BEFORE
THE OHIO POWER SITING BOARD

In the Matter of the Application of **REPUBLIC WIND, LLC** for a Certificate of Environmental Compatibility and Public Need for a Wind-Powered Electric Generating Facility in Seneca and Sandusky Counties, Ohio	)))))	Case No. 17-2295-EL-BGN

REPUBLIC WIND, LLC'S REPLY BRIEF

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I. INTRODUCTION

The crux of every Ohio Power Siting Board ("Board") case is the statutory criteria in R.C. 4906.10(A). The goals of this statutory provision are to reasonably minimize the potential impacts from a major utility facility while also allowing for construction of the facility. The Board is tasked with balancing and achieving both of these goals if possible. While many opposing claims, arguments, and positions arise during litigated wind farm cases, the Board must always return to the statutory goals of R.C. 4906.10(A) as the foundation for its decision.

In this case, the Board should grant a certificate to the Republic Wind, LLC ("Republic") Wind Farm Project (the "Project") because Republic provided the Board with sufficient evidence to find and determine that the Project meets every applicable requirement of R.C. 4906.10(A). In its initial brief, Republic summarized the evidence it presented that supports a positive finding under each applicable criterion. As such, Republic has carried its burden as the applicant in this proceeding and a certificate should be issued.

While the Project meets the applicable requirements of R.C. 4906.10(A), certain parties maintain opposition to the Project. These parties are the Local Residents, Local Governments[1], and Seneca County Park District. These opposition parties' goal is not to reasonably minimize the potential impacts of the Project while also allowing for construction of the Project. Their primary objective is to ensure the Project is not constructed. But these opposition parties fail to point to any credible evidence that would preclude issuance of a certificate due to a failure meet the criteria of R.C. 4906.10(A). They second-guess the studies performed by Republic, question the findings set forth in the Application, and claim that Republic is intentionally misrepresenting the potential impacts of the Project.

But the record demonstrates that the Project will not negatively impact the public interest and convenience, will not harm human health, and will not present safety threats to the surrounding public. The record also shows that Republic has performed the necessary studies and will implement the necessary measures to ensure the Project will have minimal impacts to the ecology within the Project Area. The Board should disregard the oppositions' arguments because they fail to demonstrate that the criteria of R.C. 4906.10(A) has not been met by Republic. The many flaws in the oppositions' arguments are discussed in this reply brief.

Staff performed its statutory obligation to investigate Republic's Application and issue a report that contains its finding. It its report, Staff recommends issuance of a certificate with certain conditions. Republic and Staff are aligned on a number of key issues and proposed conditions. However, Republic and Staff disagree on some critical issues such as:

- Certain proposed aviation conditions of Staff are unlawful because they are based upon the Ohio Department of Transportation-Office of Aviation's unlawful actions and determinations that are not based on sound aeronautical principles.

[1] The "Local Governments" are Seneca County, Adams Township, Reed Township, and Scipio Township.

- Staff incorrectly relies on the new version of the Board's state and federal highway setback rule when recommending that turbines 10, 38, and 43 not be constructed. Republic properly structured and submitted its Application and Amended Application in compliance the Board's prior rules, and the Board properly deemed Republic's application complete based on the prior rules.

- Staff's proposed Condition 58 is unreasonable because it imposes an arbitrary bar on noise impacts; while the condition is intended to address Staff's purported "due process" concerns, it is not a reasonable limitation on potential noise impacts.

- Staff's decision to reduce the average ambient nighttime sound level to 40.5 dBA based on the results of the monitoring locations from a separate Board proceeding is unreasonable and unlawful.

- Staff's recommended Condition 26 is inconsistent with the Technical Assistance Letter ("TAL") that has been issued to Republic, the guidance provided by USFWS, and scientific evidence regarding the northern long-eared bat.

- Staff's recommended Condition 40 is inconsistent with federal law and is not necessary to minimize impacts to bald eagles.

The Board should adopt Republic's modified conditions. Republic's proposed conditions ensure that the Project reasonably represents the minimum adverse environmental impact while also preventing the Board from adopting the unreasonable and/or unlawful conditions recommended by Staff.

Based on the arguments in this reply brief and Republic's initial brief, the Board should: (1) issue a Certificate for the Project; and (2) adopt Republic's proposed modifications to Staff's proposed Conditions.

II. ARGUMENT

A. <u>The evidence demonstrates that the Project represents the minimum adverse environmental impact with respect to noise.</u>

1. Republic's noise study demonstrates that the Project will comply with the Board's Rules, and the Project will have limited noise impacts on non-participating landowners.

a) The record demonstrates that Republic will comply with the Board's noise limit of average ambient nighttime sound level plus 5 dBA.

Local Residents claim the Project does not comply with the operational noise limit set forth in O.A.C. 4906-4-09(F)(2). This is incorrect. Republic's noise study demonstrates that none of the non-participating sensitive receptors will be exposed to operational sound levels that exceed the ambient nighttime average by more than 5 dBA. Because 46 dBA is no more than 5 dBA above the Project Area's average ambient nighttime sound level of 41 dBA, Republic is within the sound limit set forth in O.A.C. 4906-4-09(F)(2).[2]

The Local Residents claim that the operational sound level of 46 dBA "would allow Republic's turbines to increase noise levels by 5 dBA rather than *prohibiting* noise increases of 5 dBA or more." (Local Residents' Brief at p. 6; emphasis added.) The Local Residents gravely misconstrue the Board's operational noise rule. Pursuant to Board precedent, a wind facility must be designed to operate so that the facility noise contribution does not exceed the ambient nighttime sound level *plus* 5 dBA at any non-participating sensitive receptor. Simply put, the additional 5 dBA is the highest operational sound level allowed. This is consistent with Staff Witness Bellamy's interpretation of the rule and Board precedent. Tr. VII at pp. 1466, 1478.

[2] After the filing of the initial application, O.A.C. 4906-4-09(F)(2) went into effect. O.A.C. 4906-4-09(F)(2) codifies the Board's precedent of an operational sound level limit of 5 dBA above the average nighttime ambient sound level. Republic based its operational sound level limit on Board precedent. Although O.A.C. 4906-4-09(F)(2) was not in effect when Republic submitted its initial application and the new Board rules did not apply to Republic's Amended Application, the record demonstrates that Republic would be in compliance with O.A.C. 4906-4-09(F)(2) if the Board decides to apply this rule in the case.

For over a decade, the Board has continuously applied an operational sound level limit of the nighttime ambient sound levels plus 5 dBA. Before the enactment of O.A.C. 4906-4-09(F)(2), the Board held that the facility must "not exceed the project area ambient nighttime Leq (46 dBA) by 5 dBA … at the exterior of any currently existing nonparticipating sensitive receptor." *In Re Application of 6011 Greenwich Windpark, LLC*, 13-990-EL-BGN, Opinion, Order, and Certificate at pp. 15-16 (August 25, 2014). The Board conditioned Greenwich Windpark's certificate upon the requirement that it adhere to 51 dBA nighttime ambient levels—precisely 5 dBA above the ambient nighttime Leq of 46 dBA. In another case, the Board stated that operational sound levels must not result in noise levels at the exterior of any currently existing nonparticipating sensitive receptor that exceed the project area ambient nighttime Leq (42 dBA) by 5 dBA. *In Re Application of Hardin Wind LLC*, Case No. 13-1177-EL-BGN, Opinion, Order, and Certificate at p. 26 (March 17, 2014)("*Hardin Wind Order*").

In another case, the overall average nighttime sound level was 43 dBA. *In Re Application of Black Fork Wind Energy, L.L.C.*, Case No. 10-2865-EL-BGN, Opinion, Order, and Certificate, (January 23, 2012)("*Black Fork Wind Order*"). The Board provided that "the formula of nighttime noise level plus 5 dBA, which was established in prior cases before the Board" led to the expert's conclusion of "the design standard noise level for the project […] at 48 dBA." *Id*. at p. 59. *See also In Re Application of Champaign Wind, LLC*, Case No. 12-160-EL-BGN, Opinion, Order, and Certificate at p. 63 (May 28, 2013) ("*Champaign Wind Order*") ("Based on the determination of the average ambient nighttime noise level of 39 dBA, and upon **the addition of 5 dBA to the nighttime average**, we believe a design goal of 44 dBA is a reasonable and appropriate level that is supported by the record in this case."; emphasis added.)

Based on these years of precedent, the Board codified the ambient nighttime sound level plus 5 dBA standard into O.A.C. 4906-4-09(F)(2). In the one case decided after the rule went into

effect, the Board held that "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…except during daytime operation that is in accordance with O.A.C. 4906-4-09(F)(2)." *In Re Application of Paulding Wind Farm IV LLC,* Case No. 18-91-EL-BGN, Opinion, Order, and Certificate at p. 37 (February 21, 2019; emphasis added.) In satisfying a condition of its certificate, the applicant submitted a Notice of Compliance demonstrating the project area ambient nighttime average sound level of 43 dBA Leq. The applicant established "an absolute limit of 48 dBA Leq" based on sound level that does not exceed the nighttime ambient by 5 dBA. *Id.* at p. 2.

It is clear that 46 dBA does not exceed the average ambient nighttime sound level by 5 dBA. Merriam Webster defines "exceed" as "to be greater than or superior to," "to go beyond a limit set by," and "to extend outside of." Merriam-Webster, https://www.merriam-webster.com/dictionary/exceed (last visited Jan. 6, 2020). Thus, the operational sound level must not "be greater than," "go beyond," or "extend outside of" the average ambient nighttime sound level plus 5 dBA. An operational sound level of 46 dBA is clearly not greater than, and does not go beyond, the average nighttime ambient sound level of 41 dBA by 5 dBA.

b) Board precedent demonstrates that applicants can utilize noise reduced operations ("NRO") to achieve operational noise limits.

The record demonstrates that Republic will comply with the 46 dBA sound limit with the use of NRO. Although Local Residents argue that Republic should not be permitted to utilize NRO to achieve the 46 dBA sound level limit, Board precedent demonstrates applicants can utilize NRO to achieve operational noise limits. See *Northwest Ohio Wind Energy, LLC,* Case No. 13-197-EL-BGN, Opinion, Order, and Certificate at p. 15 (December 16, 2013); *Hardin Wind, Order* at p. 17; *Champaign Wind Order* at p. 54 (May 13, 2013). The Board has recognized that applicants should

be permitted to utilize available technology in order to meet regulatory requirements and minimize impacts. This is consistent with the criterion set forth in R.C. 4906.10(1)(3) which indicates that the Board must find that the "facility represents the minimum adverse environmental impact" when "considering the state of available technology."

Local Residents argue that Republic's usage of NRO cannot be effectively enforced. This claim is baseless. As stated above, the Board has already certificated other wind farm projects that utilize NRO to meet the operational noise limit. To the extent a non-participating landowner believes Republic is operating at a level that exceeds the noise limit, the non-participating landowner can utilize the complaint resolution process to determine if the Project is complying with the 46 dBA noise limit. In a prior rulemaking proceeding, the Board stated that the complaint resolution process "act[s] as an appropriate means of handling any complaints regarding the resulting noise." *In the Matter of the Ohio Power Siting Board's Review of 4906-4-08 of the Ohio Administrative Code*, Case No. 16-1109-GE-BRO, Finding and Order at 82 (May 4, 2017)("*2016 Rulemaking Order*"). See also *Champaign Wind Order* at p. 62. ("[W]e believe the inclusion of Staff's recommended condition for a noise complaint resolution process provides continued protection of the public interest by providing a procedure that will ensure nonparticipating property owners' use and enjoyment of their property will not be compromised by the operation of the proposed facility.") Here, Staff recommends Condition 11 which states:

> At least 30 days before the preconstruction conference, the Applicant shall provide Staff with a copy of a finalized complaint resolution plan that provides a procedure to address potential complaints resulting from facility construction and operation. The Applicant shall file this plan on the public docket.

Staff Ex. 1 at p. 62 (Staff Report). Republic does not object to this proposed condition. Further, Republic commits to cooperating with Staff regarding the investigation of noise complaints that

occur during construction or operation of the Project. This will address any concerns about determining if Republic is complying with the 46 dBA operational noise limit.

Local Residents also claim that the noise study is inaccurate because certain octave band spectral data regarding the Nordex N149 5.5 and 5.7 turbine models was unavailable. Local Residents' Brief at p. 5. However, the noise study indicates that RSG addressed this in its modeling by using the spectral data available for the Nordex N149 4.5 and 4.8 turbine models. App. Ex. 1E, Att. B at p. 42. This was a reasonable method of addressing this lack of data for the Nordex N149 5.5 and 5.7 turbine models. Local Residents fail to cite any evidence showing that RSG's conclusions regarding the potential sound levels of the proposed turbines are inaccurate. In addition, Republic is obligated to comply with the 46 dBA noise limit regardless of the projected sound output of any of the proposed models.

2. Republic's sound monitoring locations accurately represent the sound levels in the project area.

a) Local Residents' arguments regarding Republic's selection of noise monitoring locations are misleading, inaccurate, and inconsistent with the record.

Before addressing the merits of Local Residents' arguments regarding the selection of monitoring locations, it is important to note that these arguments are littered with false statements and other inaccuracies. For example, Local Residents make numerous untrue statements regarding Republic "choosing" certain monitoring locations to intentionally "make the existing sound level in the Project Area appear to louder than is actually is." (Local Residents' Brief at p 9.) Republic Witness Old testified that RSG selected the monitoring, *not* Republic:

> Q. [Mr. Van Kley] Did you consult with Republic Wind about the locations that were going to be used for the monitoring stations?
>
> A. [Mr. Old] I performed the on-site installation solo. No one was there with me… No one from Apex or Republic was.
>
> * * *

> Q. [Mr. Van Kley] To your knowledge did Republic Wind express any preferences for where the monitoring stations would be placed?
>
> A. [Mr. Old] Not that I'm aware of, other than where they could get access.

Tr. I at pp. 155-156.

> Q. [Mr. Van Kley] Did Republic Wind make those determinations before it chose its monitoring stations as to what activities were occurring in each of the areas that it's surveying?
>
> A. [Mr. Old] Again, Republic Wind didn't make the determination of where these locations were.

Id. at p. 174.

The record shows that Republic did not select the monitoring locations. Rather, Republic relied upon RSG, as Republic's acoustic consultant, to independently select the appropriate monitoring locations. As such, it is patently false to claim Republic selected certain monitoring locations to skew the ambient sound levels for the Project Area. Significantly, Local Residents failed to cite any evidence that RSG cherry-picked certain monitoring locations to increase the ambient sound level for the Project Area. Local Residents' conspiratorial allegations are unsupported by any evidence.

Local Residents also make inaccurate statements regarding the potential impacts to non-participating landowners. Local Residents claim that "many **non-participating** sensitive receptors" will be exposed to "nighttime turbine noise of at least 46 dBA." Local Residents Brief at 6 (emphasis added). Local Residents also claim that "at least 36 **non-participating** sensitive receptors will be exposed to noise levels of 46 dBA or higher from one or more turbine models proposed in the application." *Id.*; emphasis added. These statements are untrue. The very document the Local Residents cite to support this false statement shows that no **non-participating** landowners will be exposed to noise levels above 46 dBA. See Notice of Modification at App. Ex. 1E, Att. B,

Table 8 at pp. 68-176. The only receptors listed on Table 8 of the noise study who may be exposed to noise levels above 46 dBA are **participating** landowners.

These are just a few examples of the Local Residents blatant misrepresentation of facts. These unfounded claims taint the entirety of Local Residents' initial brief and call into question all their arguments.

b) Republic's acoustic expert, Isaac Old, established the accuracy of the average nighttime ambient sound level of the Project Area.

Local Residents attack Republic's method of determining the average nighttime ambient sound level for the project area. Local Residents failed to present any expert testimony to support their claims. Local Residents only express their lay opinions regarding the proper way to determine average nighttime ambient sound level and how to select monitoring locations. But the record demonstrates that Republic's acoustic expert properly determined the average nighttime ambient sound level in a manner consistent with the best standards and practices of the acoustic engineering industry, and consistent with the methodology used in prior Board wind farm cases.

In accordance with O.A.C. 4906-4-08(A)(3)(a), Republic submitted "a preconstruction background noise study of the project area." App. Ex. 1E, Attachment B at pp. 5-33 (Notice of Modification); App. Ex. 17 at pp. 2, 4-6 [Direct Testimony of Isaac Old ("Old Direct")]. Isaac Old testified regarding his substantial experience as an acoustician with extensive experience with wind power projects in thirteen different states. App. Ex. 17 at pp. 1-2 (Old Direct). Mr. Old has worked on three prior Board wind farm cases (Black Fork and Scioto Ridge). *Id*. at p. 9. Local Residents did not challenge Mr. Old's expert qualifications in this proceeding. Further, Local Resident's failed to present any testimony of an expert witness to challenge the expert opinions of Mr. Old. Therefore, the Board should give considerable weight to Mr. Old's testimony regarding the findings and conclusions within the noise study.

Mr. Old testified that the selection of the monitoring locations was based on best practices in the industry, professional judgment, and experience evaluating sound levels within similar areas for this type of project. *Id.* at p. 6. In addition, he testified he followed relevant standards developed by the American National Standards Institute that specifically address the measurement of long-term wide area sound and methods for characterizing sound sources. *Id*. The methodology Mr. Old used here is the same methodology used in prior Board wind farm cases. *Id*. Nothing in the record provides a basis for questioning Mr. Old's expertise or rejecting his methodology.

c) All the noise monitoring locations accurately represent the soundscapes existing within Project Area, even if certain monitors were located outside the current Project Area.

Local Residents and the Local Governments claim that noise monitoring locations located outside of the Project Area cannot be used to calculate the average nighttime ambient sound levels for the Project Area. This flawed argument is based on a fundamental misunderstanding of the process and purpose of selecting sound monitoring locations. Mr. Old testified that the purpose of selecting a particular monitoring location is to determine if the location is representative of a given landscape or soundscape within the Project Area. App. Ex. 17 at p. 5 (Old Direct); Tr. I at p. 171. Mr. Old stated that soundscapes are considered areas that have similar sound sources. Tr. I at p. 162. Monitoring locations are initially selected to record areas where turbines are expected to be located to adequately cover all the areas that may be impacted. However, it is not the purpose of selecting the monitoring locations to determine the potential noise impacts from the proposed turbines. Rather, the goal is to determine an overall average representative ambient sound level across a wide project area using various representative soundscapes. App. Ex. 1E, Att. B at pp. 5-33 (Notice of Modification).

In selecting the monitoring locations, RSG considered land use, roads and railways, ground cover, elevation, geographic features, and population density. App. Ex. 17 at p. 3 (Old Direct).

RSG used orthographic imagery as part of its analysis of soundscapes of the Project Area. Tr. I at p. 171. During the development of the final project footprint, the Project Area changed before the final application was submitted. This is common in wind farm projects because of the ongoing process of selecting the most viable wind turbine locations across thousands of potential acres. In this case, the Project Area was reduced in size overtime. In fact, the Project Area was reduced in size by 9,000 acres while this case was pending. App. Ex. 13 at p. 7 (Carr Direct). Changes in the Project Area footprint, however, do not necessarily render sound monitoring locations invalid. Mr. Old testified that it is appropriate to use a monitoring location located outside the Project Area if that monitoring location is still representative of a soundscape within the Project Area. Tr. I at p. 164. This was the case for the North Boundary, Agricultural Operations, and Remote Rural monitoring locations.

The following is a map from the noise study showing the seven monitoring locations:

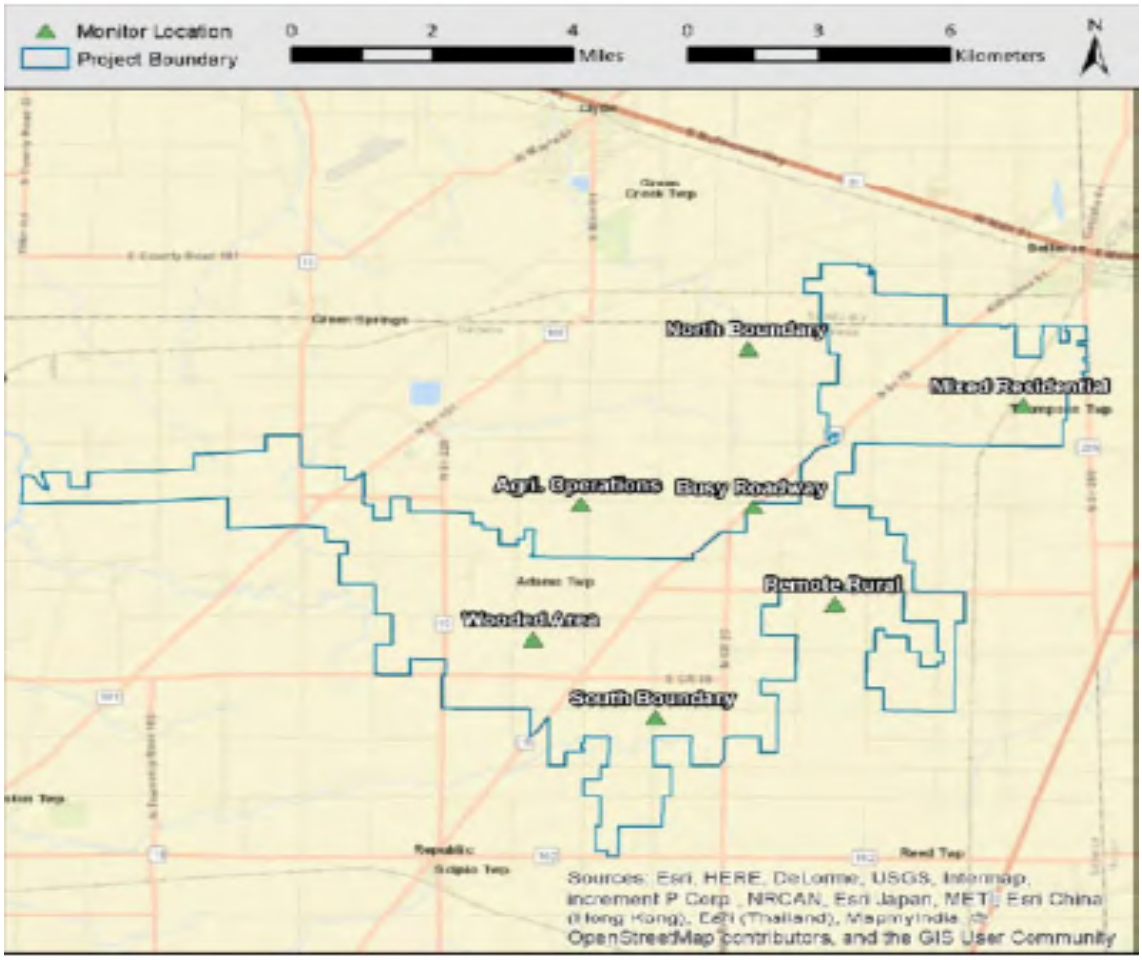
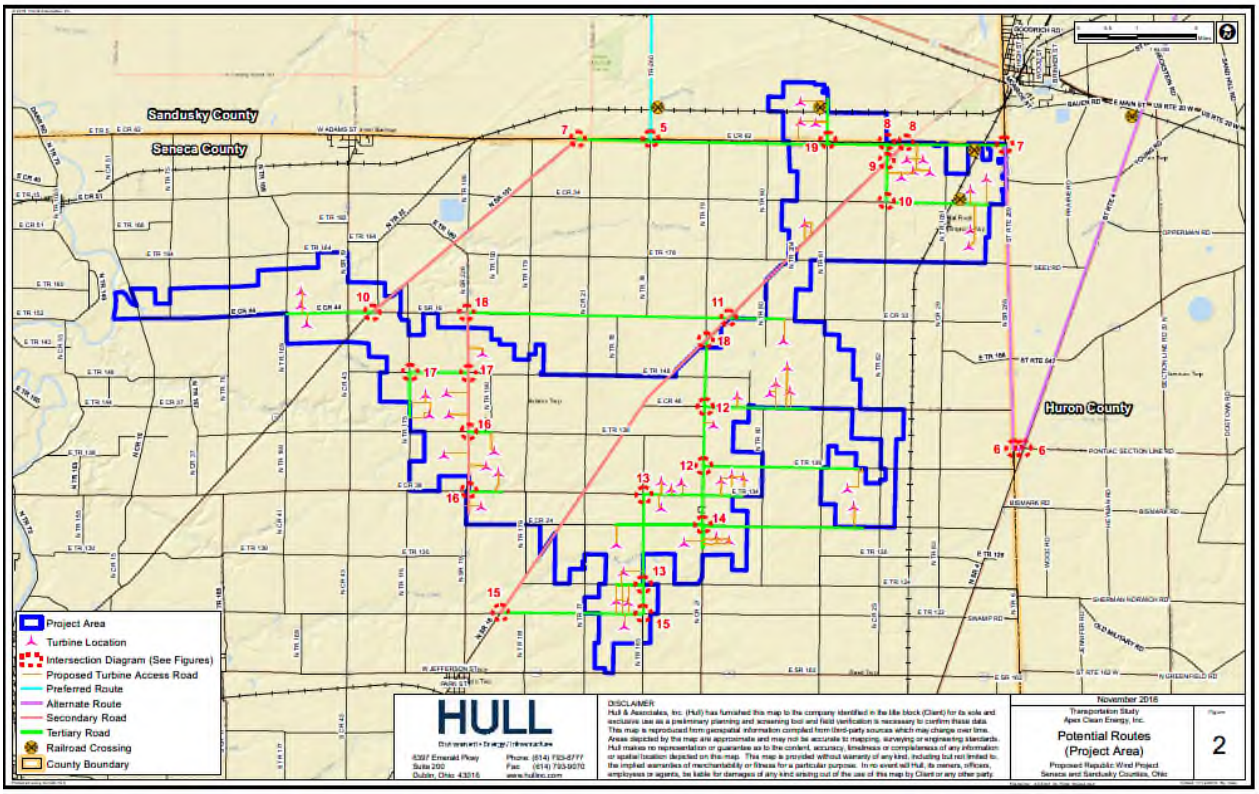


FIGURE 2: LONG-TERM MONITORING LOCATIONS FOR REPUBLIC WIND (PRE-CONSTRUCTION)

App. Ex. 1E, Attachment B at p. 20, Figure 2 (Notice of Modification). The "North Boundary" monitoring location is a monitoring location that is slightly outside the Project Area but still representative of soundscapes inside the Project Area. Tr. I. at p. 165. The North Boundary monitoring location was selected because it is near the northern extremity of the project area and represents a lower vehicle agricultural traffic area. App. Ex. 17 at p. 5 (Old Direct); App. Ex. 1E, Attachment B at p. 5 (Notice of Modification). Maps of the Project Area demonstrate there is a large section in the northeast portion that is located near a rail line track traveling east-west. Att. B, p. 2, Figure 2 at Notice of Modification. The following is a map from the transportation study that shows the various rail lines around the Project Area:



App. Ex. 1C, Exhibit E- Figure 2 (Transportation Study). Sounds that are created by this east-west rail line would be present within the northeastern portion of the Project Area. The noise study indicates that the area monitored by the North Boundary monitor was relatively quiet but for intermittent train horns from a nearby crossing. App. Ex. 1E, Att. B at p. 20 (Notice of Modification). The same rail line noises recorded at the North Boundary monitoring location would impact the northeastern portion of the Project Area which is located next to the same rail line. Therefore, the North Boundary monitoring location is representative of the soundscapes within the northeastern portion of the Project Area.

The "Agricultural Operations" monitoring location is also representative of soundscapes within the Project Area. This monitoring location is located near the middle section of the Project Area. App. Ex. 1C, Exhibit E- Figure 2 (Transportation Study)[3] This area consists of larger-scale

[3] Figure 2 of the Transportation Study is a map of potential transportation routes.

agricultural operations and related low-density housing. App. Ex. 17 at p. 5 (Old Direct); App. Ex. 1E, Attachment B at p. 5 (Notice of Modification). The Agricultural Operations monitoring location represents the majority of the area within the Project Area. Tr. I at p. 209. Although this monitoring location is slightly outside Project Area, it was inside the Project Area when the monitoring was performed. *Id*. More importantly, Mr. Old testified that the Agricultural Operations monitoring location still represents the soundscapes of the Project Area even though it is no longer inside the final Project Area boundary. *Id.* Mr. Old testified that it is unnecessary to perform additional monitoring if the monitoring location still accurately represents the soundscapes in the Project Area. *Id.* at p. 210. Further, Local Residents fail to present any evidence that the Agricultural Operations monitoring location is not representative of soundscapes within the Project Area.

The Remote Rural monitoring location is located near the southeastern section of the Project Area. This location was selected to represent a quiet area that is still subject to agricultural activity. App. Ex. 17 at p. 5 (Old Direct). Further, this location was selected because it is farther away from the more heavily traveled roads within the Project Area. App. Ex. 1E, Attachment B at p. 8 (Notice of Modification). Although the Remote Rural location is slightly outside the Project Area, this location still accurately represents the quieter rural areas within the southeastern portion of the Project Area. This is because it is located in an area that is farther away from heavily traveled roads while also incorporating the noise from the north-south rail line which is situated along the eastern edge of the entire Project Area. *Id.* at pp. 6, 8, and 30. Local Residents take issue with the use of this monitoring location, but they fail to demonstrate that this location does not accurately represent soundscapes within the Project Area.

Mr. Old's expert testimony and Republic's noise study demonstrate that all the noise monitoring locations selected by RSG accurately represent soundscapes that exist within the Project Area. Further, Staff Witness Bellamy testified that the seven monitoring locations selected in the

noise study in this case are a good representation of the ambient sound level in the Project Area. Tr. VII at p. 1544. Mr. Bellamy admitted he believed the seven monitoring locations were sufficient. *Id*. at p. 1545. In addition, Mr. Bellamy did not recommend that any of the selected monitoring locations be removed from the average nighttime ambient sound level analysis performed by RSG. *Id.* at p. 1468. Mr. Bellamy testified he recommend that a monitoring location be removed from a noise study in a prior Board wind case because he believed the location was not representative of the soundscapes within the project area. *Id.* The fact that Mr. Bellamy did not make a similar recommendation in Republic's case is further evidence that the monitoring locations selected by RSG accurately represent the soundscapes within the Project Area.

The record makes it abundantly clear that all the monitoring locations used in determining the average nighttime ambient sound level accurately represent the soundscapes within the Project Area. Local Residents have cited nothing to prove otherwise. Although Local Residents' label the monitoring locations outside the Project Area as "noncompliant," nothing within the Board's rules states that the monitoring locations must be located within the Project Area boundary. In fact, the Board's rules do not prescribe any specific method for determining the ambient sound level for the project area. The only requirement is for the applicant to submit a preconstruction background noise study of the project area. *See* O.A.C. 4906-4-08(A)(3)(a). Republic did just that by submitting a noise study that accurately reflects average nighttime ambient sound level in various soundscapes throughout the Project Area.

d) RSG selected noise monitoring locations at various soundscapes throughout the Project Area that accurately reflect the ambient sound levels in those particular areas.

Local Residents arguments about "skewing" the ambient sound levels are inaccurate and misrepresent the process used to determine average nighttime ambient sound level for the Project Area. The record demonstrates that RSG carefully selected seven monitoring locations that

represent different types of soundscapes within the Project Area. Because of the large size of the Project Area, it was necessary to examine the varying types of soundscapes that exist within the Project Area. A number of different factors will impact the ambient sound levels throughout different areas within the Project Area. These factors include land use, roads and railways, ground cover, elevation, geographic features, and population density. App. Ex. 17 at p. 3 (Old Direct). After obtaining daytime and nighttime ambient sound levels from each monitoring location, RSG averaged the results from all the locations to obtain the project area ambient nighttime average sound level. The methodology use by RSG in this case has been accepted by the Board in three prior wind cases.[4] *Id*. Therefore, Board precedent and the record demonstrate that RSG's method of determining the average nighttime ambient sound level for the Project Area was accurate.

Local Residents ignore the fact that RSG averaged results from all seven monitoring location. Instead, Local Residents attack RSG's selection of certain monitoring locations and claim that these locations are "non-representative" of the Project Area. But the record is abundantly clear that RSG selected monitoring locations based on different types of soundscapes that actually exist within the Project Area. For example, the "Mixed Residential" location represents higher-density residential areas within the proposed project boundary. *Id.* at p. 5. Maps of the Project Area demonstrates that the northeastern section of the Project Area is located near a number of rail lines and county roads. App. Ex. 1E, Attachment B at p. 20 (Notice of Modification); App. Ex. 1C, Exhibit E- Figure 2 (Transportation Study). The area also contains a senior care center that is located near a quarry. Although Local Residents claim that the Mixed Residential location is not representative of the Project Area, it is apparent from the record that the entire northeastern section of the Project Area is a soundscape that is exposed to various noises sources. Ignoring these sound

[4] 13-0197-EL-BGN (Northwest Ohio Wind), 13-1177-EL-BGN (Scioto Ridge Wind), and 10-2865-EL-BGN (Black Fork Wind).

sources would misrepresent the ambient sound levels in northeastern section of the Project Area and ultimately result in an inaccurate average ambient sound level for the whole Project Area.

Furthermore, Local Residents mischaracterize the ambient sound level from the Mixed Residential location by focusing on noises that are emitted from the parking lot of senior care center and the quarry. RSG's nighttime average ambient sound level of 41 dBA is based on the nighttime sound levels and *not* the daytime. Although there is increased noise at the senior care center and quarry during the day, Mr. Old testified that "very little" noise occurs at the care center at night. Tr. I at p. 188. He also testified that noises from the quarry were only present during the daytime. *Id* at p. 280. The record shows that these noise sources have no impact on the overall average ambient nighttime sound level of 41 dBA.

Local Residents also claim that the Busy Roadway monitoring location is not representative of any soundscapes within the Project Area. This claim is inaccurate. RSG selected the Busy Roadway location because it is representative of the homes near State Route 18. *Id.* at p. 220. As explained in the noise study, this particular location was selected because other areas within the Project Area are crossed with town roads and county roads with less traffic. App. Ex. 1E, Att. B at p. 5 (Notice of Modification). However, the project map indicates that a large portion of the center of the Project Area is dissected by County Road 18. App. Ex. 1C, Exhibit E- Figure 2 (Transportation Study). RSG selected the Busy Roadway because it is representative of a significant portion of the Project Area that will have increased traffic noise due to State Road 18. The purpose of determining the ambient sound level and developing a sound level limit is to protect humans, who will primarily be located near residences. Tr. I at p. 262. Residences are typically located near roadways which is why monitoring locations are often located near roadways. *Id.* It was completely appropriate for RSG to monitor the soundscape related to State Road 18 because of various

residences located within this area. *Id*. at 220. Ignoring this soundscape would result in an inaccurate average ambient sound level for the Project Area.

Although Local Residents claim the Busy Roadway location "skews" the average ambient nighttime noise level due to the roadway traffic, Local Residents cannot deny that: (1) the Busy Roadway accurately represents a soundscape within the center portion of the Project Area; and (2) the Busy Roadway sound levels were combined with lower ambient sound levels from other monitoring locations which resulted in a lower average ambient nighttime sound level for the overall Project Area. While Local Residents claim Mr. Old stated that the Busy Roadway site is "unlike any other location in the Project Area, they fail to provide a citation for this statement. Local Residents' Brief at p. 19. This is not surprising because Mr. Old *never* made such a statement. RSG selected the Busy Roadway location because it accurately represents a soundscape within the Project Area that encompasses a number of receptors along State Road 18.

Local Residents also claim RSG's method of averaging results from the seven monitoring locations resulted in a "flawed representation of the Project Area's ambient sound level." *Id*. at p. 18. However, Local Residents failed to present any evidence to prove the soundscapes recorded at the monitoring locations are not representative of soundscapes that exist within the Project Area. Although Mr. Old did not calculate the exact percentage of the Project Area covered by each particular soundscape, he testified that each monitoring location was selected because it was representative of a soundscape within the Project Area.

e) Local Residents' proposed method of measuring the ambient sound level would result in a grossly inaccurate representation of the soundscapes in the Project Area.

In their attempt to kill the Project, the Local Residents seek a finding that the average ambient nighttime sound level for the Project Area is 35 dBA. Local Residents claim that five of the seven monitoring locations should be removed from the calculations. Local Residents argue

that the Southern Boundary and Wooded Area are the "only legitimate monitoring sites." Local Residents' Brief at p. 11. Local Residents chose these two locations because they are the two quietest out of the seven locations. These two areas represent the least populated and the most remote areas within the Project Area. Further, there are fewer sensitive receptors in these areas, which results in lower traffic and noise from human activity. The Wooded Area monitor is located far from any road, unlike most receptors in the Project Area. App. Ex. 17 at p. 10 (Old Direct). The Wooded Area monitor is 2,018 feet from the closest road. *Id.*

Although it was proper to include Southern Boundary and Wooded Area into the overall ambient sound level analysis, these quieter areas do not represent all the different types of soundscapes within the Project Area. As Mr. Old testified, the majority of the Project Area consists of larger-scale agricultural operations and related low-density housing, which is represented by the Agricultural Operations monitoring location. *Id*. at p. 5; App. Ex. 1E, Attachment B at p. 5 (Notice of Modification); Tr. I at p. 209. In addition, significant portions of the Project Area in the northern and northeastern sections are located near rail lines. Further, the northeastern section of the Project Area is a higher-density residential area. Eliminating the Norther Boundary, Agricultural Operations, Remote Rural, Mixed Residential, and Busy Roadway monitoring locations would result in an ambient sound level that does not accurately represent the Project Area.

3. The Board should reject Staff's and the Local Residents' attempt to modify the results of RSG's noise study based upon monitoring locations utilized in the transmission line case.

Staff and the Local Residents seek to include results from a noise study performed in Republic's transmission line case. As addressed in Republic's Initial Brief, there is no legal basis for modifying or conditioning the Amended Application in this case based on a separate, pending application. Republic Initial Brief at p. 56. To the extent the Board conditions or modifies the pending certificate application in this case, these conditions or modifications must be based on the

application pending before the Board and not studies or exhibits submitted as part of a separate certificate application. *See* R.C. 4906.10(A). It would be outside the scope of the Board's statutory authority to modify or condition Republic's wind farm certificate application based on the transmission line application. Furthermore, it would be unjust, unreasonable, and unprecedented for the Board to rely upon a separate pending application for one type of major utility facility (that is still under investigation) as an evidentiary basis for conditioning an entirely different type of major utility facility.

In addition, the record does not demonstrate that the inclusion of the three transmission line monitoring locations will result in a more accurate noise study in the wind farm case.[5] The transmission line corridor is small strip of land located in the far western portion of the Project Area. There are three monitoring locations in the transmission line corridor. Tr. VII at p. 1491. There are only three turbines that would be located within this small corridor. *Id.* at p. 1491. This means there is one monitoring location for each turbine in this section of Project Area. *Id.*[6] No other area within the Project Area has monitoring locations so closely located. Staff Witness Bellamy admitted that the three monitors with the transmission line corridor are more closely located that any other monitors throughout the Project Area. *Id* at p. 1489. Mr. Bellamy also admitted that if you put monitoring locations too close together, it could skew the monitoring results. *Id.* at p. 1476.

Mr. Old testified there are a number of factors that need to be considered when selecting monitoring locations. App. Ex. 17 at p. 3 (Old Direct). These factors include land use, roads and railways, ground cover, elevation, geographic features, and population density. *Id.* There is no

[5] Staff characterizes its recommendations as an "eight monitoring point" because Staff used the average of the three transmission line locations. Staff Ex. 16 at p. 2 (Amended Bellamy Direct). However, Staff's additional monitoring location measurement (36.3. dBA) is derived from the three transmission line monitoring locations.

[6] Although Local Residents claim that there were nine monitoring location near the East Monitor, Staff Witness Bellamy testified that he did not know the exact distance of the turbines from the monitoring locations. Therefore, there is no definitive evidence that there are "nine turbine sites… within a mile to the east and southeast of the East Monitor." Local Residents' Brief at p. 17.

evidence that Mr. Bellamy considered any of these factors when he decided to include the three transmission line monitoring locations in the ambient sound level analysis for the wind farm project. Mr. Bellamy admitted he did not consider elevation or topographical features when he made his recommendation regarding inclusion of the transmission line monitoring locations. Tr. I. at p. 1476. Because Mr. Bellamy did not conduct such an analysis, it is unclear whether including the three transmission monitoring locations would result in an overrepresentation of one of the soundscapes analyzed by RSG as part of the wind farm case. What is clear is that Mr. Bellamy did not have any concerns with seven noise monitoring locations selected by RSG. *Id.* at p. 1474. During his investigation in this case, Mr. Bellamy never issued any data requests to Republic regarding why particular monitoring locations were selected and did not ask how RSG selected its monitoring locations. *Id.* at pp. 1469-1470, 1472.

Although Staff had no concerns regarding the noise study, Staff is attempting to take the unprecedented action of basing its recommended condition on information submitted in an entirely separate case.[7] The problem with picking and choosing select portions of the noise study from the transmission line case is that it conflates the findings from one narrowly focused noise study (the transmission line noise study) with the results of a broader noise study that analyzed a substantially larger project area (the wind farm noise study). Although Republic fully stands behind the noise study submitted in the transmission line case, the concern is that the transmission line noise study was prepared for an entirely different type of project with a very limited project area footprint. It would be unreasonable for the Board to incorporate select portions of a noise study submitted in a separate proceeding to reduce ambient sound level results determined in this proceeding. This is especially true because Staff Witness Bellamy: (1) testified that the seven monitoring locations

[7] Staff Witness Bellamy admitted that Staff is typically not allowed to rely upon information from separate cases during their investigation. Tr. VII at p. 1545.

selected in the wind farm noise study in this case are a good representation of the ambient sound level in the Project Area; and (2) admitted he believed the seven monitoring locations were sufficient in this proceeding. *Id.* at pp. 1544-1545.

Further, the Local Residents wish to use the three transmission line monitoring locations as a way to prevent construction of the Project. Their goal is to drive down the average ambient sound level to a point where the Project is not feasible. They are not concerned with determining the true level of noise impacts and reasonably minimizing these impacts, and they are not interested in determining the most accurate ambient sound level for the whole Project Area. Local Residents' inclusion of the three transmission line monitors is even more problematic considering that Local Residents want to eliminate the results from the North Boundary, Agricultural Operations, Remote Rural, Mixed Residential, and Busy Roadway monitoring locations. If the Board accepts the Local Residents positon, there would be a total for five monitoring locations: three monitors for the far western transmission line corridor, the Wooded Area monitor, and the Southern Boundary monitor. This would result in inaccurate sound study that completely ignores the eastern and northern portions of the Project Area. App. Ex. 1E, Att. B at p. 20, Figure 2 (Notice of Modification).

4. The Board should disregard Local Residents' arguments regarding the WHO's purported recommendation and claims regarding negative health impacts due to wind turbine noise.

The Local Residents rely upon a World Health Organization ("WHO") recommendation that suggests individuals should not be exposed to nighttime noise that exceeds 40 dB $L_{night, outside}$. The Board should ignore this argument because the Board already has established precedent and (a now rule) that support an ambient sound level plus 5 dBA sound level limit. Mr. Old testified that WHO's guidelines provide recommendations for governing jurisdictions and regulatory agencies attempting to address potential environmental noise impacts. App. Ex. 17 at p. 12 (Old Direct). Although these

guidelines can be used by communities considering establishing noise standards, they do not automatically apply in any circumstance and were not developed specifically for wind turbines. *Id.* Mr. Old also testified that WHO guidelines use a sound level metric that is different from the metric in Board wind farm cases. Tr. I. at p. 245. Applicants in Board-approved wind farm cases typically use an L_{1h} when measuring wind turbine noise and deriving the sound level limit. L_{1h} is an hourly average sound level. WHO, on the other hand, uses $L_{night,\ outside}$ which is an average over all nights of a year. *Id.* Mr. Old testified that these two different sound level durations are not comparable. *Id.*

Although Local Residents claim wind turbine sound levels above 40 dBA may cause harmful health effects, Local Residents cite no evidence to support this statement. In fact, the record demonstrates that there is no causal connection between sound levels from industrial wind turbines and harm to human health. App. Ex. 19 at p. 25. Mr. Mundt performed a comprehensive review and synthesis of the peer-reviewed, published epidemiological literature addressing potential health impacts of noise emissions from industrial wind turbines. *Id* at p. 11. Based on the review, Dr. Mundt concluded there is no clear or consistent evidence that wind turbine noise leads to negative health outcomes. *Id.* at pp. 11-13.

Dr. Mundt also explained how quiet the wind turbine noise would be in this case, explaining that the Project sound levels would fall between the sounds caused by refrigerators and heating systems. *Id.* at p. 18. In addition, in its most recent rulemaking proceeding the Board acknowledged that a dBA level below 50 has minimal impact on individuals. *2016 Rulemaking Order* at p. 85 ("we emphasize that the noise levels we are considering in this context, which are generally less than 50 dBA, is less than human conversation from three feet away or the noise levels found at a typical urban residence.")

Further, Mr. Old testified the ambient noise level of 41 dBA is relatively low, which further supports an operational noise limit of 46 dBA. For example, normal (non-raised) speech volume is approximately 60 dBA at 1 to 2 meters distance. App. Ex. 17 at pp. 9-10 (Old Direct). The maximum recommended interior sound levels for a variety of rooms is above 41 dBA, including living rooms, hotels/motels, offices, conference rooms, health care facilities, worship spaces, libraries, and courtrooms. *Id.* In addition, other Ohio wind power projects have similar average ambient sound levels (Scioto Ridge – 42 dBA, Northwest Ohio Wind – 42 dBA, and Black Fork – 43 dBA). *Id.*

The record demonstrates that the ambient noise level of 41 dBA is reasonable and that a 46 dBA noise limit will have no adverse impact on human health. Therefore, the Board should reject the Local Residents' reliance on the WHO recommendations and reject their unfounded claims regarding the negative impacts of wind turbine noise

5. Condition 58 is unreasonable because it imposes an arbitrary bar on noise impacts that is not intended to reasonably reduce noise impacts.

Staff and Local Residents claim that Condition 58 is necessary because Republic did not include ten receptors in its noise study map. Republic's failure to initially include these receptors was inadvertent and was addressed immediately when pointed out by Staff. App. Ex. 18 at p. 3 (Supp. Direct Old). Regardless, the evidence demonstrates that the individuals who reside at these receptors will not experience noise levels that exceed 46 dBA Leq (1 hour) noise limitation which was derived based on Board precedent and is consistent with O.A.C. 4906-4-09(F)(2). *Id.* at pp. 2-3. Mr. Bellamy admits that Staff still would have accepted the 46 dBA operational noise limit if the individuals who reside at the ten receptors were notified of the potential noise impacts earlier. Tr. VII at p. 1495. Further, Mr. Bellamy admitted that an operational noise limitation of 46 dBA adequately addresses potential concerns for noise impacts on sensitive receptors. *Id.* at p. 1476.

Staff claims its recommendation is based upon "fairness "and the "public interest." But it is unreasonable for Staff to recommend an operational limitation (i.e., reducing the operation noise limit) to address purported procedural concerns, especially when Staff admits they would have come to the same conclusion even if these individuals were notified earlier in the process. The record demonstrates that the 46 dBA noise limitation is an acceptable and reasonable noise limitation for the Project. There is no evidence indicating Condition 58 is intended to reduce environmental impacts. Rather, it is a complete bar on noise impacts for inadvertently missing ten receptors.

B. <u>The record demonstrates that the setbacks and safety measures that Republic will utilize for the Project minimize adverse safety impacts.</u>

1. The record demonstrates that Republic will comply with the applicable Board setback requirements and protect the public from blade shear incidents.

a) The Board should not adopt the Local Residents' recommended setback of 1640 ft. because it is based on a temporary emergency safety zone, and not a standard operational setback.

Local Residents' recommended setback of 1640 feet is unreasonable and unfounded based on the record. The only evidence supporting the Local Residents proposed setback of 1,640 ft. is the recommended safety setback contained in turbine safety manuals. Staff Witness Conway explained that the 500 m. (1,640 ft.) temporary setback contained in the turbine safety manuals is intended to address emergency situations:

> Q. [Mr. Van Kley] Okay. Now, what's your understanding with respect to why the safety area should be at least 1,640 feet from the wind turbine?
>
> A. [Mr. Conway] I've seen this in several wind farms that have a temporary clearance area. As far as this, it's a temporary area that's cleared while there's a malfunction or a fire with the turbine so that the risk to the public is minimized and that pieces or parts that are on fire don't -- are contained within a specific safety area.
>
> Q. [Mr. Van Kley] Okay. So the reason for that safety area is to make sure that members of the public don't get hit by pieces of wind turbine blades?
>
> A. [Mr. Conway] That's one -- if there's a specific malfunction, yes.

Tr. VI at 1305-1306.

It is clear from Mr. Conway's testimony that the 1,640-foot safety zone is only to be utilized when the turbine malfunctions or there is a fire. This is not a recommended setback for normal turbine operations. The language from the very Nordex safety manual Local Residents cite indicates that the 500 m. (1,640-foot) safety zone should only be used temporarily "[i]n case of a fire in the tower." Local Residents' Brief at p. 42. The evidence demonstrates that the 1,640foot safety clearance zone is not intended to be utilized as a permanent setback.

Further, in *Champaign Wind*, the Board rejected a similar attempt to impose a permanent operational setback on the project based upon a recommended temporary emergency safety zone area. *Champaign Wind* Order at p. 42. ("[T]hese turbine safety manuals … refer to recommended temporary clearance areas in the event of temporary safety situations such as fire or overspeed, akin to temporary evacuations that might take place during a gas leak, and are *not recommended permanent setback distances*.") (Emphasis added); aff'd.in *In re Application of Champaign Wind, L.L.C.*, 146 Ohio St.3d 489, 2016-Ohio-1513, 58 N.E.3d 1142, ¶ 32, Based on Board precedent and the evidence in this case, the Board should reject the Local Residents' 1640 ft.-setback recommendation.

b) Requiring Republic to install the "latest safety equipment" is unnecessary because Republic is already obligated to utilize turbines that are certified to be in compliance with engineering standards.

Local Residents assert that the Board should require Republic to install the latest safety equipment on its turbines. This argument is a nonissue because of Staff's proposed Condition 1, which states:

> The 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 this *Staff Report of Investigation*.

Staff Ex. 1 at p. 61 (Staff Report). Staff Witness Bellamy testified that this condition obligates Republic to construct the Project in a manner consistent with the description within the Application and Amended Application. Tr. VII at p. 1507. The Amended Application states:

> Modern utility-scale turbines are certified according to international engineering standards. These include ratings for withstanding different levels of hurricane-strength winds and other criteria (ASCE & AWEA, 2011). The engineering standards of the wind turbines ultimately used for this Facility will meet all applicable engineering standards.

App. Ex. 1C at p. 86 (Am. Appl.).

Mr. Bellamy testified that international engineering standards for utility scale turbines address safety features such as braking systems, as well as manufacturing standards. Tr. VII at pp. 1504-1506. Further, the Amended Application specifically indicates that Republic intends to use turbines that "will be equipped with two fully independent braking systems" and that the "turbines will automatically shut down at wind speeds over the manufacturer's threshold [i.e., 25 m/s (56 mph)]." App. Ex. 1C at p. 86 (Am. Appl.). The record demonstrates that proposed Condition 1 and the commitments set forth in the Amended Application ensure Republic will utilize industry certified technology that contains the most recent engineering standards.

c) Condition 42 incorrectly relies on a setback requirement that was not in effect when Republic filed its Application.

In recommending Condition 42, Staff relies upon the version of O.A.C. 4906-4-08(C)(2)(b) that took effect on April 26, 2018. Staff Ex. 5 at pp. 9-10 [Direct Examination of Andrew Conway ("Conway Direct")]. In Case No. 16-1109-GE-BRO, the Board made the following modifications to O.A.C. 4906-4-08(C)(2)(b) and (c):

> (b) The wind turbine shall be at least one thousand, one hundred, twenty-five feet in horizontal distance from the tip of the turbine's nearest blade at ninety degrees to the property line of the nearest adjacent property, <u>including a state or federal highway</u>, at the time of the certification application.

> (c) The distance from a wind turbine base to any electric transmission line, gas pipeline, gas distribution line, hazardous liquid(s) pipeline, or ~~state or federal highway~~ public road shall be at least one and one-tenth times the total height of the turbine structure as measured from its tower's base (excluding the subsurface foundation) to the tip of a blade at its highest point.

2016 Rulemaking Order at 82.

By adding "state and federal highways" to O.A.C. 4906-4-08(C)(2)(b), the Board was increasing the setback requirement for state and federal highways. This increase in the state and federal highway setback did not occur until after Republic submitted its initial Application. Further, Staff determined that the initial Application was deemed to be complete and in compliance with the prior rules. This completeness determination by Staff means the prior rules govern the initial Application *and* the Amended Application.

Staff Witness Conway testified that the current version of O.A.C. 4906-4-08(C)(2)(b) should be applied to turbines 10, 38, and 43 because these turbines were proposed in the Amended Application which was filed after the new rules became effective. Staff Ex. 5 at pp. 9-10 (Conway Direct). However, the Amended Application was submitted in compliance with the prior rules because Republic's initial application was already deemed complete pursuant O.A.C. 4906-3-06(A)(1). Pursuant to O.A.C. 4906-3-11(A), an applicant can file an amendment to a "pending accepted, complete application." This rule does not require the applicant to undergo another completeness review and does not require the applicant to restart the entire certificate application process. Staff previously claimed that the Republic's Amendment Application should have undergone a new "completeness review," which would have required application of the new rules. Staff's Memorandum Contra Republic's Motion for Procedural Schedule at p. 2 (January 10, 2019). The ALJ ruled against Staff, stating that such a requirement would "negate the need for O.A.C.

4906-3-11(A) inasmuch as there would be no difference between an application for amendment and a brand new certificate." *Entry* at ¶11 (February 15, 2019).

In accordance with O.A.C. 4906-3-11(A)(1), Republic submitted an Amended Application that identified the portions of the initial application that had been amended. The Amended Application was clearly structured to demonstrate that it was in compliance with the prior rules. Further, the Amended Application specifically states that Republic applied the 1.1 x total tip height setback for public roads as required by the prior version of O.A.C. 4906-4-08(C)(2)(c). App. Ex. 1C at p. 145 (Am. Appl.). Staff is now attempting to retroactively apply the new rules to eliminate certain turbines from the Project. Staff's proposal is inconsistent with the May 15, 2018 completeness determination, the February 15, 2019 Entry, and the intent of O.A.C. 4906-3-11(A).

Furthermore, Staff's proposed Condition 42 is unnecessary because Republic demonstrated that turbines 10, 38, and 43 will comply with the prior version of O.A.C. 4906-4-08(C)(2)(c). This 1.1 x total tip height setback for public roads has been applied by the Board in prior cases and has been determined by the Board to adequately protect the public. Instead of eliminating turbines 10, 38, and 43, which will negatively impact the economic viability of the Project, the Board should apply the public road setback of the prior version of O.A.C. 4906-4-08(C)(2)(c). This proposal strikes the appropriate balance of protecting the public while also ensuring that unnecessary negative impacts to the project's viability are avoided.

C. <u>The Project will not have a negative impact on emergency responders or Life Flight.</u>

Local Residents claim that the wind turbines will delay life-saving air ambulance transportation. This claim is based on mere speculation and is not based on any definitive evidence. Local Residents cite to Local Residents Witness Chappell to support their argument. Mr. Chappell admits he is not a Life Flight pilot. Tr. V at p. 974. He has no aviation training. *Id.* at p. 976. He

has not performed any analysis to determine the potential impacts on Life Flight due to wind farm projects. *Id.* at p. 977. He is not aware of the ceiling height for Life Flight helicopters. *Id.* Therefore, he does not know if Life Flight helicopters can fly over the proposed turbines. Further, Mr. Chappell does not know if Life Flight will be able to access the Project Area. *Id.*

Because Mr. Chappell is not a pilot, he does not know if wind turbines will negatively impact Life Flight's ability to access accident scenes. *Id* at p. 980. He is merely expressing his lay opinion regarding his general concerns about Life Flight and is not basing his testimony on any empirical data. *Id*. He does not have any direct knowledge regarding Life Flight or emergency services being delayed due to wind turbines. *Id.* It is abundantly clear from the record that Mr. Chappell cannot support the Local Residents' claim that Life Flight will be negatively impacted due to the Project.

In contrast to Mr. Chappell, Republic presented an expert witness who was more than qualified to testify regarding the Project's potential impacts on Life Flight. Republic Witness Marcotte is a U.S. Coast Guard Academy graduate with ten years of experience flying Coast Guard rescue helicopters. App. Ex. 24 at p. 3 [Direct Testimony of Francis Marcotte]. Mr. Marcotte testified that he has flown helicopters in and near wind farms. *Id.* Mr. Marcotte testified that it is possible to safely operate a helicopter within or a near a wind farm in either daytime or nighttime conditions. *Id.* As explained in Republic's initial brief, Mr. Marcotte testified regarding the various ways trained helicopter pilots can safely access a wind farm project area and avoid structures. Mr. Marcotte explained how helicopter pilots avoid tall structures like wind turbines on a daily basis.

In addition, the Staff has proposed a condition to address the Life Flight concerns. Staff recommended Condition 49 states:

> At least 30 days prior to construction, the Applicant shall prepare through interested and pertinent persons, a plan for at least one predesignated emergency-response landing zone within the project area. The Applicant shall include the location of this landing zone in its emergency response plan.

Staff Ex. 1 at p. 67. Republic does not oppose this condition. Therefore, the record demonstrates that the Project will have no negative impacts on the abilities of EMS providers or Life Flight.

D. The Project will comply with the Board's shadow flicker requirements, and there will be limited shadow flicker impacts on non-participating landowners.

Local Residents incorrectly claim that the Project casts "unlawful amounts of shadow flicker on neighboring properties." Local Residents' Brief at p. 48. The record does not support this claim. Condition 45 of the Staff Report states:

> At least 30 days prior to construction, the Applicant shall submit a shadow flicker study showing that cumulative shadow flicker impacts will not exceed 30 hours per year at any non-participating sensitive receptor.

Staff Ex. 1 at p. 67 (Staff Report). Republic does not object to this proposed condition. Before it begins any construction. Republic will be required to demonstrate that it will not exceed the 30-hour per year limitation. Further, in the Amended Application and Notice of Modification, Republic commits to operating the facility such that no non-participating receptors receive more than thirty hours of shadow flicker per year. App. Ex. 1E at p. 1 (Notice of Modifications); App. Ex. 1C, Exhibit I at p. 14 (Shadow Flicker Report). Republic stated that it will accomplish this goal through neighbor agreements, turbine operational measures, and/or other mitigation measures. *Id*. Because this commitment is part of Republic's filing, Republic is obligated to comply with this commitment pursuant to Staff's recommended Condition 1.[8] Staff Ex. 1 at p. 67 (Staff Report).

In addition, even before Republic implements measures to mitigate shadow flicker impacts, the record demonstrates the potential for shadow flicker impacts for non-participating landowners will be minimal. Republic submitted a shadow flicker study in its Amended Application. App. Ex. 1C, Exhibit I (Shadow Flicker Report). The Vestas V150 turbine has the largest rotor diameter of

[8] Staff Condition 1 states that "[t]he 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 this *Staff Report of Investigation*."

the proposed turbines and was the turbine model used for the shadow flicker analysis submitted with the Amended Application. Staff Ex. 1 at p. 38 (Staff Report). The model included 837 receptors and 50 turbine locations. The model showed that for the Vestas V150, 46 non-participating receptors out of the 837 receptor modeled would be exposed to more than thirty hours of shadow flicker per year.[9] *Id.* at p. 38; App. Ex. 1C, Exhibit I at pp. 6 and 14 (Shadow Flicker Report). And, as stated above, Republic commits to operating the facility such that no non-participating receptors receive more than thirty hours of shadow flicker per year.

Although the Local Residents argue that Republic should not have relied on the modeling of the Vestas V150 to determine the shadow flicker impacts, Staff Witness Bellamy testified that it was appropriate to utilize the V150 because it has the largest rotor diameter out of all the proposed turbines. Tr. VII at p. 1511. Mr. Bellamy explained that rotor diameter is biggest factor in considering shadow flicker impacts. *Id.* By using the V150 in the shadow flicker study, Republic presented the "worst case scenario" regarding potential impacts. Further, Republic will submit a final shadow flicker analysis based on the final turbine locations and turbine models. So, no matter what model is used, Republic will abide by the 30-hour per year limitation.

Finally, Local Residents' recommendation that Republic "turn off" the turbines to avoid any and all shadow flicker impacts should not be adopted. The Board has long recognized that the 30-hour per year limit on shadow flicker is appropriate and reasonable. *Paulding Wind Farm, LLC*, Case No. 09-980-EL-BGN,Opinion, Order, and Certificate at p. 17 (August 23,2010); *Black Fork Wind Order* at pp. 51-52 (January 23, 2012): *Champaign Wind Order* at p. 51-52; *Heartland Wind, LLC*, Case No. 09-1066-EL-BGN, Opinion, Order, and Certificate at 16-18 (August 23, 2010). Further, in its recent rulemaking proceeding, the Board stated "we find that a 30-hour per year

[9] 77 receptors experienced more than thirty hours of shadow flicker per year. 31 of these were participating landowners.

exposure limit is appropriate and reasonable to apply to wind turbines sited in Ohio and provides sufficient protections to the public interest." *2016 Rulemaking Order* at p. 97. There is no basis for the Board to depart from this precedent and no reason to impose an absolute bar on shadow flicker.

E. The Board must reject Staff's proposed Conditions 56, 57 and 59 regarding aviation because these conditions would be unlawful and unreasonable if adopted by the Board.

1. Background

The Federal Aviation Administration ("FAA") reviewed Republic's fifty proposed turbine sites under the obstruction standards contained in 14 C.F.R. Part 77. It determined that each technically constituted an "obstruction" under 14 C.F.R. 77.17(a)(1), (a)(2) or (a)(3). Significantly, it found that none of the turbines would be an obstruction under 14 C.F.R. 77.17(a)(5). Because of these obstructions, the FAA concluded that the minimum descent altitude must be increased by forty feet for one turbine site (T1) that exceeded the section 77.17(a)(1)-(3) obstruction standards. The FAA also concluded that minimum flight altitudes must be increased by one-hundred feet for thirty-three sites that exceeded the section 77.17(a)(3) standard.

With safety concerns resolved for these sites by increasing the minimum altitudes, the FAA's inquiry focused on whether the increased altitudes would affect flight operations (or airport utility) at the affected airports, *i.e.*, the number of aircraft landing at the airport. The FAA concluded, and the record in this proceeding reflects, that only one turbine site (T1) would affect flight operations at one approach (the non-directional beacon ["NDB"] approach) to the Seneca County Airport. Because the NDB approach is seldom used (only up to three times a year[10]) and used an outdated technology, the FAA found that construction of T1 would not have a "substantial aeronautical

[10] App. Ex. 41 Rev. Rebuttal at Att. BMD-1 (Doyle Rebuttal).

impact"[11] on Seneca County Airport's flight operations. As a result, it issued a determination of no hazard ("DNH") for each of the fifty proposed turbines on June 26, 2019. App. Ex. 29 at att. BMD-1 [Direct Testimony of Benjamin M. Doyle ("Doyle Direct")]. The FAA's determination means that turbines of up to 606 feet above ground level can be constructed at each of Republic's fifty sites, without a threat to safety or the utility of airports.

Although the Ohio Department of Transportation – Office of Aviation ("ODOT-OA") lacks jurisdiction to consider section 77.17(a)(1)-(3) obstructions, it nevertheless issued a determination on July 18, 2019 that agreed with the FAA and waived all section 77.17(a)(3) obstructions. App. Ex. 29 at Att. BMD-1 (Doyle Direct). However, upon an untimely objection by the manager of the Fostoria Municipal Airport, ODOT-OA reversed its determination and, by a subsequent determination of September 27, 2019, refused to waive the section 77.17(a)(3) obstructions it had previously granted. App. Ex. 30 at Supp. Att. BMD-1 [Supplemental Direct Testimony of Benjamin M. Doyle ("Doyle Supp.")]. It refused to waive the standard because two airport managers claimed that the increase in minimum flight altitudes allegedly could compromise safety by requiring aircraft to fly in icing conditions, and the increase in minimum altitudes allegedly would adversely affect each airport's flight operations or "utility." Staff Ex. 3 at pp. 9-10 [Prefiled Testimony of John Stains ("Stains Direct")]; Seneca County Ex. 2 at p. 1 [Direct Testimony of Bradley Newman ("Newman Direct")]. ODOT-OA determined that these additional thirty proposed turbine sites exceeded the section 77.17(a)(3) obstruction standard, and that they must be reduced in height or eliminated. App. Ex. 30 at Supp. Att. BMD-1 (Doyle Supp.)

Staff adopted ODOT-OA's determination and proposes to condition the certificate by requiring a total of thirty-one of the fifty proposed turbine sites to use the turbine brand with lowest

[11] "Substantial aeronautic impact" and "substantial adverse effect" are used interchangeably in this brief and the briefs of the parties to this proceeding.

height, Vestas 136. Staff Ex. 1, Condition 56 (Staff Report); Staff Ex. 6, Condition 59 (Supp. Staff Report). However, Republic's Project is configured such that only up to ten of the Vestas 136 turbines can be used. Staff's proposal threatens the viability of the Project and the significant benefits that jobs and revenues will bring to the local communities and the state of Ohio.

As discussed below, it is clear that ODOT-OA lacks jurisdiction to consider section 77.17(A)(1)-(3) obstruction standards. The Board should so find and adopt the FAA's DNHs. This reply also refutes Staff's, the Local Governments', and Local Residents' broad assertions that ODOT-OA has jurisdiction to consider all obstruction standards in 14 C.F.R. Part 77. Even assuming that such jurisdiction exists, ODOT-OA's determination is unlawful, arbitrary, and capricious because it failed to determine whether the proposed turbines will have a "substantial aeronautic impact" on the airports flight operations, as required by R.C. 4561.32(A). The evidence of record shows that the turbines do not substantially affect flight operations and that Staff's proposed Conditions 56, 57 and 59 must be rejected.

2. ODOT-OA lacks jurisdiction to consider section 77.17(a)(1)-(3) obstructions because its jurisdiction is limited to regulating structures that could penetrate the six distinct "imaginary surfaces" associated with airport runways as identified in R.C. 4561.32(A) and 14 C.F.R. 77.17(a)(5).

In its initial brief, Staff evaded the jurisdictional question that is determinative of the aviation issues. Instead, Staff merely assumes that ODOT-OA has jurisdiction to regulate structures that exceed all obstruction standards contained in 14 C.F.R. Part 77. Staff Brief at 18-19. Staff is wrong.

As Republic stated in its initial Brief,[12] Ohio's General Assembly strictly limited ODOT-OA's authority to regulate structures that penetrate "imaginary surfaces" associated with an airport's runway; specifically an airport's "clear zone surface, horizontal surface, conical surface, primary

[12] See Republic Initial Brief at p. 24.

surface, approach surface, or transitional surface." R.C. 4561.32(A). Structures that penetrate these imaginary surfaces are considered obstructions under 14 C.F.R. 77.17(a)(5). However, in this proceeding the FAA concluded, and ODOT-OA "determined" under R.C. 4906.341, that none of the Project's proposed fifty turbines would constitute a section 77.17(a)(5) obstruction. Tr. V at p. 1149; App. Ex. 29 at att. BMD-1 (Doyle Direct). Because it is undisputed that all of the proposed turbines will comply with the imaginary surface standards listed in R.C. 4561.32(A), the Board must find that the Project is in compliance with the statute and that the requirements of R.C. 4906.10(A)(5) are fulfilled. Upon making this finding, the Board's inquiry should end.

3. The plain meaning of R.C. 4561.32(A) expressly limits ODOT-OA's jurisdiction to the six imaginary surfaces identified in the statute. *In re Columbus S. Power Co.*, 138 Ohio St.3d 448, 454 (2014). If ODOT-OA wishes to expand its authority, it must seek recourse through the General Assembly (again). *One Energy Enterprises, LLC v. Ohio Dept. of Transp.*, 10th Dist. Franklin No. 17AP-829, 2019-Ohio-359.

Staff's brief does not address ODOT-OA's limited authority under R.C. 4561.32(A). Instead, it asserts that ODOT-OA has authority to consider all 14 C.F.R. Part 77 obstruction standards, including those at issue in this case: 14 C.F.R. 77.17(a)(1)-(a)(3).[13] It maintains that R.C. 4906.10(A)(5), R.C. 4561.341, and R.C. 4561.32 are controlling, but Staff fails to analyze their requirements. Staff Brief at 18. The statutes do not support Staff's position.

R.C. 4906.10(A)(5) requires that a certificate issued by the Board be "in compliance with the standards and rules adopted under section 4561.32." In addition, R.C. 4561.341, which governs ODOT-OA's review of Board applications, requires that ODOT-OA's determinations comply with the rules adopted under R.C. 4561.32. In turn, R.C. 4561.32(A) requires that the rules be adopted

[13] Republic witness Doyle explained that the section 77.17(a)(5) imaginary surfaces are separate and distinct from the surfaces at issue in this proceeding under 14 C.F.R. 77.17(a)(1)-(3), in that they differ geometrically and are specifically related to runway classifications. App. Ex. 29 (Doyle Direct) at p. 14.

only to regulate the six imaginary surfaces identified above. Specifically, R.C. 4561.32(A) requires that ODOT:

> …adopt rules based in whole upon the obstruction standards set forth in 14 C.F.R. 77.21 to 77.29, as amended,[14] to uniformly regulate the height and location of structures and objects of natural growth ***in any airport's clear zone surface, horizontal surface, conical surface, primary surface, approach surface, or transitional surface***. The rules shall provide that the department may grant a permit under section 4561.34 of the Revised Code that includes a waiver from full compliance with the obstruction standards. The rules shall also provide that the department shall base its decision on whether to grant such a waiver on sound aeronautic principles, as set out in F.A.A. technical manuals, as amended, including advisory circular 150/5300-13, "airport design standards"; 7400.2 c, "airspace procedures handbook,"; and the U.S. terminal procedures handbook. [Emphasis added.]

In recently addressing the rules of statutory construction, the Ohio Supreme Court stated:

> When interpreting a statute, a court must first examine the plain language of the statute to determine legislative intent. *Cleveland Mobile Radio Sales, Inc. v. Verizon Wireless*, 113 Ohio St.3d 394, 2007-Ohio-2203, 865 N.E.2d 1275, ¶ 12. The court must give effect to the words used, ***making neither additions nor deletions from the words chosen by the General Assembly***. *Id. See, also, Columbia Gas Transm. Corp. v. Levin*, 117 Ohio St.3d 122, 2008-Ohio-511, 882 N.E.2d 400, ¶ 19. Certainly, had the General Assembly intended to require that electric distribution utilities prove that carrying costs were "necessary" before they could be recovered, it would have chosen words to that effect.

In re Columbus S. Power Co., 138 Ohio St.3d 448, 454 (2014) (emphasis added).

R.C. 4561.32(A) is unambiguous: ODOT-OA has authority to regulate only the six airport imaginary surfaces identified. To conclude that ODOT-OA has authority to adopt rules to regulate section 77.17(a)(1)-(3) obstructions, the Board would have to add to the specific words chosen by the General Assembly in R.C. 4561.32(A). A certificate that includes proposed Conditions 56, 57, and 59, which are based upon non-jurisdictional obstruction standards, would not comply with R.C. 4561.32(A) and would be unlawful under R.C. 4906.10(A). The FAA has jurisdiction to consider

[14] 14 C.F.R. 77.21 to 77.29 have since been amended and re-numbered as 14 C.F.R. 77.17 to 77.23.

section 77.17(a)(1)-(3) obstructions. Based upon the FAA's rigorous review, the evidence shows that none of the fifty proposed turbines create a hazard to air navigation. The Board must so conclude and adopt the FAA's determination.

If ODOT-OA seeks authority to expand the scope of its jurisdiction, its recourse is with the General Assembly, not this Board. In fact, ODOT-OA has sought to change this jurisdictional limit before. See *One Energy Enterprises, LLC v. Ohio Dept. of Transp.*, 10th Dist. Franklin No. 17AP-829, 2019-Ohio-359. In *One Energy*, ODOT-OA witness Stains admitted that ODOT-OA sought to amend R.C. 4561.31(A), which also limits the agency's jurisdiction when issuing "permits" to the six imaginary airport surfaces identified above. See 2017 H.B. No. 49. Specifically, ODOT-OA sought to replace the reference to the six imaginary surfaces listed in the statute with the term "navigable airspace," which it proposed to define in R.C. 4561.01(L) as the "imaginary surfaces around an airport as specified in 14 C.F.R. part 77, as amended." See *One Energy* at ¶ 12. ODOT-OA's efforts to expand its jurisdiction to include all 14 C.F.R. Part 77 surfaces were not successful through the General Assembly and should not be permitted here.

4. The Local Governments' construction of R.C. 4561.32(A) and O.A.C. 5501:1-10-05 is unlawful because it would expand the scope of ODOT-OA's authority beyond that delegated by the General Assembly. *Burger Brewing Co. v. Thomas*, 42 Ohio St.2d 377, 379 (1975).

The Local Governments' claim that ODOT-OA has authority to consider all 14 C.F.R. Part 77 obstructions. They rely on O.A.C. 5501:1-10-05,[15] which ODOT-OA adopted to implement R.C. 4561.32(A). Although this statute requires that rules be adopted to regulate only the six identified imaginary surfaces, ODOT-OA adopted all of the rules in 14 C.F.R. Part 77. O.A.C. 5501:1-10-05

[15] Staff relies on this same rule in an attempt to unlawfully expand ODOT-OA's authority. Staff Ex. 3 (Stains Direct) at p. 5.

provides, in part, that "[t]he Ohio department of transportation office of aviation adopts the obstruction standards set forth in 14 CFR [77.17 to 14 CFR 77.25]."

The Local Governments' position must be rejected. The Ohio Department of Transportation, of which ODOT-OA is a part (R.C. 4561.021), is an administrative agency of the state of Ohio. It is settled that the authority conferred upon an administrative agency by the General Assembly cannot be extended by that agency. *Burger Brewing Co. v. Thomas*, 42 Ohio St.2d 377, 379, 329 N.E.2d 693 (1975); *see, also, Amoco Oil Co. v. Petroleum Underground Storage Tank Release Comp. Bd.*, 89 Ohio St.3d 477, 480, 733 N.E.2d 592 (2000) (noting that administrative agencies "must adopt rules within the standards provided by the General Assembly in order for the rules to be valid").

ODOT-OA cannot extend its authority by rulemaking to regulate obstructions beyond the six imaginary surfaces that the General Assembly specifically identified in R.C. 4561.32(A). Any construction of O.A.C. 5501:1-10-05 that extends ODOT'-OA's jurisdiction beyond the imaginary surfaces identified in R.C. 4561.32(A) is invalid and unlawful.

5. ODOT-OA must consider "whether" to waive an obstruction when making its determination and that determination, whether granting or denying the waiver, must be based on "sound aeronautic principles." R.C. 4561.32(A).

The Local Governments also argue that O.A.C. 5501:1-10-05 gives ODOT-OA the "sole discretion" to issue a waiver and that it is only required to consider "sound aeronautical principles" when granting a waiver, not denying one. The relevant part of the rule reads:

> ***At its sole discretion***, the office of aviation may grant a permit which includes a waiver from full compliance with the obstruction standards. ***Any decision to grant a waiver shall be based on sound aeronautical principles*** as set forth in the following technical manuals, as amended: "Federal Aviation Regulations part 77, Objects Affecting Navigable Airspace, Title 14, CFR, TERPS, advisory circular 150/5300-13, Airport Design Guide, FAA Heliport and Vertiport Design Guides, and FAA 7400.2 c, Procedures for Handling Airspace Matters," as amended. [Emphasis added.]

If the Local Governments' interpretation were accepted, this portion of the rule would also falls victim to *Burger Brewing* because it changes ODOT-OA's statutory authority in considering waivers. R.C. 4561.32(A) clearly requires ODOT-OA to "base its decision on ***whether*** to grant a waiver on ***sound aeronautical principles*** as set forth in F.A.A. technical manuals…" (Emphasis added). Webster's Dictionary defines the word "whether" as considering "alternative possibilities." See *The Merriam-Webster.com Dictionary*, Merriam-Webster Inc., https://www.merriam-webster.com/dictionary/whether. The plain language of the statute requires that ODOT-OA base its determination whether to grant *or deny* a waiver upon "sound aeronautic principles."

Even Staff disagrees with the Local Governments. ODOT-OA witness Stains concedes that when issuing "permits" under R.C. 4561.34, ODOT-OA must use the "sound aeronautic principles" identified in the FAA's technical manuals (see R.C. 4561.32(A)) when considering waivers to obstruction standards. Tr. V at p. 1092, 1102. These principles include a determination of whether an obstruction has a "substantial aeronautical impact" on air navigation *i.e.*, substantially affects flight operations. Curiously, however, Mr. Stains contends that ODOT-OA is not bound by these same principles when issuing "determinations" in Board proceedings under R.C. 461.341. *Id.* This distinction is without merit.

R.C. 4561.32(A) became effective in 1991 and required ODOT-OA to adopt the FAA's technical manuals, including the process for determining whether an obstacle has a "substantial adverse effect" on air navigation. ODOT-OA adopted the manuals in 1992 in O.A.C. 5501:1-10-05. At the time the statute and rules were enacted they explicitly referred to "permits."[16] However,

[16] R.C. 4561.32 requires, in part, that ODOT's rules include:

> …that the department may grant a ***permit*** under section 4561.34 of the Revised Code that includes a waiver from full compliance with the obstruction standards. The rules shall also provide that the department shall base its decision on whether to grant such a waiver on sound aeronautic principles, as set out in F.A.A. technical manuals, as amended, including advisory circular 150/5300-13, "airport design standards"; 7400.2 c, "airspace procedures handbook,"; and the U.S. terminal procedures handbook. [Emphasis added.]

R.C. 4561.341 first became effective in 1999 and required ODOT-OA to also apply these same rules to its "determinations" under R.C. 4561.341.[17] Accordingly, ODOT-OA's determination "whether" to grant *or deny* a waiver must be based upon "sound aeronautic principles," which requires ODOT-OA to consider whether the proposed turbines would have a "substantial adverse effect" on airport flight operations.[18]

Moreover, R.C. 4561.32 requires ODOT-OA to issue rules to "***uniformly*** regulate the height and locations of structures" in an airport's imaginary surface. (Emphasis added.) Obviously, if the sound aeronautical principles identified by statute are applied only to structures in a permitting process, but not to structures in a Board determination process, their regulation would not be uniform. ODOT-OA's attempted distinction of the standards applicable to permits and determinations is unlawful because it violates R.C. 4561.32(A).

6. If ODOT-OA has jurisdiction to consider section 77.17(a)(1)-(3) obstructions (which it does not), it erred by not basing its determination whether to waive the obstructions on "sound aeronautic principles."

The FAA is charged with protecting the safety of air navigation in this country. See 14 C.F.R. 77.15(a); App. Ex. 29 at p. 6 (Doyle Direct). It did so here by slightly increasing the minimum flight altitudes for some turbine sites by 40 to 100 feet. In opposing the Project, two airport managers make the claim that the FAA creates unsafe flying conditions by raising these altitudes. Staff Ex. 3 at pp. 9-10 (Stains Direct); Tr. V at p. 1133 (Stains Cross). Unfortunately, ODOT-OA accepted their bold claim. Staff, the Local Governments, and the Local Residents each relies on

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As stated above, O.A.C. 5501:1-10-05 also refers only to issuing a "permit" ("…the office of aviation may grant a ***permit*** which includes a waiver from full compliance with the obstruction standards…" (Emphasis added.)

[17] R.C. 4561.341 provides in part that ODOT-OA "shall review the application to determine whether the facility constitutes or will constitute an obstruction to air navigation based upon the rules adopted under section 4561.32 of the Revised Code."

[18] The technical manuals adopted under O.A.C. 5501:1-10-05 include FAA Joint Order 74002m (which amended Joint Order 74002c). Joint Order 74002m addresses "Identifying/Evaluating Aeronautical Effects" at page 6-3-1, and specifically addresses "substantial adverse effect," commencing on page 6-3-2. See https://www.faa.gov/documentLibrary/media/Order/7400.2M_Bsc_dtd_2-28-19.pdf

ODOT-OA witness Stains' mistaken criticism of the FAA in an attempt to show that the FAA's determination falls short of safety standards. Mr. Stains testified:

> The FAA acknowledges that this project will create obstructions to air navigation and acknowledged that the affected airspace must be adjusted to mitigate the height of the structures. However, the FAA found that the impacts of the project would not have enough of a substantial adverse effect to justify a determination of hazard. ODOT is not in the business of assuming additional risk or playing a numbers game when it comes to the safety of the traveling public. If there is an adverse impact, that is what we conclude in our determination. [Staff Ex. 3 at p. 17 (Stains Direct); see, also, Staff Brief at p. 21, Local Governments Brief at p. 6, Local Residents' Brief at p. 51 (adopting Local Governments' position).]

Putting Mr. Stains' bravado aside, it is apparent that his criticism is based upon a misunderstanding of the FAA's determination process (which is the same one ODOT-OA would be required to follow per the FAA technical manuals it adopted, if it had jurisdiction). Mr. Stains' analysis conflates the FAA's consideration of safety (adjusting minimum altitudes) with its determination that the adjustment will not have a "substantial adverse effect" on an airport's utility (number of aircraft that land). The FAA is not risking, or playing a numbers game, with public safety. Rather, its determination that the adjustment will not have a substantial adverse effect merely recognizes that changes to flight procedures for safety reasons will have absolutely no effect on the airports' flight operations for thirty-three turbines; and that only one turbine (T1) could affect Seneca County Airport's flight operations on only the NDB approach up to three times a year. App. Ex. 29 at att. BMD-1 (Doyle Direct). It is in that context that the FAA determined that the effect of T1 was not "substantial." It had nothing to do with compromising public safety.

Republic's Initial Brief explains why the minimal increase in flight altitudes does not comprise safety in icing conditions. Republic Initial Brief at 52-55. Aircraft approaching any of the airports will fly at altitudes higher than the minimums identified by the DNHs. Icing conditions can occur at any elevation and the FAA's technical manuals, which ODOT-OA adopted and should

have followed, provide the procedures to follow if an aircraft finds itself in icing conditions at any elevation. Tr. IV at pp. 899-900 (Doyle Cross). The FAA's determination does not increase any safety risk.

The two airport managers' and ODOT-OA's real concern is with the prospect of giving up a sliver of airspace. The concern could be valid if the loss could have a substantial adverse impact on flight operations. However, neither the airport managers nor ODOT-OA conducted any studies to determine the degree of the impact on an airport's utility.[19] ODOT-OA erroneously believed it was not required to support its opinion with fact or "sound aeronautic principles." Instead, it simply abdicated its responsibility to regulate airspace to the whims of airport managers. Staff, the Local Governments, and the Local Residents recognize as much in citing Mr. Stains' testimony:

> If an airport is willing to agree to give up the utility of their [sic] navigable airspace, meaning, for example, they are [sic] willing to consent to the FAA raising minimum flight altitudes or changing traffic patterns, then that is when ODOT determines a waiver is appropriate…ODOT is not the owner or sponsor of any airport, and it is not our mission to dictate to local airport sponsors how they should or should not operate their airport. [Staff Ex. 3 at p. 17 (Stains Direct); see, also, Staff Brief at p. 21, Local Governments Brief at p. 6, Local Residents' Brief at p. 51 (adopting Local Governments' position).]

Assuming ODOT-OA has jurisdiction to consider section 77.17(A)(1)-(3) obstructions, its abdication of its responsibilities to make a fair and impartial determination on behalf of all stakeholders is reckless. This is particularly true if a local airport manager is opposed to an entire wind project [Tr. VI at p. 1241 (Newman Cross)] and uses his influence under ODOT-OA's misguided interpretation of its responsibilities for purposes other than to assure safe and navigable

[19] Tr. V at p. 1082; Tr. VI at p. 1229. The only evidence is that any impact is limited to the three flights per year that aircraft would be unable to use the NDB approach, assuming cloud coverage was in the 40-foot adjusted minimum altitude at the precise time the three aircraft wished to land at Seneca County Airport. Even then, other approaches were available to the aircraft, *e.g.*, GPS. Staff cites to the economic output of, and the job supported by, each airport (Staff Br. at 20); however, no evidence was presented that construction of the Project would affect either. The Local Residents also make a vague claim of economic detriment to pilots, but provide no evidence in support. Local Residents' Br. at 51.

airspace. ODOT-OA's refusal to consider "sound aeronautic principles," *i.e.*, whether the turbines will have a substantial adverse effect on air navigation as required under its adopted FAA's manuals, has resulted in a determination in this proceeding that is unlawful, arbitrary, and capricious.

To be clear: the FAA's slight increase in the minimum flight altitudes does not affect icing conditions and to suggest that the FAA's actions increased the risk to public safety borders on the absurd. ODOT is bound to follow the FAA procedures in the FAA's technical manuals in determining whether to grant or deny waivers. R.C. 4561.32(A) and O.A.C. 5501:1-10-05. Those procedures require a determination of whether the change in flight operations will have a substantial adverse effect on an airport's flight operations, *i.e.*, the number of aircraft landing. Neither the airport managers nor ODOT-OA conducted any studies on this effect. The studies done by the FAA and supported by Republic witness Doyle show that only one turbine (T1) affects flight operations, but that its effect is so very small that it cannot be determined to be substantial. Absent a substantial adverse effect on flight operations, waivers must be granted for all turbines, as the FAA concluded. On this basis, the Board must reject Staff's proposed Conditions 56, 57, and 59.

F. The Board has adequate evidence to determine the nature of the probable impact to bats, birds, and eagles, and the evidence—along with the conditions recommended by Staff (including several modified per Republic's Proposals)—establishes the Project represents the minimum adverse impact to bats, birds, and eagles.

The Local Residents claim that Republic's avian and bat surveys are flawed and outdated. They rely on one witness for these assertions: Mark Shieldcastle. While Mr. Shieldcastle has studied birds, including conducting general avian surveys, he has never designed or performed a single bird or eagle survey under the study protocols applicable to wind facilities. Tr. V at pp. 997, 1008. Of the hundreds of post-construction mortality studies done for wind facilities, he has reviewed only one. *Id.* at pp. 1004-1005. In terms of bats, Mr. Shieldcastle has never designed or performed a bat study of *any* type; indeed—he concedes ***he is not a bat expert***. *Id.* at pp. 991, 994, 1009. Against

this weak foundation, the Local Residents ask the Board to disregard all of the following uncontroverted facts:

- The bird and bat studies were designed in consultation with USFWS and ODNR. App. Ex. 22 [Direct Testimony of Paul Kerlinger ("Kerlinger Direct")] at p. 10; App. Ex. 20 [Direct Testimony Chris Leftwich ("Leftwich Direct")] at p. 5.

- The bird and bat studies complied with the applicable ODNR and USFWS protocols and guidelines used for proposed on-shore wind facilities. App. Ex. 22 at pp. 4-8 (Kerlinger Direct); App. Ex. 20 at p. 5 (Leftwich Direct).

- ODNR confirmed that the surveys performed in relation to the Republic Project for its application to the Board meet ODNR's pre-construction monitoring protocols. App. Ex. 23 (ODNR Jan. 25, 2018 e-mail); Tr. V at p. 1001.

- Staff determined, in consultation with ODNR and USFWS, that Republic—through these avian and bat studies—identified the ecological impacts on birds and bats and, most importantly, that the Project represents the minimum adverse environmental impact. See Staff Ex. 1 at p. 43, 46 (Staff Report)

Shieldcastle claims to have the technical background to assess the studies performed here, but a review of his criticisms reveals he either lacks the background necessary to render an educated opinion or his theories are motivated, at least in part, by bias against wind projects. Either way, Shieldcastle's theories should be given no weight.

1. Republic's Bat Surveys comport with the applicable ODNR Study Protocols and USFWS Guidelines.

Mr. Shieldcastle provides nothing other than a conclusory statement that the 2011 Bat Acoustic Monitoring Survey is outdated. But ODNR was well aware of the dates of each bat study, including the 2011 acoustic monitoring study. Not only did ODNR *never* ask for an updated acoustic study, it expressly acknowledged—nearly seven years later—that this 2011 acoustic study met its pre-construction monitoring protocols for the current Republic boundary. See App. Ex. 23. Per ODNR's protocols, *one* acoustic monitoring study is recommended. App. Ex. 33 at §1.3, p. 4

(ODNR Study Protocols). Had ODNR believed another acoustic monitoring study was called for, it could have easily recommended one. It did not.[20]

Shieldcastle criticizes the location of the acoustic monitoring as not being near notable bat habitat and suggests the study was designed not to pick up bats. Tr. V. at pp. 991-992. Shieldcastle is actually criticizing ODNR's On-Shore Bird and Bat Pre- and Post-Construction Monitoring Protocol for Commercial Wind Facilities in Ohio, which specifically call for locating the acoustic monitoring equipment on met tower(s). App. Ex. 33 §1.3 at p. 4 (ODNR Study Protocols). There is a sound scientific and ecological basis for this design protocol, as recognized in the protocols themselves: bats do not confine themselves solely to forested habitat; they have been documented in agricultural sites as well (where wind facilities are often located). See *Id.* Therefore, ODNR's protocols require acoustic monitoring on meteorological tower(s) to assess the bat activity levels at the location of the turbines themselves. See *Id.*

Shieldcastle is also wrong in suggesting the consultants believed the location of the monitoring was somehow flawed and skewed the survey results. The consultants were simply noting what ODNR itself recognizes—that agricultural land with little forested habitat is avoided by the Indiana Bat, which could explain the overall low levels of myotis calls. App. Ex. 1C, Ex. P at p. 6 [2011 Ac. Monitoring ("Report")]. Republic's 2011 bat acoustic monitoring study was in full compliance with the ODNR Study Protocols. It provided the information the study was designed to provide—the species composition and activity levels of bats that may be present at turbines. Contrary to Shieldcastle's assertion otherwise, the Report gave a thorough and substantive analysis of its findings. The results were consistent with post-construction mortality studies that

[20] It is noted that the meteorological tower on which the 2011 acoustic monitoring occurred is located within the current project boundary. See Ex. 1C (Am. Appl.) at Exhibit P (2011 Acoustic Monitoring Report at Legend/Map); and App. Ex. 25/1 of 2 (Project Boundary Map Eagle Use Surveys Map).

show the most commonly encountered bat species are non-listed, long-distance migratory bats, and that the location of the met tower is not a significant foraging habitat. *Id.* at pp. 5-7; 12-13.

Also contrary to Shieldcastle's claims, the results of the acoustic monitoring were in line with the mist-netting survey conducted that same year. Shieldcastle claims the capturing of an Indiana Bat in the 2011 Mist Net Survey negates the acoustic monitoring conclusions. Local Residents Ex. 23, at p. 22 [Direct Testimony of Mark Shieldcastle ("Shieldcastle Direct")]. These claims reveal Shieldcastle's lack of understanding of the ODNR Study Protocols (and the scientific rationale supporting the protocols), and the unreliability of his assessments.

In fact, the 2011 Acoustic Monitoring Survey Report states that Indiana Bats are known to occur in the vicinity and that it is possible Indiana Bat calls were recorded. App. Ex. 1C (Am. Appl.) Ex. P, Report at p. 6. The ODNR Study Protocols themselves note that acoustic monitoring may provide a generalized activity level for a site but cannot indisputably determine species composition. App. Ex. 33 at §2.4, p. 5 (ODNR Study Protocols). And, because the entire state of Ohio is considered in the range of the Indiana Bat, mist netting should be performed in accordance with USFWS guidelines. *Id.* at pp. 5-6.

A Mist Net Survey was conducted in 2011 in coordination with ODNR and USFWS. App. Ex. 1C (Am. Appl.) at Ex. Q, pp. 3, 5-6; Appx. B to Survey Report. An Indiana Bat was captured. *Id.* at 16, 20. Neither the 2011 acoustic monitoring nor the 2011 mist netting report noted any unexpected findings, and the types and number of bats captured during the mist net survey as compared with the species of bat calls recorded during the acoustic monitoring are not inconsistent.[21] In short, Shieldcastle's criticisms of the 2011 Acoustic Monitoring and Mist Net Surveys are not well-founded.

[21] See App. Ex. 1C (Am. Appl.) at Ex. P, 2011 Bat Acoustic Monitoring Survey Report at p. 8, Table 3.2; App. Ex. 1C (Am. Appl.) at Ex. Q, 2011 Mist Net Survey Final Report at p. 20, Table 6.

Shieldcastle also finds fault with the mist net studies done in 2015 and 2016, claiming they too are outdated and were only conducted during short periods of time. Again, Shieldcastle's criticisms are hollow and, at best, reveal his lack of understanding and/or acceptance of the study protocols and the purpose of the studies. Per the ODNR Study Protocols, mist netting surveys may only occur between June 15 and July 31. App. Ex. 33, § 2.4 at p. 6 (ODNR Study Protocols). All three of the 2015 and 2016 surveys complied with this parameter. See App. Ex. 1C (Am. Appl.) at Ex. J/Appx. E: Copperhead 2015 Bat Surveys at p. 1; Copperhead 2016 Bat Survey at p. 1; Copperhead 2015 and 2016 Surveys at p. 1. Significantly, the results are generally consistent with the 2011 mist net study in that: (1) the vast majority of bat species captured were non-listed big brown and eastern red bats (see *id*. at pp. 6, 4, and 7, respectively; App. Ex. 1C (Am. Appl.) at Ex. Q (2011 Mist Net Survey) at p. 20; and (2) an Indiana Bat was captured in 2015 which, given the location of the capture and overlap in foraging areas, suggests the 2015 capture was from the same colony as the 2011 capture. See App. Ex. 1C (Am. Appl.) at Ex. J/Appx. E: Copperhead Summer 2015 Bat Surveys at p. 28.

More importantly, the 2015 mist net study confirmed the presence of the Indiana Bat and Northern Long-Eared Bat and the location of roost tree(s). This data was considered by USFWS and addressed with Republic and ODNR at multiple meetings, ultimately resulting in the issuance of a Technical Assistance Letter ("TAL") by USFWS. App. Ex. 13 Att. DC-1 (Carr Direct). The salient point—which Shieldcastle totally disregards—is that the bat studies did their job of identifying any listed species, and Republic has agreed to the avoidance measures set forth in the TAL, which will protect the Indiana Bat and Northern Long-Eared Bat. Accordingly, Republic has not only presented substantial evidence sufficient for the Board to determine the nature of the

probable impact to bats, but adherence to the TAL ensures the Project represents the minimum adverse impact to these listed bat species.[22]

2. The Bird/Raptor Nest Surveys comport with the applicable Study Protocols and Guidelines.

Shieldcastle attacks the avian surveys using essentially the same all-encompassing (and unsupported) argument he asserts against the bat surveys—that the study designs are flawed. He goes through a litany of criticisms of the breeding bird, passerine migration, and raptor nest surveys—everything from challenging the time periods and hours during which the studies were performed—to how many studies were performed. See Local Residents' Br. at pp. 56-62. He (and the Local Residents) go so far as to claim *Republic* intentionally designed the avian studies so as to avoid detection of birds. In reality, Shieldcastle and the Local Residents are actually attacking ODNR's and USFWS's pre-construction study protocols and guidelines for wind facilities, which Republic indisputably followed.

For example, Shieldcastle attacks the Passerine Migration and Diurnal Bird/Raptor Migration studies because they were not performed at night, and he asserts three years of nighttime radar monitoring should have occurred. But radar studies are only required where the project is in an area deemed to need "Extensive" survey effort, which Republic does not. See App. Ex. 33, §3.1 at p. 8 (ODNR Study Protocols). While ODNR has discretion under its Protocols to recommend any type of study, it has never requested *any* radar study be performed for Republic (let alone three years of radar studies). See App. Ex. 33 at p. 1 (ODNR Study Protocols); App. Ex. 1 at Appx. D.[23]

Shieldcastle also attacks the Raptor Nest and Breeding Bird surveys, claiming they were not conducted at appropriate time periods and/or were not likely to find all species. But like the

[22] Dr. Kerlinger testified that the avoidance measures in the TAL reduces impacts to both the Indiana Bat and the Northern Long-Eared Bat to virtually zero. Tr. III at p. 727.

[23] Appendix D to the initial Application contains the historical survey recommendation letters.

Passerine and Diurnal Bird/Raptor Migration studies, the Raptor Nest and Breeding Bird Surveys conformed to the ODNR Study Protocols. *See* App. Ex. 22 at pp. 4-8 (Kerlinger Direct).[24] All of the studies performed arise from ODNR's survey recommendations to Republic, the last recommendation letter being October 31, 2017. The October 31, 2017 letter sets forth the type and level of survey effort for the Republic Project area, and ODNR noted that the results of these studies will influence ODNR's recommendation to the Ohio Power Siting Board.[25] See fn. 24. Since the inception of the Project in 2010, ODNR has issued multiple letters setting forth survey recommendations, and the survey effort has remained "Moderate." This makes sense, since the habitat in the Republic Project area has not changed; even Shieldcastle cannot say there has been any major change in habitat. Tr. V at pp. 1017, 1049; App. Ex. 1, Appx. D.

Shieldcastle also claims that all the studies are outdated and do not cover the entire Project area, and he challenges the use of studies performed for the nearby Emerson West project. First, ODNR and USFWS haven not requested additional avian studies. More importantly, upon the request of Republic to confirm compliance with ODNR guidelines as required for the Ohio Power Siting Board application process, ODNR informed Republic that its bird and bat studies—including studies performed at the nearby Emerson West project—meet ODNR's pre-construction monitoring protocols for the new (and current) Republic boundary. App. Ex. 23 (Republic Wind Survey).

In requesting approval from ODNR, Republic submitted a Technical Memorandum dated January 10, 2018. *Id.* This Memorandum points out that the current Republic Project includes land that was initially part of the Emerson West project and that data from the Emerson West project provides additional information on species composition and usage patterns throughout the Republic

[24] See also, App. Ex. 33 at §§ 1.1, 1.2, 2.1, and 2.2 at pp. 2-5 (ODNR Study Protocols) setting forth survey design recommendations for breeding bird, raptor nest, passerine, and diurnal bird/raptor migration surveys.

[25] See App. Ex. 1 (Initial Appl.) at Appx. D.

Project area. *Id.* at pp. 1-2 of Memo. The Memorandum listed all the bird and bat studies, including the relevant Emerson West surveys. *Id.* at p. 5. The Memorandum noted that while some of Republic's surveys had been completed over five years ago, data from the more recent Emerson West project provides current insight into the level and timing of species activity, diversity, and abundance within the Republic Project area. *Id.* at p. 6. Further, because the Emerson West survey results are similar, the older Republic survey results are still applicable and sufficient to allow ODNR to assess the potential impacts and make a recommendation in the OPSB application process. *Id.*

ODNR obviously agreed with Republic's Memorandum, since it responded that "these" surveys meet ODNR's monitoring protocols. *Id.*, Jan. 25, 2018 ODNR email. Dr. Kerlinger agrees, noting that the Emerson West Breeding Bird Surveys provide additional information about the type and number of birds that nest in close proximity to the Republic site. App. Ex. 22 at p. 6 (Kerlinger Direct). Further, while the Local Residents point to the map in the January 10, 2018 Technical Memorandum (App. Ex. 23 at p. 4) and claim this shows only "slight" overlap between the projects, this map does not tell the whole story of the extent of the *substantive* overlap in the studies. Indeed, the physical boundary lines of the two projects do not equate to what areas were actually surveyed, and the Local Residents (and Shieldcastle) ignore the fundamental connection between the Emerson West and Republic studies/project areas.[26]

ODNR understood the connection and relevancy, and accepted the Emerson West studies in reviewing the Republic project. So does Staff, in concluding Republic presented information sufficient to show the probable environmental impact. Shieldcastle's assertions that the studies do

[26] Just one example is that the Emerson West 2016 Raptor Nest Survey went out one mile around the project boundary for non-eagle nests, and four miles for eagle nests. Survey at pp. 1, 3-4, found at Ex. J, Part 8 [online docket].

not cover the entire Project area and/or that the Emerson West studies may not be considered should be rejected.

Perhaps the most important fact the Local Residents ignore is the overwhelming evidence that wind turbines, including Republic's proposed turbines, do not pose a significant threat to nocturnal migrating birds (which all parties agree are the species of greatest risk from wind turbines). See Local Residents Ex. 23, at p. 4 (Shieldcastle Direct); Tr. III at pp. 593, 618. Instead, the Local Residents suggest that the Project area should be carved out as an "important migratory pathway" because Lake Erie and Magee Marsh are located north of Seneca County. They attempt to rely on testimony from Dr. Kerlinger for this assertion. But Dr. Kerlinger's testimony does not support this theory. First, Dr. Kerlinger testified that Magee Marsh is not in the Republic Project area. *Id.* at p. 768. And, Dr. Kerlinger noted that not only Seneca County, but the counties to the east and west are covered with this broad-front migration. *Id.* at pp. 576, 578.

More importantly, the Local Residents fail to acknowledge Dr. Kerlinger's testimony that the location of Lake Erie and Magee Marsh in relation to the Republic Project is immaterial to the impacts on migrating birds. Relatively few of these migrating birds will use the Project area as a stopover, due to its lack of appropriate habitat. *Id.* at *pp.* 582-583, 617-618. Further, most night migrants fly at between 800-2,500 feet above ground (thus, above turbine height). *See id.* at p. 770. There have been over 170 post-construction fatality studies, four of which are reported in peer-reviewed journals that look at the total number of individual species killed. *Id.* at pp. 646-647. Most of these studies are done in collaboration between wind company consultants, USFWS, and the state departments of natural resources, and they follow federal law. *Id.* at pp. 646-647. As for the types of birds most susceptible to mortality from wind turbines (night migrants), nothing in the record establishes that Staff, USFWS, or ODNR are concerned about the Project's impact on nocturnal migrants/passerines.

It is clear that ODNR, USFWS, and Staff agree that not only should ODNR's and USFWS's study protocols and guidelines be utilized here, but that Republic followed these protocols and guidelines and submitted studies that sufficiently answered the "questions asked" by the Board: what is the probable environmental impact and does the Project represent the minimum adverse impact. Dr. Kerlinger—the only established expert who has actually conducted avian use surveys for wind projects under the protocols and guidelines, of which he is very familiar with—testified there is no reason to question the validity of the avian studies performed here and that Republic's studies were conducted in accordance with ODNR's and USFWS's guidelines/protocols for wind projects. Tr. III at p. 769; App. Ex. 22 at p. 9 (Kerlinger Direct). In terms of the efficacy of pre- and post-construction avian use studies, including the ones performed in relation to the Republic project, Shieldcastle is the outlier.

In essence, Shieldcastle and the Local Residents are asking the Board to find that the two government agencies the Board and its Staff rely on to provide skillful analyses as to the probable environmental impact—ODNR and USFWS—have developed defective study protocols. The Local Residents then make the monumental assertion that all new studies should be performed. Not just any studies—but ones that meet with Mark Shieldcastle's approval—a person who has never conducted a single bird or bat study under the applicable protocols, protocols of which he is only generally or "somewhat" knowledgeable. Tr. V. at pp. 997, 1006, 1034. Shieldcastle's and the Local Residents' whole cloth assertions have no support in the scientific community, and they should be rejected.

3. There are adequate Eagle Surveys to assess risk.

Shieldcastle claims Republic's eagle surveys are outdated and flawed, and decries the use of more recent surveys done for the adjacent Emerson West project. First, every eagle survey that was considered for the Republic Project was performed in accordance with the applicable study protocols

and guidelines, including the number of point counts used and the time(s) of year the surveys were performed. Shieldcastle misleadingly condemns the 2011-2012 Bald Eagle Survey, alleging it fails to follow ODNR protocol. In doing so, however, Shieldcastle does not reference the applicable study protocols. Instead, he cites protocols allegedly applicable to a program he was involved with decades ago, called the Ohio bald eagle restoration program. Local Residents Ex. 23 (Shieldcastle Direct). There is no evidence this program is even still in operation. More importantly, none of the eagle studies here fall under that program's protocols.

The 2011-2012 Bald Eagle Survey Effort, as well as the other eagle/raptor monitoring and use surveys, were and are governed by USFWS Eagle Conservation Plan Guidance ("ECP Guidance"), USFWS Land-Based Wind Energy Guidelines, and/or the ODNR Study Protocols. These Protocols and Guidance were not only followed Republic coordinated the design protocols with USFWS/ODNR and received USFWS/ODNR approval of the study designs. *See* App. Ex. 22, at pp. 4-7 (Kerlinger Direct).

Further, of course the Emerson West Eagle Monitoring and Large Bird/Eagle Use Surveys provide information salient to the Republic Project—even the Local Residents seem to ultimately concede this. Emerson West borders the Republic Project, and this proximity makes the results of the Emerson West surveys an appropriate consideration in assessing eagle use in the Republic Project area. Indeed, one of the nests monitored during the Emerson West survey was later monitored for the Republic Project. See Local Residents Ex. 16 (Nov. 15, 2017 Technical Memo). This nest was located .50 miles east of the Republic Project. *Id.* The 2017 Emerson West Eagle Nest Monitoring Surveys reported that this nest had been inactive or abandoned (in 2016). App. Ex. 1C, Ex. J, Part 8 [online docket] Study at p. i. But the Report also noted that eagles typically reuse nests and that eagle use in this area may become higher in subsequent years. *Id.* at p. 11.

Sure enough, the nest became active, and it was monitored one year later for the Republic Project. See Local Residents Ex. 16. Shieldcastle finds fault with this monitoring survey, claiming eagle activity was "undercounted" due to leaf coverage, which allegedly makes eagles difficult to find. But the survey report notes that all four fixed-point count locations had a clear viewshed in order to document potential flight paths (the purpose of the study), and the observers documented the eagles' activities with an unlimited viewshed. *Id.* at p. 1. The purpose of the survey was to gain more information about how bald eagles approach and leave the nest relative to the Project area (not to observe the nest specifically)—which objective was accomplished.

Shieldcastle, on one hand, challenges the relevancy of the 2018 Large Bird/Eagle Use Survey for Emerson West because it only shares four of the twenty-nine point counts with Republic. On the other hand, he references this very same survey to say that eagle use is high in the Republic area. Shieldcastle and the Local Residents use this survey, along with anecdotal evidence of eagle sightings, to support the argument that new studies must be performed before the Board acts on the Certificate and that a 2.5-mile buffer should be imposed around every eagle nest. But neither ODNR nor USFWS have required or recommended that additional eagle surveys be performed before the Board considers Republic's Certificate, nor does any applicable Guidance or Protocol call for a 2.5-mile buffer.[27]

More importantly, Shieldcastle's and the Local Residents' arguments are based entirely on an unproven premise—that wind turbines pose an undue risk to bald eagles. The only empirical evidence that exists—versus mere conclusory and unsupported statements—is that they do not. Dr. Kerlinger testified consistently that bald eagles are not at high risk. See Tr. III at p. 645. Dr.

[27] USFWS, instead, calculates a "½ inter-nest distance" that is specific to a project. Here, USFWS concluded the ½ inter-nest distance as 1.17 miles. See App. Ex. 1C (Am. Appl.), Appx. E to Ex. J at Part 9 [online docket at p. 25 of .pdf].

Kerlinger presented actual evidence of this low risk. He referenced the 170 post-construction fatality studies and studies he has done at wind facilities that are high risk sites to eagles—and the eagle fatalities numbers are very small. See *Id*. at p. 646. Indeed, the *empirical* information from the last twenty-plus years is that even as more and more turbines have been put up, bald eagles are not terribly susceptible to colliding with those turbines; fatalities are very small; and the eagle population has grown continuously despite the increase in the number of turbines. *Id.* at p. 739. It has never been empirically shown that a larger turbine rotor diameter poses more of a risk to bald eagles. *Id.* at p. 654.

Dr. Kerlinger gave the example of where, in places like Maryland and along Appalachian ridges where there is a lot of bald eagle migration, USFWS is not even requiring ECP permits anymore because bald eagles do not collide with turbines; these are places where there are thousands of turbines and there are no fatalities. *Id.* at pp. 736-737. The state of New York has 1,000 turbines and only one bald eagle fatality since 2000, while the bald eagle population grows. *Id.* at pp. 739-740. As for the risk to bald eagles whose nests are close to turbines, Dr. Kerlinger testified that the sample size of eagles that have been killed by wind turbines is so small, there does not appear to be a correlation between the distance of a nest from a wind project area and risk, and there is no data stating the distance or range a bald eagle travels has any correlation to risk of fatality by wind turbines. *Id.* at pp. 723-724, 764. Significantly, Dr. Kerlinger notes it has not been demonstrated that an increase in the number of eagle nests correlates to risk of fatality by wind turbines, and the discovery of a new eagle nest near or within the Project boundary does not change his opinion on risk. *Id.* at pp. 764, 769.

In summary, Republic provided more than sufficient information, by way of studies vetted by USFWS and ODNR (as applicable) and which complied with applicable protocols and guidance, to assess the risk to bald eagles. Although bald eagle use is well-documented in the Republic Project

area, USFWS has not recommended an ECP. Indeed, Dr. Kerlinger's testimony established that risk to bald eagles from wind turbines is very low. The Local Residents' arguments lack substantive foundation and should be rejected.

4. Modifications to Bat, Bird, and Eagle Conditions

a) Condition 26 should be modified so it is consistent with the Technical Assistance Letter, which provides protective measures for *both* the Indiana Bat and the Northern Long-Eared Bat.

Staff acknowledges that the purpose of its proposed Condition 26 is to minimize impacts to the Indiana Bat ("IB") and the Northern Long-Eared Bat ("NLEB"). Staff Brief at p. 9. But Staff erroneously states that the TAL issued to Republic does not provide for summertime feathering measures to protect the NLEB. *Id.* That is not true. The TAL itself states that the summertime feathering measures, based on the distance of turbines from IB roosts, will *also* protect the NLEB. App. Ex. 13, Att. DC-1 at p. 1 (Carr Direct). Republic's initial Brief set forth in great detail the science that supports this and why there is no conservation-based reason to impose a feathering measure on turbines within 2.5 miles of NLEB roosts. See Republic Brief at pp. 36-38.

The bat studies performed here are consistent with this science. The Copperhead Summer 2015 Bat Surveys, for example, show the foraging ranges for both the IB and NLEB. See Study at App. Ex. 1C (Am. Appl.) Ex. J-Appx. E, Part 11 [online docket]. Significantly, none of the bats traveled farther than 379.3 meters (less than one-quarter mile) from the forested areas. *Id.* at Study Report, p. 17. The Study also shows that, like the USFWS data detailed in Republic's initial Brief, the IB's foraging points were more spread out than the NLEB. *Id.* at p. 18/Figure 7. Being conservative then, a curtailment measure requiring the feathering of turbines within 2.5 miles of the IB roosts will obviously also serve to protect the NLEB—which the recognized science shows does not travel as far from its roost trees as the IB does.

Staff argues its recommended condition is consistent with the TAL, because the TAL recommends coordination with ODNR and addresses ODNR concerns. But Staff produced no written evidence that ODNR has actually requested the feathering of turbines located within 2.5 miles of NLEB roosts. There is also no evidence that ODNR relayed any such measure to Republic—even though ODNR was part of the meetings with Republic and USFWS where avoidance measures (including feathering of turbines) and the development of a TAL were discussed. See App. Ex. 1C at Appendix J, Pt. 19 [online docket at .pdf pp. 12-15 and 16-20].

In fact, the only written communication from ODNR on this topic that is in the record is ODNR's April 27, 2018 letter to the Board, setting forth ODNR's review of the Republic Project. App. Ex. 40. As for the NLEB, while ODNR did recommend a curtailment regime to avoid take of the NLEB—it did *not* recommend a specific regime, let alone the feathering of turbines within 2.5 miles of NLEB roosts. *Id.* at p. 2. If ODNR wanted to impose such a curtailment measure, it would be reasonable to assume ODNR would have set forth that specific measure in its letter to the Board. It did not.

ODNR requires the radio telemetry data that was collected here to identify such things as home ranges and foraging data. See App. Ex. 33 at §2.4 (ODNR Study Protocols). Even had ODNR recommended the same feathering regime for the NLEB that is imposed for the IB—which it did not—that recommendation would not be supported by either the underlying science or the specific data collected here. Perhaps that is why there is no written evidence that such a recommendation was made here. TALs are issued by USFWS. USFWS—consistent with the relevant science—recognizes that if turbines within 2.5 miles of IB roosts are feathered during certain time periods, then that same feathering regime *will also protect the NLEB.* This is what is set forth in the TAL issued to Republic. All Republic is asking is that proposed Condition 26 be modified so that it is consistent with the TAL and recognized science. Condition 26 should read:

> At least 60 days prior to the first turbine becoming operational, the Applicant shall obtain a technical assistance letter from the USFWS. The technical assistance letter shall include feathering of turbines during low wind speed conditions at night during periods of risk, as described in the TAL. This documentation shall be reviewed by Staff to confirm compliance with this condition. The Applicant shall comply with the operational measures detailed within the technical assistance letter until an incidental take permit has been obtained for the project.

b) Staff and Republic agree on the modification to Conditions 33, 34 and 35.

As set forth in Republic's initial Brief, Staff has agreed with Republic's request to modify these conditions so that ODNR's definitions (set forth in the April 27, 2018 letter) is applied to the term "nesting habitat." See Staff Brief at pp. 10-11. Conditions 33, 34 and 35 should be modified as follows (shown in underline):

> (33) Construction in upland sandpiper preferred nesting habitat types, as defined by ODNR, shall be avoided during the species' nesting period of April 15 through July 31, unless coordination with the ODNR allow a different course of action.
>
> (34) Construction in northern harrier preferred nesting habitat types, as defined by ODNR, shall be avoided during the species' nesting period of May 15 through August 1, unless coordination with the ODNR allow a different course of action.
>
> (35) Construction in loggerhead shrike preferred nesting habitat types**,** as defined by ODNR**,** shall be avoided during the species' nesting period of April 1 through August 1, unless coordination with the ODNR allow a different course of action.

c) The Board should not adopt recommended Condition 40 because it is unnecessary and overly burdensome.

Staff mischaracterizes the bases for Republic's request that the Board not adopt proposed Condition 40. It is not because Dr. Kerlinger does not believe an ECP is necessary until a bald eagle is killed. It is because the proposed condition is inconsistent with federal law and is not necessary to ensure impacts to bald eagles are minimized. Republic has already performed adequate pre-construction eagle use and nest monitoring surveys in consultation with USFWS. On that note, Staff

incorrectly states that Republic has not completed a bald eagle survey since 2012. In fact, there have been eagle use and nest monitoring surveys conducted in the Republic Project area, and which were considered for the Republic Project, in 2016, 2016-2107, and 2017.[28]

More importantly, USFWS has not recommended an ECP here. Staff makes the nonsensical argument that proposed Condition 40 simply requires Republic to seek out USFWS's opinion on the need for additional surveys and an ECP. But Republic has already been in extended communications with USFWS about the Project, including in-person meetings. As Dr. Kerlinger testified, USFWS *will tell you* whether you're going to need an ECP and that a summary of a meeting between a project and USFWS would include whether an ECP had been recommended. Tr. III at pp. 736, 761-762. In all the meetings and communications between USFWS and Republic over the past many years, USFWS has *never* suggested to Republic that an ECP be obtained. Instead, the parties discussed that this was a low risk site for eagles and that a take permit was not warranted. See Ex. 1C (Am. Appl.) at Appx. E, Ex. J at Part 18 [online docket].

Finally, proposed Condition 40 is overly burdensome because it would mandate the development of an ECP if USFWS recommends one, even though federal law recognizes that an ECP is part of a voluntary process. Staff brushes this off by arguing that the "expert" recommendation of USFWS should be made mandatory. USFWS is the federal agency that enforces federal wildlife laws. USFWS developed the ECP Guidance to address the legal protections afforded eagles. See Local Residents Ex. 15 at p. ii (Eagle Conservation Plan Guidance). Federal law allows USFWS to issue permits to wind companies, authorizing incidental takes of bald and golden eagles when that take is associated with a lawful activity. *Id.* at p. iii, citing 50 CFR 22. 26-

[28] See Eagle Nest Monitoring Surveys for Em. West 2017 at App. Ex. 1C (Am. Appl,) Ex. J, Part 8 [online docket]; Large Bird and Eagle Use Surveys for Em. West 2018 at I*d.*; and Local; Residents Ex. 16 (Technical Memorandum). See, also, discussion *infra* regarding the relevancy of the Emerson West surveys to the Republic Project.

27. An ECP permit is not required; it is a voluntary process. *Id.* at iii. In evaluating an application for a permit, USFWS considers whether take is likely. 50 CFR 22.26(e)(1).

Again, USFWS has not recommended an ECP permit here. Even if had, federal law does not mandate the permit be pursued. Staff is asking the Board to second-guess the federal scheme that governs the ECP permitting process. If the federal government believed its expert agency's recommendation should be mandatory, then federal law would state such. It does not. State agencies—under Staff's own argument—are *not* the "experts" when it comes to ECPs. They should not be imposing mandates relating to federal permits where the "experts" and federal law do not.

Condition 40 is unnecessary, overly burdensome, and contrary to federal law. Republic respectfully requests that the Board not adopt it.

G. <u>The Project will not negatively impact community groundwater supplies.</u>

Republic and the Local Residents are largely in agreement with respect to the presence of karst geology and its effect on the groundwater underlying the Project Area. First, despite the Local Residents' lengthy criticism that Republic has not conducted borings and other invasive tests "to examine the geology of the Project Area," both Republic and the Local Residents already agree as to the nature of that geology: the Project Area is largely in a karst region. The Local Residents' expert witness, Ira Sasowky, believes that "at least 70% and possibly 100% of the Project Area is occupied by karst or potential karst." *Id.* at p. 2. Republic does not deny that karst features are present and perhaps prevalent in the Project Area and has identified that geology in its Amended Application. Local Residents concede that Republic "admits that about 50% of the Project Area is located within the Bellevue-Castalia Karst Plain." Local Residents' Br. at p. 28. The Staff Report likewise recognizes, as Republic set forth in its Amended Application, that eastern Seneca and Sandusky Counties are karst regions. Staff Ex. 1 (Staff Report) at p. 26. There is no dispute on this point.

Further, both Republic and Local Residents believe it is important to protect the quality and availability of the groundwater in and around the Project Area. To that end, Republic and the Local Residents agree that karstic features and their effect on groundwater will require further investigation and special consideration during Project design and construction. Republic is aware of that, has disclosed this in its Amended Application, and has set forth its intention to develop a Project design that fully identifies and accounts for karst and other geological features. App. Ex. 1C, Exhibit F, [Groundwater, Hydrogeological, and Geotechnical Report ("Geotechnical Report")].

Likewise, Republic's witness Sean McGee of Hull & Associates —whose credentials Local Residents notably did not contest before or at the hearing—testified that Republic would conduct site-specific investigations into each proposed turbine location prior to construction: "as part of the final design process, the designer would go out, hire a geotechnical firm, and drill geotechnical borings at the exact turbine locations and determine the subsurface conditions at those locations." Tr. IV at p. 824. Similarly, he testified that Republic does not plan to blindly inject grout into the bedrock as Local Residents now imply, but that "a plan of grout would part of the final design . . . the next phase of the project." *Id.* at p. 841. He testified that the final Project design, including grouting, would manage groundwater such that existing natural drainage patterns would not be modified. *Id.* at pp. 846-47.

Once the Certificate is issued and prior to construction of any wind facilities, Republic would attend a preconstruction conference and submit "a fully detailed geotechnical exploration and evaluation to confirm that there are no issues to preclude development of the facility." O.A.C. 4906-4-09(A)(2)(b)(i). Republic cannot proceed with construction until this evaluation and confirmation is submitted.

The Staff Report reaffirms that this is the correct and appropriate plan. In its Report, Staff explained that "Applicant would conduct a geotechnical drilling investigation to obtain further site-

specific detailed information and engineering properties for the soils for design and construction purposes." Staff Report, at p. 26. These efforts, Staff concluded, would "ensure that the structures would be installed in locations that are suitable based upon soil and rock properties." *Id.* Further, Staff has indicated that, even at this early stage it is apparent that Republic's Project does not pose a risk to "either surface or groundwater" in the Project Area, including the portions covered by Source Water Protection Areas, and later site-specific testing and monitoring would ensure minimal impact. *Id.* at pp. 25, 27.

Nonetheless, at this stage before the Project's final site-specific studies and designs are completed, Local Residents argue that Republic should be outright barred from "turbine construction on any site found to possess karst features" because, contrary to Staff's findings, "Republic's plans to build its turbine foundations on karst will threaten to contaminate or cut off the neighbors' well water supplies." Local Residents' Brief, at pp. 2, 41. Local Residents argue that construction of turbines and grouting, which they admit must be designed based on site-specific conditions, "will threaten to contaminate of cut off the neighbors' well water supplies." *Id.* at p. 2; see also pp. 25-41. They also speculate that construction of the Project could result in flooding if the karst features are not properly handled. *Id.* at p. 40.

Local Residents, however, have no factual basis to attack Republic's Project design or its construction plan. In keeping with the phased process set forth in the Ohio Administrative Code, they have not even been created yet. On this point, Local Residents' expert Ira Sasowksy testified that he had no knowledge of what Republic's later site-specific studies and resulting turbine designs would entail and, thus, he had no opinion on whether they would be sufficient to address his concerns regarding groundwater. Tr. VI at pp. 1192. For example, he testified:

> Q: So, at this point, you don't know how wide each turbine foundation will be, correct?

A: I do not know that. . . .

Q: Okay. And you don't know how deep each turbine foundation will be, correct?

A: Correct.

Q: Okay. And you've never observed the construction of a wind facticity, correct?

A: Correct.

* * *

Q: And this point you don't know what, if any, proposed turbine locations will involve the use of grouting, do you?

A: No, I do not.

* * *

Q: And you are not aware if a final design for each turbine site has been created, correct?

A: My understanding, from the Application, is that they would be designed based on site-specific conditions.

Id. at pp. 1197-99. He further testified that he "didn't see anything" in Republic's Application supporting the Local Residents' current implication that Republic's investigation into the geology "would be limited" to surface features and not include comprehensive invasive testing. *Id.* at p. 1210.

Nonetheless, Local Residents' argue that Republic should have conducted exhaustive testing at this early stage to affirmatively disprove every possible hazard they can now dream up. This is not consistent with the requirements set forth at O.A.C. 4906-04-08 and 4906-4-09(A)(2)(b)(i).

To this end, Dr. Sasowsky testified that despite his criticism of Republic's pre-application investigation, he had no opinion on whether the studies conducted by Republic were consistent with Republic's obligations under the Ohio Administrative Code. *Id. at* pp. 1191 and 1196. And, to the

contrary, he testified that he did not intend his opinion on the proper scope of investigations to correspond to Republic's requirements at this stage in the proceedings. *Id.* at p. 1196.

Local Residents are creating conflict where there is none. Republic does not disagree that more investigation into the area's karst geology and groundwater flow, including invasive site-specific investigations, is necessary prior to final design and construction of the Project. *See, e.g.*, Tr. V at pp. 824-47. As Dr. Sasowsky testified, the Amended Application makes clear that the final design of the Project will depend on these later and in-depth site-specific investigations. Tr. VI, at p. 1199. And, as stated earlier, Republic is not permitted to start construction until it has provided OPSB Staff with final fully detailed geotechnical exploration and evaluation to confirm that there are no issues to preclude the development of the facility.

H. Republic's Visual Impact Assessment comports with O.A.C. 4906-4-08(D)(4).

Republic has demonstrated that, consistent with all requirements of O.A.C. 4906-4-08(D)(4), it conducted and provided the Board with a thorough Visual Impact Assessment ("VIA") covering a 10-mile radius around the Project Area. App. Ex. 1C, Exhibit AA (VIA). In preparing the VIA, Applicant Witness Robinson used available GIS data and databases to identify over 430 potential visually sensitive resources, including Historic Sites, County Parks, Scenic Rivers, and Bike Routes and Trails. Tr. III at pp. 535 and 563; App. Ex. 1C, Exhibit AA, at pp. 15-19. Based upon this process of identification, EDR decided which locations to visit, visited many sites in the field, and then produced representative views and assessments from throughout the Project Area.

Left with very little potential criticism of the thorough VIA, Seneca County Park District takes issue with the VIA as it relates to just one resource, a nature preserve within the Project Area called Bowen Nature Preserve. But the Park District fails to acknowledge that the VIA specifically included and considered the entirety of the Park District, including—by name—Bowen Nature Preserve. *Id.* at p. 18. Mr. Robinson testified that he also visited the Park District's website and

used its lists of places and maps. Tr. III at p. 536. The VIA provides specific analysis of the visual impact on the Park District's nature preserves, including Bowen Nature Preserve, stating:

> The Seneca County Park District has facilities that cover approximately 2,500 acres spread out across Seneca County . . . The Seneca County Park District has 10 park facilities that cover approximately 650 acres surrounding the City of Tiffin. Within the study area, ***these include the Bowen***, Clinton, Mercy Community, Steyer, Tiffin University and Zimmerman Nature Preserves and Opportunity Park. . . These sites are located primarily within the Rural Residential/Agricultural LSZ, however similar [to] the Sandusky County Park District facilities, open views are generally limited due to intervening mature vegetation. Scenic quality and viewer sensitivity in these areas are considered to be relatively high.

App. Ex. 1C, Exhibit AA, at pp. 18-19 (VIA); emphasis added.

Additionally, when questioned about Bowen Nature Preserve, Mr. Robinson possessed information sufficient to respond with an opinion as to wind turbine visibility from Bowen Nature Preserve. Tr. III p. 540. Contrary to the Park District's claim, Bowen Nature Preserve was not ignored or overlooked. It was specifically considered and analyzed. A visit to the nature preserve was not required for the VIA to comport with O.A.C. 4906-4-08(D)(4).

With far less specificity, the Local Residents take issue with the entirety of the Project as a purported "visual blight" on the community. In support of this position, they cite the testimony of a small number of local residents who will be able to see some number of turbines from their residences. Local Residents' Brief, at pp. 50-51. Moreover, they distort information in the VIA in an apparent effort to overstate the visual impact. For example, they state "[t]urbines will be visible to the citizens in more than half of the 10-mile [study area]." Local Residents' Brief at p. 50. But the VIA does not say that. It states that approximately "54.8% of the study area could have potentially views of some portion of a wind turbine." App. Ex. 1C, Exhibit AA, at pp. 27 (VIA). This statement is very different than Local Residents' implication that more than half of citizens will see turbines from their homes. To the contrary, the VIA repeatedly confirms that visual impact

in concentrated residential areas will be minimized and that the most available views of Project turbines are not in more populous City/Village and Suburban Residential LSZs, but rather in the Rural Residential/Agricultural LSZ where the turbines are exclusively located and where homes are only widely scattered. *Id.* at pp. 9-10.

Despite the Local Governments' claims to the contrary, Republic provided an adequate and thorough Visual Impact Assessment of the 10-mile radius around the Project Area in compliance with the Board's rules.

III. CONCLUSION

Based on the foregoing as well as its Initial Brief, Republic request that the Board: (1) issue a Certificate for the Project; and (2) adopt Republic's proposed modifications to Staff's proposed Conditions.

Respectfully submitted on behalf of
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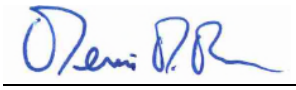
CERTIFICATE OF SERVICE

I hereby certify that the foregoing Reply Brief was served upon the following parties of record via regular or electronic mail this 13th day of January 2020.



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