

IN THE COMMONWEALTH COURT OF PENNSYLVANIA

Bethlehem Authority,	:	
Appellant	:	
	:	
v.	:	
	:	
The Zoning Hearing Board of Penn	:	
Forest Township, Penn Forest	:	
Township, Christopher Mangold,	:	
Eileen DiGregorio, Cathy O'Connell,	:	
John O'Connell, David J. Hudack,	:	
Francis W. Gola, Jeanne M. Nelson,	:	
Jon Anderson, Marjorie Anderson,	:	
Andrea Miller, Bill Toone, Margaret	:	
Toone, Iris Turney, Patricia Beltz,	:	
Christine Nilsen, Virginia Lachette,	:	
Robert Daley, Cynthia Daley, Susan	:	No. 1814 C.D. 2024
Graves, and John Cihiy	:	Argued: September 17, 2026

BEFORE: HONORABLE ANNE E. COVEY, Judge
HONORABLE STACY WALLACE, Judge
HONORABLE MATTHEW S. WOLF, Judge

OPINION NOT REPORTED

MEMORANDUM OPINION BY
JUDGE COVEY

FILED: October 13, 2026

The Bethlehem Authority (Authority) appeals from the Carbon County Common Pleas Court's (trial court) December 31, 2024 order denying the Authority's land use appeal and affirming the Zoning Hearing Board (ZHB) of Penn Forest Township's (Township) remand decision (Remand Decision). The Authority presents one issue for this Court's review: whether the ZHB committed an error of law or abused its discretion by denying the Authority's special exception application (Application). After review, this Court affirms.

On February 5, 2018, Atlantic Wind, LLC (Atlantic Wind),¹ an Oregon limited liability company and wholly owned subsidiary of Iberdrola Renewables, submitted the Application to the ZHB for a proposed Wind Turbine Project (Project), consisting of up to 28 wind turbines to be built on the Authority's property located north and south of Hatchery Road, also known as Reservoir Road, within the Township (Project Area).² The Project Area is made up of 15 tax parcels, most of which are in the Township's R-1 Rural Residential Agricultural Zoning District (R-1 District), and the remainder are in the Township's R-2 Low Density Residential Zoning District. All 28 wind turbines would be located in the R-1 District. In the Application, Atlantic Wind requested permission to construct on the Project Area up to 28 wind turbines and all pertinent infrastructure including, but not limited to, permanent meteorological towers, electrical substations, overhead and underground electrical and data cables, access roads, and an emergency service station/operations and safety building.

Atlantic Wind also sought an interpretation of the Township Zoning Ordinance of 2011 (Zoning Ordinance) that the permanent meteorological towers are: permitted as an integral part of the wind turbine use and necessary for the operation of the wind energy conversion system; or permitted as an accessory use or structure that is customary and incidental to the wind turbine use and/or permitted as an accessory structure to the wind turbine use pursuant to Section 402.A.54(n) of the Zoning Ordinance which permits accessory electrical facilities. Alternatively, Atlantic Wind requested a special exception pursuant to Section 105.B of the Zoning

¹ On January 1, 2022, Atlantic Wind assigned all rights, title, and interests in its Application to the Authority. *See* Reproduced Record at 1655a; *see also* Section 107 of the Pennsylvania Municipalities Planning Code, Act of July 31, 1968, P.L. 805, *as amended*, 53 P.S. § 10107 (defining *applicant* as the landowner or developer who has filed an application or its "heirs, successors[,] and assigns").

² The Township is a township of the second class located in Carbon County, Pennsylvania.

Ordinance to permit the permanent meteorological towers as a use not specifically provided for (and not prohibited) in any of the Township's Zoning Districts.

Pursuant to the Pennsylvania Municipalities Planning Code,³ the ZHB advertised by public notice that the first hearing on Atlantic Wind's Application would take place on March 1, 2018, at the Township Volunteer Fire Company No. 1, 1387 State Route 903, Jim Thorpe, Pennsylvania. The ZHB held hearings on March 1, April 4, April 23, May 22, June 5, July 16, July 23, August 13, September 10, October 2, October 9, and October 30, 2018. By January 30, 2019 decision and order, the ZHB denied the Application, concluding: (1) Atlantic Wind failed to meet its burden of establishing by credible evidence that the Application complies with all applicable requirements of the Zoning Ordinance, since the proposed Project would constitute a second principal use within a residential district in violation of Section 802.B.2 of the Zoning Ordinance and the proposed permanent meteorological tower would not qualify as an accessory use or would be considered a second principal use within that residential district; and (2) Atlantic Wind failed to present evidence and to sustain its burden that the Project would comply with Section 402.A.54.p of the Zoning Ordinance.

Atlantic Wind and the Authority separately appealed to the trial court. On May 29, 2020, the trial court affirmed the ZHB's order. Atlantic Wind and the Authority appealed to this Court. On January 12, 2022, this Court reversed the portions of the trial court's order upholding the ZHB's decision denying the special exception as a second principal use and denying approval for the permanent meteorological tower. *See Atlantic Wind LLC v. Zoning Hearing Bd. of Penn Forest Twp.* (Pa. Cmwlth. Nos. 585, 591 C.D. 2020, 20, 242 C.D. 2021, filed Jan. 12, 2022). This Court further vacated the trial court's order and remanded the matter to the trial

³ Act of July 31, 1968, P.L. 805, *as amended*, 53 P.S. §§ 10101-11202.

court for remand to the ZHB to make findings of fact and conclusions of law regarding which metric applies to measure the Project's noise level pursuant to Section 402.A.54.p of the Zoning Ordinance and the basis therefor, and whether the Project would comply with the Zoning Ordinance. *See id.*

On February 22, 2023, the ZHB issued the Remand Decision, wherein it concluded that the Lmax metric applied, set forth 96 findings of fact and 8 conclusions of law, and determined that the Project would not comply with the Zoning Ordinance. The Authority appealed to the trial court. On December 31, 2024, the trial court denied the Authority's appeal and affirmed the ZHB's Remand Decision. The Authority appealed to this Court.⁴

The Authority argues that the ZHB erred by concluding that the Zoning Ordinance requires the use of the Lmax metric and denying the Application based on predicted noncompliance with the Lmax metric. The Authority further retorts that the Lmax metric is not the applicable industry standard as required by the Zoning Ordinance. The Township rejoins that Atlantic Wind had the obligation to both present evidence and sustain its burden of persuasion that audible sounds from the wind turbines shall not exceed 45 A-weighted decibels, as measured at the exterior of an occupied dwelling on another lot. The Township asserts that according to Atlantic Wind's expert, using the Leq matrix, the level of sound at the nearest

⁴ Appellate review of a decision of a zoning hearing board, where the trial court does not take any additional evidence, is limited to determining whether the [zoning hearing] board abused its discretion or committed an error of law. *Twp. of Exeter v. Zoning Hearing Bd. of Exeter Twp.*, . . . 962 A.2d 653 ([Pa.] 2009). An abuse of discretion occurs where the [zoning hearing] board's findings are not supported by substantial evidence. *Id.* Substantial evidence is such relevant evidence that a reasonable person would accept as adequate to support the conclusion reached. *Id.*

Friends of Lackawanna v. Dunmore Borough Zoning Hearing Bd., 186 A.3d 525, 531 n.6 (Pa. Cmwlth. 2018).

occupied dwelling would be 43 A-weighted decibels; however, according to Atlantic Wind's expert, to predict the maximum level of sound which would be generated by the Project after it is built and operational, one must add 11 decibels to the Leq average. Thus, the Township emphasizes that, according to Atlantic Wind's expert, the maximum sound level at the exterior of the nearest occupied dwelling would be 54 A-weighted decibels (43 + 11), which clearly exceeds 45 A-weighted decibels. Intervenor/Objectors⁵ retort that Section 402.A.54.p of the Zoning Ordinance is a *shall not exceed* ordinance, and Atlantic Wind's contention that the *average* sound level is below the maximum level allowed does not demonstrate compliance with the Zoning Ordinance. Intervenor further counter that assuming, *arguendo*, that the Zoning Ordinance calls for an average sound level, Atlantic Wind's failure to include the variabilities/margins of error in its computations demonstrates that it has nevertheless failed to establish that the projected average sound level complies with the Zoning Ordinance's noise limit restriction.⁶

Initially, Section 402.A.54 of the Zoning Ordinance provides:

Wind turbines, [o]ther than is Allowed for Wind Turbine as an Accessory Use by Section 403 [of the Zoning Ordinance, Ord. § 403] (This section regulates, among other items, a wind turbine as a principal use or in most cases [two] or more wind turbines per lot).

. . . .

f. The design of the Wind Energy Facility shall conform to applicable industry standards, including those of the American National Standards Institute. The [a]pplicant shall submit certificates of design compliance obtained by the equipment manufacturers from

⁵ By June 30, 2023 order, the trial court granted intervenor status to 20 identified objectors. See Intervenor Br., Appendix 1 at 1-3.

⁶ By January 29, 2026 Order, this Court precluded the ZHB from filing a brief and participating in oral argument due to its failure to file a brief pursuant to this Court's September 19, 2025 Order.

Underwriters Laboratories, Det Norske Veritas, Germanischer Lloyd Wind Energies, or other similar certifying organizations.

....

p. The audible sound from the wind turbine(s) shall not exceed 45 A[-]weighted decibels, as measured at the exterior of a[n] occupied dwelling on another lot, unless a written waiver is provided by the owner of such building.

Ord. § 402.A.54 (emphasis added).⁷

At the outset, relative to the Authority’s argument that the Zoning Ordinance requires use of a metric that conforms to applicable industry standards, Section 402.A.54.f of the Zoning Ordinance expressly applies to “[t]he design of the Wind Energy Facility[,]” Ord. § 402.A.54.f, not “[t]he audible sound from the wind turbine[.]” Ord. § 402.A.54.p. Accordingly, the Zoning Ordinance is silent as to which metric should be used to measure the audible sound from the wind turbines. *See* Ord. § 402.A.54.p.

At the Application hearings, professional acoustical engineer, Mark Bastasch (Bastasch), testified on Atlantic Wind’s behalf that he conducted predictive modeling for the Project and issued his February 27, 2018 report, in which he concluded that the Project’s sound levels will comply with Section 402.A.54.p of the Zoning Ordinance without the need for waivers. *See* Reproduced Record (R.R.) at 2046a-2048a. According to Bastasch, because the Zoning Ordinance did not specify the use of a particular metric to establish compliance with Section 402.A.54.p of the Zoning Ordinance, he employed the Leq metric. *See* R.R. at 2046a.

Bastasch determined that there are zero occupied dwellings at the 45 and 44 A-weighted decibels, 1 at 43 A-weighted decibels, 6 at 42 A-weighted

⁷ *See* <https://pennforesttownship.org/wp-content/uploads/2021/05/ZONING-BOOK-3.pdf> (last visited Oct. 9, 2026).

decibels, 16 at 41 A-weighted decibels, and 8 at 40 A-weighted decibels. Accordingly, he concluded that “[t]he [] noise level that we’re able to predict based on the available data and the typical data for a wind project using the vendor information and using the calculation means and methods for engineering and evaluations does not exceed 45 A-weighted decibels.” R.R. at 169a. Bastasch acknowledged that there is a plus or minus one error rate on his testing, but clarified that his prediction method was found in the Massachusetts Clean Energy Center (MASSCEC) study not to underpredict sound levels. *See* R.R. at 170a-171a.

Robert W. Rand (Rand) testified on Objectors’ behalf as an expert in wind turbine acoustics and noise measurements. *See* R.R. at 801a. He explained that the Leq metric measures average sound levels, while Lmax measures the highest noise level. *See* R.R. at 805a. Rand reviewed Bastasch’s report and testimony and opined that the Leq metric is not a proper metric to evaluate a *shall not exceed* noise ordinance, since the average may report a number lower than the actual noise created by the source. *See* R.R. at 805a-806a. Rather, based upon his experience, Rand opined that Lmax is the proper metric to assess the Project’s noise level in the context of a *shall not exceed* noise ordinance. *See id.*

Regarding which metric application must be applied to determine compliance with Section 402.A.54.p of the Zoning Ordinance, Rand declared:

It doesn’t say Lmax in the [Zoning O]rdinance. What I’m providing is an opinion, professional opinion, that if you are to go out and measure a noise which had been permitted -- and I’m not saying what equipment may have been permitted, any equipment -- you hold up a meter and you’re evaluating against [sic] shall not exceed, you have to look at the Lmax.

. . . .

. . . . If you look at Leq and Lmax, Leq clearly will not provide the range of sound levels needed to assess against shall not exceed. Leq could be any number of decibels

below the Lmax. And in the case of Michigan^[8] and the testimony and data provided from the [MASS]CEC study, the Lmax can be as high as 11 [A-weighted decibels] over the Leq. So you have to use Lmax.

R.R. at 896a-897a. Rand testified that all of his opinions were rendered with a reasonable degree of scientific certainty. *See* R.R. at 841a.

Atlantic Wind also presented certified noise control engineer, Robert D. O'Neal (O'Neal), on rebuttal. *See* R.R. at 1290a-1438a. O'Neal reviewed Section 402.54.A.p of the Zoning Ordinance, Bastasch's and Rand's testimony, and Bastasch's February 27, 2018 report. O'Neal observed that Section 402.54.A.p of the Zoning Ordinance specifies that the Township's wind turbine sound limit is 45 A-weighted decibels, but does not state a particular metric by which the sound limit must be measured. *See* R.R. at 1366a. O'Neal described that acoustics experts like himself will "read [an ordinance] like this that does not specify what the metric is, . . . [and] would use [their] professional experience in terms of what [they]'re evaluating. So for a wind turbine [they will] evaluate it . . . with respect to the equivalent sound level or the Leq." R.R. at 1307a-1308a.

O'Neal concluded with a reasonable degree of professional certainty that Bastasch's modeling accurately demonstrated that Atlantic Wind has the ability to comply with and not to exceed the 45 A-weighted decibel Zoning Ordinance standard, and that the Project sound levels will not exceed 45 A-weighted decibels at any identified occupied dwelling. *See* R.R. at 1349a.

"The [ZHB] is the arbiter of credibility and weight to be afforded the evidence and [courts] may not engage in fact[-]finding or disturb the [ZHB's] credibility determinations on appeal." *Allen Distrib. v. W. Pennsboro Twp. Zoning*

⁸ This reference is to a case wherein the company that Atlantic Wind's expert, Robert D. O'Neal, is a managerial principle argued that the Leq metric applied in reviewing a zoning ordinance virtually identical to the Zoning Ordinance herein. However, the zoning board in that case found that the Lmax metric applied, and the appellate court affirmed.

Hearing Bd., 231 A.3d 90, 102 (Pa. Cmwlth. 2020). Further, “[a] zoning [hearing] board is free to reject even uncontradicted testimony it finds lacking in credibility, including testimony offered by an expert witness[,] [and] [i]t does not abuse its discretion by choosing to believe the opinion of one expert over that offered by another.” *Taliaferro v. Darby Twp. Zoning Hearing Bd.*, 873 A.2d 807, 811 (Pa. Cmwlth. 2005) (citations omitted).

In its Remand Decision, the ZHB found, relative to Rand:

44. [Objectors] presented the testimony of [Rand], [Acoustical Society of America (]ASA[)], [the Institute of Noise Control Engineers (]INCE[)], . . . who was accepted as an expert in the area of acoustics and noise measurement[.] (N[otes of] T[estimony] (N.T.) 7/16/[20]18 at 24). Rand did not appear at the hearing[,] but his testimony was offered by way of report and the ZHB relies upon his testimony to reach its conclusions. **The ZHB finds that his testimony is more credible than that of [Atlantic Wind’s] witnesses concerning which standard of measurement, Leq or Lmax, is to be used in interpreting the [Zoning O]rdinance and in the decibels that the [P]roject will generate based upon [Atlantic Wind’s] expert testimony.** Rand’s C[urriculum] V[itae] was admitted into evidence as Objectors’ Exhibit “8” and he authored a report (Rand Report) with regard to the testimony and report of [Bastach, the sound modeling consultant retained by Atlantic Wind. [Rand’s R]eport was admitted as Objectors’ Exhibit “10”. [Rand is an independent acoustic investigator and a Member of the [INCE] since 1993 and a Member of the [ASA] with over [38] years of experience providing environmental and technical consulting services to power generation, commerce, industry and communities. (Rand Report at 24 and [7/]16[/]2018 N.T. at 11)[.]

Specifically, [Rand’s wind turbine experience dates from 2009 with investigations [of sound and infrasound pressure pulsations and community noise impact assessment for industrial wind turbines at multiple facilities. Significant testing reported in the literature

includes independent peer-reviewed investigations in Falmouth, Massachusetts in April 2011, and the Cooperative Measurement Study in Shirley, Wisconsin in December 2012. (Rand Report at 24)[.]

45. **The [ZHB] finds that Rand’s report is credible that the sound level would exceed 45 decibels at the exterior of occupied dwellings on other lots.** (N.T. 7/16/[20]18 at 26-29, 49). **The [ZHB] finds that Rand’s report is credible that the Lmax metric can and is used to accurately measure the sound generated by wind turbines.** (N.T. 7/16/[20]18 at 29-30, 32, 33-34, 91, 100-101, 108, 109, 116, 117). **The [ZHB] finds that Rand used “established conservative adjustments” to calculate the Lmax from the Leq data provided by [] Bastasch** (N.T. 7/16/[20]18 at 122-123, 127).

46. **Rand testified credibly that a reasonable rule of thumb to convert a sound level using the Leq metric to a sound level using the Lmax metric is to add eleven (11) decibels to the Leq measurement.** (N.T. 7/16/[20]18 at 40-41, 48-49, 112-113, 115, 120; N.T. 10/9/[20]18 at 93-94, Exhibit 0-10 [at] 8, 19).

47. **Rand testified credibly that the variance used in the [International Organization for Standardization method (][IOS[]] 9613-2 standard is $\pm$ three (3) decibels.** (N.T. 7/16/[20]18 at 42-43, 82-83, 109, Exhibit 0-10 [at] 9-10[.].)

48. The measurement of decibels is logarithmic in nature, and not linear. (N.T. 7/16/[20]18 at 41, 100).

49. **Rand testified credibly that the Zoning []Ordinance provides for a “shall-not-exceed” standard and not an average.** (N.T. 7/16/[20]18 at 27-28, Exhibit 0-10, at I).

50. **Rand testified credibly that the appropriate metric for a “shall-not-exceed” [Zoning O]rdinance is the Lmax metric.** (N.T. 7/16/[20]18 at 27-28, Exhibit 0-10, at 1)[.]

51. Rand testified credibly that the Leq metric is not responsive to a “shall-not-exceed” ordinance because it

measures an average and “the average may report a number which is lower than the actual range of noise levels that are created by the noise source.” (N.T. 7/16/[20]18 at 28-29, Exhibit 0-10, at I).

52. Rand testified credibly that noise reduction methods suggested by Atlantic Wind may not reduce the loudness of the wind turbines “under real world conditions.” (N.T. 7/16/[20]18 at 56, 97-100).

Remand Dec. at 9-11 (emphasis added).

The ZHB found, relative to Bastasch:

53. [] Bastasch, an acoustical engineer, was called to testify on behalf of Atlantic Wind.

54. [] Bastasch described an acoustical engineer as one who looks at the acoustical output of projects and designs sound control measures or evaluates sound control whether it’s from outdoor sources such as emergency generators, power plants, or indoor facilities dealing with [heating, ventilation, and air conditioning] and other sources. ([3/]1[/]2018 . . . N.T. at 143).

55. [] Bastasch has testified with respect to wind projects for Atlantic Wind and for other applicants dozens of times and for Atlantic Wind specifically on the order of a dozen times[.] (*Id.* at 160-161).

56. [] Bastasch prepared a Technical Memorandum [(Memorandum)] entitled “Penn Forest Wind Project Sound Modeling” which was admitted at [Atlantic Wind’s] Exhibit “A-8.”

57. [] Bastasch prepared his Memorandum based upon the Vestas 136 model. (*Id.* at 151).

58. [] Bastasch acknowledged that turbine technology is ever changing (Exhibit “AB” at 3) and that the turbine model may change. ([3/]1[/]2018 N.T. at 163).

59. [] Bastasch modeled and predicted the projected sound level using the Leq metric of sound measurement,

which measures the average sound level over time. (*Id.* at 164).

60. In his [] Memorandum, [] Bastasch stated that [Section] 402.A.54[p] of the [Zoning] Ordinance does not specify the metric to be used. (Exhibit “A-8” at 1).

61. He also testified that the Leq is the most common metric and the basis for the only standard available to assess wind turbine sound levels, International Electrotechnical Commission [] standard 61400-11 and that his assessment is necessarily based on the Leq metric. (*Id.*).

62. When asked on direct examination about the Lmax metric of sound measurement, which measures the highest sound level over a period of time, [] Bastasch testified that the vendors do not provide any data that would allow one to evaluate an Lmax criteria. ([3/]1[/]2018 N.T. at 156).

63. [] Bastasch said, based upon the Leq metric of sound measurement, that the predicted sound levels do not exceed 45 [A-weighted decibels] at the exterior of any occupied building. (*Id.* at 149 and Exhibit “A-8” at 3).

64. **The [ZHB] finds that it is disingenuous that it appears that vendors do not provide any data using the Lmax metric.**

65. When asked what the error rate on his testing is, [] Bastasch replied that a type one sound level meter would be on the order of plus or minus one. ([3/]1[/]2018 N.T. at 170, 171)[.] When asked what the error rate was on the model that he used in predicting the sound levels in [the] Township, [] Bastasch replied[:] “The prediction method that we use using these parameters was found to not underpredict in studies conducted on behalf of the State of Massachusetts.” (*Id.* at 171).

66. When asked whether he is aware of situations where the number that [was] predicted by the model has been exceeded, [] Bastasch replied[:] “Yes. There have been complaints.” (*Id.* at 175).

Remand Dec. at 11-13 (bold emphasis and italics added).

The ZHB found, relative to O’Neal:

67. [] O’Neal was called by Atlantic Wind in the rebuttal phase of its case. He had previously testified in Atlantic Wind’s Application #1 at the Carbon County Courthouse. ([10/]9[/]2018 . . . N.T. at 11). He was offered as an expert in sound modeling and acoustics. (*Id.* at 112). When he testified he was a managing principal at Epsilon Associates, Inc. [Epsilon], a Massachusetts environmental engineering consulting firm. (*Id.* at 7-8)[.]

68. [] O’Neal did not author a report with regard to this matter.

69. [] O’Neal testified that the term “shall not exceed” in [Section] 402.A.54[p] of the [Zoning] Ordinance did not suggest to him the metric by which the 45 [A-weighted decibel] limit is to be determined. (*Id.* at 22). **According to [] O’Neal, Leq is not a standard - with regard to wind turbines.** It is the most common metric. (*Id.* at 76). **The [ZHB] finds this point important and find[s] O’Neal credible on this issue.**

70. He was familiar with the Les Bloomberg paper, **a comprehensive study of 491 noise regulations across the United States found that the Leq is rarely used.** When asked whether that was what Les Bloomberg concluded, [] O’Neal answered “[t]hat’s what he concluded.” (*Id.* at 77)[.]

71. On direct examination, [] O’Neal testified that Leq is not an average. (*Id.* at 25)[.]

72. On cross-examination, however, [] **O’Neal confirmed that Leq is an integrated energy average.** (*Id.* at 150)[.]

73. [] **O’Neal also confirmed that Lmax is the instantaneous sound level during a given time period.** (*Id.* at 84)[.]

74. [] O'Neal agreed with [] Bastasch's conclusion that the actual facility noise will not exceed 45 [A-weighted decibels]. (*Id.* at 52). The [ZHB] finds this testimony not credible.

75. [] O'Neal repeated that [] Bastasch stated that he used a five-minute average in his [] Memorandum with regard to the [A]pplication presently before the ZHB. (*Id.* at 70-71). However, when presented with a copy of [] Bastasch's [] Memorandum, [] O'Neal testified as follows:

[]Q. [Bastasch] doesn't say that that's what he used. He does not say that he used a five-minute Leq sound, does he?

A. You're right.[]

(*Id.* at 72)[.]

76. [] O'Neal testified that if the sound level exceeded the 45 [A-weighted decibel] limit, the operator has control over the turbines and can regulate them. ([*I*]d. at 53-54)[.]

77. On cross-examination, [] O'Neal conceded that the operators do not monitor the sound generated by the wind turbines[.] (*Id.* at 101)[.]

78. [] O'Neal acknowledged that in [a] 2017 Michigan case in which Epsilon was involved:

(i) the [zoning o]rdinance sound standard was the same as that in [the] Township, a not to exceed standard;

(ii) [] O'Neal's company argued in that Michigan case that the L[eq] was the proper method to use -

using the same arguments that he is using at [the] Township;

(iii) the **Michigan** equivalent of the . . . Township ZHB ruled that the L[max] was the proper method to be used based upon the [zoning] [o]rdinance that was at issue; and []

(iv) the appellate court affirmed the local level's ruling. (*Id.* at 86-90).

79. [] O'Neal confirmed that the MASSCEC Study concluded that the L[max] post-construction

measurements of wind turbine sound ranges 6 [decibels] to 11 [decibels] greater than the L[eq]. [] O’Neal’s colleagues, referencing the 2016 MASSCEC Study, added 11 [decibels] to the L[eq] computation when testifying on behalf of the wind company in the 2017 Michigan case. (*Id.* at 92-93)[.]

80. [] O’Neal, called as a rebuttal witness, never rebutted or even discussed [] Rand’s testimony regarding [] Bastasch’s failure to disclose or include in his calculation the variabilities and uncertainties in the standard algorithm he used and in the IOS 9613-2 itself.

Remand Dec. at 13-16 (bold emphasis and italics added).

Based on its findings of fact, the ZHB concluded:

1. The ZHB concludes that [Section] 402.A.54.p [of the Zoning Ordinance] is a “shall-not-exceed” standard.
2. The ZHB concludes that Lmax measures the maximum sound level during any given time period.
3. The ZHB concludes that [Section] 402.A.54.p [of the Zoning Code] is to be construed using Lmax.
4. The ZHB concludes that Leq measures the average sound level.
5. The ZHB concludes that [Atlantic Wind] has failed to sustain its burden of proof since it failed to identify the exact wind turbine equipment it would be installing.
6. The ZHB concludes **without testimony concerning the exact type of equipment of wind turbine equipment [sic] and the noise generated therefrom it is conjecture and not adequate proof as to what the sound levels the equipment generates.**
7. The ZHB concludes that it finds that Rand is more credible than the witnesses presented by [Atlantic Wind].
8. The ZHB concludes that **even if the appropriate measure of sound** that [Section] 402.A.54.p [of the Zoning Ordinance] requires **were Leq, the [P]roject does not comply** with [Section] 402.A.54.p [of the Zoning

Ordinance] **because** based on Rand's credible testimony that **adding 11 decibels to the Leq data** of [Atlantic Wind's] experts **would yield the sound level at the exterior of an occupied building of another lot to be as high as 57 A-weighted decibels.**

Remand Dec. at 24-25 (emphasis added).

In accordance with this Court's January 12, 2022 Order, the ZHB made findings of fact and conclusions of law supporting its use of the Lmax metric to measure the Project's noise level pursuant to Section 402.A.54.p of the Zoning Ordinance and the basis therefor, and concluded based thereon that the Project would not comply with the Zoning Ordinance. Because the ZHB's findings are supported by substantial evidence, this Court holds that the ZHB did not abuse its discretion. *See Friends of Lackawanna v. Dunmore Borough Zoning Hearing Bd.*, 186 A.3d 525 (Pa. Cmwlth. 2018). Accordingly, this Court affirms the trial court's order.

For all of the above reasons, the trial court's order is affirmed.

ANNE E. COVEY, Judge

Judge Fizzano Cannon did not participate in the decision in this matter.

IN THE COMMONWEALTH COURT OF PENNSYLVANIA

Bethlehem Authority,	:	
Appellant	:	
	:	
v.	:	
	:	
The Zoning Hearing Board of Penn	:	
Forest Township, Penn Forest	:	
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O R D E R

AND NOW, this 13th day of October, 2026, the Carbon County
Common Pleas Court’s December 31, 2024 order is affirmed.

ANNE E. COVEY, Judge