STATE OF NEW YORK
PUBLIC SERVICE COMMISSION
NEW YORK STATE BOARD ON ELECTRIC GENERATION
SITING AND THE ENVIRONMENT

Case No. 16-F-0559

In the Matter of the Application of
Bluestone Wind LLC and Public Need
Pursuant to Article 10 to
Construct a Wind Energy Project.

REBUTTAL TESTIMONY OF: THOMAS SALO

DELAWARE-OTSEGO AUDUBON SOCIETY RESEARCH COMMITTEE CO-CHAIR
West Burlington, New York

Q: Please state your name, employer and business address?

A: Thomas E. Salo, self-employed, 5145 State Highway 51, West Burlington, NY 13482.

Q: Where can your qualifications and educational history be found?

A: My education, qualifications and experience are detailed in my direct testimony.

Q: Have you previously testified before the New York State Public Service Commission or The New York State Board on Electric Generation Siting and the Environment (Siting Board) on electric generation?

A: Yes. I submitted direct testimony for this Application.

Q: What is the purpose and scope of your rebuttal testimony in this proceeding?

A: To comment on behalf of the Delaware-Otsego Audubon Society, Inc. (DOAS) on the testimony of Tom Bell and Daniel Rosenblatt of the New York State Department of Environmental Conservation, hereafter referred to as Bell-Rosenblatt. I will cite the testimony of Jeremy Rosenthal of NYSDPS but this is not a rebuttal of his testimony.

Q: What do you intend to address in the Bell-Rosenblatt testimony?

A: I will question some of their findings, determinations and recommendations. I will also address the data sources they used in developing their testimony, and available data they did not use, or possibly did not cite.

Q: DOAS conducted 384 hours of independent eagles studies in the Bluestone project area and documented 578 eagle observations. Does the Bell-Rosenblatt testimony consider this body of data?

A: It is not apparent they did. If so, they did not give DOAS data much consideration or weight.

Q: Why do you believe Bell-Rosenblatt did not adequately consider DOAS data?

A: Bell-Rosenblatt do not list DOAS survey data as a source in their testimony. The DOAS organization is listed in their references but there is no mention of specific survey reports, or of the mapping done at the request of NYSDEC, informing their determinations. The DOAS GIS maps show intensive use by both species of eagle in the area around the Sanford hamlet and adjacent ridges.

After receiving an intervenor funding award in October 2017 to conduct independent eagle surveys in the project, DOAS contacted NYSDEC to inquire what data we could provide to assist

in their assessment of risk for this project. In a conference call on 20 October 2017 with Brianna Denoncour of NYSDEC, Ms. Denoncour asked DOAS to map flight paths for 4 species of raptor - Exhibit TES 2. This included both species of eagle and 2 other raptor species of concern: Northern Harrier and Peregrine Falcon. DOAS field maps have been made available to all parties through a shared web link. In response to exceptionally high numbers of eagle observations, flight paths from the winter-spring surveys were entered into a Geographical Information System (GIS). Those GIS maps are included in our 2018 and 2019 survey reports. The maps show eagle flight paths broken out into various cohorts: by species, migratory status, height of flight – Exhibits TES 4, TES 3.

Bell-Rosenblatt make statements about eagle directional movements that are contrary to DOAS findings and maps created by DOAS for NYSDEC.

We do not know if Bell-Rosenblatt failed to cite the DOAS survey data, or if they chose not to address it. However, their testimony is in sharp contrast to the testimony of Jeremy Rosenthal of NYSDPS who extensively references DOAS survey information. It is clear from the testimony of Mr. Rosenthal that he considers these data valuable. They were acquired at considerable expense and effort, and in part at the specific request of NYSDEC. They should inform NYSDEC's risk assessment and recommendation.

Q: DOAS has submitted a report on how vegetation impacts visibility at eagle survey points used by Western EcoSystems Technology, Inc. (WEST). Do Bell-Rosenblatt express any concerns over how visibility issues affected eagle counts in the WEST data?

A: No. DOAS has raised the issue of visibility since first investigating potential survey sites in October 2017. Those problems are described in our fall 2017 survey report – Exhibit TES 2 - and in subsequent filings.

Q: WEST surveys were designed to gather data for the USFWS Bayesian risk model. These USFWS take estimates are provided in the Net Conservation Benefit Plan (NCBP) sections 4.2.3 and 4.3.3,and indicate very high numbers of eagles that would be taken over the life of the project. NYSDEC signed the protective order on 5 June 2019 allowing access to these protected materials. Bell-Rosenblatt should have had access to the NCBP for the 2 days prior to the 7 June 2019 filing deadline. Do Bell-Rosenblatt reference, or in any way discuss the Bayesian model estimates contained in the NCBP, or the dramatic difference between those Bayesian numbers and the lower numbers being submitted for the state application?

A: No. Admittedly, the Bayesian model take estimates are difficult to find in the NCBP. They would be easy for anyone to

miss. They are also calculated on a per-year basis. The low numbers are presented as whole numbers for the 30 year life of the project.

Q: Bell-Rosenblatt note Golden Eagle is "rare in winter in appropriate habitat." (page 7, line 15) Based on your knowledge of Golden Eagles in New York, do you agree?

A: Yes.

Q: Do Bell-Rosenblatt reference or acknowledge that record numbers and rates of wintering/non-migrant Golden Eagles were documented by DOAS in the project in February and March?

A: No.

Q: Why should the numbers of Golden Eagles observed in the project area have been addressed by Bell-Rosenblatt?

A: Bell-Rosenblatt speak for the Department on Endangered and Threatened Species: "*As Wildlife Biologists, we assist in the programmatic oversight for the State's statutory and regulatory Threatened and Endangered (T&E) Species programs…….....The purpose of our testimony is to provide an overview of the State's T&E species program, and specifically, how State regulations and responsibilities regarding the protection of wildlife should be applied to assessing, avoiding, minimizing, and mitigating the*

impacts of wind energy projects on BAEA and GOEA." (page 2, lines 1-2, page 3, lines 9-12)

Golden Eagle presence in the project is exceptional. Similar findings by DOAS in 2018 and 2019 suggest the habitat is exceptional. The testimony of Jeremy Rosenthal of NYSDPS states "*The discovery of a resident Golden Eagle population by the DOAS report calls into question the Applicant's assertions, and the associated risks to Golden Eagles from the Project.*" (page 8, lines 12-15) The NYSDEC biologists charged with addressing concerns about Threatened and Endangered Species in this proceeding do not even address the magnitude of DOAS findings. In their testimony, Bell-Rosenblatt cite WEST studies and telemetry data but ignore DOAS data showing record numbers and rates of observation of an Endangered Species they describe as "*rare in winter*".

Golden Eagles are Bell-Rosenblatt's responsibility. The exceptional, unprecedented numbers of an Endangered Species known to be vulnerable to impacts from wind turbines residing in the project area should have been addressed in their testimony.

Q: According to Bell-Rosenblatt "*Based on the evaluation of the materials provided by the Applicant and the Miller (2019) risk assessment.....turbines likely to result in the take of eagles.....are T13, T22, T23, T25, T26, T27, T29, T31, T32 and T40.*" (page 15, line 20 to page 16, line 1) What did Dr.

Miller's analysis of risk of individual turbines address – Exhibit TAM 3?

A: Dr. Miller examined risk of individual turbines to spring migrating Golden Eagles.

Q: Did Dr. Miller's report address migrating Bald Eagles, non-migrant Bald Eagles or non-migrant Golden Eagles?

A: No.

Q: Bell-Rosenblatt note, in addition to Dr. Miller, "*the Applicant*" provided material to make some of the determination of risk from individual turbines. What other information is available to determine high risk of individual turbines?

A: Tricia Miller PhD provided GPS eagle tracks from a single stopover Golden Eagle showing use of the turbine 25, 26, 29 ridge on multiple occasions. This is found in the report on seasonality of Golden Eagles – Exhibit TAM 1 - and is cited by Bell-Rosenblatt. WEST surveys may have provided some data but the Bayesian Model design seems to preclude detailed documentation of eagle use at turbine sites. WEST surveys sampled the project area. They were not intended to observe behavior near turbine sites, or much beyond their 800m limits. In contrast, DOAS surveys conducted for long periods in a limited area provide a high level of detail on eagle use but only for a very limited number of turbine sites.

Those with access to confidential materials could examine WEST maps in the Bluestone Eagle Use Surveys – Third Year Supplement dated 29 May 2019 and compare them to DOAS mapping in DOAS Exhibit TES 4 to understand the difference in how different survey types could provide different levels of information on eagle use at turbine sites.

Observational data used to address risk at individual turbine sites is incomplete. Most sites are outside WEST's 800m survey range. Many or most were out of sight of WEST surveyors. Any risk assessment of individual turbine sites needs to consider that most turbine sites were not in view of surveyors and cannot be surveyed from the ground due to the forested landscape.

Q: Bell-Rosenblatt acknowledge high eagle use around turbines 25, 26 and 29 based upon heavy use by one tracked eagle, and WEST surveys. Does DOAS data support the assertion that these turbines are high risk?

A: Definitely. If Bell-Rosenblatt viewed DOAS maps, they would have reinforced concerns about these turbines. Turbines 25, 26 and 29 are a major concern. However, there are many sites for which no information is available that may also pose similar risks.

Q: Could the visibility of turbine sites 25, 26 and 29 from WEST survey points affect the determination of risk being discussed?

A: Certainly. Turbine sites 25 and 26 are well seen from point 15. That survey point has the best visibility of all survey points based on different analyses. It is the site DOAS used in 2018 and 2019. Turbine site 25 is also well seen from survey point 25. Turbine site 29 is just out of sight of survey point 15 but can be seen from that location if the surveyor moves a short distance. A number of DOAS eagle flight paths are truncated just short of turbine site 29 due to an obstruction of trees. Some flight paths are shown through the T29 location because the surveyor walked across the road to continue tracking the eagle.

Q: Bell-Rosenblatt state "*The burden is on the applicant to propose and accomplish effective and successful minimization and mitigation. Based on data on eagle occurrence across the Project area, avoidance could be achieved by the removal of turbines that are likely to result in the take of eagles.*" (page 15, lines 17-20) Do Bell-Rosenblatt recommend specific turbines be removed to achieve avoidance of eagle take?

A: Bell-Rosenblatt discuss high risk turbine removal as a method but make no recommendation to remove specific turbines.

Jeremy Rosenthal, in his testimony for NYSDPS, responds to the question "*What turbines would you recommend for elimination?*" with "*Proposed turbines 25, 26, and 29 have documented high use and as such are particularly problematic.*" (page 15, lines 3-5)

Q: How does the visibility of turbine sites 25, 26, 29 compare to other turbine sites?

A: Turbine sites 24, 25, 26 and 29 can be seen well from survey point 15. The flying space for eagles above many turbine sites cannot be seen from survey points due to obstructions from trees and terrain. This is especially true for turbine sites east of the turbine 25, 26, 29 ridge, with the exception of T34. An observer at survey point 25 can see much of the flying space around T34 though not to its base - Exhibit TES 11.

Q: Bell-Rosenblatt state "*Most of the eagle movements documented at the Project site were associated with north-to-south movements in the fall and south-to-north movements in the spring.*" (page 19, lines 15-17) Do the data support this assertion?

A: No. I am completely puzzled by this determination by Bell-Rosenblatt and hope it can be explained. I have no idea where Bell-Rosenblatt found that information. The data provided by DOAS do not support the claim, and our spring data actually contradict it. WEST did not provide information on flight directions of eagles - Exhibit TAM 1. NYSDEC provides no exhibits or data to support the claim.

DOAS flight directions are shown on the maps we produced for NYSDEC. DOAS eagle data distinguish between migrating and non-migrant eagles. Those data and maps are all available on the

DMM site. If Bell-Rosenblatt had examined those maps and data, it should have prompted some explanation of their claim.

At the DOAS Sanford survey location – in view of turbine sites 24, 25, 26 and 29 - 81% of the total eagles observed were not migrating – Exhibit TES 12. Suppose those 81% of eagles were moving randomly, as the bulk appear to be in Exhibit TES 4 Map 3, the non-migrant eagles which happened to moving in the same direction as the 19% that were migrants might be called a plurality of eagles moving in a migratory direction. It could not be called "*most*."

In the fall, distant from the areas of the project with documented high concentrations of eagles, DOAS documented a higher number of migrants than non-migrants at a site adjacent to WEST survey point 4. However, these were much lower numbers than in spring in an area where WEST eagle observation rates were also at the low end of their range - Exhibit TES 4 page 42.

This unsupported claim either needs to be explained, or reconsidered. It should not affect the risk assessment, or determinations on what can be done to minimize impacts. Migrant eagles are a concern. However, DOAS surveys have shown that most eagles observed were not migrants, especially in areas of high eagle density. Discussions on eagle impacts need to address migrants but also the majority of eagles in the project area.

Q: Bell-Rosenblatt accept the WEST take estimates of 6 Bald and 3 Golden Eagles over the life of the project. In an earlier response, you noted that they did not reference the very high take estimates from the Applicant's Bayesian Risk Model. What rationale do they provide for these lower than Bayesian model estimates?

Q: Bell-Rosenblatt note "*the only operating wind energy facility known to have taken eagles in New York has taken one BAEA over 5 years, which extrapolates out to 6 BAEA over the life of the project.*" (page 17, lines 5-7) However, earlier in their testimony, Bell-Rosenblatt state "*To date, no currently operating wind energy project in New York State has been issued an incidental take permit under Part 182 for take of either species of eagle.*" (page 13, lines 5-7) It would seem to follow, if no wind project constructed in New York required an eagle take permit, extrapolating eagle take from fatalities at sites with low eagle use for a site with exceptionally high eagle use would be impossible. The available data are not appropriate for extrapolating such take numbers.

It is not completely clear what Bell-Rosenblatt mean when they state "*We have no data from other similar wind projects in New York to assume this Project may take more than 6 BAEA or 3 GOEA.*" (page 17, lines 8-10) This project needs a take permit for both species. There are no "*other similar projects in New*

York". As a result, there are no data from similar wind projects in New York. The assumption is flawed.

Q. Bell-Rosenblatt answer the question "*Does the Project, as proposed, adequately avoid and minimize impacts to BAEA and GOEA?*" with "*Yes*." (Page 18, line 19 to page 10, line 1) Could you comment on their rationale for this determination?

A: Bell-Rosenblatt cite the removal of two of the high-risk turbines. These turbines were among those identified by Dr. Miller as high risk for migrating Golden Eagles. DOAS has not been provided with an explanation for why the Applicant removed these along with a number of other turbines. If turbines were to be removed for eagle risk only, it would seem turbines 25, 26 and 29 would be among the first to be removed since hundreds of hours of observational data show them to be high risk. The impression is the others were removed for reasons unrelated to eagle risks, or possibly multiple reasons.

Q: Bell-Rosenblatt also note "*the Applicant has agreed to utilize a monitor (either biologist(s) or an automated system) to scan for eagles near the highest risk turbines (T25, T26, T29) during the peaks of eagle activity (October 15 – November 30 and February 15 – April 30). Assuming that these observations are used to trigger curtailment at these turbines, this would be another meaningful effort to minimize impacts.*" (page 19, lines

7-12) Monitors would be placed on the north end of a ridge in fall and the south end in spring. Would you comment on the Applicant's monitor proposal and Bell-Rosenblatt's endorsement of same?

A: This proposal assumes that the only turbines needing monitoring are 25, 26 and 29. The ridge with these turbines was observed for 236 hours by DOAS surveyors. The eagle use there is well documented by those surveys. The proposal in question does nothing to address many other turbine sites that are without similar data due to inadequate surveys.

The Applicant's proposal to visually intercept migrating eagles continues to neglect addressing the high percentage of non-migrant eagles. Data show that most eagles were not migrating. Observations by DOAS near turbines 25, 26 and 29 found 81% of 409 eagles were non-migrants. This includes 36 Golden Eagles – 51% of the species observed at that site – Exhibit TES 12.

Bell-Rosenblatt state, in regards to eagles, that they "*may be subject to direct collisions with the turbines. This is particularly true of eagles performing hunting behavior, as their attention will be focused primarily on scanning the ground below them for prey items (Watson et al., 2018).*" (page 11, line 14-19) Bell-Rosenblatt mention that hunting behavior is high risk but this concern is not raised or addressed again once the

unsupported claim about most eagles moving in a migratory direction appears in their testimony.

Automated systems might be effective but have yet to be proven. Their current effectiveness seems limited to birds at horizon level or above. This apparently limits their ability to spot eagles that are moving at low elevations, possibly below the sightline of the monitoring device until they acquire lift near a ridge or hill that may have a turbine sited on it.

Early assumptions were made by multiple parties that most of the concern for eagles would involve migrants moving through the project area. Even DOAS assumed this would be the case when we applied for intervenor funding. However, we now know that this is not the case. Migrants remain a major concern due to their linear movement at low elevations near high terrain, but addressing migrating eagles is only addressing a portion of the potential risk.

Q: What other comments do Bell-Rosenblatt make about the use of eagle monitors?

A: Bell-Rosenblatt state "*Human observers stationed at locations where they have clear sight lines of at least 1,000m in all directions from the high-risk turbines could be used to observe eagles entering the Project area.*" (page 16, lines 10-12)

Q: Could a single human observer near high risk turbines 25, 26 and 29 see other turbines within 1000m?

A: No. Turbine 25 is 1100 meters from 26. Turbine 26 is 1600 meters from 29. Turbine 25 is 2700 meters from 29.

Q: Could a human on the ground near turbine sites 25, 26 or 29 see eagles at 1000 meters?

A: No. The observer would need to be higher than tree top level.

Q: Has anyone addressed how an observer could be positioned above tree top level for full day surveys?

A: DOAS has seen nothing in NYSDEC or NYSDPS testimony that addresses this problem. There is no mention of how the Applicant plans to overcome this challenge in the Final Certificate Conditions dated 6 June 2019.

Q: Returning to the Bell-Rosenblatt claim that most eagles were moving in a migratory direction: Besides the risk assessment, what other aspects of the project does this claim affect in regards to eagles?

A: Bell-Rosenblatt, in their acceptance of the Applicant's minimization plan state "*For those turbines situated on the same ridge line, a single monitor on the southern end of the ridge in the spring could potentially observe the majority of eagles before they move into the high-risk area on the ridge. In the*

fall, a single monitor could be used on the northern end of the ridge line to observe the majority of eagle movements as they enter the Project area as they make their southern movements." (page 19, line 17 - page 20, line 1)

This would be true for the migrating eagles. However, a belief that most eagles in spring were moving in a migratory direction seems to have informed this determination. There is contrary evidence for eagle movement in the spring. There is no evidence, no data showing a majority of eagles was moving south in the fall near this ridge. The only flight direction information for fall is DOAS data and field maps from a location ~7 miles SW of that ridge, away from its habitat and the eagle concentration near Cannonsville Reservoir.

DOAS did observe more migrants than non-migrant eagles in fall but also many fewer eagles - Exhibit TES 2. Radical differences in eagle density across the project study area are well documented with the highest densities in the NE quadrant near the ridge with turbine sites 25, 26 and 29. Data from different terrain and habitat cannot be used to extrapolate what happened near that ridge. 75% of all eagles observed by DOAS during 3 seasons, and 81% of all eagle observations during February and March near turbine sites 25, 26 and 29, were classified as non-migratory birds – Exhibit TES 12. DEC's limited focus on migrating birds results in an unrealistic

expectation of benefit from monitoring as a method of minimization.

Q: Bell-Rosenblatt state "*Part 182 permit standards require that a project, in total, must provide a net conservation benefit to the impacted species.*" (page 17, lines 10-11) They continue with "*a mitigation measure must either demonstrably and reliably reduce the impact of an existing threat to the species or proactively increase the productivity or abundance of the species or its habitat.*" (page 18, lines 3-6) Further on they state "*The Applicant has asserted its intention to mitigate for 7 BAEA and 4 GOEA through a combination of support for the rehabilitation of both eagle species and a willingness to protect at least one existing bald eagle nest identified by the Department.*" (page 20, lines 18-21) Does funding the rehabilitation of sick or injured eagles provide a net benefit?

A: No. As per DOAS and Tricia Miller testimony, Golden Eagles are rarely rehabilitated and any bird with the potential for rehabilitation would become a priority individual. Bald Eagles are also a priority species for rehabilitation. Since, if rehabilitation were possible, these birds would be given priority treatment, there would be no net benefit from such additional funding.