapter. (Staff Rpt. at 43-44.)

Given these facts, the Board may conclude that with the above measures, construction and operation of the facility will comply with the requirements in Chapter 6111, Revised Code, and the rules adopted under that chapter.

d. Section 4561.32, Revised Code – Aeronautics

The Federal Aviation Administration ("FAA") evaluated the impact of all 56 proposed turbines in the preliminary layout, and determined that they do not exceed obstruction standards and will not be hazardous to air navigation. (Co. Ex. 1 at 144, Exhibit S; Staff Rpt. at 44). As is typical for wind turbines, the FAA did require that the turbines be marked/lighted in accordance with an FAA circular. (*Id.*) Staff consulted with the ODOT-OOA, as required by Section 4906.10(A)(5), Revised Code. Staff concluded that, in light of the FAA's determination of no hazard, the construction and operation of the Facility is not expected to create any adverse impacts on airports or the existing air travel network. (Staff Rpt. at 44). The FAA

determinations of no hazard carry significant weight, and provide sufficient evidence to the Board to make a finding that the proposed facility will have minimal adverse effect on aviation.

The proposed facility will also have minimal adverse impact on local emergency flight services. Francis Marcotte, an aviation air safety investigator specializing in helicopter accident reconstruction and analysis with over 9,000 hours of helicopter flight time, testified that wind turbines will have no effect on CareFlight operations. (Co. Ex. 10, Direct Testimony of Francis Marcotte, at 5-6.) He also testified that the presence of a wind farm would not necessarily delay reaction time to an accident scene given the speed of the helicopters. (*Id.* at 5.)

The evidence demonstrates that Section 4906.10(A)(5), Revised Code, has been met, and no concerns raised by other parties at hearing are convincing to warrant a conclusion otherwise.

5. Public Interest, Convenience and Necessity – Section 4906.10(A)(6), Revised Code

a. Public Interaction

Champaign Wind has involved the public in the development of this project. A community open house was held in January 2012. (Co. Ex. 1 at 151.) Bus tours and other meetings have been held to educate the public. (*Id.*) Champaign Wind, in partnership with Green Energy Ohio, sponsored a community visit to the Blue Creek Wind Farm in northwest Ohio in September 2011. (*Id.* at 152.) Champaign Wind has also hired local residents as project developers, and has established a local office in Bellefontaine, Ohio to help with general project development and community outreach. (*Id.*) Champaign Wind officials have also met with local elected officials, including the Champaign County Engineer, to discuss the project. (TR at 1841.) These efforts support a finding that the project is in the public interest.

b. Liability

Also supporting a finding that the project is in the public interest is the fact that Champaign Wind will carry liability insurance through the life of the facility in the amount of $1 million per claim occurrence, and $2 million in the aggregate. (Staff Rpt. at 46.) The policy will cover any potential personal injury, death, and property damage associated with operation of the proposed facility. Participating landowners will be added as additional insureds. In addition, Champaign Wind will maintain umbrella coverage that will insure against claims of $10 million per occurrence and $10 million in the aggregate. (Co. Ex. 1 at 153.) Roads will also be protected through the use of a road use maintenance agreement. (Staff Rpt. at 47.) These facts support a finding that the project is in the public interest.

c. Alternative Portfolio Standard

The proposed project will also help entities meet Ohio's alternative renewable energy portfolio standards. SB 221, as codified in part at Section 4928.64(B), Revised Code, requires electric distribution utilities in Ohio to provide a percentage of all power delivered to come from renewable resources. This amount of the renewable energy portfolio increases each year, from today's statutory mandate of 2% reaching a minimum of 12.5% by 2024. Section 4928.64(B), Revised Code, also mandates that 6.5 percent of that renewable generation come from in-state renewable energy resources which would include a wind-powered generation facility. The facility will assist in providing additional emission-free electricity to the grid and can assist Ohio utilities in meeting the mandates of SB 221. In addition to SB 221's requirement that Ohio utilities provide 12.5 percent of their generation from renewable energy resources, SB 221 also requires utilities to achieve an overall portfolio of advanced energy resources equaling 25% by 2024. The generation from the facility can be used to meet that requirement as well.

d. Property Values

The record in this proceeding also supports a finding that property values will not be adversely impacted by the facility. The Board previously addressed this issue in the Buckeye Wind I proceeding, finding that property values will not be affected by a wind farm. (*In re Buckeye Wind, LLC*, Case No. 08-666-EL-BGN, Opinion, Order, and Certificate at 40.) That conclusion applies in this proceeding.

Champaign Wind witness Dr. Mark Thayer's testimony, an Emeritus Professor and chair of the Department of Economics at San Diego State University, testified at length about property values. Dr. Thayer not only co-authored one of the most extensive reports on wind farm impacts on property values, he also toured the Project Area and addressed it in his testimony.

Dr. Thayer testified that in his opinion, the proposed facility would have no impact on local property values. (Co. Ex. 8, Direct Testimony of Mark Thayer at A.11.) He based this finding on the study he co-authored and done by the Lawrence Berkley National Laboratory and funded by the Department of Energy which analyzed 7,459 single family home sales before, during and after wind farm development in the United States. (*Id.* at A.7, A.11.) He also noted that in addition to the Lawrence Berkley National Laboratory study, four other large empirical studies since December 2009 had examined the impact of wind farms on nearby property values. (*Id.* at A.5.) Those four studies used similar methods and came to the same conclusion that "post-operation/construction, there was **no identifiable effect** of wind power projects on nearby residential property values." (*Id.*, emphasis in original.)

Dr. Thayer testified that three studies, including the one he co-authored, suggest that there may be negative property value effects in the post-announcement, pre-construction phase, which he labeled an anticipation stigma. (Co. Ex. 8, Direct Testimony of Dr. Thayer at A.5.)

The anticipated stigma may just be a result of the publicity by opponents to the wind project. Once construction is complete though prices return to their former levels. In all, the studies show that "... these anticipation effects are transitory and disappear once the operation of the wind farm commences." (*Id.*)

Union Neighbors United called an appraiser, Mark McCann, to the stand to testify for the proposition that property values would be negatively affected by construction of the Champaign Wind Farm. (UNU Ex. 18.) Mr. McCann's conclusion was largely based on a study he conducted in Illinois looking at "paired sales." (TR 1092.) The paired sales were of "like" properties save for the location of one property near a wind turbine. The flaw with Mr. McCann's approach is that no two residential properties are ever truly a like. Properties differ by size, need of repair, location to work and recreation and curb appeal. Even in the rare instance where the same house is sold and then resold after a turbine is built nearby, there will be a difference in market conditions. As the recent real estate bubble demonstrates, real estate values can vary greatly over time. Further, Mr. McCann comparative sales approach looked at a very small sample size, only 53 properties. (TR 1093.) In sharp contrast, the Lawrence Berkley National Laboratory study looked at more than seven thousands residential sales and by using multi variable regression techniques, adjusted for the differences in each sale for square footage, scenic views, current market conditions and various other pricing components. The goal was to leave only the variable of distance to a wind turbine. The Lawrence Berkley National Laboratory study then underwent statistical studies to verify the results as well as being subject to true peer review. In terms of reliability, there is no question that the Lawrence Berkley National Laboratory study is the more reliable study.

Mr. McCann attempted to critique the Lawrence Berkley National Laboratory study, questioning, among other items, the exclusion of date points more than 6 standard deviations out. (TR 1062.) On cross examination, Mr. McCann admitted that he had not completed any college level courses in statistics, and lacked even a basic understanding of regression analysis. (TR 1053-1054.) Thus, his statistical criticism of the Lawrence Berkley National Laboratory study must be summarily dismissed. Given the testimony in this proceeding and the Board's prior conclusion in Buckeye Wind I on property values, the Board may determine that the facility will have minimal impact on property values. (*In re Buckeye Wind, LLC*, Case No. 08-666-EL-BGN, Opinion, Order, and Certificate at 40.)

e. Setbacks

The Board may also find that the setbacks as proposed for the facility are in the public interest. All turbines satisfy the minimum statutory setbacks of 541 feet to a property line and 919 feet to a residential structure, with the exception of two turbines (turbines 95 and 79) identified by Staff at the hearing and which require either relocation or rights to adjoining parcels. (TR 2031-2032.) In fact, the average turbine setback is much greater than the statutory minimums. As currently sited, the distance between proposed turbines and the nearest non-participating property line ranges from 561 to 3,403 feet, and averages 1,170 feet. The distance between proposed turbines and the nearest residential structure ranges from 934 to 2,642 feet, and averages 1,512 feet. (Co. Ex. 1 at 82.)

The facility's setbacks are sufficient to address shadow flicker, ice throw, operational noise and blade throw concerns. Shadow flicker modeling for the Buckeye II wind farm resulted in only 8 residential structures predicted to exceed a total of 30-hours of shadow flicker per year. (Co. Ex. 1 at 87.) Cumulative modeling taking into account existing site-specific features resulted in an estimate of 7 non-participating structures predicted to exceed 30-hours per year of

shadow flicker. (Co. Ex. 1 at 88-89.) Staff recommended Condition 50 ensures that Champaign Wind must conduct further analysis and mitigation, if necessary at all sites predicted to be in excess of 30 hours of shadow flicker per year.

Operational noise modeled for the facility as sited, and cumulatively for both the Buckeye I and II facilities, showed worst case levels at critical wind speeds below 44 dBA and at levels that lead to few complaints. (Co. Ex. 11, Amended Direct Testimony of David M. Hessler at A.13, A.14.; TR 1738-142; WHO Recommended Guidelines.) Staff has also recommended Condition 49 which imposes a noise condition similar to the two wind turbine facilities currently operating in Ohio. (Staff Rpt. at 59.) Notably, operational noise complaints have been essentially non-existent at those facilities. (TR 2798-2799, 2831.) The setbacks are also sufficient to protect the public from ice throw and blade throw given the rare occurrence of these events and the fact that no member of the public has been injured by such an event. (Staff Rpt. at 31; Co. Ex. 5, Direct Testimony of Michael Speerschneider at 9; Co. Ex. 12, Direct Testimony of Christopher Shears at 3; Co. Ex. 9, Direct Testimony of Robert Poore at A.10 – A.11.)

The setbacks also conform to what is common in the industry. Robert Poore, from DNV KEMA with over 30 years in the wind industry, testified that "[t]he wind farms that I have worked on and visited over my years in the wind industry have employed a range of setbacks from structures, property lines, and roads typically from one times to two times the total height of the turbine, or tip height." (Co. Ex. 9, Direct Testimony of Robert Poore at A.8.) He also noted that:

> Typical industry setbacks vary depending on what the turbine is being set back from (unoccupied structure, occupied structure, minor roads, pipelines, or major roads). Some setbacks, such as setbacks from minor roads, can be as small as blade overhang only or even zero. All turbine locations proposed for Buckeye II fall within typical industry experience for setbacks.

(*Id.* at A.8.)

Manufacturing setbacks also support the siting of the facility's turbines. Staff Witness Andrew Conway discussed setbacks recommended by GE during his cross examination. He noted that GE recommended a general setback of 1.1 times the tip height for public use areas, residences, buildings, sensitive above-ground services, public roads and railroads. (TR 2499.) In areas where icing can occur and when ice detectors are not utilized, GE recommends a setback of 1.5 times the sum of the hub height plus the rotor diameter. (TR 2499; TR 2581.) He testified that the proposed turbines as sited exceeded the GE recommendations for the vast majority, if not at all of the wind turbines. (TR 2499.) Only residences near turbines 87 and 91 are less than this distance, so he recommended Condition 46 to ensure the turbines are resized or relocated to conform to the GE ice throw setback recommendation. (Staff Ex. 7, Prefiled Testimony of Andrew Conway at 4.) Staff's adoption of the GE setback even though turbines will have ice detectors, further supports a finding that the facility turbine setbacks are in the public interest.

f. Emergency First Responders

The Board may also find that Staff's recommended conditions as to emergency first responders are in the public interest. Champaign Wind intends to conduct emergency response training with local first responders as done at other wind farms operated by Everpower. Michael Speerschneider testified that Champaign Wind "...believes that safety is of the utmost importance, and is committed to working with local responders to provide adequate training and information that will facilitate efficient and safe operations." (Co. Ex. 5, Direct Testimony of Michael Speerschneider at A.42.) He attached a report on a joint training exercise conducted at Everpower's Howard, New York project. (*Id.*) He also stated that:

> Champaign Wind intends to conduct a similar exercise for the Buckeye II project and will work closely both with local emergency responders, 911 dispatching and local emergency life flight companies to ensure all responders are properly equipped and are properly trained not only on accidents at any turbine site, but also on conducting emergency operations around turbine sites.

(Co. Ex. 5 at A.42.)

City of Urbana witness Mark Keller, the Fire Chief, testified that he attended an annual first responder safety meeting at an Everpower wind farm facility in Pennsylvania, and found it informative. (TR 2218.) He also was able to go up into a turbine tower after reading the company's emergency and safety plans. (TR 2216.) He also noted that the local first responders (Johnstown Fire Department) had a one time per year hands-on training. (TR 2219.) Additionally, he indicated that local first responders had no issues with communications. (TR 2220.)

The Board may also take note of Frank Marcotte's testimony. Mr. Marcotte, an experienced Coast Guard helicopter pilot with over 10 years experience flying Coast Guard rescue missions and two years of life flight service at a California hospital, testified that wind turbines will have no effect on CareFlight operations. (Co. Ex. 10, Direct Testimony of Francis Marcotte, at 5-6.) He testified that the presence of a wind farm would not necessarily delay reaction time to an accident scene given the speed of the helicopters. (*Id.* at 5.) He also testified that the high number of low level wires in the area of the project would be more dangerous than turbines, because when landing the wires are invisible because they blend in with earth tones. (TR 665.) He further testified that a distance of 30 feet from stationary obstructions was a safe distance to operate for takeoff and landing. (TR 675.) The Board may rely on Mr. Marcotte's credible testimony to find that local emergency response services will not be adversely impacted by the proposed facility.

Given the evidence in the record, which includes Mr. Marcotte's expert testimony, the Board may find that the proposed facility will serve the public interest, convenience and necessity.

6. Agricultural Districts – Section 4906.10(A)(7), Revised Code

Under Section 4906.10(A)(7), the Board must determine the facility's impact on the viability of agricultural land of any land in an existing agricultural district that is located within the site. As noted in Champaign Wind's application, significant impacts to agricultural land will be avoided by designing facility components for installation along field edges/hedgerows to the extent practicable. (Co. Ex. 1 at 160.) Champaign Wind estimates that 445.7 acres of agricultural land will be disturbed during project construction but that only 64.6 acres will be permanently lost as a result of the project's construction. (Co. Ex. 1 at 160.) Staff also noted that within the project area, only 15.46 acres of permanent impacts will occur to agricultural district land, and that the impacts to the agricultural district land would not affect the agricultural district designation of any of the properties within the project area. (Staff Rpt. at 49.) In addition, Champaign Wind has proposed a number of mitigation measures designed to protect and restore agricultural soils. (Co. Ex.1 at 160.)

Witness testimony in the proceeding provides additional information on the facility's impact on agricultural land. Mark Westfall testified that he had been farming for nearly 40 years in Champaign County and that in his opinion, wind power would help preserve the agricultural and rural character of the community. (Co. Ex. 17 at A.8.) Dale Arnold, Director of Energy, Utility and Local Government Policy for the Ohio Farm Bureau Federation testified that wind towers impose a small footprint that if properly constructed will not hamper agricultural development. (OFBF Ex. 1, Direct Testimony of Dale Arnold at A.8.) On cross examination, Mr. Arnold also testified that agricultural ground can be put back into viable agricultural production after construction. (TR 1560.) He further testified that once reclaimed, the "...farmer will still be able to farm that ground around a particular turbine and still utilize it for agricultural purposes." (TR 1559.)

Given the information in the application and witness testimony, the Board may find as Staff did, that the impact of the proposed facility on the viability of existing agricultural land in agricultural districts has been determined, and is minimal.

7. Water Conservation Practice – Section 4906.10(A)(8), Revised Code

Section 4906.10(A)(8), Revised Code, requires that "the facility incorporates maximum feasible water conservation practices as determined by the board, considering available technology and the nature and economics of the various alternatives." As noted in the Staff Report of Investigation, wind-powered electric generating facilities do not utilize water when generating electricity. Staff noted that a potable water supply would be available in the operations and maintenance building but the amount of water consumed would be minimal. (Staff Rpt. at 50.) Given the minimal use of water, the requirements of Section 4906.10(A)(8) are not applicable to the facility. (*See e.g.*, *In re Buckeye Wind, LLC*, Case No. 08-666-EL-BGN, Opinion, Order, and Certificate at 78.)

B. Proposed Revisions to Staff's Recommended Conditions

With the hearing concluded, Champaign Wind proposes the following revisions to Staff's recommended conditions, starting first with Conditions 6, 10, 19, 20-22 and 31-34 which Staff has indicated an agreement to the revisions. (Staff Ex. 2 at A.21.; TR 2030-2031; TR 2130-2131.)

1. Conditions 6, 10, 19, 20-22, 31-34

In his direct testimony, Champaign Wind witness Michael Speerschneider presented revisions to some of the 70 conditions and recommended deleting others as redundant or not necessary. (Co. Ex. 5 at 11-12.) Staff witness Don Rostofer stated in his direct testimony that Staff was agreeable to certain of Mr. Speerschneider's suggested revisions. (Staff Ex. 2 at A.21; *see also* TR 2030-2031.) Specifically, Staff is agreeable to Champaign Wind's suggestion that

Conditions 20, 21 and 22 be deleted and that Conditions 6, 10, 31, 32, 33 and 34 be revised as proposed by Mr. Speerschneider. A brief discussion of the agreed upon changes follows.

a. Condition 6

Champaign Wind requests a minor clarification to Condition 6 in order to avoid confusion on what should be included in the final engineering drawings. (Co. Ex. 5, Direct Testimony of Michael Speerschneider, at 12.) Champaign Wind and Staff agree that the following revision is appropriate. (TR 2030-2031.)

> (6) At least 30 days before the preconstruction conference, the Applicant shall submit to Staff, for review and acceptance, one set of detailed engineering drawings of the final project design, including the wind turbines, collection lines, substation, temporary and permanent access roads, any crane routes, construction staging areas, and any other associated facilities and access points, so that Staff can determine that the final project design is in compliance with the terms of the certificate. The final project layout shall be provided in hard copy and as geographically-referenced electronic data. The final design shall include ~~all conditions of the certificate and~~ references at the locations where the Applicant and/or its contractors must adhere to a specific environmental condition in order to comply with the certificate.

b. Condition 10

Champaign Wind proposed revision of the condition in order to account for seasonal or other conditions that could prevent site restoration within 30 days. (Co. Ex. 5, Direct Testimony of Michael Speerschneider, at 13-14.) Staff has indicated that it agrees to this revision. (TR 2030-2031.)

> (10) If construction has commenced at a turbine location and it is determined that the location is not a viable turbine site, that site shall be restored to its original condition within 30 days. If the Applicant demonstrates that good cause prevents it from completing the site restoration within 30 days, it may request an extension of time for completing such site restoration."

c. Condition 19

Champaign Wind requested substantive revisions to Condition 19 because it is duplicates efforts which Champaign Wind will be required to undertake as part of its Section 404 and Section 401 permit applications under the Clean Water Act. (Co. Ex. 19, Direct Testimony of Hugh Crowell, at 14; Co. Ex. 5, Direct Testimony of Michael Speerschneider, at 15-17.) Because this requirement will already be in place through the permit applications, Champaign Wind and Staff agree that revision to Condition 19 is appropriate. (TR at 2030-2031; TR 2130-2131.)

> (19) Unless addressed by final engineering drawings, the ~~The~~ Applicant shall have a construction and maintenance access plan based on final plans for the access roads ~~,transmission line,~~ collection lines, and types of equipment to be used. Prior to commencement of construction, the Applicant shall submit the plan to Staff, for review and confirmation that it complies with this condition. ~~The plan shall consider the location of streams, wetlands, wooded areas, and sensitive plant species, as identified by the ODNR, Division of Wildlife (ODNR-DOW), and explain how impacts to all sensitive resources will be avoided or minimized during construction, operation, and maintenance. The plan shall provide specific details on all wetlands, streams, and/or ditches to be crossed by the transmission line, including those where construction or maintenance vehicles and/or facility components such as access roads cannot avoid crossing the waterbody. In such cases, specific discussion of the proposed crossing methodology for each wetland and stream crossing (such as culverts), and post-construction site restoration, must be included. The plan shall include the measures to be used for restoring the area around all temporary access points, and a description of any long-term stabilization required along permanent access routes. For each phase of construction, the Applicant shall delineate each phase prior to any construction and the Applicant shall participate in a preconstruction conference with Staff prior to each phase of construction.~~"

d. Condition 20

As Mr. Speerschneider noted in his testimony, Condition 20 appears to have been copied from a transmission line report and relate to a transmission right of way. (Co. Ex. 5, at 17.) Since that is not applicable to this facility, which will have buried collection lines primarily

running in open areas and turbines located in open fields, Staff agrees that the condition should be deleted in its entirety. (TR at 2030-2031; 2138.)

(20) ~~The Applicant shall have a vegetation management plan. Prior to commencement of construction, the Applicant shall submit this plan to Staff, for review and confirmation that it complies with this condition. The plan must identify all areas of proposed vegetation clearing for the project, specifying the extent of the clearing, and describing how such clearing work will be done so as to minimize removal of woody vegetation. The plan must also describe how trees and shrubs around structures, along access routes, in the transmission line corridor, at construction staging areas, during maintenance operations, and in proximity to any other project facilities will be protected from damage. Priority should be given to protecting mature trees throughout the project area, and all woody vegetation in wetlands and riparian areas, both during construction and during subsequent operation and maintenance of all facilities; low-growing trees and shrubs in particular should be protected wherever possible within the proposed right-of-way. The vegetation management plan should also explore various options for disposing of downed trees, brush, and other vegetation during initial clearing for the project, and recommend methods that minimize the movement of heavy equipment and other vehicles within the right-of-way that would otherwise be required for removing all trees and other woody debris off site.~~

e. Condition 21

This condition is unnecessary because any requirements for restoration or mitigation will be addressed through best management practices as required by the National Pollutant Discharge Elimination System and/or Clean Water Act permits that must be secured by Champaign Wind. Champaign Wind stated that this condition results in regulatory redundancy and uncertainty and should be deleted in its entirety, and Staff has agreed. (TR at 2030-2031.)

(21) ~~The Applicant shall have a streamside vegetation restoration plan that minimizes impacts associated with the clearing of riparian vegetation. At least 30 days prior to the commencement of clearing activities, the Applicant shall submit such plan to Staff for review and confirmation that it complies with this condition.~~

f. Condition 22

Condition 22 appears to be taken from a transmission line application, and is not applicable to the facility, as its buried collection lines and the general location of the facility are

in open fields. For this reason and for the reasons stated by Hugh Crowell in his testimony (*see* Co. Ex. 19, Direct Testimony of Hugh Crowell, at 14), Champaign Wind recommends deleting the condition, and Staff agrees. (TR at 2030-2031.)

> (22) ~~For both construction and future right-of-way maintenance, the Applicant shall limit, to the greatest extent possible, the use of herbicides in proximity to surface waters, including wetlands along the right-of-way. Individual treatment of tall-growing woody plant species is preferred, while general, widespread use of herbicides during initial clearing or future right-of-way maintenance should only be used where no other options exist, and with prior approval from the Ohio EPA. Prior to commencement of construction, the Applicant shall submit a plan to Staff for review and confirmation that it complies with this condition, describing the planned herbicide use for all areas in or near any surface waters during initial project construction and/or future right-of-way maintenance.~~

g. Conditions 31, 32, 33, 34

Champaign Wind suggested minor clarifications to these conditions which relate to road transportation permits, repairs and improvements, and road use maintenance agreements. Staff agreed to the revisions suggested below for Conditions 31, 32, 33 and 34. (TR 2030-2031; 2041-2042). Condition 31 should be revised because often either the project's engineering procurement construction contractor (EPC contractor) or the transportation company will obtain the necessary permits for transportation during actual construction, rather than prior to the start of construction. (Co. Ex. 5, Direct Testimony of Michael Speerschneider, at 20-23.)

> (31) ~~Prior to commencement of construction activities that require transportation permits,~~ ~~the~~ The Applicant shall ensure ~~obtain~~ all ~~such~~ transportation permits are obtained prior to transport. The Applicant shall coordinate with the appropriate authority regarding any temporary or permanent road closures, lane closures, road access restrictions, and traffic control necessary for construction and operation of the proposed facility. Coordination shall include, but not be limited to, the county engineer, Ohio Department of Transportation, local law enforcement, and health and safety officials. This coordination shall be detailed as part of a final traffic plan submitted to Staff prior to the preconstruction conference for review and confirmation that it complies with this condition.

Conditions 32, 33 and 34 require minor clarifications, including clarifying the entities responsible for entering into road use agreements.

(32) The Applicant shall provide the final Champaign County delivery route plan and the results of any traffic studies to Staff and the County Engineer(s) 30 days prior to the preconstruction conference. The Applicant shall complete a study on the final equipment delivery route to determine what improvements will be needed in order to transport equipment to the wind turbine construction sites. The Applicant shall make all improvements outlined in the final delivery route plan prior to equipment and wind turbine delivery. The Applicant's delivery route plan and subsequent road modifications shall include, but not be limited to, the following:

(a) Perform a survey of the final delivery routes to determine the exact locations of vertical constraints where the roadway profile will exceed the allowable bump and dip specifications and outline steps to remedy vertical constraints.
(b) Identify locations along the final delivery routes where overhead utility lines may not be high enough for over-height permit loads and coordinate with the appropriate utility company if lines must be raised.
(c) Identify roads and bridges that are not able to support the projected loads from delivery of the wind turbines and other facility components and make all necessary upgrades.
(d) Identify locations where wide turns would require modifications to the roadway and/or surrounding areas and make all necessary alterations. Any alterations for wide turns shall be removed and the area restored to its reconstruction condition unless otherwise specified by the County Engineer(s).

(33) The Applicant shall repair damage to government-maintained (public) roads and bridges caused by construction activity. Any damaged public roads and bridges shall be repaired promptly to their preconstruction state by the Applicant under the guidance of the appropriate public authority ~~regulatory agency.~~ Any temporary improvements shall be removed unless the County Engineer(s) request that they remain. The Applicant shall provide financial assurance ~~to the counties~~ to the Board of Commissioners of Champaign County that it will restore the public county and township roads in Champaign County it uses to their preconstruction condition. The Applicant shall also enter into a Road Use Agreement with the County Engineer(s) or other appropriate public authority prior to construction and subject to Staff review and confirmation that it complies with this condition. The Road Use Agreement shall contain provisions for the following:

(a) A preconstruction survey of the conditions of the roads.

(b) A post-construction survey of the condition of the roads.
(c) An objective standard of repair that obligates the Applicant to restore the roads to the same or better condition as they were prior to construction.
(d) A timetable for posting of the construction road and bridge bond prior to the use or transport of overweight equipment ~~heavy equipment~~ on public roads or bridges.

(34) The facility owner and/or operator shall repair damage to government-maintained (public) roads and bridges caused by decommissioning activity. Any damaged public roads and bridges shall be repaired promptly to their pre-decommissioning state by the facility owner and/or operator under the guidance of the appropriate public authority ~~regulatory agency~~. The Applicant shall provide financial assurance to the Board of County Commissioners of Champaign County ~~the counties~~ that it will restore the public ~~county and township~~ roads and bridges it uses in Champaign County to their pre-decommissioning condition. These terms shall be defined in a Road Use Agreement between the Applicant and the County Engineer(s) or other applicable public authority prior to construction. The Road Use Agreement shall be subject to Staff review and confirmation that it complies with this condition, and shall contain provisions for the following:

(a) A pre-decommissioning survey of the condition of public roads and bridges conducted within a reasonable time prior to decommissioning activities.
(b) A post-decommissioning survey of the condition of public roads and bridges conducted within a reasonable time after decommissioning activities.
(c) An objective standard of repair that obligates the facility owner and/or operator to restore the public roads and bridges to the same or better condition as they were prior to decommissioning.
(d) A timetable for posting of the decommissioning road and bridge bond prior to the use or transport of heavy equipment on public roads or bridges.

2. Conditions 15, 17, 28, 35, 47, 49, 53, 55, 67, 68 and 70

Champaign Wind also believes that additional conditions warrant revision in the Staff Report of Recommendation. A discussion of the revisions follows.

a. Condition 15

Applicant requests a minor revision to Condition 15 because while it believes the cultural work suggested in the condition is appropriate, a modification or mitigation to the Board's Staff would suffice to address the results of any additional cultural resources survey work. (Co. Ex. 5,

Direct Testimony of Michael Speerschneider, at 14-15.) Staff recommended that the Applicant do additional cultural resource survey work and amend the application should a find be made. Champaign Wind requests the condition be revised to read:

> (15) Prior to commencement of any construction, the Applicant shall prepare a Phase I cultural resources survey program for archaeological work within the construction disturbance area, in consultation with Staff and the OHPO. If the resulting survey work discloses a find of cultural or archaeological significance, or a site that could be eligible for inclusion in the National Register of Historic Places, then if necessary, the Applicant shall submit an amendment to the Board or~~,~~ a modification~~,~~ or mitigation plan to the ~~Board~~ Board's Staff for review and approval."

b. Condition 17

Staff recommended Condition 17 which requires Champaign Wind to develop a historic preservation mitigation plan in consultation with Staff and the OHPO, detailing procedures for promoting the continued meaningfulness of the survey area's rural history. Champaign Wind is in ongoing consultation with Staff and OHPO and requests that no specific procedures or concepts are identified that might be out of context with the overall process. (Co. Ex. 5, Direct Testimony of Michael Speerschneider, at 15.) Champaign Wind also wants to ensure that any mitigation that is agreed upon will not limit the operation of its turbines. As Michael Speerschneider testified, the purpose of Champaign Wind's proposed revision is to ensure the integrity of the project and its ability to perform. (TR 347.) "...[T]he purpose of the clarification on this condition, was ... to establish that any future action with regards to mitigation for cultural resources didn't sort of fundamentally change the operational expectations for the project." (*Id.*) With that explanation, Champaign Wind asks that the condition be revised to read:

> (17) Prior to commencement of construction, the Applicant shall develop a historic preservation mitigation plan in consultation with Staff and the OHPO~~, to be used to promote the area's history~~. Unless agreed to by the Applicant, no part of the plan shall limit or affect turbine operation or the Applicant's activities

authorized under the certificate.", ~~detailing procedures for promoting the continued meaningfulness of the survey area's rural history.~~"

c. Condition 28

Champaign Wind agrees that avian and bat monitoring is necessary as required in the condition, but it should allow for variations on the protocol between the Applicant and ODNR. Staff recommended Condition 28 which defines post-construction methods for avian and bat monitoring. The current language merely sets forth requirements that Applicant *must* adhere to, without any flexibility between Applicant and ODNR if the two determine a better alternative monitoring method exists. (Co. Ex. 5, Direct Testimony of Michael Speerschneider, at 18-19.) Adding the phrase "Unless otherwise agreed to by the DOW and Staff" allows deviation from the protocol but only if approved by DOW and Staff. Deleting the sentence on daily turbine sampling takes into account any future agreed changes by DOW and Staff that would not require daily sampling. The remaining revisions, inserting "work with" and "agreed upon by the Applicant, DOW and Staff" provide the Applicant with input into the mitigation process, but still ensures that mitigation will occur if necessary.

With that explanation, Champaign Wind requests that Condition 28 be modified as follows:

> (28) Sixty days prior to the first turbine becoming operational, the Applicant shall submit a post-construction avian and bat monitoring plan for DOW and Staff review and confirmation that it complies with this condition. Unless otherwise agreed to by the DOW and Staff, the ~~The~~ Applicant's plan shall be consistent with ODNR¬approved, standardized protocol, as outlined in ODNR's *On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Energy Facilities in Ohio*. ~~This includes having a sample of turbines that are searched daily.~~ The post-construction monitoring shall begin within two weeks of operation of the first turbine and be conducted for a minimum of two seasons (April 1 to November 15), which may be split between calendar years. If monitoring is initiated after April 1 and before November 15, then portions of the first season of monitoring shall extend into the second calendar year (e.g., start monitoring on July 1, 2011 and continue to November 15, 2011; resume

monitoring April 1, 2012 and continue to June 30, 2012). The second monitoring season may be waived at the discretion of ODNR and OPSB Staff. The monitoring start date and reporting deadlines will be provided in the DOW approval letter and the OPSB concurrence letter. If it is determined that significant mortality, as defined in ODNR's approved, standardized protocols, has occurred to birds and/or bats, or a state-listed species is killed, then the DOW and OPSB Staff will work with ~~require~~ the Applicant to develop and implement a mitigation plan. If required, the Applicant shall submit a mitigation plan to the DOW and OPSB Staff for review and approval within 30 days from the date reflected on ODNR letterhead, in coordination with OPSB Staff, in which the DOW is requiring the Applicant to mitigate for significant mortality to birds and/or bats. Mitigation initiation timeframes shall be agreed upon by the Applicant, DOW and Staff and outlined in the DOW approval letter and the OPSB concurrence letter.

d. Condition 35

Champaign Wind requests a minor modification to the condition so that certain construction that is safer during lower winds which occur in the evening hours, (i.e., crane activity) are permitted to operate past 7:00 p.m. (Co. Ex. 5, Direct Testimony of Michael Speerschneider, at 24.) Staff recommended Condition 35 which limits the hours of general construction activity from 7:00 a.m. to 7:00 p.m. For safety measures, Champaign Wind requests the following modification of Condition 35 to account for safety in certain construction activities. A similar condition was previously approved by the Board in the Black Fork Wind proceeding. (*In re Black Fork Wind Energy LLC*, Case 10-2865-EL-BGN, Opinion, Order and Certificate, January 23, 2012 at 44.)

(35) General construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m., or until dusk when sunset occurs after 7:00 p.m. This limitation shall not apply to nacelle, tower, and rotor erection activities which may need to be carried out during low wind, nighttime hours for safety reasons. Impact pile driving operations and blasting if required, shall be limited to the hours between 10:00 a.m. to 5:00 p.m., Monday through Friday. Construction activities that do not involve noise increases above ambient levels at sensitive receptors are permitted outside of daylight hours when necessary. The Applicant shall notify property owners or affected tenants within the meaning of Rule 4906-5-08(C)(3), O.A.C, of upcoming construction activities including potential for nighttime construction activities.

e. Condition 47

Staff recommended Condition 47 in an attempt to protect underground gas pipelines from being pierced by turbine collapse. As described in Mr. Speerschneider's testimony, the probability of such an event is extremely low, and possibly nonexistent. (Co. Ex. 5, at 24-25.) Also, Staff witness Andrew Conway implied in his testimony that the concern was gas transmission and hazardous pipelines. (TR 2467-2468.) Because of this, and the fact that setbacks of this nature are not required under state or federal pipeline safety rules, Champaign Wind requests the following minor change to Condition 47 to reflect the type of pipeline that is of concern to Staff:

> (47) The Applicant shall adhere to a setback distance of at least 1.1 times the total height of the turbine structure, as measures from its tower's base (excluding the subsurface foundation) to the tip of its highest blade, from any natural gas transmission pipeline in the ground at the time of commencement of construction.

f. Condition 49

Staff recommended Condition 49 which addresses facility noise contribution for day and nighttime Leq levels. As written by Staff, this does not take into account the fact that Leq measurements were based on the critical wind speed of 6 meters per second, which is the greatest differential between ambient background noise and the turbine's sound power output. Using a set limit during nighttime hours, as Condition 49 as-written by Staff does, ignores the increase in ambient noise that occurs during periods of high winds. (Co. Ex. 11, Amended Direct Testimony of David Hessler, at 8-9.) Staff witness Strom agreed that in periods of high ambient background noise, turbine noise may not be detectable. (TR 2824-2825.) Champaign Wind also recommends using the phrase "non-participating residence" instead of "sensitive receptor" in the condition because it avoids any ambiguity over the type of receptor to which the condition applies, and follows language used in other Board approved certificates. (*See e.g. In re Paulding*

Wind Farm II, Case No. 10-369-EL-BGN, Opinion, Order and Certificate, November 18, 2010 at pages 32; *In re Paulding Wind*, Case No. 09-980-EL-BGN, Opinion, Order and Certificate, August 23, 2010 at pages 30–31; *In re Blue Creek*, Case No. 11-3644-EL-BGA, Order on Certificate Amendment, November 28, 2011 at page 5; TR 27908-2799; TR 2831.)

For good cause, Champaign Wind requests the following revision to Condition 49 taking into account Staff witness Strom's preference for the word "exceedences" over "excursions."

> (49) The facility shall be operated so that the facility noise contribution, other than short-term exceedences, does not result in noise levels at the exterior of any currently existing non-participating residence ~~sensitive receptor~~ that exceed the greater of: ~~project area ambient nighttime L*eq* (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 L*eq* (39 dBA) plus five dBA; or, (b) the validly measured ambient L*eq* plus five dBA at the exterior of any currently non-participating ~~location of the~~ residence ~~sensitive receptor~~. After 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.

g. Condition 53

Champaign Wind requests that this condition, related to ensuring all known microwave paths and communication systems are subject to avoidance or mitigation, be qualified to require it only to identify such paths and systems that are in existence at the time of the submission of the Application. After communication with Pioneer Rural Electric Cooperative, Inc. regarding Champaign Wind's concerns with the condition, a revised Condition 53 was drafted, which both Champaign Wind and Pioneer Rural Electric Cooperative, Inc. support. (Pioneer Rural Electric, Ex. 1, Direct Testimony of Thomas J. Musick, at 7.) The requested revision of Condition 53 is as follows:

> (53) All known microwave paths and communication systems, as identified in the communication studies performed for this project or required by the Board, shall be subject to avoidance or mitigation. The Applicant shall complete avoidance or mitigation measures prior to commencement of construction for

impacts that can be predicted in sufficient detail to implement appropriate and reasonable avoidance and mitigation measures. After construction, within seven days or within a longer time period acceptable to Staff.~~—~~, the Applicant shall mitigate all observed impacts of the project (a) to microwave paths and systems ~~within seven days or within a longer time period acceptable to Staff.~~ identified in the communication studies performed for this project or required by the Board, (b) to new microwave paths or systems identified by an electric service provider after the communication studies are performed but prior to the date the Applicant advises such electric service provider of the final turbine layout; provided that construction has commenced on such new paths or systems prior to the date the Applicant advises such electric service provider of the final turbine layout, or (c) to new microwave paths or systems identified by an electric service provider following the date the Applicant advises such electric service provider of the final turbine layout but only if the Applicant subsequently modifies the final turbine layout and such microwave paths or systems were modified or introduced in reliance upon the original final turbine layout and are adversely affected by the modifications to the original final turbine layout; provided that construction has commenced on such new paths or systems prior to the date that the Applicant advises such electric service provider of the modified final turbine layout. Avoidance and mitigation shall consist of measures acceptable to Staff, the Applicant, and the affected path owner, operator, or licensee(s).

h. Condition 55

Condition 55 relates to the costs of decommissioning a turbine at the end of its usable life. Champaign Wind objects to the condition to the extent it does not take into account that the salvage value of a newly installed turbine far outweighs the cost to take the turbine down. Requiring full decommissioning costs prior to construction without regard to salvage value has a significant financial impact on a wind project and is not necessary during the first five years of the life of the facility due to the salvage value of the equipment. (Co. Ex. 5, Direct Testimony of Michael Speerschneider, at 28-34.) Champaign Wind requests that Condition 55 be revised to follow the financial assurance requirements imposed in the Buckeye I certificate. This would avoid inconsistencies between the two projects, especially if Champaign Wind transfers the certificate to Buckeye Wind LLC. Paragraphs (g), (h) and (i) of Condition 55 should be revised as follows:

(g) Prior to construction of each turbine, the Applicant, facility owner and/or facility operator shall post and maintain financial assurance for said turbine in the amount of $5,000. This financial assurance shall be in place until such time that the facility has been operational for one year. With regard to financial assurance after the first year of operation of the facility, the following shall apply: Subject to approval by staff, an independent and registered professional engineer, licensed to practice engineering in the state of Ohio, shall be retained by the Applicant, facility owner and/or facility operator to estimate the total cost of decommissioning in current dollars (decommissioning costs), without regard to salvage value of the equipment, and the cost of decommissioning net salvage value of the equipment (net decommissioning costs). Said estimate shall include: an analysis of the physical activities necessary to implement the approved reclamation plan, with physical construction and demolition costs based on ODOT's Procedure for Budget Estimating and RS Means material and labor costs indices; the number of units required to perform each of the activities, and an amount to cover contingency costs (not to exceed 10 percent of the above-calculated reclamation cost). Said estimate should be on a per turbine basis and shall be submitted for staff review and approval after one year of facility operation and every fifth year thereafter, until the facility is decommissioned. The Board reserves the right to hire its own expert, at the generation facility's expense, to evaluate any of the periodic reports. After one year of facility operation. The Applicant, facility owner and/or facility operator shall post and maintain decommissioning funds in an amount equal to the net decommissioning costs, provided that at no point shall the net decommissioning funds be less than 25 percent of the decommissioning costs. The Applicant, facility owner and/or facility operator shall adjust the funds, if necessary, based on the updated estimate within 90 days after notice of staff's approval of the estimate. The decommissioning funds (financial assurance) shall be in a financial instrument mutually agreed upon by staff and the Applicant, facility owner and/or facility operator , and conditioned on the faithful performance of all requirements and conditions of the approved decommissioning and reclamation plan. Alternatively, the Applicant, facility owner and/or facility operator may use a performance bond in lieu of the 25 percent requirement. Decommissioning funds shall be in a form approved by Staff. ~~Subject to confirmation of compliance with this condition by Staff, and seven days prior to the preconstruction conference, an independent, registered Professional Engineer, licensed to practice engineering in the state of Ohio, shall be retained by the Applicant, facility owner, and/or facility operator to estimate the total cost of decommissioning in current dollars, without regard to salvage value of the equipment. Said estimate shall include: (1) an identification and analysis of the activities necessary to implement the most recent approved decommissioning plan including, but not limited to, physical construction and demolition costs assuming good industry practice and based on ODOT's *Procedure for Budget*~~

~~*Estimating and RS Means* material and labor cost indices or any other publication or guidelines approved by OPSB Staff; (2) the cost to perform each of the activities; (3) an amount to cover contingency costs, not to exceed 10 percent of the above calculated reclamation cost. Said estimate will be converted to a per-turbine basis (the "Decommissioning Costs"), calculated as the total cost of decommissioning of all facilities as estimated by the Professional Engineer divided by the number of turbines in the most recent facility engineering drawings. This estimate shall be conducted every five years by the facility owner and/or facility operator.~~

(h) ~~The Applicant, facility owner and/or facility operator shall post and maintain for decommissioning, at its election, funds, a surety bond, or similar financial assurance in an amount equal to the per-turbine Decommissioning Costs multiplied by the sum of the number of turbines constructed and under construction. The funds, surety bond, or financial assurance need not be posted separately for each turbine so long as the total amount reflects the aggregate of the Decommissioning Costs for all turbines constructed or under construction. For purposes of this condition, a turbine is considered to be under construction at the commencement of excavation for the turbine foundation.~~ The form of financial assurance or surety bond shall be a financial instrument mutually agreed upon by the Board and the Applicant, the facility owner, and/or the facility operator. The financial assurance shall ensure the faithful performance of all requirements and reclamation conditions of the most recently filed and approved decommissioning and reclamation plan. At least 30 days prior to the preconstruction conference, the Applicant, the facility owner, and/or the facility operator shall provide an estimated timeline for the posting of decommissioning funds based on the construction schedule for each turbine. Prior to commencement of construction, the Applicant, the facility owner, and/or the facility operator shall provide a statement from the holder of the financial assurance demonstrating that adequate funds have been posted for the scheduled construction. Once the financial assurance is provided, the Applicant, facility owner and/or facility operator shall maintain such funds or assurance throughout the remainder of the applicable term and shall adjust the amount of the assurance, if necessary, to offset any increase or decrease in the ~~Decommissioning Costs~~.

(i) The decommissioning funds, surety bond, or financial assurance shall be released by the holder of the funds, bond, or financial assurance when the facility owner and/or facility operator has demonstrated, and the Board concurs, that decommissioning has been satisfactorily completed, or upon written approval of the Board, in order to implement the decommissioning plan."

i. Condition 67 and 68

Conditions 67 and 68 should be deleted because they are above and beyond FAA requirements. Champaign Wind's project has received determination of no hazards from the FAA for all turbines. (Co. Ex. 1 at Exhibit S.) Yet, Staff recommended Condition 67, which requires Applicant to provide flight service stations within proximity with notices to airman (NOTAM). The FAA did not require these notices as part of the determinations of no hazard. More importantly, as Mr. Speerschneider noted, the FAA issues the notices, not Champaign Wind. (TR 45.) Champaign Wind is more than willing to provide final turbine locations to Grimes Field for posting (TR 46), it just cannot do so through NOTAMs.

Staff also recommended Condition 68, requiring Applicant to file all 7460-2 forms with the FAA at least 42 days prior to construction and to Staff for confirmation of compliance with the condition. This condition contradicts the FAA's express direction to Champaign Wind that it file Form 7460-2, Notice of Actual Construction or Alteration within 5 days after the construction reaches its greatest height. (*See* Co. Ex. 1 at Exhibit S, Determination of No Hazards; TR 408-409.)

With that explanation, Champaign Wind requests that Conditions 67 and 68 not be adopted by the Board.

(67) ~~The Applicant shall provide the flight service stations within proximity with notices to airman (NOTAM). These notices shall include the latitude and longitude coordinates for all structures, including cranes and construction equipment, that exceed 200 feet in height at ground level.~~

(68) ~~The Applicant shall file all 7460-2 forms with the FAA at least 42 days prior to construction and to Staff for confirmation of compliance with this condition.~~

j. Condition 70

Condition 70 should be revised because the record shows that the project will not interfere with local emergency life flight services in the vicinity of the project area, as recognized in the Board's previous decision. (*See In re Buckeye Wind, LLC*, Case No. 08-666-EL-BGN, Opinion, Order, and Certificate at 34.) Condition 70 requires Champaign Wind to coordinate a plan with local emergency life flight services, but then requires Champaign Wind to have a plan that will shut down the facility depending on the route of the helicopters. That last part of condition is very troubling. As explained by Frank Marcotte, an experienced Coast Guard helicopter pilot, wind turbines will have no effect on CareFlight operations, and it is not necessary to shut turbines down during flight operations. (Co. Ex. 10, Direct Testimony of Francis Marcotte, at 5-6.) Significantly, it should be noted that neither CareFlight nor any other life flight service intervened in this proceeding. Mr. Marcotte also testified that "the response time for a very quick aircraft may be in excess of the shutdown period and you would actually be delaying responses by doing so." (TR 691.) He further explained that shutting down turbines before he could land would result in delays and other problems in the response. (TR 725.)

Given Mr. Marcotte's testimony and experience in the cockpit of a helicopter, Champaign Wind requests that the following revision to Condition 70:

> (70) 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 ~~the~~ local emergency life flight service~~s~~, ~~CareFlight. 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.~~

3. Condition with Champaign Telephone Company

Champaign Wind also requests that Staff add an additional condition, with the support of Champaign Telephone Company, related to communication towers in the area. Champaign

Wind was contacted by Champaign Telephone Company regarding concerns with two communication towers in the area. In light of these discussions, Champaign Wind and Champaign Telephone Company have agreed to apply Condition 53 from the Buckeye Wind I project Opinion, Order and Certificate issued in Case No. 08-666-EL-BGN to the Buckeye II Wind project. (Co. Ex. 5, Direct Testimony of Michael Speerschneider, at 35-36.) Champaign Wind requests that Staff add the following condition to its list:

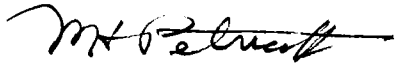
> The Applicant shall be prohibited from locating a proposed turbine where: (1) the distance from the turbine to either of two towers owned by the Champaign Telephone Company located at 10955 Knoxville Road, Mechanicsburg, Ohio 43044 (LAT: 40-0-30.16 N; LONG: 83-35-14.39 W) and at 2733 Mutual Union Road, Cable, Ohio 43009 (LAT: 40-9-26.0 N; LONG: 83-37-52.0 W) is less than the total height of the turbine above ground level or (2) the turbine would be in the direct line of sight between the two towers.

Because the revisions requested above are supported by evidence at the hearing, Champaign Wind requests that they be granted.

IV. CONCLUSION

The record supports a finding by the Board that Champaign Wind has provided evidence satisfying the criteria set forth in Section 4906.10(A), Revised Code. Accordingly, Champaign Wind's application for a Certificate should be granted subject to Staff's conditions with clarification and/or modified as requested by Champaign Wind herein.

Respectfully submitted,



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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing document was served upon the following parties of record via electronic mail on this 16th day of January 2013.

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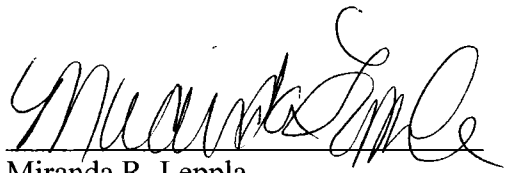

Miranda R. Leppla

Summary: Brief of Champaign Wind LLC electronically filed by Ms. Miranda R Leppla on behalf of Champaign Wind LLC