

THE OHIO POWER SITING BOARD

IN THE MATTER OF THE APPLICATION OF
FIRELANDS WIND, LLC FOR A
CERTIFICATE OF ENVIRONMENTAL
COMPATIBILITY AND PUBLIC NEED TO
CONSTRUCT A WIND-POWERED
ELECTRIC GENERATION FACILITY IN
HURON AND ERIE COUNTIES, OHIO.

CASE NO. 18-1607-EL-BGN

OPINION, ORDER AND CERTIFICATE

Entered in the Journal on June 24, 2021

I. SUMMARY

{¶ 1} The Ohio Power Siting Board approves and adopts the stipulation and recommendation, as modified herein, between Firelands Wind, LLC, Staff, and other parties and directs that a certificate be issued to Firelands Wind, LLC for construction of a new 297.66 megawatt wind-powered electric generation facility.

II. INTRODUCTION

{¶ 2} This Opinion, Order, and Certificate considers an application from Firelands Wind, LLC (Firelands or Applicant) to construct a wind farm consisting of up to 71 turbines in Erie County and Huron County. As described by Firelands, the wind-energy facility will involve 1,000 parcels covering 32,000 acres of leased land, with the permanent operating footprint of the facility occupying approximately 84.5 acres of built facilities. In addition to the turbines, the facility will include access roads, buried collection line, an operations and maintenance (O&M) building, a laydown yard, meteorological towers, and a substation that will be located in Oxford Township, Erie County. (Firelands Ex. 1 at 4, 7.) The Ohio Power Siting Board (Board) finds that a certificate for construction should be issued to Firelands in order to construct the facility.

III. PROCEDURAL BACKGROUND

{¶ 3} All proceedings before the Board are conducted according to the provisions of R.C. Chapter 4906 and Ohio Adm.Code Chapter 4906.

{¶ 4} Firelands is a corporation and person under R.C. 4906.01(A).

{¶ 5} R.C. 4906.04 provides that no person shall construct a major utility facility in the state without obtaining a certificate for the facility from the Board.

{¶ 6} The proposed electric generation facility is a major utility facility, as defined in R.C. 4906.01(B).

{¶ 7} On October 26, 2018, Firelands, a wholly owned subsidiary of Apex Clean Energy Holdings, Inc., filed a pre-application notification letter with the Board regarding its proposed 298.2 megawatt (MW) wind-powered electric generating facility in Huron, Erie, and Seneca counties, Ohio.

{¶ 8} On November 15, 2018, Applicant held a public information meeting at the Bronson-Norwalk Conservation League, in Norwalk, Ohio to discuss the proposed project with interested persons and property owners. Previously, on November 6, 2018, Firelands filed an affidavit of publication demonstrating its compliance with the notice requirements of Ohio Adm.Code 4906-3-03.

{¶ 9} On January 31, 2019, Firelands filed its application with the Board for a certificate of environmental compatibility and public need to construct and operate a wind-powered electric generation facility in Huron and Erie counties, Ohio (Project). Applicant explained that the information presented in the pre-application notification letter was revised to reflect that the project would be located in Huron and Erie counties only and that no facilities are now proposed for Seneca County. Specifically, Firelands stated that the project will be located within approximately 32,000 acres of leased land in Groton and Oxford townships in Erie County, and Lyme, Norwich, Richmond, Ridgefield, and Sherman townships in Huron County. Further, the application indicated that the project consists of up to 87 turbine generators, each with a nameplate capacity rating of 4.2 to 4.5 MW, which results in the project generating up to 297.66 MW, rather than the 298.2 MW listed in the pre-application notification letter.

{¶ 10} On March 7, 2019, the Board ordered the Applicant to hold another public information meeting in accordance with Ohio Adm.Code 4906-3-03(B) based on “substantial changes” that were made to the application after the informational meeting on November 15, 2018. The noted changes included: (1) the elimination of turbines in Seneca County; (2) the alteration of associated facilities so as to maintain a nearly equivalent generating capacity; and, (3) the greater detail regarding the number of acres under lease and the specific townships affected.

{¶ 11} On March 13, 2019, Applicant scheduled the Board-ordered second public information meeting for April 3, 2019.

{¶ 12} On April 3, 2019, Applicant held the second public information meeting at the VFW in Bellevue, Ohio.

{¶ 13} On March 18, 2019, Applicant filed a “Supplement to Application – Visual Impact Assessment” (VIA). The filing was described as being in accordance with the original Application narrative, wherein Applicant stated that the VIA would be filed as a supplement to the Application. The supplemental filing consisted of 242 pages.

{¶ 14} On March 29, 2019, Applicant and the Board’s Executive Director (Staff) filed separate pleadings wherein they each requested an extension of the Application completeness deadline set forth in Ohio Adm.Code 4906-3-06(A), due to the timing of the scheduled second public information meeting. By Entry of March 29, 2019, the Administrative Law Judge (ALJ) granted the extension of the completeness deadline, setting the new deadline as April 17, 2019.

{¶ 15} On April 11, 2019, Applicant filed its Second Supplement to Application - Summary of Second Public Information Meeting.

{¶ 16} On April 17, 2019, Staff issued correspondence confirming that the application was complete in compliance with Ohio Adm. Code Chapters 4906-01, et seq.

{¶ 17} On June 25, 2019, the ALJ granted a motion to intervene filed on May 17, 2019, by residents who lived or owned property in proximity to the project area (Residents¹).

{¶ 18} Additional notices of intervention were filed by Huron County (September 23, 2019), Norwich Township (October 4, 2019), Richmond Township (October 4, 2019), and Erie County (October 16, 2019).

{¶ 19} On July 10, 2019, Applicant filed a “Third Supplement to Application – Updated Wind Turbine Models and Map.” The purpose of this 199 page filing was purportedly threefold: (1) to update the list of turbine models that may be used for this project to include the latest updated versions of the Nordex and Vestas turbine models, which were included in the Application; (2) to provide an updated map that reflects a small portion of the project boundary that was inadvertently excluded from the maps included in the Application; and, (3) to provide updated maps reflecting the locations for several associated collection lines and private access roads.

{¶ 20} On September 12, 2019, Applicant filed a “Fourth Supplement to Application – Updated Wind Turbine Models and Maps” (Fourth Supplement). Applicant stated that the purpose of this 871-page filing is to update the list of turbine models that may be used for this project and to include an additional hub height for the proposed Vestas turbine model.

{¶ 21} On September 12, 2019, Applicant also filed its certificate of service of its accepted and complete application, in accordance with the requirements of Ohio Adm.Code 4906-3-07. Applicant also submitted the application fee to the Board, pursuant to Ohio Adm.Code 4906-3-12.

¹ Numerous local residents joined as parties throughout the case. Prior to the hearings in the case, some of the local residents either declined to participate or formally withdrew from the case. Ultimately, attorney Jack Van Kley began serving as counsel to many, but not all, of the local resident intervenors pursuant to his notice of appearance on January 24, 2020. As no local residents participated in the case other than through attorney Van Kley, “Residents” shall refer to all participating local residents.

{¶ 22} On September 27, 2019, Staff filed a motion to modify the completeness determination that was originally issued on April 17, 2019. Staff requested that Applicant's Fourth Supplement filed on September 12, 2019, be deemed as an amendment to a pending accepted, complete application pursuant to Ohio Admin. Code 4906-3-11(A). Accordingly, Staff requested that the Board find that Applicant must comply with Ohio Adm.Code 4906-3-06 for the filing of an amendment, and that a further Staff determination of completeness should be extended for 60 days from the filing of the Fourth Supplement.

{¶ 23} On September 27, 2019, Applicant filed to withdraw its Fourth Supplement that was filed on September 12, 2019.

{¶ 24} On October 4, 2019, Applicant filed a "Revised Fourth Supplement to Application – Updated Wind Turbine Models and Map" (Revised Fourth Supplement). The purpose of the 212-page filing was to replace the filing of September 12, 2019. The filing: updated changes to the proposed turbine model specifications, sound analysis, shadow flicker analysis, and setback analysis.

{¶ 25} On October 11, 2019, Staff filed an amended motion to modify the completeness determination regarding the application. This filing updated Staff's motion from September 27, 2019, in response to the additional Applicant filings of September 27, 2019, and October 4, 2019. Staff requested that Applicant's filing on October 4, 2019, be treated as an application amendment, and that a further determination of completeness be extended until December 3, 2019.

{¶ 26} On October 15, 2019, Applicant filed a "Second Certificate of Service of Accepted, Complete Application on Local Public Officials and Libraries." (Second Certificate) This filing described the service of the application of January 31, 2019, as supplemented on March 18, 2019, April 11, 2019, July 10, 2019, and October 4, 2019.

{¶ 27} On October 24, 2019, the ALJ granted Staff's amended motion of October 11, 2019, and extended the time for Staff's further determination of completeness until December 3, 2019.

{¶ 28} On December 3, 2019, Staff issued correspondence notifying Applicant that its application, as supplemented, had been found to be sufficiently complete pursuant to Ohio Adm.Code Chapter 4906-1, et seq.

{¶ 29} On December 23, 2019, the ALJ issued an Entry establishing the effective date of the application as December 23, 2019, and adopting a procedural schedule for the case, including dates for a local public hearing and adjudicatory hearing on March 17, 2020 and April 14, 2020, respectively.

{¶ 30} On January 24, 2020, attorney Jack Van Kley filed a notice of appearance on behalf of 22 members who were participating as Residents in the case. On February 21, 2020, former counsel for Residents filed a notice of withdrawal of counsel.

{¶ 31} On February 6, 2020, petitions for leave to intervene and memoranda in support of petitions were filed separately by (1) the Black Swamp Bird Observatory (BSBO) and, (2) Tom Yingling and Kevin Erf (collectively "Local Farmers").

{¶ 32} On March 2, 2020, Staff filed its Report of Investigation.

{¶ 33} By Entries dated October 24, 2019, December 23, 2019, and March 5, 2020, Huron County, Norwich Township, Richmond Township, Erie County, City of Willard, Local Farmers, and BSBO were granted intervention.

{¶ 34} On March 9, 2020, the governor signed Executive Order 2020-01D (Executive Order), declaring a state of emergency in Ohio to protect the well-being of Ohioans from the dangerous effects of COVID-19. As described in the Executive Order, state agencies were required to implement procedures consistent with recommendations from the Ohio

Department of Health (ODOH) to prevent or alleviate the public health threat associated with COVID-19.

{¶ 35} In response to the Executive Order, and the guidance from ODOH, the March 18, 2020 local public hearing, and the April 14, 2020 adjudicatory hearing were postponed by an ALJ Entry issued on March 11, 2020.

{¶ 36} On July 13, 2020, the ALJ issued an Entry adopting a new procedural schedule for the case, including dates for the local public hearing and adjudicatory hearing, both of which were to be conducted using remote hearing technology due to the COVID-19 continued state of emergency. The revised schedule provided for a virtual local public hearing on August 20, 2020, and a virtual adjudicatory hearing beginning on October 5, 2020.

{¶ 37} On July 23, 2020, Firelands filed its proof of service and publication regarding the rescheduled date, time, and virtual hearing arrangements of the local public and adjudicatory hearings, including proof of notice of the public hearing and adjudicatory hearing to affected property owners and elected officials, in substantial compliance with Ohio Adm.Code 4906-3-09(A)(2).

{¶ 38} The local public hearing was held as scheduled using remote hearing technology on August 20, 2020.

{¶ 39} On September 11, 2020, the Joint Stipulation and Recommendation (Joint Stipulation) was filed, as signed by Firelands, Staff, City of Willard, Huron County, Norwich Township, Richmond Township, and Local Farmers. Residents, BSBO, and Erie County did not sign the Joint Stipulation.

{¶ 40} In accordance with the procedural Entry on July 13, 2020, the parties filed direct testimony on September 11 and September 21, 2020.

{¶ 41} The adjudicatory hearing was held as scheduled using remote hearing technology between October 5-16, 2020. At the close of the hearing, a briefing schedule was set.

{¶ 42} In accordance with the established briefing schedule, initial and reply briefs were timely filed by Firelands, Staff, Local Farmers, Residents, and BSBO.

IV. PROJECT DESCRIPTION

{¶ 43} The project will be located on approximately 1,000 parcels or 32,000 acres of leased land located in (a) Groton and Oxford townships in Erie County, and (b) Lyme Norwich, Richmond, Ridgefield, and Sherman townships in Huron County, Ohio. The permanent operating footprint of the project will be approximately 84.5 acres of built facilities, including construction of up to 71 turbines. The total generating capacity will not exceed 297.66 MW, with estimated annual energy production of between 847,000 to 952,000 megawatt hours (MWh). The buried collection line associated with the project will be approximately 36 to 48 inches below the surface and will be a total length of between 105 and 194 circuit miles depending on the number of turbines constructed. The purpose of the project is to deliver energy production to the transmission grid operated by PJM for sale at wholesale or under a power purchase agreement (PPA). Firelands has a PPA contract in place with AEP Energy Partners, which is seeking to meet demand from a new Google data center located in New Albany, Ohio. (Firelands Ex. 31 at 6.)

V. SUMMARY OF EVIDENCE

{¶ 44} The Board will review the evidence presented with regard to each of the eight criteria by which we are required to evaluate these applications. Any evidence not specifically addressed herein has nevertheless been considered and weighed by the Board in reaching its final determination.

A. *Public Input*

{¶ 45} Since Firelands filed the application, the Board held a public hearing and received numerous comments. The Board held its public hearing using virtual technology on August 20, 2020. The ALJs heard testimony from 45 witnesses. Witnesses spoke both in support of and in opposition, although a slight majority (25 witnesses) were in opposition to the project. Among those opposing the project, primary concerns related to the project's (1) effect on bird and bat mortality, (2) impacts to safety, surface water, and ground water resulting from installing turbines and related project construction on land that is impacted by karst geology, (3) safety and aesthetics of the proposed turbines, (4) negative economic impacts from the project, (5) impact on agriculture land use, (6) impact on the electric reliability system resulting from increased intermittent electricity generation, and (7) impact on flight operations around the project area. All of the witness testimony was insightful as to the concerns of local residents who will be impacted by the project. For example, witness Pat Ruffing, who resides less than one-half mile from a proposed turbine, described his family's strong opposition to the project, citing (1) safety concerns relating to locating turbines in populated areas, (2) decreased property values, (3) karst impacts associated with turbine safety and groundwater contamination, (4) negative viewshed impacts, (5) noise and shadow flicker impacts, (6) bird impacts, and (7) concerns regarding the reliability of wind energy (Aug 20, 2020 Tr. at 89-92). Similarly, witnesses Greg Smith, Nathan Miller, and Kathleen Hite joined others in passionately describing the project's negative impact on the local eagle population (Aug. 20, 2020 Tr. at 185-188, 199-206). And witness Stephanie Miller added specific detail concerning the project's impact on public safety in regard to emergency air response times (Aug. 20, 2020 Tr. at 207-211). As highlighted in the testimony of these select witnesses, members of the community were both alarmed by the project's impact and frustrated by the process that considers the certification of the project in spite of their reasons for opposition.

{¶ 46} Among those in favor of the project, testimony focused primarily on (1) the project's favorable income potential through tax payments to schools and local

governments, (2) benefits to leaseholders, (3) new job creation, (4) maintaining current agricultural land use, and (5) the benefits of renewable energy.

{¶ 47} In addition to the public hearing, since Firelands' application was filed, over 650 comments were submitted to the Docket for the Board's review. Comments were relatively evenly divided between those in favor of the application and those against it. Arguments for and against were generally consistent with those raised by those who testified during the public hearing. All the comments are available online in the Board's docketing system under this case number.

B. Staff Report

{¶ 48} Pursuant to R.C. 4906.07(C), Staff completed an investigation into the application, which included recommended findings regarding each of the enumerated factors in R.C. 4906.10(A). Staff's findings will be considered in our evaluation of each required criterion. In addition to making various findings throughout its report, Staff additionally recommended that 42 conditions be made part of any certificate issued by the Board for the proposed facility (Staff Ex. 1 at 75-82). With some notable differences, many of the recommended conditions found within the Staff Report are adopted and re-enumerated in the Joint Stipulation. The conditions are discussed below.

VI. STIPULATION AND CONDITIONS

{¶ 49} On September 11, 2020, the Joint Stipulation was docketed. The Joint Stipulation was signed by Firelands, Staff, city of Willard, Huron County, Norwich Township, Richmond Township, and Local Farmers (Signatory Parties), and contained 44 recommended conditions. Residents, BSBO, and Erie County were not signatories.

{¶ 50} The following is a summary of the conditions agreed to by the parties and is not intended to replace or supersede the actual Joint Stipulation. The parties stipulate that:

- (1) Applicant shall install the facility, utilize equipment and construction practices, and implement mitigation measures as

described in the application and as modified and/or clarified in supplemental filings, replies to data requests, and recommendations in the Staff Report.

- (2) Applicant shall comply with the requirements established by the Ohio Adm.Code 4906-4-09, regulations associated with wind farms.
- (3) Applicant shall docket a detailed construction project schedule within seven days of the date of journalization of the certificate.
- (4) Applicant shall comply with the requirements established in Ohio Adm.Code 4906-3-13 and 4906-3-14.
- (5) Prior to the commencement of construction activities in areas that require permits or authorizations by federal or state laws and regulations, Applicant shall obtain and comply with such permits or authorizations. Applicant shall provide copies of permits and authorizations, including all supporting documentation, to Staff within seven days of issuance or receipt by Applicant. Applicant shall provide a schedule of construction activities and acquisition of corresponding permits for each activity at the preconstruction conference.
- (6) Applicant shall coordinate with local building code enforcement officials with regard to the construction of any new structures, or modification of any existing structures, not directly related to the operation of the generation facility.
- (7) At least 30 days prior to the preconstruction conference, Applicant shall submit to Staff, for review and acceptance, one set of detailed engineering drawings of the final project design, including the

facility, 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 incorporate all conditions of the certificate and references at the locations where Applicant and/or its contractors must adhere to a specific condition in order to comply with the certificate. The detailed engineering drawings of the final project design and foundation design shall account for karst topography and include the identity of the registered professional engineer(s), structural engineer(s), or engineering firm(s), licensed to practice engineering in the state of Ohio who reviewed and approved the designs.

- (8) At least 30 days prior to the preconstruction conference, Applicant shall submit to Staff, for review and acceptance, mapping in the form of PDF and geographically referenced data (such as shapefiles or KMZ files) based on final engineering drawings to confirm that the final design would be sited as certified. Mapping shall include the limits of disturbance, permanent and temporary infrastructure locations, areas of vegetation removal and vegetative restoration as applicable, and specifically call out any adjustments made from the siting detailed in the application.
- (9) Applicant shall provide the final delivery route plan and the results of any traffic studies to Staff, the Ohio Department of Transportation, the Huron and Erie county engineer offices, and township officials 30 days prior to the preconstruction conference.

- (10) At least seven days prior to the start of construction, the Applicant shall notify via mail affected property owners and tenants including those individuals who were provided notice of the public informational meeting, residences located within 1 mile of the project area, parties to this case, county commissioners, township trustees, emergency responders, airports, schools, and libraries, as well as anyone who has requested updates regarding the project. This notice will provide information about the project, including contact information, a timeline for construction and restoration activities, and a copy of the complaint resolution plan. The Applicant shall file this notice on the public docket.
- (11) At least seven days prior to the start of facility operations, the Applicant shall notify via mail affected property owners and tenants including those individuals who were provided notice of the public informational meeting, residences located within 1 mile of the project area, parties to this case, county commissioners, township trustees, emergency responders, airports, schools, and libraries, as well as anyone who has requested updates regarding the project. This notice will provide information about the project including contact information, a timeline for the start of operations, and a copy of the complaint resolution plan. The Applicant shall file this notice on the public docket.
- (12) Applicant shall not commence any construction of the facility until it has executed an Interconnection Service Agreement and an Interconnection Construction Service Agreement with PJM Interconnection, which includes construction, operation, and maintenance of system upgrades necessary to integrate the proposed generating facility into the regional transmission system

reliably and safely. The Applicant shall docket in the case record a letter stating that the Agreement has been signed or a copy of the executed Interconnection Service Agreement and Interconnection Construction Service Agreement.

- (13) The facility shall be operated in such a way as to assure that no more than 297.7 MW would at any time be injected into the Bulk Power System.
- (14) Applicant shall continue to adhere to the Programmatic Agreement signed between the Applicant and the Ohio Historic Preservation Office to minimize impacts to cultural resources in the project area, including avoiding site 33HU0043 with collection lines and access roads. Site 33HU0043 should be clearly delineated on construction drawings to ensure no inadvertent disturbance occurs during construction.
- (15) Applicant shall coordinate the timing and location of temporary closures of any multi-use trails during construction in the project area with the owner of the trails or appropriate entities prior to construction.
- (16) Applicant shall avoid all impacts to category 3 wetlands through facility design, horizontal directional drilling, or other methods.
- (17) Prior to construction, Applicant shall provide a copy of any floodplain permit required for construction of the project, or a copy of correspondence with the floodplain administrator showing that no permit is required.
- (18) Applicant shall have a Staff-approved environmental specialist on site during construction activities that may affect sensitive areas.

Sensitive areas may include, but are not limited to, wetlands and streams, and locations of threatened or endangered species. The environmental specialist shall be familiar with water quality protection issues and potential threatened or endangered species of plants and animals that may be encountered during project construction. The environmental specialist shall have authority to stop construction to assure that unforeseen environmental impacts do not progress and recommend procedures to resolve the impact. A map shall be provided to Staff showing sensitive areas which would be impacted during construction with information on when the environmental specialist would be present.

- (19) Applicant shall contact Staff, the Ohio Department of Natural Resources (“ODNR”), and the U.S. Fish and Wildlife Service (“USFWS”) within 24 hours if state or federal listed species are encountered during construction, operation, or monitoring activities. Activities that could adversely impact the identified plants or animals shall be immediately halted until an appropriate course of action has been agreed upon by Applicant, Staff, and the appropriate agencies. If Applicant encounters any listed plant or animal species prior to construction, Applicant will notify Staff of the location and how impacts would be avoided during construction.
- (20) Applicant shall comply with all operational measures detailed in the technical assistance letter for avoidance of Indiana and northern long-eared bat take issued by the USFWS. The technical assistance letter includes feathering of turbines during periods of risk to these species. Summertime feathering measures identified in the technical assistance letter for the Indiana bat, including

feathering within specified distances of documented roost trees, shall also be applied to the northern long-eared bat. Applicant shall comply with the operational measures detailed within the technical assistance letter for the life of the project or until an incidental take permit has been obtained for the project.

- (21) Turbines shall be feathered below manufacturer's cut-in speed during the summer season from May 16 through July 31, as a measure to minimize bat strikes at operating turbines.
- (22) Sixty days prior to the first turbine becoming operational, Applicant shall submit a post-construction avian and bat monitoring plan for the ODNR Division of Wildlife (DOW) and Staff review and confirmation that it complies with this condition. Applicant's plan shall be consistent with the ODNR-approved, standardized protocol, as outlined in the 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. Collectors of bird and bat carcasses for the purpose of post-construction monitoring shall obtain the appropriate carcass collection permits. 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, 2019 and continue to November 15, 2019; resume monitoring April 1, 2020 and continue to June 30, 2020). The second monitoring season may be waived at the discretion of the ODNR and Staff. The monitoring

start date and reporting deadlines will be provided in the DOW approval letter.

- (23) If Staff and the ODNR, in consultation with the USFWS, determine that significant mortality, as defined in ODNR's approved, standardized protocols, has occurred to birds and/or bats due to construction or operation of the facility, the ODNR and Staff will notify the Applicant. As soon as possible and no longer than 30 days after receiving notification of the significant mortality, Applicant shall implement practices to rectify the significant mortality, which will include development and submission of a mitigation plan or adaptive management strategy to Staff and the ODNR for review to confirm compliance with this condition. Operation activities that could adversely impact the identified animals shall be modified to minimize risk until the mitigation plan or adaptive management strategy is agreed upon.
- (24) Applicant shall adhere to seasonal cutting dates of October 1 through March 31 for removal of any trees greater than or equal to three inches in diameter unless coordination efforts with ODNR and USFWS allow a different course of action.
- (25) Prior to any in-water work, the Applicant shall provide information to Staff and ODNR indicating that no mussel impacts would occur at stream crossings. If this is not possible, then the appropriate survey(s) shall be performed in coordination with ODNR and Staff. If mussels found in the project area cannot be avoided, as a last resort, a professional malacologist shall collect and relocate the mussels to suitable and similar habitat. All surveys, assessments, and relocation plans shall be completed in

accordance with the Ohio Mussel Survey Protocol and provided to Staff and ODNR for review to ensure compliance with this recommendation.

- (26) Applicant shall conduct no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous species and their habitat.
- (27) Construction in upland sandpiper preferred nesting habitat types shall be avoided during the species' nesting period of April 15 through July 31. Mapping of these habitat areas shall be provided to the construction contractor along with instructions to avoid these areas during the restricted dates unless coordination with ODNR allows a different course of action.
- (28) Construction in northern harrier preferred nesting habitat types shall be avoided during the species' nesting period of May 15 through August 1. Mapping of these habitat areas shall be provided to the construction contractor along with instructions to avoid these areas during the restricted dates unless coordination with ODNR allows a different course of action.
- (29) Prior to construction, if impacts to potential suitable habitat for the Blanding's turtle, Kirtland's snake, and smooth greensnake are proposed, the Applicant shall obtain an ODNR-approved herpetologist to conduct habitat suitability surveys to determine if suitable habitat exists within the project area. If suitable habitat is determined to be present, the Applicant shall avoid impacts to suitable habitat by doing one of the following:

- (a) Avoid the area determined to be suitable habitat along with an appropriate buffer determined by the ODNR.
 - (b) Obtain an ODNR-approved herpetologist to conduct a presence/absence survey. If either species is determined to be present, the Applicant shall continue to coordinate with the ODNR to assure that impacts are avoided.
 - (c) Obtain an ODNR-approved herpetologist to develop and implement an avoidance/minimization plan.
- (30) Should construction be delayed beyond five years of the date of the certificate, certain wildlife surveys may be required to be updated as determined by Staff and ODNR.
- (31) Applicant shall develop and implement an Eagle Conservation Plan prior to the start of turbine construction. The Eagle Conservation Plan shall be developed in coordination with the USFWS and in accordance with the USFWS Eagle Conservation Plan Guidance document and 2016 Revised Eagle Take Permit Regulations (50 CFR 22). The Eagle Conservation Plan shall be developed in coordination with the USFWS prior to the start of turbine construction. Additionally, Applicant shall apply for an Eagle Take Permit from the USFWS prior to the project becoming operational. Further correspondence with the USFWS shall be provided to Staff and filed on the docket to confirm compliance with this condition, within seven days of receipt; but in no event, less than 30 days prior to turbine construction.
- (32) Applicant shall notify Staff at (866) 270-6772 or contactOPSB@puco.ohio.gov within 30 minutes of the discovery of

any extraordinary event unless notification within that time limit is impracticable under the circumstances. Extraordinary events include, but are not limited to tower collapse, turbine failure, thrown blade or hub, collector or feeder line failure, injury to any person, property damaged by ice throw, or nacelle fire. A written report shall be submitted to staff within 30 days detailing the incident and corrective actions to be taken to avoid, prevent, mitigate, or minimize a recurrence. Where additional related information is obtained after the 30-day written report is submitted, Applicant shall make a supplemental report as soon as practicable.

- (33) The facility shall be operated so that the cumulative nighttime sound level at any nonparticipating sensitive receptor within one mile of the project boundary will not exceed 5 dBA over the project area ambient nighttime average sound level (Leq), except during daytime operation that is in accordance with Ohio Adm.Code 4906-4-09(F)(2).
- (34) At least 30 days prior to construction, Applicant shall docket a shadow flicker study showing that cumulative shadow flicker impacts will not exceed 30 hours per year at any non-participating sensitive receptor.
- (35) At least 30 days prior to construction, Applicant shall submit to Staff relevant portions of the turbine manufacturer's turbine restart procedures due to vibration, ice accumulation, lightning storm, and collector or feeder line failure.

- (36) Applicant shall only construct the Vestas V150, Siemens Gamesa SG145, or Nordex N149 wind turbine models that have tip heights from 591 feet to 602 feet at turbine location T82.²
- (37) At least 30 days prior to the preconstruction conference, Applicant shall conduct a microwave path study that identifies all existing microwave paths that intersect the wind farm project, and a worst-case Fresnel zone analysis for each path. A copy of this study shall be provided to the path licensee(s), for review, and to Staff for review and confirmation that the Applicant is complying with this condition. The assessment shall conform to the following requirements:
- (a) An independent and registered surveyor, licensed to survey within the state of Ohio, shall determine the exact locations and worst-case Fresnel zone dimensions of all known microwave paths or communication systems operating within the project area, including all paths and systems identified by the electric service providers that operate within the project area. In addition, the surveyor shall determine the center point of all turbines within 1,000 feet of the worst-case Fresnel zone of each system, using the same survey equipment.
 - (b) Provide the distance in feet between the nearest rotor blade tip of each surveyed turbine identified within

² The Board finds that this condition is superseded by condition 40, which indicates that there will be no turbine construction at T82.

section (a) above and the surveyed worst-case Fresnel zone of each microwave system path.

- (c) Provide a map of the surveyed microwave paths, center points, and boundaries at a legible scale.
 - (d) Describe the specific, expected impacts of the project on all paths and systems considered in the assessment.
- (38) All existing licensed microwave paths, and licensed communication systems shall be subject to avoidance or mitigation. 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, Applicant shall mitigate all observed impacts of the project to microwave paths, and licensed communication systems within seven days or within a longer time period acceptable to Staff. Avoidance and mitigation for any known point-to-point microwave paths, and licensed communication systems shall consist of measures acceptable to Staff, Applicant, and the affected path owner, operator, or licensee. If interference with an omnidirectional or multi-point system is observed after construction, mitigation would be required only for affected receptors.
- (39) At least 30 days prior to the preconstruction conference, Applicant shall design and hold a training session to inform local aviation stakeholders (including, but not limited to, the Willard Airport) of the changes to flight procedures and altitudes outlined in the FAA DNH letter.

- (40) Applicant will not construct turbine locations T80, T81, T82, and T83.
- (41) Applicant shall meet all recommended and prescribed FAA DNH letter requirements to construct an object that may affect navigable airspace for the remaining turbines.
- (42) At least 30 days prior to the preconstruction conference, Applicant shall file in this docket a copy of the FAA DNH letter for the meteorological towers.
- (43) Applicant shall file in this docket copies of the FAA temporary construction permits for any work activity involving construction cranes when they are received, but no later than seven days prior to crane deployment.
- (44) If Applicant receives certification as a Qualified Energy Project (QEP) in a given county under Revised Code 5727.75, Applicant will comply with all requirements under R.C. 5727.75 in that county, including, but not limited to, entering into a road use maintenance agreement (RUMA)³, providing training and equipment to local first responders, and engaging in a university program.

(Joint Ex. 1 at 2-9.)

³ We note that the required implementation of RUMAs is not dependent upon the QEP certification, as that requirement exists independently in Ohio Adm.Code 4906-4-09(I)(9), and Firelands has expressly committed to entering RUMAs with county engineers prior to commencing construction (Firelands Ex. 1 at 243-244).

VII. CERTIFICATE CRITERIA

{¶ 51} R.C. 4906.10(A), the Board shall not 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 finds and determines all of the following:

- (1) The basis of the need for the facility if the facility is an electric transmission line or gas pipeline;
- (2) The nature of the probable environmental impact;
- (3) The facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations;
- (4) In the case of an electric transmission line or generating facility, the 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 the facility will serve the interests of electric system economy and reliability;
- (5) The facility will comply with R.C. Chapters 3704, 3734, and 6111, as well as all rules and standards adopted under those chapters and under R.C. 1501.33, 1501.34, 4561.32, and 4561.341;⁴
- (6) The facility will serve the public interest, convenience, and necessity;
- (7) The impact of the facility on the viability as agricultural land or any land in an existing agricultural district established under R.C. Chapter 929 that

⁴ The Board notes that R.C. 4906.10 was recently amended, effective October 17, 2019, such that all references to R.C. 1501.33 and 1501.34 were removed.

is located within the site and alternative site of the proposed major facility;
and

- (8) The facility incorporates maximum feasible water conservation practices as determined by the Board, considering available technology and the nature and economics of various alternatives.

VIII. CONSIDERATION OF CERTIFICATE CRITERIA

{¶ 52} Consistent with R.C. 4906.10(A), the Board has reviewed the record and made determinations regarding each of the statutory criterion.

A. *Basis of Need*

{¶ 53} R.C. 4906.10(A)(1) requires that the Board consider the basis of the need for the facility if the facility is a gas pipeline or an electric transmission line.

{¶ 54} Staff concluded that R.C. 4906.10(A)(1) is not applicable in this proceeding, given that the project is not a gas pipeline or an electric transmission line (Staff Ex. 1 at 29). Signatory Parties agree that this criterion is not applicable to this proceeding.

{¶ 55} Because the project is not a gas pipeline and does not include approval of an electric transmission line, the Board finds that R.C. 4906.10(A)(1) is not applicable under the circumstances (Staff Ex. 1 at 29).

B. *Nature of Probable Environmental Impact*

{¶ 56} R.C. 4906.10(A)(2) requires that the Board determine the nature of the probable environmental impact of the proposed facility.

{¶ 57} Signatory Parties maintain that the project should be approved in regard to its socioeconomic impacts, public service and safety impacts, and ecological impacts.

1. SOCIOECONOMIC IMPACTS

{¶ 58} Economically, Firelands asserts the construction of the facility and its ongoing use will have a positive impact in the local area. According to Firelands, project construction will produce \$62.9 million in employment earnings and the value of the economic output associated with the facility is \$170.4 million. Firelands further projects that each year of operation will generate roughly \$3.1 million in earnings and \$10.6 million in economic output. Firelands also states the local government revenues will benefit, as PILOT are estimated at between \$1.8 million to \$2.7 million per year. (Firelands Ex. 1 at 7, 8, 19; Firelands Ex. 36 at 4.) In addition to Applicant's claims, multiple public comments discussed the positive economic impacts that the project could bring in terms of tax payments for schools and local governments, increased jobs, environmental protection resulting from carbon-free electricity generation, diversification of electric power, and maintaining current land use (Aug. 20, 2020 Tr. at 45, 55, 83, 94, 103, 110, 128, 132, 135, 139, 142, 163, 170, 176, 196, 218, 222, 224, 236, 239).

{¶ 59} Local Farmers join in highlighting the project's economic benefits, both to the community at large and to participating landowners. They stress the testimony supportive of the project's financial impact to the budgets of local schools and government entities. (Aug. 20, 2020 Tr. at 45-46, 84; Tr. Vol. VI at 810.) Further, they argue that the payments to participating landowners ease the financial burden of farmers by providing a significant income stream without impairing the overall farming characteristics of the local farming community (Local Farmers Ex. 1 at 3, Ex. 2 at 3). In addition to the direct financial impact claims, Local Farmers highlight the benefits to climate change that ensue from creating power sources that are independent of fossil fuels (Local Farmers Ex. 1 at 3, Ex. 9 at 55-56).

{¶ 60} Staff adds to the consideration of socioeconomic impacts from the project, emphasizing that the project does not interfere with land use planning, including the use of recreational areas. Staff notes that while the project encompasses approximately 32,000 acres, only 85 acres are expected to be permanently dedicated to the project, and 83 of the lost acres are currently agricultural. Moreover, while several of the proposed turbines are

expected to be sited near the Buckeye Trail and North Coast Inland Trail, Staff finds that their presence does not diminish the overall enjoyment of these recreation areas. Similarly, Staff finds that nearby cultural and historical resources will not be substantially affected by the project, noting that Firelands has entered into a Programmatic Agreement (PA) with OHPO in order to minimize the project's impact (Staff Ex. 1 at 30-32; Firelands Ex. 37 at 5-6).

{¶ 61} Residents and BSBO dispute the recommendations of the Stipulating Parties as to the socioeconomic impacts of the project. They raise concerns regarding issues of (1) blight, (2) diminished property values, and (3) economic damage from the project. (Aug. 20, 2020 Tr. at 151, 153-155; Tr. Vol. IV at 557; Residents Ex. 2; Residents Ex. 7; Tr. Vol. V at 637-642.)

{¶ 62} In terms of blight, Residents and BSBO aver generally that the installation of turbines is inconsistent with the natural features of the community. They further stress that the turbines will (1) be visible from more than half of a ten-mile radius around the project, (2) be visible from most transportation corridors, and (3) add blinking red lights that interfere with the night sky. (Tr. Vol. V at 671-674.)

{¶ 63} In terms of diminished property values, Residents and BSBO dispute the conclusions of witness Michael MaRous, who testified on Applicant's behalf in support of the position that the project will not negatively impact local property values. In addition to critiquing Mr. MaRous' background in providing testimony in more than two dozen cases in support of wind farm operators, Residents and BSBO challenge the witness' conclusions claiming that (1) his comparison appraisal techniques are flawed, (2) he improperly considered comparison properties outside of the project area, (3) his reliance on county auditor communications is misplaced, (4) he lacks important experience as a real estate broker, (5) his use of agricultural appraisal techniques is misplaced, and (6) the studies upon which he bases his conclusions were sponsored by the wind power industry and rely upon flawed analysis. Residents and BSBO stress that there is disparity in the conclusions as to

the property value impact of wind farms, emphasizing (1) the cross-examination testimony of witness MaRous in response to these issues, and (2) published studies supporting the conclusion that property values suffer in response to wind farm installations. (Tr. Vol. IV at 539-542, 553, 557; Residents Ex. 7.)

{¶ 64} In terms of economic damage from the project, Residents and BSBO dispute that the project will enhance the community's economic welfare. They dispute the credibility of witness Erica Tauzer, who testified on Applicant's behalf in support of the project, arguing that (1) her lack of training as an economist impacts her credibility, (2) her modeling fails to consider declines in property values, costs of government subsidies, costs associated with declining bat and bird populations, and the impact on other electricity production sources. They further maintain that the results of the Jobs and Economic Development Impact (JEDI) model created by the U.S. Department of Energy is flawed because it fails to analyze negative economic impacts on local commercial and industrial activities. (Tr. Vol. V at reply at 68.) In addition to disputing the validity of the evidence proffered by Applicant and Local Farmers, Residents and BSBO note that the local testimony in the case favored opposition (25) over support (20) (Aug. 20, 2020 Tr. 20, 25, 32, 38, 50, 64, 71, 78, 89, 96, 120, 125, 144, 150, 156, 185, 190, 199, 207, 212, 229, 240, 246, 255, 258).

{¶ 65} Consistent with the Staff Report and the evidence presented at hearing, the Board finds that the probable impact of the project on socioeconomic conditions has been evaluated and determined. We observe the positive economic impact that the construction and operation of the project will have on the local community. We accept the testimony supportive of the project's favorable economic impact on the citizens served by the increased funding to local governments finding that, overall, the project is economically beneficial to those in the project area. (Firelands Ex. 36 at 5-8, 19.) Further, we find that the project is designed in a manner that minimizes the affect to local (1) viewsheds, (2) recreational activities, and (3) cultural or historical resources. Balancing these considerations, we find that the project is consistent with the socioeconomic conditions in the project area and should be approved pursuant to this consideration.

2. PUBLIC SERVICES, FACILITIES, AND SAFETY

{¶ 66} Staff considered the following issues common to wind-powered facilities in recommending that the project satisfies protective requirements as to public services, facilities, and safety: setbacks; turbine foundations; roads and bridges; blade shear; ice throw; construction noise; operational noise; low frequency noise and infrasound; shadow flicker; wind velocity; safety; communications; and, decommissioning.

{¶ 67} Firelands avers that the project complies with all public services, facilities, and safety considerations. Firelands intends to comply with all requirements applicable to construction safety, setbacks, noise and shadow flicker limitations, water resource protections, road and bridge protections, and signal interference considerations. For items such as turbine installation engineering and shadow flicker analyses that are dependent on the project's final design, Firelands stresses that the terms of the Joint Stipulation require Staff's final approval of detailed engineering drawings and updated shadow flicker analysis prior to construction. For the remaining siting considerations such as noise impacts, water source protections, setbacks, shadow flicker, and signal interference protections, Firelands maintains that the evidence submitted in support of the project sufficiently addresses these considerations. (Joint Ex. 1 at 3; Firelands Ex. 1.)

{¶ 68} Firelands further maintains that its decommissioning plan provides public assurances as to safety and financial resources. As detailed in its application, Firelands is committed to providing a decommissioning plan to Staff and the Huron and Erie county engineers at least 30 days prior to the preconstruction conference. The decommissioning plan will describe the plan for the removal of facility components, as well as the reclamation and restoration of the project area's topography. Further, the plan will provide financial assurances as to funding the decommissioning through the use of a performance bond, which will (1) correlate to the costs of decommissioning as determined by an independent engineer licensed by the state, and (2) be subject to cost adjustments every five years during the life of the project. (Firelands Ex. 1 at 46-47, 240-244.)

{¶ 69} Staff maintains that the application is consistent with statutory public protection requirements. Staff is satisfied with Applicant's commitment to submit final engineering drawings, which are subject to Staff review and approval, prior to allowing the start of construction activities. Further, Staff concludes that, for those items that are not contingent on the final design of the project, including the project's impact on roads and bridges, that Applicant satisfies public protection concerns. (Joint Ex. 1 at 3; Staff Ex. 1 at 46, 48.)

{¶ 70} Residents and BSBO contest the determination that the project complies with the siting criteria at issue based on deficiencies as to consideration of (1) the project's noise impacts, (2) the project's impact on water sources, (3) the safety of turbine construction in relation to karst soils and setback requirements, (4) shadow flicker, and (5) impacts to GPS and television signals.

{¶ 71} In terms of noise impacts, Residents and BSBO contest that the project's construction will comply with noise limitations. First, they claim that Applicant's baseline sound determination is flawed because (1) testing occurred at locations where baseline sound was inflated, and (2) two of the nine sound study locations were located outside of the project area. Additionally, they claim that the permissible sound level increases described in the Joint Stipulation are inconsistent with the 5 dBA limitation described in Ohio Adm.Code 4906-4-09(F)(2), and that consistent exposure to turbine noises, even below the permissive threshold level permitted by Code, has a serious negative health consequence. In order to remedy these issues, Residents and BSBO propose that either (1) sound limitations be set at 40 dBA in accordance with World Health Organization (WHO) warnings, (2) the sound studies used to support the Joint Stipulation be revised to exclude certain monitoring stations such that the project's maximum allowable nighttime sound level would be established below 45.1 dBA in accordance with Ohio Adm.Code 4906-4-09(F)(2), or (3) the language in Stipulated Condition 33 be modified to clarify that the maximum noise level increase is below, not at, the additional 5 dBA limitation. (Residents Ex. 8, 9; Residents Brief at 11.)

{¶ 72} In terms of impacts to water resources, Residents and BSBO maintain that the project's impact has not been adequately addressed, primarily in regard to karst soil construction considerations. They specifically cite to concerns regarding (1) pollution, (2) flow impairments, (3) flooding, and (4) drought. They argue that karst soils are susceptible to subsurface pathways that could connect surface contaminants to groundwater. They further claim that the project's proposed grouting of karst cavities will (1) enhance the potential for groundwater contamination, (2) increase local flood conditions, and (3) diminish the production of local water supply wells. Based on these considerations, they claim (1) that additional testing is required, and (2) that construction must be avoided in karst areas where grouting would be required.

{¶ 73} In support of their water resources positions, Residents and BSBO cite to the testimony of Dr. Ira Sasowsky, a geoscientist who provided expert testimony as to geologic, hydrologic, and soil considerations. According to Dr. Sasowsky, constructing turbines on karst topography involves significant risks to water supplies due to the disruption of subsurface water flows, which can disrupt aquifer recharging, restrict subsurface stormwater drainage in a manner that induces greater flood risks, and induce erosion-related surface collapses. Further, Dr. Sasowsky maintains that water quality is also impacted by karst-related sinkholes, as the sinkholes allow contaminated surface water to more freely penetrate aquifers that feed local water supplies. Based on these concerns, Residents and BSBO oppose construction in karst geology and the use of grouting techniques.

{¶ 74} Firelands submits that its geotechnical investigation of proposed turbine sites supports that the project can safely occur in spite of karst concerns. Initially, Firelands stresses that its geotechnical desk study determined that the vast majority of the proposed turbine sites are located outside of karst prone areas in the Ohio Shale Formation, where the underlying bedrock is shale, rather than limestone. Firelands notes that shale is not prone to karst development and is generally not conducive to water wells due to poor yields. Firelands further explains that it intends to conduct site-specific geotechnical borings at each

proposed turbine location prior to construction as part of the final design process, and that final construction siting and techniques will be dependent on Staff approval. To date, Firelands' initial geotechnical field borings at potential turbine sites found a moderate or greater probability of karst development, with features that were minimal in size, at only seven of the proposed sites. Given the minimal karst encounters that are expected to be confirmed by final geotechnical testing and installation design, Firelands maintains that its planned use of grouting techniques, where necessary to provide foundation support, are consistent with the Board's minimum adverse environmental impact and public interest considerations.

{¶ 75} In terms of the placement of turbines, Residents and BSBO claim that turbines cannot be placed safely (1) within 1,640 feet from neighboring properties, and (2) on karst soils. With respect to the setback claim, they cite to the safety manual of turbine manufacturer Nordex. (Firelands Ex. 82 at 47.) In addition to referencing the distance recommendation within the Nordex safety manual, they rely upon the fact that there have been five blade throw events in Ohio since 2009. (Tr. Vol. III at 454-455.) With respect to safety concerns resulting from constructing on karst, they claim that additional geotechnical analysis is required to determine what locations, if any, could support safe turbine placement (Tr. Vol. VIII at 1064-1065; Firelands Ex. 87 at 27).

{¶ 76} In terms of shadow flicker limitations, Residents and BSBO claim that the modeling submitted in support of the application indicates that the project will exceed the 30-hour per year permissible standard applicable to nonparticipating neighbors (Ohio Adm.Code 4906-4-08(H)(1); Firelands Ex. 1 at 92; Tr. Vol. I at 61-62). They argue that the project should not be certificated as conditioned in the Joint Stipulation, claiming that actual modeling for the final project design must serve as the basis for the certification. Further, they claim that the project should be required to operate in a manner that eliminates shadow flicker for all nonparticipating neighbors. (Residents Brief at 32-34.)

{¶ 77} In terms of the project's potential impacts to television and global positioning satellite reception, Residents and BSBO are dissatisfied with proposed Joint Stipulation Condition 38 in regard to communication protections. They maintain that the stipulation language is vague in a manner that might allow Firelands to avoid its obligation to remedy TV or GPS signal disruption. (Tr. Vol. III at 400-401, 435.)

{¶ 78} Firelands rebuts the assertions by Residents and BSBO regarding the project's impacts on noise, water resources, shadow flicker, and signal interference, as well as allegations that turbine construction and setback requirements are inadequate.

{¶ 79} In rebutting claims relating to impacts from noise, shadow flicker, and signal interference, Applicant maintains that its studies are reliable in supporting the project's compliance with public protections. Applicant disputes claims that it improperly determined the project's baseline ambient sound level and commits to operating below the 5dBA increase threshold mandated in Ohio Adm.Code 4906-4-09(F)(2). Applicant maintains that its survey of baseline sound levels in the project area is accurate, and that the locations of its monitors result in an accurate measure of ambient sound levels across the project area. Further, Applicant stresses its commitment to comply with shadow flicker and signal interference oversight by Staff such that public protections are not jeopardized by the project. (Firelands Ex. 1 at 3, 69, 101; Firelands Ex. 31 at 10; Firelands Ex. 41 at 2, 9.)

{¶ 80} In rebutting claims of deficient setback and siting requirements, Firelands maintains that the Nordex safety manual provision cited in support of requiring a minimum setback requirement of 1,640 is misplaced, as the safety manual at issue is solely intended to address the emergency management response in case of a tower fire. In support of this position, witness Pedder produced a letter from Nordex, which described the intention of the language in the safety manual. (Firelands Ex. 31 at 8-9, NP-2.) Further, Staff witness Bellamy also testified as to his experience in investigating five blade shear incidents in Ohio, describing that where sheared blades have migrated at all from a turbine's base, that the migration has been limited to between 250 -765 feet (Tr. Vol. III at 454-456).

{¶ 81} Moreover, as for turbine foundations, Firelands emphasizes that the consideration of final turbine construction design is reasonably contingent on its receipt of certification, and that Staff maintains oversight as to safe construction measures. Firelands recognizes the karst geology that impacts a portion of the project area. In developing its geotechnical design and construction recommendations, Firelands completed geological and hydrogeological reviews, subsurface explorations, engineering evaluations, and a risk hazard assessment. The combined effect of these considerations led to Firelands' determination that the project's turbine construction will (1) occur safely in terms of avoiding tower instability, (2) avoid disruption to public and private water supplies, (3) protect aquifers, and (4) minimize flooding impacts in the project area. (Firelands Ex. 1 at 79, Ex. E; Firelands Ex. 39 at 5; Joint Ex. 1 at 3.)

{¶ 82} The Board finds that the setback requirements in R.C. 4906.201 and Ohio Adm.Code 4906-4-08(C)(2) shall apply to this project. In reaching this decision, we accept the testimony of witnesses Pedder and Bellamy, and the clarifying correspondence of manufacturer Nordex. Initially, we note that the turbines will have various protections and state-of-the-art technology to ensure safety. Specifically, Firelands notes that each turbine will have braking systems, speed controls, pitch controls, and ice-detection equipment. (Firelands Ex. 1 at 85-89.) We find that the safety features incorporated into the design and manufacturing of the proposed turbines are sufficient to protect the public's safety and property.

{¶ 83} The Board also accepts the stipulated finding that the project can safely occur despite the karst features at issue, subject to the following modification. Initially, we find that construction is not permitted at locations T24, T25, T26, T42, T43, T73, T74, and T75. According to Firelands' geotechnical expert witness, these sites have been identified as locations where either (1) potential solution cavities within bedrock were encountered during drilling activities, (2) available geologic maps and literature document mapped karst features, or (3) boring logs, geological maps, and literature demonstrate a moderate to high probability of karst development (Firelands Ex. 38 at 6-8). We reject the contention that

these sites may be further reviewed using additional testing to determine whether they can be considered for installation using grouting techniques. While grouting may be an effective measure to safeguard installation in certain instances, we are opposed to the use of grouting techniques on a widespread basis. Here, much of the proposed project lies outside of areas where karst is expected to be encountered at a moderate to high level. We find that construction in these areas is reasonable. But in areas where initial review and testing confirm that karst is likely to be encountered at a level that is moderate or above, we conclude that those areas must be avoided for construction purposes.

{¶ 84} Our decision is not intended to reject the notion of using grouting techniques for all construction purposes. We recognize that grouting may be an effective technique for ensuring the safe construction of future turbines. Nevertheless, we disfavor the use of grouting on a widespread basis, particularly in areas where karst activity is prevalent. As Residents and BSBO demonstrate, grouting can impact water management, including important aspects of water migration and contamination. In recognition of these impacts, we reject claims that grouting should be considered as an appropriate remedial construction technique in areas where karst is anticipated at a level that is moderate or higher, as described above.

{¶ 85} As for the use of grouting in areas other than those that are not expressly prohibited herein, we modify Stipulated Condition 7 to require that, where it intends to employ grouting measures, Firelands must file in the case docket detailed engineering drawings outlining its intended use of grouting. Further, the use of the proposed grouting shall be contingent upon Staff filing a written approval of any proposed grouting in the case docket at least 30 days prior to the preconstruction conference.

{¶ 86} Subject to these limitations, we find that the overall project is sufficient from a public safety perspective. (Firelands Ex. 1 at 80, 82, Ex. E; Firelands Ex. 38 at 3-6; Firelands Ex. 39 at 3-7; Tr. Vol. VI at 770-771.)

{¶ 87} As for operational noise, including low frequency noise and infrasound, we accept the stipulated finding that the project complies with sound limitations necessary for the public's protection, subject to clarification that the maximum permissible nighttime Leq is below, rather than "at or below" 49 dBA. We conclude that the baseline sound analysis is reasonable in establishing the background Leq at 44 dBA, rejecting the claim that Firelands acted improperly in its choice of monitoring sites. (Firelands Ex. 1 at 69, Ex. G; Firelands Ex. 41 at 8.) Further, we find that Stipulated Condition 33 is intended to describe the requirement that Firelands must adhere to the nighttime noise level limits that are below 5 dBA, as set forth in Ohio Adm.Code 4906-4-09(F)(2). Moreover, relying on the expert testimony of Dr. Mundt in support of the application, we reject the claim that the sound effects, including infrasound, preclude the project's safe operation (Firelands Ex. 42 at 8-9).

{¶ 88} As for shadow flicker, we find that the project complies with shadow flicker limitations. We acknowledge that the studies relied upon by Firelands are conservative, maximum-case, scenarios. In reality, the final project will involve between 16-25 fewer turbines than the 87 that have been modeled to date. Moreover, while the specifications of turbine models and exact siting remain under development, the Board is convinced that that the project will not cause adverse shadow flicker impacts based on (1) the requirement in Stipulated Condition 34 that Firelands submit a final study 30 days prior to construction, and (2) the ability of Firelands to employ post-construction techniques, including curtailment of operations, in order to maintain shadow flicker conditions within permissible tolerances. We further concur that (1) the predictive value of the preliminary shadow flicker studies, and (2) Staff's reservation of final approval of a final shadow flicker report prior to construction, provide assurances that the project will comply with the shadow flicker requirements set forth in Ohio Adm.Code 3906-4-09(H)(1). (Firelands Ex. 1 at 3, 91, 95; Firelands Ex. 31 at 5; Joint Ex. At 8.)

{¶ 89} As for communications, Firelands asserts that the project is not expected to impact either television (TV) reception or local global positioning systems (GPS). Further, if any unexpected impacts occur, Firelands is committed to resolving such issues in favor of

those who are unexpectedly impacted by the project. As for TV reception, mitigation measures would include the potential for Firelands to purchase cable or satellite services for those negatively impacted by the project. As for GPS services, which are relied upon in guiding mobile farming vehicles, Firelands has committed to installing repeater stations that will overcome any signal blockages that might result from turbine construction. (Firelands Ex. 1 at 101; Firelands Ex. 31 at 10; Firelands Ex. 44 at 3-4; Joint Ex. 1 at 9.)

{¶ 90} The Board also finds that the language in the Joint Stipulation, as supplemented through sworn hearing testimony, is clear in requiring Firelands to mitigate TV and GPS signal disruptions that might arise from the project. Initially, we note that the language in Stipulated Condition 38 is broad, requiring that all licensed microwave paths and communications system disruptions must be avoided or mitigated. Where any disruption is anticipated, mitigation must occur prior to construction. And where any disruption occurs unexpectedly, Staff is empowered to ensure that Firelands takes timely and satisfactory mitigation action. In addition to the language in the Joint Stipulation, the record supports Firelands' obligation to remedy TV and GPS interference, as evidenced by the testimony of Nathan Pedder, the project's development manager. (Tr. Vol. I at 41.) For these reasons, we conclude that the project will not adversely impact communications systems.

{¶ 91} The Board also finds that the language in the Joint Stipulation is clear in providing a satisfactory plan and financial security for decommissioning the project. In accordance with Ohio Adm.Code 4906-4-09(I), Firelands commits to (1) providing a decommissioning plan to the Board and county engineers at least 30 days prior to the preconstruction conference that addresses removal of the facility and reclamation of the land, (2) updating the decommissioning plan every five years, and (3) posting a performance bond, which shall be reviewed every five years for sufficiency, in the amount of the per-turbine decommissioning costs multiplied by the sum of the number of turbines constructed. (Firelands Ex. 1 at 46-47, 240-244.)

{¶ 92} Similarly, the Board finds the Joint Stipulation, in concert with Ohio Adm.Code 4906-4-09(I)(9), ensures that local roads and bridges will be properly maintained and satisfactorily addressed by the Applicant. Firelands has committed to entering into a road use agreement with local county engineers and the Board recognizes that this is a requirement outlined in the Board's rules. We note that pursuant to Ohio Adm.Code 4906-4-09(I)(9) the Applicant must enter into a road use agreement prior to construction and must provide financial assurance to the counties that road and bridges will be restored to their original condition. The Board additionally directs that the road use agreement must be provided to Staff before construction can begin.

{¶ 93} In summary, the Board finds that the probable impact of the project on public services, facilities, and safety has been evaluated and determined. As determined herein, we note that the consideration of issues common to wind facilities, such as setbacks; turbine foundations; roads and bridges; blade shear; ice throw; construction noise; operational noise; low frequency noise and infrasound; shadow flicker; wind velocity; safety; communications; and, decommissioning have been sufficiently addressed by Firelands and Staff. We further observe that Firelands is taking necessary precautions to ensure the turbines will be constructed and operated safely. For example, the turbines will have state-of-the-art braking systems, pitch controls, sensors, vibration monitors, fire suppression systems, and ice detection equipment. Additionally, pursuant to Condition 5 of the Joint Stipulation, Firelands will obtain all necessary federal and state permits and authorizations.

3. ECOLOGICAL IMPACTS

{¶ 94} Signatory Parties contend that the Application and the Joint Stipulation provide the Board with the ability to determine the ecological impact of the project, noting that Firelands conducted an ecological assessment to determine the project's impact (Firelands Ex. 1 at Ex. Z). The ecological assessment involved the combined desktop, and field survey review, and considered: vegetative communities; surface water; aquatic and terrestrial plant and animal life; species of commercial and recreational value; and, threatened and endangered species. In furtherance of protecting against ecological impacts,

Staff recommends sixteen conditions (Conditions 16-31) that should be adopted regarding the project's construction and operation (Staff Ex. 1 at 77-79).

{¶ 95} Relative to the project's expected vegetation impacts, the project will permanently disturb 84.5 acres when complete. Nearly all the disturbance (83.3 acres) will occur to agricultural land, with the remaining disturbance impacting land that is currently barren, urban, or forestland. Additional temporary land disturbance will occur during the project's construction. Staff and Firelands maintain that the vegetation impacts resulting from the project's construction and operation are limited as a result of the recommended certificate conditions and based on the fact that facility components are not sited in proximity to forestland, streams, and wetlands. (Firelands Ex. 1 at 142-144.)

{¶ 96} Relative to surface water impacts, the project will cross 11 streams for access road purposes, 47 streams for collection line installation purposes, 20 wetlands for collection line installation purposes, and one wetland for access road purposes. Staff and Firelands agree that the project will minimize these impacts through (1) the use of horizontal directional drilling (HDD), (2) the coordination of construction through Ohio EPA, ODNR, and the U.S. Army Corps of Engineers (USACE), (3) the requirement that Firelands employ a Staff-approved environmental specialist during construction activities that may affect sensitive areas, and (4) the requirement that Firelands must provide for Staff approval a construction access plan that identifies how impacts to sensitive areas will be avoided or minimized during the project's construction, operation, and maintenance. (Staff Ex. 1 at 38-39; Firelands Ex. 1 at 54, 150-154; Joint Ex. 1 at 5.)

{¶ 97} Other than with respect to impacts to birds and bats, Staff and Firelands maintain that there will be minimal impact to (1) aquatic and terrestrial plant and animal life, (2) species of commercial and recreational value, and (3) threatened and endangered species. The limited impact is attributable to (1) siting considerations designed to avoid encounters, (2) Firelands' commitment to contact Staff, ODNR, and USFWS if the project's construction, operation, or maintenance encounter any threatened or endangered plant or

animal species, and (3) the fact that much of the native wildlife species in the project area will adapt to the presence of the man-made features on the habitat. (Firelands Ex. 1 at 154-156; Staff Ex. 1 at 41.)

{¶ 98} We note that Residents and BSBO do not argue against the conclusion that, other than with respect to (1) bats and birds, and (2) water resources, the environmental impacts from the project have been determined and included in the terms of the Joint Stipulation. Accordingly, we focus on the disputed issues involving the alleged impacts to bats and birds having discussed water resources issues earlier herein.

4. BIRD AND BAT IMPACTS

{¶ 99} Relative to impacts to birds and bats, including species that are endangered, threatened, or species of concern, the project was extensively reviewed in consultation with USFWS and ODNR. Further, Applicant conducted extensive wildlife field assessments between 2009 - 2020, including: raptor nest and migration surveys (11); eagle use surveys (4); passerine migration (3); breeding bird (4); owl playback (1); bat activity (2); bat mist-net (4). These surveys were conducted in accordance with recommended protocols of ODNR, and survey methods were consistent with the recommendations of both the USFWS and ODNR. Survey results document that the project area currently has known nests or serves as a known habitat range for several significant bird and bat species. Despite the presence of these species, Firelands and Staff agree that the project satisfies the requirement in R.C. 4906.10(A)(2). (Firelands Ex. 1 at 121, Ex. R-T, V-X; Firelands Ex. 32 at 4-17, 24; Staff Ex. 1 at 56.)

{¶ 100} Firelands emphasizes its commitment to operational requirements aimed at measuring the impact of the project on birds and bats, as well as curtailing operations where impacts are deemed excessive by wildlife regulators - namely, USFWS and ODNR. USFWS issued a technical assistance letter (TAL) regarding Indiana bat protections. In compliance with the recommendations in the TAL, Firelands will curtail turbine operations by (1) increasing the cut-in speed for all turbines to 6.9 meters/second from ½ hour before sunset

to ½ hour after sunrise between March 15 and May 15, and between August 1 and October 15, and (2) feathering to below 6.9 meters/second the turbines that are within the home range of the Indiana Bat maternity colonies during the summer (May 16 to July 31) between ½ hour before sunset to ½ hour after sunrise. Moreover, Firelands will mitigate construction impacts to bat species by adhering to seasonal tree cutting dates of October 1 through March 31. Further, Firelands agrees to (1) submit a post-construction avian and bat monitoring plan that satisfies the recommendations of USFWS, ODNR, and Staff, and (2) comply with ODNR mitigation requirements if post-construction monitoring confirms that bird/bat mortality rates are significantly excessive as determined by ODNR. Similar to the state's enforcement efforts, USFWS requires specific bald eagle and other raptor protections. Firelands is committed to obtaining an ETP from USFWS prior to operating the facility. As a requirement for obtaining an ETP, Firelands will develop an ECP, which requires (1) an initial assessment of eagle risk, (2) a post-construction monitoring plan, and (3) an adaptive management plan. (Firelands Ex. 1 at 24-25, Firelands Ex. 33 at 18; Joint Ex. 1 at 7.)

{¶ 101} In consideration of Applicant's commitment to comply with the above recommendations of USFWS and ODNR, Staff concludes that the project complies with ecological condition requirements aimed at protecting birds and bats subject to compliance with 16 conditions. In general, the conditions are intended to ensure that the project be developed and operated in continuing cooperation with environmental regulators at the state and federal level. As the precise impacts of operating the facility are unknown, post-construction monitoring, including collision detection, will be required for two operating seasons. During the monitoring period, Firelands is required to comply with demands from Staff and wildlife regulators to develop and implement mitigation plans or adaptive management strategies if the facility's operation results in significant adverse impacts to wildlife. (Staff Ex. 1 at 56, 77-79; Joint Ex. 1 at 5-7.)

{¶ 102} Residents and BSBO argue that the project does not meet ecological impact requirements with respect to bird and bat protections for myriad reasons, including: there is insufficient bird and bat survey information to ascertain mortality expectations; the

absence of nighttime radar monitoring fails to protect migrating birds; plans to minimize bat mortality are insufficient; there is no compensatory plan for bat mortality; ODNR and USFWS monitoring protocols for birds and bats are inadequate; and, the eagle activity surveys provided in support of the project were deficient and produced results significantly inconsistent with reports of Residents and BSBSO. For these reasons, Residents and BSBO claim that there is insufficient information to determine the nature of the probable environmental impact such that Firelands' application should be denied. Regarding bird and bat mortality concerns, Residents and BSBO rely on the testimony of Dr. Shieldcastle (birds) and Dr. Smallwood (bats), who testified that the survey data submitted in favor of the project inaccurately minimized mortality expectations. According to these experts, the impact of the project on birds and bats is unknown, as the estimated mortality numbers are based on faulty data. (Tr. Vol. VII at 914; Tr. Vol. VIII at 1102; BSBO Ex. 1; BSBO Ex. 2; BSBO Ex. 7-10.)

{¶ 103} Firelands emphasizes that there is an abundance of information for the Board to determine the probable environmental impact. In addition to the extensive wildlife field assessments it conducted in accordance with protocols set forth by ODNR and USFWS between 2009-2020, Firelands provided data from over 200 post-construction monitoring studies in support of the project's estimated impact on bats and birds (Firelands Ex. 32 at 21, 24). Based on this combined analysis, Firelands maintains there is ample evidence to demonstrate that the facility will have minimal impact on birds and bats.

{¶ 104} Firelands also stresses that post-construction monitoring will determine the accuracy of the estimated impact and require Firelands to modify operations to ensure that actual impacts align with pre-construction estimates. According to Joint Stipulation Condition 23, and the post-construction avian and bat monitoring plan, a triad of regulators (USFWS, ODNR, and Staff) are empowered to require that Firelands develop either a mitigation plan or adaptive management strategy should the project's actual operations cause a significant, unexpected, impact to bird and bat populations. (Tr. Vol. II at 222; Firelands Ex. 5 at 2; Firelands Ex. 32 at 24, 25; Firelands Ex. 47.)

{¶ 105} Initially, the Board acknowledges the extensive evidence provided in order to evaluate the nature of the probable environmental impact of the project on birds and bats, including 29 site-specific surveys conducted between 2009 and 2020, in dedication to understanding the estimated impact to raptors, passerines, eagles, breeding birds, owls, and bats. In addition to Firelands' coordinated efforts with ODNR and USFWS at estimating the project's expected impacts to bats and birds, we also acknowledge the value of the knowledge gained from the aggregated data from more than 200 post-construction monitoring studied wind projects, which further describe mortality expectations from wind farm projects, as described by Witness Good. (Firelands Ex. 32 at 21.) Further, we acknowledge the value of the eagle risk assessment data presented by Witness Farmer in coordination with USFWS. (Firelands. Ex 32 at 21, 24.; Firelands Ex. 33.)

{¶ 106} From this evidence, we conclude that the nature of the probable environmental impact can be determined. Firelands witness Rhett Good testified as to the studies that document the impact of terrestrial wind farms on bird and bat populations. In his opinion, the bird mortality rate is reasonably estimated to be consistent with other midwestern wind projects, which have resulted in a median bird mortality rate of 2.63 birds per MW per year. Similarly, his projection for bat mortality is a rate of 7.9 bats/MW/year. Witness Good testified that the project has been designed and modified to mitigate these mortality rates by placing turbines in tilled agricultural sites and avoiding their placement in forested areas. Staff's review of the project highlights the awareness of the potential need for greater bird and bat protections as compared with Ohio's terrestrial wind projects due to the fact that the project has eight times the amount of forested area as other operating projects in agricultural landscapes in the state. In furtherance of the need to quantify the actual impact of the project, and reserve control of mitigation measures that might be warranted should its operations result in excessive mortality, Staff recommends that the project be conditioned on (1) the development of a post-construction monitoring plan that is acceptable to Staff, ODNR, and USFWS, (2) committing to develop a mitigation plan that is acceptable to Staff and ODNR in response to significant mortality findings during post-

construction monitoring, (3) implementing curtailment measures for the life of the project in satisfaction of USFWS's TAL as to Indiana bat protections, and (4) developing an ECP in conjunction with obtaining an ETP from USFWS.

{¶ 107} Residents and BSBO dispute the contention of the Stipulating Parties that the conditions agreed to in the Joint Stipulation associated with determining the nature of the environmental impact of the project on bats and birds are adequate. Residents and BSBO insist that further monitoring should be completed before a certificate is issued and that, without such monitoring data, the nature of the probable environmental impact cannot be determined.

{¶ 108} The Board disagrees with the arguments raised by Residents and BSBO. As discussed above, the probable impact of the project on birds and bats can be evaluated by, among other things, examining similarly situated wind projects in the state and midwest. Pursuant to R.C. 4906.10(A)(2), the Board is tasked with identifying the nature of the probable impact, not the actual impact. The Supreme Court of Ohio describes "a dynamic process that does not end with the issuance of a construction certificate." *Buckeye Wind* at ¶ 16. Thus, R.C. 4906.10(A)(2) authorizes the Board to conditionally approve a certificate and to continue to monitor the project as it develops. Here, we conclude that the project's environmental impacts are predictable, and reasonably in line with similarly situated wind farms that have received certificates in Ohio. Moreover, the safeguards in place to monitor and mitigate impacts beyond our current expectations provide further assurances that the project's environmental impact is within the Board's reasonable expectations for this type of wind farm.

5. CONCLUSION

{¶ 109} Consistent with our determinations above, the Board finds that the nature of the probable environmental impact can be evaluated and determined. Issues such as the proximity of nearby properties to the wind turbines in relation to items such as blade shear, shadow flicker, set-back requirements, and ice throw have been addressed. Further, in light

of the additional construction restrictions that we impose relative to (1) avoiding construction in areas where karst is anticipated at a level that is moderate or above, and (2) obtaining Staff approval of engineering plans prior to allowing the use of grouting techniques at any locations within the project, we conclude that the project's impacts to water resources, vegetative, and aquatic life are expected to be minimal. Moreover, we find that the project's impact to birds and bats due to collision, attraction, and avoidance associated with the turbines has been reasonably determined through the combined actions of Firelands, ODNR, USFWS, and Staff. (Staff Ex. 1 at 30-56.)

C. Minimum Adverse Environmental Impact

{¶ 110} Pursuant to R.C. 4906.10(A)(3), the proposed facility must represent the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, along with other pertinent considerations.

{¶ 111} Signatory Parties claim that the Application and the Joint Stipulation provide for several measures to ensure that the project has the requisite minimum adverse environmental impact. Ultimately, Signatory Parties believe that the Joint Stipulation provides a well-balanced approach to ensuring that the facility represents the minimal adverse impact to the environment, while also taking into the consideration the need for certainty with regard to the construction and operation of the project.

{¶ 112} Residents and BSBO generally believe that Firelands and the other Signatory Parties have failed to provide the information the Board requires in order to determine whether the facility represents the minimum adverse environmental impact pursuant to R.C. 4906.10(A)(3). Their arguments primarily pertain to the protection of (1) water resources, and (2) avian and bat species that may be impacted by the project.

1. WATER RESOURCE CONSIDERATIONS

{¶ 113} As discussed previously, Firelands contends that the evidentiary record demonstrates that the project poses mitigated risk.

2. AVIAN AND BAT IMPACT CONSIDERATIONS

{¶ 114} As discussed previously, Firelands contends that the evidentiary record demonstrates that the project poses mitigated risk to birds and bats, noting (1) the 29 avian and bat surveys conducted since 2009, (2) the requirement that Applicant submit a post-construction avian and bat monitoring plan for review and approval by Staff, ODNR, and USFWS, (3) the requirement that Applicant must develop and receive approval for a mitigation plan if monitoring demonstrates that its operations are causing mortality that is significantly beyond what ODNR expects for the project, (4) the requirement that Applicant develop an ECP and obtain an ETP from USFWS prior to starting operations, and (5) the requirement that Applicant comply with operational curtailment measures recommended by USFWS during four and one-half months of each year to protect bat species, including Indiana bats. Firelands reiterates, as documented in the Joint Stipulation, that its commitment to rigorous post-construction bird and bat monitoring ensures that the risk to birds and bats will remain within projected, reasonable expectations for the project. (Joint Ex. 1 at 5-7.)

{¶ 115} Staff agrees that the monitoring and adaptive management strategies contained in the Joint Stipulation will ensure monitoring and assessment of the project's impacts as it becomes operational. Despite the low risk attributed to the project, as calculated by Firelands' consultants, Staff notes that the Joint Stipulation introduces significant protections to any eventual impacts that may occur during pre-construction, construction, or operational phases of the project, including the considerable monitoring and adaptive management strategies. (Joint Ex. 1 at 5-7.)

{¶ 116} In opposing the project, Residents and BSBO contend that the application contains significant flaws that prevent the Board from making a determination on whether

the project represents the minimum adverse environmental impact, including (1) the application lacks credible data regarding expected bat mortality, (2) the bat mortality safeguards (raising cut-in speeds and feathering blades during spring and fall migration) recommended by the USFWS in the TAL are deficient, (3) the project cannot adequately protect bats without employing a real-time acoustic detection system, (4) there is no plan for compensating for bats that are taken by the project, (5) the post-construction monitoring plan is inadequate, both in terms of how it will be conducted and the duration of the plan, (6) the siting of turbines in the path of migratory birds is impermissible, (7) there was no nighttime radar monitoring study to assess the expected impact on migrating birds, (8) Applicant's bird and eagle survey results are flawed as, among other issues, they do not align with testimony of local individuals who provide their accounts of eagle activity in the project area, and (9) eagle activity surveys are inadequate to predict eagle fatalities.

{¶ 117} In response, Firelands notes that the Board's standard for considering certification applications does not require that the project represent zero impacts. Rather, Firelands argues the statute requires the Board to determine that all measures have been taken to ensure the minimum adverse environmental impact "considering the state of available technology and the nature of economics of various alternatives, and other pertinent considerations." R.C. 4906.10(A)(3). Firelands emphasizes its coordinated efforts with ODNR and USFWS at confirming that the project minimizes the impact on wildlife. Given the extensive wildlife accommodations provided for in the Joint Stipulation, Firelands maintains that Staff, and the other Signatory Parties, were justified in supporting the agreement.

{¶ 118} Staff also disputes the arguments raised by Residents and BSBO as to whether the project complies with minimum ecological adverse environmental impact requirements. Staff emphasizes the 16 conditions in the Joint Stipulation (specifically, conditions 16-31) that ensure proper mitigation of the project's environmental impact.

3. AVIAN AND BAT IMPACT MITIGATION PLAN

{¶ 119} Firelands contends that the Stipulated Conditions agreed to in this case will ensure that the project complies with the minimum adverse environmental impact requirement set forth in R.C. 4906.10(A)(3). Firelands submits that this case is consistent with past wind energy projects certificated by the Board, which have required the applicant to submit a post-construction monitoring protocol or bird and bat conservation strategy between receipt of the certificate and the commencement of the facility's operation. See, e.g., *In re Application of Paulding Wind Farm IV, LLC*, Case No. 18-91-EL-BGN, Opinion, Order, and Certificate (Feb. 21, 2019). In an effort to proactively coordinate its efforts with ODNR and USFWS, Firelands indicates that it completed extensive wildlife studies in coordination with ODNR and USFWS, and that it will continue its impact mitigation cooperation with the wildlife experts once the project is completed. In fact, as a result of negotiations, Signatory Parties aver that, at least 60 days prior to commencement of construction, Firelands will submit a final avian and bat monitoring plan to ODNR and Staff. Further, Firelands will submit its post-construction monitoring results for review by ODNR, Staff, and USFWS to ensure that the project avoids significant impacts to avian and bat species. Further, should any significant impacts occur, Firelands is required to address them through the development of a mitigation plan that is subject to review and approval by ODNR. (Joint Ex. 1 at 5-6.) Firelands also emphasizes that these measures supplement its commitment to operational limitations such as raising cut-in speeds and feathering blade speeds in satisfaction of USFWS requirements that are directed at protecting protected bat species. (Firelands Ex. 1 at 161; Tr. Vol. II at 222.)

{¶ 120} Staff agrees that Conditions 22 and 23 of the Joint Stipulation, which require Firelands to (1) develop and comply with a post-construction avian and bat monitoring plan, and (2) implement practices necessary to respond to any significant adverse wildlife impacts, are sufficiently protective of wildlife. (Joint Ex. 1 at 5.)

{¶ 121} Finally, Firelands and Staff argue that Staff and ODNR have the expertise and resources necessary to monitor and enforce the Applicant's compliance with the conditions

in the Joint Stipulation, consistent with their roles of monitoring certificate conditions on behalf of the Board for approximately 50 years.

4. ENDANGERED AND THREATENED SPECIES MITIGATION PLAN

{¶ 122} Firelands acknowledges USFWS's assessment that the project may adversely affect threatened and endangered species. Firelands notes that Joint Stipulation Condition 23 provides that, if post-construction monitoring reveals a potential occurrence at the project involving these species, adaptive management measures will be part of the avian and bat impact mitigation plan, ensuring potential impacts are minimized. This includes contacting Staff, ODNR, and USFWS and modifying operations that pose a risk to the identified species (Joint Ex. 1 at 6).

{¶ 123} Staff also contends that state and federally listed species are specifically protected under the terms of the Joint Stipulation, noting that proposed Condition 19 contains detailed responsive steps to be taken to minimize potential risks posed to those species when encountered at the project site. This condition broadly serves to stay operational activities that could adversely impact the identified plants and animals while also requiring that Firelands develop and submit a long-term strategy, which at a minimum, has to address the underlying cause of the encounter to ODNR and Staff as a proposed modification to its adaptive management strategy.

5. OTHER ENVIRONMENTAL IMPACTS

a. Ecological

{¶ 124} Firelands states that the project was designed in a manner that minimizes its ecological impact in terms of tree clearing, impacts to wetlands and surface waters, shadow flicker, and sound impacts. Specific to water quality and aquatic species impacts, Firelands anticipates minimal impacts because the project (1) is being sited primarily on agricultural land, (2) will be constructed in compliance with a NPDES water permit, a SWP3, and a soil erosion and sediment control plan, (3) avoids Category 3 wetlands, and minimizes potential impacts on stream and wetland crossings, using HDD technology where necessary, (4) will

be constructed under the direction of a Staff-approved on-site environmental specialist, (5) requires specific coordination with ODNR regarding protections to mussels, the Blanding's turtle, Kirtland's snake, and smooth greensnake, and (6) avoids in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. (Firelands Ex. 1 at 142-143; Joint Ex. 1 at 3-9.)

{¶ 125} Staff, as a signatory party, agrees that the application, as supplemented and modified by the Joint Stipulation, represents an appropriate balance and contends that the extensive studies undertaken related to bird and bat impacts, as well as water resources impacts, satisfy Ohio's statutory requirements (Staff Ex. 1 at 56, 58).

b. Geological and Hydrology

{¶ 126} Firelands states that the project adequately addresses both (1) surface water management, and (2) the potential for impacts resulting from karst areas surrounding the placement of the project. Relative to surface water management, Firelands is committed to protecting the area from surface water impacts through the use of best management practices, including (1) preserving surface water drainage, (2) using open trench installation or avoidance, where necessary, to account for pre-existing surface or drain tile conditions, (3) coordinating with the appropriate floodplain administrator as to reviewing the project and, where needed, securing a floodplain permit. Regarding known karst geology in the region, Firelands intends to conduct further testing, such as electrical imaging or void assessment, in areas where karst development is at or above a moderate level. Where the testing confirms karst features, Firelands will utilize the expertise of a licensed geotechnical engineer to determine whether construction can safely occur using bedrock grouting, or some other remediation measure. Where the construction is not feasible under these circumstances, Firelands will avoid construction in such areas. (Firelands Ex. 1 at 75-79, Ex. E; Firelands Ex. 38 at 5-6; Firelands Ex. 39 at 3-5; Joint Ex. 1 at 3.))

{¶ 127} Staff concludes that the project complies with the minimum adverse impact requirements. Staff reviewed and concluded that the project would result in a low potential

impact to land use, cultural resources, streams, wetlands, transportation, and communications. Further, in addressing specific concerns as to karst geology and surface water protections, Staff maintains that the required compliance with state and federal permitting, as well as Staff's reservation of final approval of detailed engineering drawings prior to construction, adequately ensure the safe design and construction of the project. (Stipulated Conditions 5, 7.)

{¶ 128} Residents and BSBO argue that the project fails to meet the minimum adverse impact requirements based on (1) the disruption to and contamination of water supplies, (2) safety concerns as to construction in karst areas, and (3) concerns of increased flooding. In support of their position, the project opponents rely on testimony from Dr. Sasowsky, whose testimony questions whether turbine construction can safely occur in areas where karst topography is prevalent. (Residents Ex. 3.)

{¶ 129} Firelands and Staff counter the opposition concerns citing to the stipulated requirements regarding obtaining engineering approval of final design plans prior to construction and complying with surface water protections afforded under state and federal law. Moreover, Firelands cites to the substantial subsurface geological studies and hydrogeological field work as supportive of its plans for evaluating and protecting water supplies, safeguarding against changes in flood exposure, and ensuring that turbine construction occurs safely, or is avoided where safe siting cannot occur.

c. Effects on sound shadow flicker, viewshed, and safety

{¶ 130} Firelands indicates that the project complies with minimum adverse environmental impact concerns as to its impact on sound, shadow flicker, viewshed, and operational safety. In terms of sound, Firelands asserts that the project will operate within the sound level of 5 dBA above the nighttime ambient sound level measured in the area, using the equivalent Leq as the metric for sound at any non-participating sensitive receptor. Firelands presented evidence supporting that the background Leq in the project area is 44 dBA, which would place a sound level limit from the project at 49 dBA. Firelands asserts

that the projected sound from the project is within permissible limits, as defined by Ohio Adm.Code 4906-409(F)(2) and Stipulated Condition 33.

1. EFFECTS CAUSED BY SHADOW FLICKER

{¶ 131} Firelands indicates that the project will comply with the 30 hour per year shadow flicker limitation contained in Ohio Adm.Code 4906-4-09(H)(1), advising that the final construction plan for the project will vary from the study that was submitted to Staff in support of the application. Variables that will produce the required shadow flicker results include (1) avoiding turbine construction in shadow flicker sensitive locations, (2) implementing targeted vegetation screening or window treatment, and (3) using operational curtailment to reduce shadow flicker to within acceptable limits.

{¶ 132} Staff concurs that the shadow flicker study submitted with the application, together with Applicant's commitment to modifications as described above, demonstrate that the project is compliant with the minimum adverse environmental impact requirements. Moreover, Staff maintains that compliance is secure based on Stipulated Condition 34, which requires Applicant to file and seek Staff approval of another shadow flicker study 30 days prior to construction.

{¶ 133} Residents and BSBO argue that the shadow flicker aspects of the project should not be approved on a conditional basis, and that Applicant is required to file a final a legally compliant shadow flicker report prior to the Board's certification.

2. EFFECTS ON VIEWSHED

{¶ 134} Firelands maintains that the viewshed effects from the project are mitigated based on (1) adherence to siting setback requirements, (2) the commitment to reduce the number of turbines from 87 to between 52 and 71, and to site turbines along field edges or hedgerows, where practical, and (3) the consistent design, speed, color, height and rotor diameter of the turbines (Firelands Ex. 2; Firelands Ex. 31 at 5, 218-220; Firelands Ex. 46 at 19). Moreover, Firelands contends that the determination of the aesthetics of individual

turbines is subjective and varies within the project area. In support of these claims, Firelands cites to (1) testimony at the local public hearing, (2) the inclusion of intervenors Yingling and Erf as Stipulating Parties, and (3) the fact that the project enhances the economic viability in the region without significantly impacting its agrarian qualities.

{¶ 135} Residents and BSBO assert that the proposed turbines cause an unacceptable impact to the area's viewshed. They focus particular attention on their desire to maintain the undeveloped quality of the rural community, as well as their claim that property values will be impacted by the project.

3. EFFECTS ON SAFETY

{¶ 136} Firelands asserts that the project complies with public safety requirements. In addition to describing the project's safe construction measures, Applicant provides substantial information in support of its claim that the project will, once complete, operate safely. Firelands claims that the risk of tower collapse or blade failure is extremely low, and that the facility's setback requirements are sufficiently protective of the public. Similarly, Firelands adds that the turbines to be constructed will be certified in accordance with international design standards that incorporate safety technology considerations in response to the consideration of blade throw, ice management, vibration, and extreme weather operations.

{¶ 137} Staff concurs with Applicant's position that the proposed facility design and turbine selections are safety compliant. Moreover, Staff recommends that any certificate be conditioned on Applicant's commitment to timely and adequately respond to turbine failure events by (1) staying operations, (2) immediately communicating with Staff, (3) investigating and submitting an incident report prior to resuming operations.

{¶ 138} Residents and BSBO argue that the project's safety measures are inadequate, citing to a Nordex manufacturer's safety manual, which describes that, in the event of a turbine fire, the recommended safe distance from the turbine is 1,650 feet. Based on this

manufacturer recommendation, and the five incidents of blade throw that have occurred in Ohio since 2009, Residents and BSBO assert that, if the project is certificated, that the minimum setback requirement be at least 1,650 feet.

6. BOARD CONCLUSION

{¶ 139} As provided in R.C. 4906.10(A)(3), the Board is required to review the measures and safeguards proposed in the Joint Stipulation to ensure that they are adequate to find that the facility, as conditioned, represents the minimum adverse environmental impact, considering the state of available technology, and the nature and economics of various alternatives, and other pertinent considerations. As discussed in further detail below, we find conditions set forth in the Joint Stipulation sufficiently ensure the minimum adverse environmental impact as result of the project.

{¶ 140} One of the most contested issues in this case involved the project's adverse environmental impact on birds and bats. At the outset, we note the extensive amount of information that has been provided by Firelands regarding the risk assessments and analyses undertaken to identify and sufficiently respond to the project's risks. Relative to bird and bat protections, Applicant provided a combined 29 surveys that were conducted during the period from 2009 through 2020, including: Raptor Nest Survey and Monitoring (8); Raptor Migration/Use (3); Passerine Migration (3); Eagle Use (4); Breeding Bird (4); Owl Playback (1); Bat Activity (2); and, Bat Mist-Net (4). (Firelands Ex. 1 at 121; Firelands Ex. 32 at 4-17.) Moreover, the number and quality of these surveys were at or above the recommendations of ODNR and USFWS, the agencies with expertise in the management of these wildlife resources.

{¶ 141} The Board recognizes that the project will impact birds, bats, and water resources despite the extensive efforts aimed at minimizing these impacts. This possibility is not fatal to the proposed project. We have significant experience in certificating wind energy projects consistent with the applicable statutory criteria, which dictates that the facility represent the minimum adverse environmental impact considering the state of

available technology and the nature and economics of various alternatives, and other pertinent considerations. R.C. 4906.10(A)(3).

{¶ 142} We note that ODNR regularly reviews the impact on natural resources associated with wind energy projects, and that ODNR intends to collaborate with USFWS as to the protection of wildlife species under their collective jurisdiction. Further, we note that as proposed in Joint Stipulation Conditions 22-23, Applicant is required to conduct post-construction monitoring in compliance with oversight by Staff, ODNR, and USFWS. This monitoring will determine whether the project's impacts exceed those anticipated by the wildlife experts. If excess impacts are demonstrated, Applicant is required to develop and obtain ODNR approval for a management strategy to address the excess impact. Similarly, with respect to eagle conservation measures, as proposed in Joint Stipulation Condition 31, Applicant must work with USFWS to secure an ETP, which as a prerequisite, requires Applicant to develop and obtain approval as to mitigation measures intended to protect eagle populations. We find that these wildlife safeguards ensure that this project meets the requirements of R.C. 4906.10 and represents the minimum adverse environmental impact.

{¶ 143} In addition to the two seasons of monitoring that are provided for immediately upon the onset of the facility's operations as described in Joint Stipulation Condition 22, we note that Joint Stipulation Condition 23 protects bird and bat populations during the lifetime of the project's operations. Specifically, if at any time the project causes a significant mortality event, as defined by ODNR protocols, Firelands is required to cooperate with Staff and ODNR to develop a mitigation plan in order to continue the facility's operations. By ensuring a timely response to any significant mortality events during the lifetime of the project, we conclude that avian and bat species are sufficiently protected. In furtherance of these protections, and the right of public awareness of the operating effects caused by the project, we order that any mitigation plan or adaptive management strategy that is developed in accordance with Stipulated Condition 23 must be filed in the case docket.

{¶ 144} Joint Stipulation Condition 19 also provides a higher level of oversight and protection in regard to state and federally endangered and threatened species, in addition to all applicable laws and regulations, including the federal Endangered Species Act and R.C. 1531.25, Ohio's statute protecting species threatened with statewide extinction (Joint Ex. 1 at 5). Specifically, Condition 19 contains responsive steps that are required to be taken to minimize the risks posed to these species, which are triggered if these species are encountered at the project site. Record evidence demonstrates there are a variety of ways the Applicant may utilize to determine whether an endangered or threatened species is encountered at or near the project site, including on-site identification by individuals working at the project site, physical evidence of the presence of such species, including the construction of a readily-identifiable nesting area on the turbines or platforms, and the recovery of carcasses. Consistent with our approach as to Stipulated Condition 23 (above), we also order that any notice required in response to Stipulated Condition 19 must be filed in the case docket.

{¶ 145} With respect to eagle protections, we note that Joint Stipulation Condition 31 requires Firelands to develop an ECP in furtherance of its application for an ETP, and that the correspondence between Firelands and USFWS relating to the ETP must be filed in the case docket. We note that the ETP application process is robust and can take up to several years, requiring the applicant to characterize eagle risks and develop plans for avoidance, minimization, and ongoing adaptive management of the risk during the lifetime of the project's operations. (Firelands Ex. 33 at 18-22.) Further, we note that Firelands remains accountable to USFWS for the project's impact to eagle populations such that it is expected to take the steps necessary to secure the ETP. As described by witness Farmer, in the absence of securing an ETP, the facility is subject to USFWS enforcement measures for eagle fatalities from its operations, as described in the Bald and Golden Eagle Protection Act. (Tr. Vol. II at 296-297; Firelands Ex. 38 at 18, 22.) Based on these facts, we conclude that the project will have a minimum adverse environmental impact to eagle populations.

{¶ 146} With respect to recreational use of the surrounding land and the aesthetic effects of the turbines, as noted earlier in our discussion of R.C. 4906.10(A)(2), the results of Firelands' VIA demonstrated that visual impacts are mitigated by plans for strategic siting and setbacks, reducing the number of turbines from 87 to between 52 and 71, and the consistent design, speed, color, height and rotor diameter of the turbines (Firelands Ex. 1 at 218-220; Firelands Ex. 46 at 3, 9-14, 15, 19). Based on these siting considerations, we find that Firelands has adequately addressed the concerns raised during the local public hearing as to siting the wind turbine facility.

{¶ 147} Finally, we must address the arguments raised by Residents and BSBO questioning whether Staff and ODNR are able to confirm compliance with the conditions set forth in the Joint Stipulation. Given their vast experience with overseeing Ohio's terrestrial wind energy projects, we find that Staff and ODNR have the requisite expertise to ensure compliance with the conditions of the Joint Stipulation. Historically, we have permitted subsequent modification of Board conditions subject to ODNR or USFWS approval, specifically in regard to avian and bat protection plans. See, e.g., *In re the Application of Champaign Wind, LLC*, Case No. 12-160, Opinion, Order, and Certificate (May 28, 2013) (where the Board issued a certificate which imposed a condition requiring a post-construction avian and bat monitoring plan for ODNR and Staff review, consistent with ODNR's terrestrial wind project protocols).

{¶ 148} Based on the evidence of record in this proceeding as summarized and documented herein, the Board finds that the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of various alternatives as outlined in compliance with R.C. 4906.10(A)(3). In reaching this conclusion, we emphasize the modifications to the project that are necessary to protect the public as to karst considerations, including (1) prohibiting the construction of turbines at locations where karst is anticipated at a level of moderate or above, and (2) prohibiting the use of grouting techniques at any other project location absent Staff's

advance written approval after its review and consideration of engineering drawings as submitted in the case docket by Firelands prior to the preconstruction conference.

D. Consistent with Regional Plans

{¶ 149} R.C. 4906.10(A)(4) provides that, in the case of an electric transmission line or generating facility, the Board must ensure that such 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 such facility will serve the interests of electric system economy and reliability.

{¶ 150} Firelands contends that the proposed project satisfies R.C. 4906.10(A)(4), noting that the facility will interconnect with the PJM transmission system for sale at wholesale or under a power purchase agreement (PPA). Firelands represents that it has a PPA contract in place with AEP Energy Partners, which in turn is seeking to meet clean energy demand from a Google data center located in New Albany, Ohio. (Firelands Ex. 31 at 6.) Firelands further provides that the PJM Feasibility Study, System Impact Study (SIS), and Facilities Study all included the analysis of the project, which were all completed as of November 2018 (Firelands Ex. 1 at 28-31). The PJM Feasibility Study, which evaluated compliance with reliability criteria for summer peak conditions in 2020 and analyzed the injection of the generating capacity from the project into the transmission system, found (1) no potential local or network problems with the substation, and (2) no violations with regard to deliverability. As for the SIS, Firelands describes one multiple facility contingency, an overload to 100.86 percent on the Beaver-Black River 138kV line, after evaluating the project's compliance with applicable reliability planning criteria for summer peak conditions in 2020. The described overload will, however, be mitigated by two PJM baseline projects that are scheduled for in-service dates by June 2021. Firelands understands that it may be required to advance costs for the upgrades in order to fully deliver the project's production to PJM. (Firelands Ex. 1 at 28-31.)

{¶ 151} Furthermore, Firelands asserts that Joint Stipulation Conditions 12 and 13 support that the facility is consistent with regional plans for the electric power grid and that the facility will serve the interests of electric system economy and reliability. Condition 12 requires Firelands to have a signed Interconnection Service Agreement with PJM. Condition 13 requires the facility to be operated in such a way to assure that no more than 297.7 MW would be injected into the Bulk Power System at any time. (Joint Ex. 1 at 4.)

{¶ 152} As noted earlier, Staff similarly recommended that the Board find 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 would serve the interests of electric system economy and reliability. As the various PJM system studies indicated, once the above-mentioned PJM baseline upgrades are complete, no reliability violations would occur during single and multiple contingencies. Further, Applicant is required to obtain a signed Interconnection Service Agreement with PJM and to operate the facility at a capacity of no more than 297.7 MW. (Staff Ex. 1 at 62; Joint Ex. 1 at 4.)

{¶ 153} The evidence provided by Staff and Firelands regarding the various PJM system studies persuades us to also find this criterion has been satisfied. In making this finding, we note that the project was evaluated according to (1) the federal reliability standards as required by the North American Electric Reliability Corporation (NERC), and (2) the regional grid feasibility study and SIS as conducted by PJM. Further, we emphasize that the SIS specifically evaluates issues such as generator deliverability, multiple facility contingency, potential congestion due to local energy deliverability, and system reinforcements. Further, we note that the Joint Stipulation incorporates both of Staff's originally proposed conditions regarding these issues (Joint Ex. 1 at 76). Thus, the record establishes that the facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving the state of Ohio and interconnected utility systems, and will serve the interest of electric system economy and reliability, in accordance with R.C. 4906.10(A)(4).

E. Air, Water, Solid Waste, and Aviation

{¶ 154} Pursuant to R.C. 4906.10(A)(5), the facility must comply with Ohio law regarding air and water pollution control, withdrawal of waters of the state, solid and hazardous wastes, and air navigation.

1. SUMMARY OF EVIDENCE

{¶ 155} Initially, in support of its argument that the application satisfies this criterion, Firelands asserts that no air pollution permits are required for the facility (Firelands Ex. 1 at 48-50).

{¶ 156} In regard to water pollution and use, Firelands commits to obtaining the following permits prior to construction: (1) Ohio NPDES construction stormwater permit (includes developing a SWP3 and filing a Notice of Intent with OEPA); (2) individual Nationwide Permit under Section 404 of the Clean Water Act (CWA); (3) Water Quality Certification (401) from OEPA; (4) Ohio Isolated Wetland Permit (if required after final engineering); and, (5) permit to install on-site sewage treatment from OEPA. (Firelands Ex. 1 at 51-53; Firelands Ex. 15 at 3.)

{¶ 157} Firelands further alleges that it has addressed any of the project's potential aviation-related concerns. Firelands notes that it coordinated the project with the FAA, ODOT-OA, and Signatory Parties to ensure against adverse impacts. As a result of these efforts, Firelands has committed to (1) comply with all aviation requirements as directed by the FAA and ODOT-OA, and (2) avoid construction on four proposed turbine sites that were concerns of the city of Willard, which ultimately became a Signatory Party. In addition to complying with all recommended and prescribed FAA DNH letter requirements, Firelands will file (1) a copy of the FAA DNH letter for the project's meteorological tower locations, and (2) copies of the FAA temporary construction permits for work activity involving cranes. Firelands will also conduct training 30 days prior to the preconstruction conference to inform local aviation stakeholders of changes to flight procedures and altitudes outlined in

the FAA DNH letter. Further, Firelands avers that Joint Stipulation Conditions 40-42⁵ ensure compliance with all aviation navigational requirements. (Firelands Ex. 1 at 58-59; Joint Ex. 1 at 9.)

{¶ 158} In evaluating aviation considerations, Staff recommended that the Board find that the facility complies with the requirements specified in R.C. 4906.10(A)(5), provided certain conditions be approved by the Board (Staff Ex. 1 at 64-69).

{¶ 159} While Residents and BSBO did not contest this issue during the hearing, there was stakeholder testimony at the local hearing that indicated that there were aviation concerns about the project. These related primarily to emergency response times that might be impacted by longer flight routes attributable to avoiding turbines. (Aug. 20, 2020 Tr. at 99-100.)

2. BOARD CONCLUSION

{¶ 160} We are persuaded by the record evidence produced by Firelands and other Signatory Parties as to these issues. In response to the various concerns raised during the local public hearings regarding the detrimental effect of the project, Staff concluded that Firelands will obtain various state and federal permits related to water, including a permit under Sections 404 and 10 of the CWA and a Section 401 Water Quality Certification from the Ohio EPA (Staff Ex. 1 at 35, 38-39; Joint Ex. 1 at 3). We also find that aviation-related concerns surrounding the project have been sufficiently addressed by Applicant, noting that Applicant's cooperation with the FAA and ODOT-OA provide sufficient assurances that aviation will continue to be safe in spite of the project's impact on flight routes in the area.

⁵ Staff originally recommended in Stipulated Condition 39 that Applicant must coordinate air navigation requirements with both the FAA and ODOT-OA (Staff Report at 64-67). After issuing the Staff Report, Staff received correspondence from ODOT-OA clarifying that the project did not impact matters within its scope of review. Accordingly, Staff rescinded Stipulated Condition 39, which originally required broader ODOT-OA approval. (Tr. Vol. V at 699.)

{¶ 161} Thus, the record establishes that, to the extent any of them are applicable, construction of the proposed facility will comply with the requirements in the Ohio Revised Code regarding air and water pollution control, withdrawal of waters of the state, solid and hazardous waters, and air navigation, and all rules and standards adopted under the relevant Ohio Revised Code Chapters.

F. Public Interest, Convenience, and Necessity

{¶ 162} Pursuant to R.C. 4906.10(A)(6), the Board must determine that the facility will serve the public interest, convenience, and necessity.

1. SUMMARY OF EVIDENCE

{¶ 163} Firelands contends that it has dedicated a substantial amount of time to gauge public interest and perception of the project, engaging local stakeholders and local communities. Further, Firelands stresses the project's economic development benefits, including tax payments to schools and local governments, new jobs and manufacturing, environmental protection, local energy generation, diversification of electric power, and maintaining current land use. (Firelands Ex. 1 at 35-39.)

{¶ 164} Moreover, Firelands has also submitted a complaint resolution plan as a part of its application, which will allow all complaints related to the facility to be adequately investigated and resolved. Firelands adds that, as agreed to in the Joint Stipulation, it will be required to file quarterly reports in the docket summarizing complaints received and the actions taken to resolve the complaint. (Firelands Ex. 1 at Attach. M; Firelands Ex. 12; Joint Ex. 1 at 3.)

{¶ 165} Local Farmers and several members of the community join Firelands in stressing the project's (1) local economic benefits, and (2) positive impact on reducing the state's production of greenhouse gases (Firelands Ex. 1 at 35-38; Firelands Ex. 36; Local Farmers Ex. 1 at 3; Local Farmers Ex. 9 at 55-56; Aug. 20, 2020 Tr. at 45, 55, 83, 94, 103, 110, 128, 132, 135, 139, 142, 163, 170, 176, 196, 218, 222, 224, 236, 239).

{¶ 166} Similar to its arguments related to R.C. 4906.10(A)(2) and (A)(3), Residents and BSBO contend that Firelands has failed to demonstrate that the project will serve the public interest, convenience, and necessity, as required by R.C. 4906.10(A)(6). In support of this position, Residents and BSBO provided testimony from witness Schreiner, who described that the project will be inefficient and unreliable in producing electricity, and that the continuing addition of intermittent electricity resources has a negative cumulative effect on the state's ability to maintain energy availability. (Residents Ex. 1; Tr. VII 866-869.) Further, they claim that wind energy is more expensive than non-intermittent energy, and that the increased costs of production is inconsistent with the public's interest.

{¶ 167} Firelands moved to strike or disregard the testimony of witness Schreiner, who testified against the project on behalf of Residents and BSBO, arguing that his testimony is irrelevant in determining the public interest, convenience, and necessity of the project. Further, Firelands asserts that, even if Mr. Schreiner's testimony remains admitted in the case, his credibility is outweighed by the testimony of Firelands' rebuttal expert, Deepesh Rana. Mr. Rana testified that, based on his relevant experience and specific knowledge of the project, that the project will not negatively impact the reliability of the grid. (Firelands Ex. 90 at 3-6.)

2. BOARD CONCLUSION

{¶ 168} The record establishes that the facility, as conditioned by the Joint Stipulation and modified herein, will serve the public interest, convenience, and necessity. Public interest, convenience, and necessity should be examined through a broad lens. For example, this factor should consider the public's interest in energy generation that ensures continued utility services and the prosperity of the State of Ohio. At the same time, this statutory criterion regarding public interest, convenience, and necessity, must also encompass the local public interest, ensuring a process that allows for local citizen input, while taking into account local government opinion and impact to natural resources. As part of the Board's responsibility under R.C. 4906.10(A)(6) to determine that all approved projects will serve the public interest, convenience, and necessity, we must balance projected benefits against

the magnitude of potential negative impacts on the local community. In reaching the determination in this case that the public interest, convenience, and necessity is satisfied, we note (1) the local governmental support the project received from the City of Willard, Huron County, Richmond Township, Norwich Township, and (2) there was no local governmental opposition to the project (Joint Stipulation at 17.) Moreover, as described above, we note that local witness testimony in the case was balanced with: opponents focusing primarily on the project's (1) effect on bird and bat mortality, (2) impacts to safety, surface water, and ground water resulting from installing turbines and related project construction on land that is impacted by karst geology, (3) safety and aesthetics of the proposed turbines, (4) negative economic impacts from the project, (5) impact on agriculture land use, (6) impact on the electric reliability system resulting from increased intermittent electricity generation, and (7) impact on flight operations around the project area; and, supporters focusing primarily on (1) the project's favorable income potential through tax payments to schools and local governments, (2) benefits to leaseholders, (3) new job creation, (4) maintaining current agricultural land use, and (5) the benefits of renewable energy.

{¶ 169} While Mr. Schreiner's testimony based on his roles in nuclear plant operations, including his experience in working with grid management, is relevant to this case, we conclude that his testimony is less credible than that of witness Rana in regard to the alleged impact of the project in terms of grid reliability and cost determinations. We note that Mr. Schreiner provides no credible evidence demonstrating that the project will increase generation costs, nor does his experience in nuclear plant operations directly relate to grid reliability expectations that might be expected from the Firelands wind project. Conversely, witness Rana's experience is in direct relation to wind energy projects, which enables him to testify more credibly as to the grid reliability and cost issues before the Board. Moreover, as noted earlier herein, we are also persuaded by the reliability considerations required by NERC and PJM in determining that the project will not adversely impact system reliability. Accordingly, we conclude that the expert arguments proffered by Residents and

BSBO to establish that the proposed project will not promote the public interest, convenience, and necessity as required by R.C. 4906.10(A)(6), are not compelling.

G. Agricultural Districts

{¶ 170} Pursuant to R.C. 4906.10(A)(7), the Board must determine the facility's impact on the agricultural viability of any land in an existing agricultural district within the project area of the proposed facility.

{¶ 171} Firelands, Staff, and Local Farmers contend that the project will help preserve agricultural land, avoid the conversion of farmland to other uses, and support farming by enhancing the long-term economic viability of the participating farmers. Firelands stresses that the project will result in the permanent loss of 82 acres of agricultural land, and that impact of the lost acreage is minimized by the project's design, which attempts to site turbines and access roads along field edges where possible.

{¶ 172} Staff concludes that the impact of the project on the viability of agricultural land in an existing agricultural district has been determined in compliance with R.C. 4906.10(A)(7). In reaching this determination, Staff notes that Applicant is committed to (1) continuing meetings with participating landowners to ensure uninterrupted, efficient use of agricultural land, (2) de-compacting soils impacted by the project's construction, (3) coordinating with landowners to avoid long-term impacts to irrigation systems, (4) act to avoid subsurface drainage infrastructure, and make timely repair when necessary, (5) avoid impacts to agricultural structures, (6) restore agricultural land to its intended use after construction, and (7) address landowner concerns during the growing season after construction to correct any remaining consequences from the project's construction. (Staff Ex. 1 at 73). Accordingly, Staff recommends a finding that the Joint Stipulation complies with R.C. 4906.10(A)(7).

{¶ 173} Residents and BSBO do not raise any specific object to Staff's conclusion as a finding that the impact of the proposed project on the viability of agricultural land in an

existing agricultural district has been determined in compliance with R.C. 4906.10(A)(7). Nevertheless, as described above, in opposing the project they maintain generally that the project's impact on groundwater, property values, the local economy, and wildlife are all inconsistent with the current agricultural uses that will be impacted by the project.

{¶ 174} We conclude that the project's impact on the viability of agricultural land in an existing agricultural district has been determined in compliance with R.C. 4906.10(A)(7).

We find that, once constructed, the project will have only a minor impact on the continued agricultural viability in the area surrounding the project. In reaching this determination, we accept the Staff recommendations, including the conditions specified in the Joint Stipulation.

H. Water Conservation Practices

{¶ 175} R.C. 4906.10(A)(8) requires that a proposed facility must incorporate maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives. Staff and Firelands express that water usage would be minimal. According to Staff, no water would be used in the process of production of electricity, and only minimal water usage would be necessary at the O&M building (Staff Ex. 1 at 74). Upon review, we conclude that R.C. 4906.10(A)(8) is satisfied.

IX. CONSIDERATION OF THE STIPULATION

{¶ 176} Pursuant to Ohio Adm.Code 4906-2-24, parties before the Board are permitted to enter into stipulations concerning issues of fact, the authenticity of documents, or the proposed resolution of some or all of the issues in a proceeding. Under Ohio Adm.Code 4906-2-24(D), no stipulation is binding on the Board. However, the Board affords the terms of such an agreement substantial weight. The standard of review for considering the reasonableness of a stipulation has been discussed in a number of Board proceedings. *See, e.g., In re Hardin Wind, LLC*, Case No. 13-1177-EL-BGN (Mar. 17, 2014); *In re Northwest Ohio Wind Energy, LLC*, Case No. 13-197-EL-BGN (Dec. 16, 2013); *In re AEP Transm. Co., Inc.*, Case No. 12-1361-EL-BSB (Sept. 13, 2013); *In re Rolling Hills Generating LLC*, Case No. 12-1669-EL-BGA (May 1, 2013); *In re American Transm. Systems Inc.*, Case No. 12-

1727-EL-BSB (Mar. 11, 2013). The ultimate issue for the Board's consideration is whether the agreement, which embodies considerable time and effort by the signatory parties, is reasonable and should be adopted. In considering the reasonableness of a stipulation, the Board has used the following criteria:

- (a) Is the settlement a product of serious bargaining among capable, knowledgeable parties?
- (b) Does the settlement, as a package, benefit ratepayers and the public interest?
- (c) Does the settlement package violate any important regulatory principle or practice?

A. *Is the settlement a product of serious bargaining among capable, knowledgeable parties?*

{¶ 177} Upon review, the Board finds that the Joint Stipulation is the product of serious bargaining among capable, knowledgeable parties. Initially, we note (1) the diversity of the participants in the stipulation, which included local residents, local public officials, and Staff, and (2) that all parties were represented by knowledgeable, competent counsel that regularly appear before the Board. Based on these facts, the Board finds that the first criterion is met.

B. *Does the settlement, as a package, benefit ratepayers and the public interest?*

{¶ 178} Firelands additionally avers that the second criterion is satisfied and that the project benefits ratepayers and the public interest. Firelands explains the project will produce positive economic impacts, including adding (1) 50 full time equivalent jobs, (2) over \$170 million of economic input, and (3) up \$82 million in combined local tax revenue (Firelands Ex. 31 at 19). Further, according to Firelands, the facility responds to demand from the general public and the local economy for locally-generated, renewable energy, as evidenced by the fact that the facility has a PPA in place that will meet demand from a new Google data center located within the state. As discussed previously, the Board received

many comments from the public, both in support of the project and in opposition, either at the public hearing or submitted to the docket. In support of the project, individuals touted economic benefits to schools and local governments, new jobs, green and diversified energy benefits, and the preservation of current land use. (Aug. 20, 2020 Tr. at 45, 55, 83, 94, 103, 110, 128, 132, 135, 139, 142, 163, 170, 176, 196, 218, 222, 224, 236, 239.) Additionally, we note that multiple local governments joined in supporting the Joint Stipulation. The Board also received many comments expressing support for renewable energy projects in Ohio. Those opposing the project, including 25 individuals who offered public testimony in the case, expressed that the turbines, as currently proposed, are not in the public interest because they are: (1) unsafe, (2) environmentally harmful, and (3) inconsistent with local landowner property rights expectations. (Aug. 20, 2020 Tr. at 20, 25, 32, 38, 50, 64, 71, 78, 89, 96, 120, 125, 144, 150, 156, 185, 190, 199, 207, 212, 229, 240, 246, 255, 258.)

{¶ 179} The Board concludes that the second element is satisfied. As a package, the Joint Stipulation benefits ratepayers and the public interest in multiple ways. First, we acknowledge the positive economic impact the project is expected to have. As mentioned, over 50 jobs would be created and more than \$170 million in economic output are expected from the project. Additionally, the project would result in significant tax revenue for local governments. (Staff Ex. 1 at 33-35.) Additionally, the conditions in the Joint Stipulation, as modified, including the post-construction monitoring and curtailment requirements detailed above, ensure that the impacts on avian and bat species, as well as other environmental aspects of the project, will be effectively minimized. The Board otherwise acknowledges the support for the project from trade groups, local officials, small businesses, and many other local citizens. While we acknowledge the concerns raised in opposition to the project, we conclude that the project strikes a reasonable balance of the competing local interests in terms of protecting public safety, environmental concerns, landowner rights, renewable energy, and local governmental financial concerns. Thus, we determine that, overall, the project will benefit ratepayers and the public interest.

C. *Does the settlement package violate any important regulatory principle or practice?*

{¶ 180} Firelands asserts that the application and the Joint Stipulation comply with all relevant regulatory principles and practices. Specifically, the Applicant maintains that every required criterion under R.C. 4906.10 is met. Staff and the other Signatory Parties agree. Residents and BSBO, however, disagree and maintain that the Joint Stipulation, as proposed, unlawfully delegates the Board's authority to USFWS and ODNR. As discussed, the Joint Stipulation permits Firelands to obtain its certificate based on the combined positions of USFWS and ODNR as to both (1) the project's predicted wildlife impacts, and (2) the additional monitoring and curtailment measures that the project is subject to once operational. Residents and BSBO contend that the Board is improperly delegating its authority to USFWS and ODNR to make the final statutory determinations as to the probable environmental impact and whether the project represents the minimum environmental impact.

{¶ 181} In reply, Firelands and Staff assert that the arguments raised by Residents and BSBO lack merit. Firelands maintains that there is enough evidence on the record for the Board to make a determination as to R.C. 4906.10(A)(2) and (A)(3). Specifically, Firelands emphasizes that the 29 pre-construction surveys performed since 2009 provide more than enough information for the Board to ascertain the probable environmental impact. According to Firelands, the purpose of the post-construction monitoring is to confirm that bird and bat mortality aligns with pre-construction analysis. Staff explains that the ongoing role of ODNR and Staff is to implement and enforce the conditions included in the Joint Stipulation. Firelands and Staff state this process has been recognized as acceptable by the Supreme Court of Ohio, citing *In re Application of Buckeye Wind, L.L.C.*, 131 Ohio St.3d 449, 2012-Ohio-878 (*Buckeye Wind*). As described in *Buckeye Wind*, the Supreme Court of Ohio found that the siting statutes "authorize a dynamic process that does not end with the issuance of a construction certificate." *Buckeye Wind* at ¶ 16. According to Firelands, the Supreme Court of Ohio has found that the Board can authorize Staff to

monitor compliance with the certificate conditions. Further, Firelands expresses that any submission to Staff would be public record and available for additional scrutiny. Staff notes that R.C. 4906.97 allows any party to file a complaint if a developer violates a certificate. Firelands also explains that R.C. 4906.07 requires a hearing regarding any modification to a certificate that materially increases any environmental impact of the facility.

{¶ 182} Initially, as described in our discussion of R.C. 4906.10(A)(3), the Board finds that the Joint Stipulation requires Firelands to file the bird and bat impact mitigation plan (including the collision monitoring plan) in the public record for the Board to review. Moreover, we find that Staff and ODNR's ongoing role is not unlawful. As stated in *Buckeye Wind*, the Supreme Court of Ohio has found that the Board is statutorily authorized to allow Staff to monitor compliance with the conditions enumerated in this decision. As further explained by the Court “* * *proper facility siting is subject to modification as the process continues – proposals are tested and matched to the defined conditions.” *Buckeye Wind* at ¶ 17. Thus, Residents and BSBO are incorrect to describe Staff's continued involvement as an improper delegation of authority. Rather, Staff's ongoing duties are a necessary component in a dynamic process. Above, we made our determinations regarding the statutory requirements of R.C. 4906.10. In order to ensure that Firelands continues to comply with those requirements, ongoing monitoring is required. While the Board is able to determine the nature of the probable environmental impact, Staff's involvement will be able to calculate the specific, actual environmental impact in compliance with the certificate conditions as the project is constructed and begins operation. Staff and ODNR will be reviewing the results of Firelands' post-construction monitoring to determine if it meets the specific, quantitative standards outlined in Conditions 22-23 of the Joint Stipulation. As we expressed previously, Staff and ODNR have experience monitoring the development of Ohio's terrestrial wind generation projects and they are eminently qualified to oversee Firelands' compliance with this order. The Board is not persuaded by the arguments of Residents and BSBO that Firelands' compliance with the conditions is not subject to additional review or public comment. First, we recognize that any material changes to the

project require an application to amend the certificate. In addition, as acknowledged in *Buckeye Wind*, pursuant to R.C. 4905.07 all of Staff's records are open to inspection. *Buckeye Wind* at ¶ 25.

{¶ 183} Based on the record in this proceeding, the Board concludes that all of the elements established in accordance with R.C. Chapter 4906 are satisfied for the construction, operation, and maintenance of the wind generating electric facility described in Firelands' application, subject to the conditions set forth in the Joint Stipulation and this Order. In reaching this conclusion, we note the importance of maintaining public awareness of the items that are subject to further actions by Firelands in advance of beginning construction of the project. In order to ensure continuing public awareness of these items, and the overall progress of the project, we instruct that where Firelands submits further information to Staff in satisfaction of the terms of the Joint Stipulation, that it must also simultaneously file the information in this case docket. Accordingly, based upon all of the above, the Board approves and adopts the Joint Stipulation, as modified, and hereby issues a certificate to Firelands in accordance with R.C. Chapter 4906.

X. PROCEDURAL ISSUES

{¶ 184} As a final matter, Firelands requests that the Board reconsider ALJ rulings that denied its motion in limine that was filed on October 9, 2020. In the motion, Firelands sought to strike all or portions of the testimony of witnesses Dennis Schreiner and Mark Shieldcastle, who testified in opposition to the application on behalf of Residents and BSBO. As to each witness, Firelands asserted that his testimony was irrelevant, unreliable, prejudicial, or otherwise improper in relation to the issues before the Board. Conversely, Residents and BSBO argued that the testimony of each witness was proper for admission. As to each witness, the ALJ admitted testimony over Firelands' objection.

{¶ 185} Witness Schreiner testified as an expert regarding the project's impact on the economy and reliability of the electric grid. His expert credentials included his experience and training involving (1) nuclear power technology while in the Navy, (2) work as a

Nuclear Regulatory Commission (NRC) Licensed Reactor Operator and NRC Senior Licensed Reactor Operator at the Davis-Besse nuclear power facility, (3) work as a senior instructor for Babcock and Wilcox, a nuclear plant operator, and (4) private consulting regarding NRC certification requirements. Moreover, he testified that his duties with Davis-Besse included, among other positions, serving as a control room operator, where he coordinated power flows from the facility to the regional grid. Based on his experience and training involving the operation of a nuclear generating facility, including the manner in which the facility responded to regional grid coordination issues, the ALJ determined that his testimony as to the project's impact on efficiency and reliability was probative to the issues before the Board (Tr. Vol. VII at 834-835). *See*, R.C. 4906.10(A)(4) and 4906.10(A)(6).

{¶ 186} Witness Shieldcastle testified as an expert regarding the project's environmental impact on birds, bats, and other wildlife. A portion of his prefiled testimony was stricken based on a hearsay objection. But the ALJ allowed the witness' testimony to stand over Firelands' objection regarding the importance of protecting birds in the project area. In admitting the testimony, the ALJ noted that the witness has both personal and professional knowledge that support his testimony, which includes his service as an officer of BSBO. Further, the ALJ explained that the testimony was useful in adding context to his testimony as to the health effects of preserving bird populations. (Tr. Vol. VII at 918-919.)

{¶ 187} Ohio Adm.Code 4906-2-29(F) provides, in pertinent part, that any party that is adversely affected by a ruling issued under Ohio Adm.Code 4906-2-28 or any oral ruling issued during a public hearing and that elects not to take an interlocutory appeal from the ruling may still raise the propriety of that ruling as an issue for the Board's consideration by discussing the matter as a distinct issue in its initial brief.

{¶ 188} We find that the ALJ determinations are proper as to the admission of the testimony of witnesses Schreiner and Shieldcastle. In each circumstance, the ALJ determined that the testimony at issue was both relevant and reliable. We note that, as discussed earlier, we determined that neither witness' testimony was persuasive to establish

that the proposed project was either inconsistent with electric system economy and reliability, or the public interest, convenience, and necessity as required by R.C. 4906.10(A)(4) and 4906.10(A)(6). Nevertheless, as to each witness, the ALJ properly (1) considered the relevance of the testimony at issue, (2) assessed whether issues of prejudice outweighed relevancy considerations, and (3) afforded the opportunity for broad cross examination. Further, in upholding these rulings, we find that the ALJs acted consistent with the past practice of the Board, which focuses on making evidentiary rulings in accordance with the parameters outlined by the Supreme Court of Ohio in response to motions to strike testimony on a case-by-case basis. See, e.g., *In re Duke Energy Ohio, Inc.*, Case No. 03-93-EL-ATA, et al. Entry (Feb.28, 2007).

XI. FINDINGS OF FACT AND CONCLUSIONS OF LAW

{¶ 189} Firelands is a corporation and a person under R.C. 4906.01(A).

{¶ 190} The proposed electric generation facility is a major utility facility, as defined in R.C. 4906.01(B).

{¶ 191} On October 26, 2018, Firelands filed a pre-application notification letter informing the Board of the public informational meeting for its proposed facility.

{¶ 192} Firelands held a public informational meeting regarding the project on November 15, 2018.

{¶ 193} On January 31, 2019, Firelands filed its application for a certificate to construct a wind-powered electric generation facility in Huron and Erie counties, Ohio.

{¶ 194} On March 7, 2019, an ALJ ordered Firelands to conduct an additional public information meeting due to substantial changes between the information in the October 26, 2018 pre-application notification letter and January 31, 2019 application.

{¶ 195} On March 13, 2019, Firelands filed proof of its publication of the notice regarding the additional public informational meeting in accordance with Ohio Adm.Code 4906-3-03.

{¶ 196} On March 29, 2019, Firelands filed its confirmation of notification to property owners and affected entities of the date of the additional public information meeting.

{¶ 197} Firelands held an additional public information meeting regarding the project on April 3, 2019.

{¶ 198} On April 17, 2019, the Board notified Firelands that its application, as supplemented, had been found to be sufficiently complete pursuant to Ohio Adm.Code 4906-1, et seq.

{¶ 199} Firelands filed supplements to its application on March 18, April 11, July 10, September 12, and October 4, 2019.

{¶ 200} On September 12, 2019, Firelands filed notice of payment of the application fee to the Board pursuant to Ohio Adm.Code 4906-3-07(A).

{¶ 201} On September 27, and October 11, 2019, Staff filed motions to modify the completeness determination that was originally issue on April 17, 2019.

{¶ 202} On October 24, 2019, an ALJ granted Staff's October 11, 2019 motion to modify the completeness determination that was originally issued on April 17, 2019.

{¶ 203} On December 3, 2019, the Board notified Firelands that its application, as further supplemented, had been found to be sufficiently complete pursuant to Ohio Adm.Code 4906-1, et seq.

{¶ 204} On December 10, 2019, Firelands filed its proof of compliance with the requirements for service of its accepted and complete application, consistent with Ohio Adm.Code 4906-3-07(A).

{¶ 205} On December 23, 2019, the ALJ issued an Entry establishing the effective date of the application as December 23, 2019, and adopting a procedural schedule for the case, including dates for a local public hearing and adjudicatory hearing.

{¶ 206} By Entries dated June 25, June 26, October 24, and, December 23, 2019, and March 5, 2020, Residents, Huron County, Norwich Township, Richmond Township, Erie County, city of Willard, Local Farmers, and BSBO were granted intervention.

{¶ 207} The Staff Report of Investigation was filed on March 2, 2020.

{¶ 208} On March 11, 2020, the ALJ issued an order suspending the procedural schedule and postponing all hearing dates due to the COVID-19 state of emergency that was declared by the governor on March 9, 2020.

{¶ 209} On July 13, 2020, the ALJ issued an Entry adopting a new procedural schedule for the case, including dates for the local public hearing and adjudicatory hearing, both of which were to be conducted using remote hearing technology due to the COVID-19 continued state of emergency.

{¶ 210} On July 23, 2020, Firelands filed its proof of service and publication regarding the rescheduled date, time, and virtual hearing arrangements of the local public and adjudicatory hearings, including proof of notice of the public hearing and adjudicatory hearing to affected property owners and elected officials, in substantial compliance with Ohio Adm.Code 4906-3-09(A)(2).

{¶ 211} The local public hearing was held using remote hearing technology on August 20, 2020.

{¶ 212} On September 11, 2020, Firelands, Staff, Huron County, city of Willard, Norwich Township, Richmond Township, and Local Farmers filed a joint stipulation and recommendation.

{¶ 213} In accordance with the procedural Entry on July 13, 2020, the parties filed direct testimony on September 11 and September 21, 2020.

{¶ 214} The adjudicatory hearing using remote hearing technology commenced on October 5, 2020, and concluded on October 16, 2020. At the close of the hearing, a briefing schedule was set.

{¶ 215} In accordance with the established briefing schedule, initial briefs were filed by Firelands, Local Farmers, Staff, and jointly by Residents and BSBO on November 20, 2020. Reply briefs were filed by the same parties on December 4, and December 7, 2020.

{¶ 216} Adequate data on the proposed economically significant wind farm has been provided to make the applicable determinations required by Ohio Adm.Code 4906.10(A). The record evidence in this matter provides sufficient factual data to enable the Board to make an informed decision.

{¶ 217} The record establishes that, because the project is not a gas pipeline or an electric transmission line, R.C. 4906.10(A)(1) is not applicable.

{¶ 218} The record establishes the nature of the probable environmental impact from construction, operation, and maintenance of the project, consistent with R.C. 4906.10(A)(2).

{¶ 219} The record establishes that the project, subject to the conditions set forth in this Opinion, Order, and Certificate, represents the minimum adverse environmental impact, considering the available technology and nature and economics of the various alternatives, and other pertinent considerations, consistent with R.C. 4906.10(A)(3).

{¶ 220} The record establishes that, as a generating facility, the project 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, in accordance with R.C. 4906.10(A)(4).

{¶ 221} The record establishes that the project, subject to the conditions set forth in this Opinion, Order, and Certificate, will comply with R.C. Chapters 3704, 3734, and 6111; R.C. 4561.32 and 4561.341; and all rules and regulations thereunder, to the extent applicable, consistent with R.C. 4906.10(A)(5).

{¶ 222} The record establishes that the project, subject to the conditions set forth in this Opinion, Order, and Certificate, will serve the public interest, convenience, and necessity, consistent with R.C. 4906.10(A)(6).

{¶ 223} The record establishes that the project, subject to the conditions set forth in this Opinion, Order, and Certificate, will have a minimal permanent impact on agricultural resources consistent with R.C. 4906.10(A)(7).

{¶ 224} The record establishes that the project, subject to the conditions set forth in this Opinion, Order, and Certificate, incorporates maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives, consistent with R.C. 4906.10(A)(8).

{¶ 225} The evidence supports a finding that all of the criteria in R.C. 4906.10(A) are satisfied for the construction, operation, and maintenance of the project as proposed by Firelands, subject to the conditions set forth in this Opinion, Order, and Certificate.

{¶ 226} The evidence supports a finding that the Joint Stipulation, as modified, (1) is the product of serious bargaining among capable, knowledgeable parties, (2) as a package, benefits ratepayers and is in the public interest, and (3) does not violate any important regulatory principle or practice.

{¶ 227} Based on the record, the Board should issue a certificate of environmental compatibility and public need, pursuant to R.C. Chapter 4906, for the construction, operation, and maintenance of the project, subject to the conditions set forth in this Opinion, Order, and Certificate.

XII. ORDER

{¶ 228} It is, therefore,

{¶ 229} ORDERED, That the Joint Stipulation be approved and adopted subject to the modifications herein. It is, further,

{¶ 230} ORDERED, That a certificate be issued to Firelands for the construction, operation, and maintenance of the wind-powered electric generation facility, subject to the conditions set forth in the Joint Stipulation and this Order. It is, further,

{¶ 231} ORDERED, That where Firelands submits further information to Staff in satisfaction of the terms of the Joint Stipulation, that it must also simultaneously file the information in this case docket. It is, further,

{¶ 232} ORDERED, That a copy of this Opinion, Order, and Certificate be served upon all parties and interested persons of record.

BOARD MEMBERS:

Approving:

Jenifer French, Chair
Public Utilities Commission of Ohio

Matt McClellan, Designee for Lydia Mihalik, Director
Ohio Development Services Agency

Mary Mertz, Director
Ohio Department of Natural Resources

W. Gene Phillips, Designee for Stephanie McCloud, Director
Ohio Department of Health

Drew Bergman, Designee for Laurie Stevenson, Director
Ohio Environmental Protection Agency

Sarah Huffman, Designee for Dorothy Pelanda, Director
Ohio Department of Agriculture

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Case No(s). 18-1607-EL-BGN

Summary: Opinion & Order approving and adopting the stipulation and recommendation, as modified herein, between Firelands Wind, LLC, Staff, and other parties and directs that a certificate be issued to Firelands Wind, LLC for construction of a new 297.66 megawatt wind-powered electric generation facility. electronically filed by Ms. Mary E Fischer on behalf of Ohio Power Siting Board