

April 13, 2015

The Honorable Martin Honigberg, Chairman  
New Hampshire Site Evaluation Committee  
c/o New Hampshire Department of Environmental Services  
29 Hazen Drive, P.O. Box 95  
Concord, New Hampshire 03302-0095

**Re: PETITION FOR JURISDICTION OVER A RENEWABLE FACILITY BY  
ANTRIM WIND ENERGY, LLC - DOCKET 2014-05**

Dear Vice Chairman Honigberg:

In accordance with the your March 13, 2015 procedural order in the above referenced matter, please find enclosed the timely pre-filed testimony submitted by the Windaction Group.

Thank you for the opportunity to participate in this docket. If you have any questions, please do not hesitate to contact me by phone at 603-838-6588 or e-mail at [llinowes@windaction.org](mailto:llinowes@windaction.org).

Sincerely,

A handwritten signature in black ink, appearing to be 'Lisa Linowes', with a stylized flourish at the end.

Lisa Linowes  
for The Windaction Group

cc: Parties to Docket 2014-05

**THE STATE OF NEW HAMPSHIRE**

**SITE EVALUATION COMMITTEE**

**DOCKET NO. 2014-05**

**PETITION FOR JURISDICTION OVER A RENEWABLE FACILITY BY ANTRIM WIND  
ENERGY, LLC**

**PREFILED DIRECT TESTIMONY OF LISA LINOWES ON BEHALF OF  
THE WIND ACTION GROUP**

**APRIL 13, 2015**

1           **1) Please state your name and address for the record.**

2           My name is Lisa Linowes, and my address is 286 Parker Hill Road, Lyman, NH 03585.

3           **2) Please state your current employment and the position you hold.**

4           I serve as Executive Director of the Wind Action Group (Windaction.org) a New Hampshire  
5           corporation formed in 2006.

6           **3) Please describe your experience and general responsibilities.**

7           I am responsible for tracking wind energy development worldwide with specific focus on  
8           the public policies driving industrial-scale wind energy development and the potential impacts on  
9           the natural environment, communities, and regional grid systems. I advise public and private  
10          entities on siting issues relative to wind energy development. I am a principal and regular  
11          contributor to MasterResource.org, a blog dedicated to analysis and commentary about energy  
12          markets and public policy. I served as the technical advisor of the award-winning documentary,  
13          *Windfall*, produced and directed by Laura Israel. *Windfall* tells the story of how residents in a small  
14          community in upstate New York responded upon learning that a utility-scale wind energy facility  
15          might be situated in their town.

16          I have testified before Congress<sup>1</sup> on the issue of tax subsidy programs for renewable energy  
17          and have been invited to speak on the topic of energy policy and wind energy at numerous venues  
18          including the Environmental Markets Association regional meeting, the Northeast and Midwest  
19          chapters of the Energy Bar Association, the ISO-NE Regional System Plan meeting.

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<sup>1</sup> Lisa Linowes, *Testimony before the Committee on Science, Space, and Technology*, April 19, 2012,  
<http://science.house.gov/sites/republicans.science.house.gov/files/documents/hearings/HHRG-112-SY21-WState-LLinowes-20120419.pdf>

1           **4) Having read the testimony filed by Antrim Wind Energy, LLC ("AWE") do you**  
2           **think the project plan, as amended, is sufficiently different from the original application**  
3           **reviewed by the NH Site Evaluation Committee ("SEC" or "Committee") such that a new**  
4           **review of the facts could arrive at a different outcome?**

5           I read the testimonies filed by Mr. Jack Kenworthy and Mr. David Raphael. The project is  
6           essentially the same as the plan considered by the Committee under Docket 2012-01. Mr.  
7           Kenworthy's testimony, in particular, overstates the effect of the project changes in the new plan,  
8           and has chosen to narrowly construe the findings of the Committee from 2013.

9  
10           **5) Please explain.**

11           The Committee's March 13, 2015<sup>2</sup> order makes clear that the focus of testimony in this  
12           proceeding should be on the "physical differences between the proposed Facility and the previously  
13           proposed facility and any difference in impacts between the two proposals." My testimony explores  
14           four key elements of the application in determining whether the proposed project is sufficiently  
15           different to warrant a new review by the Committee. These are: (a) Project layout, (b) Aesthetics,  
16           (c) Noise and (d) Pilot and Other Mitigation.

17           **a) Project Layout**

18           First I confirmed through the Federal Aviation Administration website that the locations for  
19           the remaining nine turbines have not changed. The below table shows the latitude and longitude of  
20           the original 10 turbines as well as the turbine locations for the amended plan. The turbine shown in  
21           red was removed in the 2014 configuration. The remaining turbine locations are identical but with

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<sup>2</sup> <http://www.nhsec.nh.gov/projects/2014-05/documents/150313order.pdf>

different heights. Docket 2012-01 listed the turbines as having a maximum height from foundation to blade tip of “not more than 495 feet” but the reported size of the turbines was 492-feet.

Year	FAA Case Number	State	Latitude	Longitude	Site Elevation	Structure Height
2011	<a href="#">2011-WTE-11264-OE</a>	NH	43° 03' 51.34" N	72° 00' 22.29" W	1743	495
2011	<a href="#">2011-WTE-11265-OE</a>	NH	43° 04' 03.41" N	72° 00' 28.14" W	1431	495
2011	<a href="#">2011-WTE-11266-OE</a>	NH	43° 03' 41.26" N	72° 00' 32.62" W	1758	495
2011	<a href="#">2011-WTE-11267-OE</a>	NH	43° 03' 31.43" N	72° 00' 59.25" W	1682	495
2011	<a href="#">2011-WTE-11268-OE</a>	NH	43° 03' 23.84" N	72° 01' 10.20" W	1726	495
2011	<a href="#">2011-WTE-11269-OE</a>	NH	43° 03' 09.66" N	72° 01' 11.94" W	1516	495
2011	<a href="#">2011-WTE-11270-OE</a>	NH	43° 02' 54.23" N	72° 01' 17.79" W	1676	495
2011	<a href="#">2011-WTE-11271-OE</a>	NH	43° 02' 43.77" N	72° 01' 16.79" W	1700	495
2011	<a href="#">2011-WTE-11272-OE</a>	NH	43° 02' 35.31" N	72° 01' 26.37" W	1646	495
<b>2011</b>	<b><a href="#">2011-WTE-11273-OE</a></b>	<b>NH</b>	<b>43° 02' 28.84" N</b>	<b>72° 01' 40.43" W</b>	<b>1896</b>	<b>495</b>
2014	<a href="#">2014-WTE-5439-OE</a>	NH	43° 04' 03.41" N	72° 00' 28.14" W	1431	489
2014	<a href="#">2014-WTE-5440-OE</a>	NH	43° 03' 51.34" N	72° 00' 22.29" W	1743	489
2014	<a href="#">2014-WTE-5441-OE</a>	NH	43° 03' 41.26" N	72° 00' 32.62" W	1758	489
2014	<a href="#">2014-WTE-5442-OE</a>	NH	43° 03' 31.43" N	72° 00' 59.25" W	1682	489
2014	<a href="#">2014-WTE-5443-OE</a>	NH	43° 03' 23.84" N	72° 01' 10.20" W	1726	489
2014	<a href="#">2014-WTE-5444-OE</a>	NH	43° 03' 09.66" N	72° 01' 11.94" W	1504	489
2014	<a href="#">2014-WTE-5445-OE</a>	NH	43° 02' 54.23" N	72° 01' 17.79" W	1676	489
2014	<a href="#">2014-WTE-5446-OE</a>	NH	43° 02' 43.77" N	72° 01' 16.79" W	1700	489
2014	<a href="#">2014-WTE-5447-OE</a>	NH	43° 02' 35.31" N	72° 01' 26.37" W	1667	447

Source: <https://oeaaa.faa.gov/oeaaa/external/searchAction.jsp?action=showSearchArchivesForm>

Since AWE has not provided any additional information on the road layout, substation or transmission route, we are assuming they have not changed from the prior application.

While outside the scope of this proceeding, I note that on March 31, 2015, the FAA issued **Notices of Presumed Hazard** ("NPH") on 7 of AWE's 9 proposed turbines, Case numbers 2014-WTE-5439-OE and 2014-WTE-5444-OE were the only turbines found to produce no hazard to air navigation. Appendix C attached includes one of the 7 NPHs issued by the FAA.

1           **b) Aesthetics**

2           The main changes to the project pertain to aesthetics. AWE argues that by eliminating  
3 turbine #10, reducing the overall height of turbines #1-8 by 38 inches (492 feet to 488.8 feet, a 0.6%  
4 change) and lowering turbine #9 so the nacelle is outside the field of view from some locations on  
5 Willard Pond, it has overcome the primary objections raised by the Committee and others in from  
6 the prior docket

7           Testimony by both Mr. Kenworthy and Dr. Raphael single out the adverse effect on views  
8 from Willard Pond and the DePierrefeu Wildlife Sanctuary but the visual impact concerns raised in  
9 the prior docket extend beyond the immediate area. The SEC rejected the Antrim Wind Energy  
10 project because of unreasonable visual impacts on the region and not just New Hampshire  
11 Audubon's Willard Pond Wildlife Sanctuary. In fact, the impacts were found to be far more  
12 extensive than those on any one property. The surrounding region, including neighboring towns  
13 within sight of the turbines, represented the context within which the project was evaluated.

14           The turbines, even at 489-feet in height, would still be the tallest in the state, and taller than  
15 any operating wind turbines in New England. Erected on a ridgeline, the turbines would loom very  
16 large compared to the mountains in the Monadnock Region which are more modest in height. The  
17 Site Evaluation Committee's deliberations underscored this point multiple times (*See Transcript of*  
18 *Deliberations on February 7, 2013 at pp. 22-23, pp 34 1-9, pp 37 10-18*)

19           The Committee also considered different configurations involving shorter or fewer turbines  
20 during its deliberations. Chairman Ignatius stated, and others agreed, that removing one turbine  
21 would not be enough to mitigate for the enormous scale of the project. (*See Transcript of*  
22 *Deliberations on February 7, 2013 at pp. 24 15-21*),

1           The Committee, in its April 25, 2013 Decision and Order denying certification stated that  
2     "the height of each turbine would be between 25% and 35% of the elevation of the ridgeline where  
3     it will be located." This statement is still true in the amended plan.<sup>3</sup> (*See Committee Order April 25,*  
4     *2013 at 49*)

5           Relative to Tuttle Hill, which has a vertical rise of 650-feet from the valley floor, the  
6     proposed turbines 1-8 would represent another 75% rise on the landscape and a 69% rise for turbine  
7     #9. (*See Carey Block prefiled direct testimony, July 31, 2012 at 8*) The visual impact of the towers  
8     in this setting would be as overwhelming as they were found to be in the prior application.

9           Dr. Raphael argues that reducing the height of turbine #9 by 10% (from 492 to 447 feet)  
10    virtually eliminates its visual presence from most locations at Willard Pond and the DePierrefeu  
11    Wildlife Sanctuary. (*Raphael prefiled testimony at 4*) This is obviously not true. While the nacelle  
12    may be just below the tree line from some views, turbine #9's blades, which are animated as they  
13    spin on the ridge, will be entirely visible. Spinning at roughly 15 revolutions per minute, viewers  
14    could see 45-instances of a blade passing by the 12-o'clock position every minute. When the  
15    turbines are stopped, the rotor assembly is generally positioned with one blade upright.

16           In this docket, Dr. Raphael argues that eliminating one turbine and slightly altering the  
17    height of others will have a significant easing affect on the visual impact of the project. However, in  
18    a proceeding before the Vermont Public Service Board he claimed similar actions would have no  
19    impact on the resulting view. On behalf of Green Mountain Power and the Kingdom Community

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<sup>3</sup> Dr Raphael wrongly asserts in his testimony that "no turbine sits at an elevation higher than 1750 feet" (pp4 at 13). In fact, at least one turbine is sited above 1750 feet in elevation. See FAA elevations in the table provided on page 2 of this testimony.

1 Wind proposal, Dr Raphael responded as follows when challenged by Jean Vissering about  
2 eliminating three of the proposed 21 turbines, a 14% reduction (*Appendix A attached at 13*):

I do not believe that Ms. Vissering's proposal to remove three turbines will substantially change or mitigate the Project's visual presence. It will still be observed as a linear array of turbines along the Lowell Mountain Ridge.

3 On whether the heights of the turbines could be reduced to lessen the visual impact his  
4 response was similar:

I do not believe that reduction of turbine height or relocation to the west would have a meaningful impact on aesthetics, within what I understand are the constraints associated with the size and location of the turbines.

5 The turbines at the Kingdom Community Wind facility stand 443 feet to the blade tip. The  
6 height reduction under consideration was 23 feet, well above the *38-inch* reduction proposed for  
7 turbines 1-8. (*Appendix A attached at 7*)

8 In his same testimony in Vermont, Dr. Raphael admits having to update his visualization  
9 renderings due to a discrepancy in the turbine pad elevations causing them to be off by as much as  
10 24-feet. While this is not germane to the AWE proposal, his statement that height adjustments up to  
11 24-feet "would be difficult to detect visually in the simulations" is important. If turbine height  
12 changes of that size are not easily detectable in rendering a visualization assessment, it is difficult to  
13 see how a *38-inch* change in turbine height could result in a meaningful change in impacts.  
14 (*Appendix A attached at 18*)

15 **c) Noise**

16 Mr. Kenworthy states that Epsilon Associates will be preparing an updated Sound Level  
17 Assessment report to show that the sound levels produced by the Siemens SWT-3.2-113 turbines  
18 will be lower than those of the Acciona turbines. While it will be useful to see Epsilon's updated



1 report, it is unlikely that the sound levels for the Siemens turbines will notably differ. The  
2 manufacturer's sound power level for the Siemens SWT-3.2-113 turbine is 107.5 dbA<sup>4</sup> with an  
3 uncertainty factor of +/- 1 dBA. For the Acciona is essentially the same at 107.4 dbA with a +/- 1  
4 dbA uncertainty factor. In general, the longer the blades and slower the rotation speed the more  
5 likely there will be periods of high noise that is audible (i.e. more opportunities for blade swish).<sup>5</sup>

6 The Committee ultimately established a not-to-exceed noise limit for the previous Antrim  
7 Wind facility of 40 dbA at nighttime or 5 dBA above ambient, whichever is greater. According to  
8 AWE's predictive modeling for the Acciona turbine, the highest sound level at any receptor would  
9 be 41 dBA. This level would exceed the permit conditions if built. (*See Committee Order April 25,*  
10 *2013 at 66*) If the Siemens model is quieter, it would only be within 1-2 dBA, a difference that  
11 would go undetected by nearby residents. But it may result in the project operating closer to the  
12 permit conditions set by the Committee. It would be a stretch to argue that the new turbines would  
13 result in a material reduction in noise impacts.

#### 14 **d) Pilot and Other Mitigations**

15 Mr. Kenworthy's testimony also cites annual tax payments under the Payment in Lieu of  
16 Taxes ("PILOT") agreement as well as increased mitigation measures as further reason for  
17 considering the amended proposal to be significantly different from the prior application.

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<sup>4</sup> See [http://mn.gov/commerce/energyfacilities/documents/33153/\\_Revised\\_%20Site%20Permit%20Application.pdf](http://mn.gov/commerce/energyfacilities/documents/33153/_Revised_%20Site%20Permit%20Application.pdf), pp 16

<sup>5</sup> Infrasound would be produced by both turbines at levels sufficient to produce sensations. With regard to infrasound levels, a one or two dbA change will not help because the energy is in the frequency range where the A-weighted scale is not useful.

1 According to Mr. Kenworthy, the project will pay the highest per megawatt payment of  
2 other PILOTS in New Hampshire for wind facilities. This fact is already in the record for Docket  
3 2012-01 and was already considered by the Committee. Dr. Ross Gittell's prefiled direct testimony  
4 specifies annual tax payments to the Town of Antrim in the amount of \$11,250 per megawatt for the  
5 first year and escalating thereafter at 2.25% per year during the 20 year operating term of the  
6 project. (*See Gittell prefiled direct testimony, January 4, 2013 at 4*) AWE's annual payment scheme  
7 exceeds those for Granite Reliable Wind and Groton Wind which pay \$5,000 per megawatt and  
8 \$11,000 per megawatt respectively. A PILOT agreement was not negotiated for the Lempster Wind  
9 facility.

10 Regarding the expanded conservation plan, Mr. Kenworthy describes an additional 100  
11 acres of conserved land around turbines 5, 6, 7 and 8, a 1-time payment of \$40,000 to the Town of  
12 Antrim to be applied to the Gregg Lake Recreational Area and a single \$100,000 payment to the  
13 New England Forestry Foundation for the acquisition of new conservation lands in the general  
14 region of the Project.

15 Appendix B attached shows the proposed conservation lands submitted to the Committee  
16 under Docket 2012-01 and the amended map that includes the added 100 acres<sup>6</sup>. In 2013, AWE  
17 stated in the record that the added 100-acres would encompass turbines 3, 4, 5 and 6. Without a  
18 current map depicting the conservation land, we cannot be certain what land Mr. Kenworthy is  
19 referring to.

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<sup>6</sup> AWE's post-hearing brief, footnote 3 states "The Application at pages 10-11 discusses the Project's initial plans to conserve 685 acres; the documents appended to this brief reflect AWE's recent success in conserving an additional 123 acres, including the land surrounding turbines 9 and 10. Addendum to Post Hearing Brief.  
<http://www.nhsec.nh.gov/projects/2012-01/documents/130114applicant.pdf>

1 In any event, Ms. Vissering's testimony and report made clear that the only way to mitigate  
2 the visual impacts was with all of her recommendations, which included removing two turbines and  
3 making all the rest significantly smaller. (*See Objection of Counsel for the Public to applicant's*  
4 *motion for rehearing and motion to reopen record, Docket 2012-01, June 13, 2013, at 17*) Adding  
5 the additional payment to the New England Forestry Foundation, which is the only mitigation  
6 component not presented in 2013, does not address the ongoing visual impacts of the project.

7 **6) Are there any further comments you would like to make at this time?**

8 Yes. Mr. Kenworthy's testimony appears to suggest that the objections cited by the  
9 Committee when it denied AWE's motion to reopen the record in 2013, somehow justify the claim  
10 that the amended project is substantially different from the one previously reviewed. If this is his  
11 claim, he is misconstruing the Committee's deliberations on that matter.

12 The Committee's statements were more about the nature of the information AWE tried to  
13 bring forward in its plea to be heard. Re-opening the record is generally reserved for "exceptional  
14 circumstances" and the party seeking to be heard bears a heavy burden. (*See Objection of Counsel*  
15 *for the Public to applicant's motion for rehearing and motion to reopen record, Docket 2012-01,*  
16 *June 13, 2013, at 16*) The new information cited by AWE at the time, including the \$40,000  
17 payment to the Town of Antrim and the 100-acre conservation parcel, were well within the ability  
18 of AWE to bring forward prior to the Committee issuing its decision to deny certification. At no  
19 time during its deliberations did the Committee consider that its statements were laying the  
20 foundation for this current proceeding. Rather, the Committee was focused on disposing of the  
21 question before it at that moment on whether to grant a re-opening of the record based on the

1 amendments proposed by AWE. Reading any more into the discussion by the Committee would be  
2 inappropriate.

3 **7) Does this complete your pre-filed testimony?**

4 Yes.

**STATE OF VERMONT**  
**PUBLIC SERVICE BOARD**

Petition of Green Mountain Power Corporation,	)	
Vermont Electric Cooperative, Inc., and Vermont	)	
Electric Power Company, Inc., for a certificate of public	)	Docket No. 7628
good, pursuant to 30 V.S.A. Section 248, to construct up	)	
to a 63 MW wind electric generation facility and	)	
associated facilities on Lowell Mountain in Lowell,	)	
Vermont, and the installation or upgrade of	)	
Approximately 16.9 miles of transmission line and	)	
Associated substations in Lowell, Westfield and Jay, Vermont	)	

**REBUTTAL TESTIMONY OF**  
**DAVID RAPHAEL**  
**ON BEHALF OF GREEN MOUNTAIN POWER CORPORATION**

**November 22, 2010**

**Summary of Testimony**

Mr. Raphael responds to the testimony of the DPS, GMC, Craftsbury and others concerning the aesthetic impact of the Project.

**REBUTTAL TESTIMONY OF DAVID RAPHAEL  
ON BEHALF OF  
GREEN MOUNTAIN POWER CORPORATION**

1   **1.     Q.     Did you previously file prefiled testimony in this proceeding?**

2           **A.     Yes.**

3

4   **2.     Q.     What is the purpose of your testimony?**

5           **A.     I respond to the testimony of the Department of Public Service (“DPS”), Green**  
6 **Mountain Club (“GMC”), the Town of Craftsbury and others concerning the aesthetic impact of**  
7 **the Project.**

8

9   **3.     Q.     Please summarize Mr. Kane’s conclusions with respect to the shocking and**  
10 **offensive portion of step two of the Quechee test.**

11           **A.     Mr. Kane’s conclusions are as follows:**

12           a.     The Petitioner has not adequately addressed impacts to nearby residential and  
13                   recreational areas, Exh. DPS-MK-2 at 31;

14           b.     The Project will result in a significant diminishment of the scenic qualities of the  
15                   areas east of Lowell Mountain within portions of Lowell and Albany, Exh. DPS-  
16                   MK-2 at 29; and

17           c.     The Project will be offensive because it is out of character and will diminish  
18                   scenic qualities in the general vicinity of Bayley-Hazen Road within 1-3 miles of  
19                   the Project, Kane Prefiled Direct testimony (“Pf.”) at 11.

1 Mr. Kane supports these conclusions based on four assertions. Exh. DPS-MK-2 at 29-30. First,  
2 the visual character and experience associated with recreational use of the Bayley-Hazen Road  
3 will be materially altered. Second, the vertical visual angle (“VVA”) to one of the turbines of  
4 14.8 degrees is very high. Third, the turbines are out of scale with the terrain. Fourth, although  
5 turbines that are  $\frac{1}{4}$  of the ridgeline scale do not overwhelm or dominate the landform, this ratio is  
6 exceeded in the vicinity of the Bayley Hazen Road.

7  
8 **4. Q. Do you agree with Mr. Kane’s conclusion concerning impact on recreational**  
9 **use?**

10 **A.** No. To the east of the Lowell Range only 17 homes within 2 miles will have any  
11 potential views of the Project based on our viewshed analysis. His conclusions are based on the  
12 views from a very small portion of the viewshed, consisting of unidentified areas adjacent to a  
13 single road (Bayley-Hazen) located between Route 14 in Albany and Irish Hill Road in Lowell.  
14 Most of this road is impassable by passenger vehicles. In contrast, we traveled all the perimeter  
15 roads within 2 miles of the Project and found relatively limited visibility. As for the residences,  
16 we traveled along East Hill Road, Square Road, Albany Road, Bayley-Hazen Road, Shuteville  
17 Road, Dyer Hill Road, and Irish Hill Road. Many residences were in the woods with no view or  
18 oriented away from Lowell Mountain.

19  
20 There has not been any specific data as to how many users in the winter cross country ski or  
21 snowshoe on this road. By contrast, we have personally observed snowmobile use on this road

1 and its vicinity (on the Nelson property in particular). This type of activity, and the associated  
2 noise and odor, is much less likely to be degraded by the visibility of wind turbines.

3 The Bayley-Hazen Road in this area is not a through road nor is it readily passable with a  
4 passenger car. The NVDA website cited in our report does not even send travelers on this  
5 section of the road. Mr. Kane concedes that “the level of recreational utilization is not  
6 particularly high” in this area. In addition, use of the road is by its nature mobile rather than  
7 stationary. Users’ views of the Project would be of limited duration only, therefore reducing the  
8 extent and nature of the visual impact, and the primary focus is the long-distance sweeping  
9 panorama views to the north and northeast.

10  
11 The Project can be seen from only a small portion of the area adjacent to this road. There is only  
12 200 feet of potential visibility possible for the first section of the road, just over the  
13 Albany/Lowell town line, and then less than 1,000 feet in the vicinity of the Nelson Farm. Thus  
14 most of the visual impact is associated with a single privately-owned parcel of land, rather than a  
15 publicly-owned recreational area. See Exh. Pet. DR-2, Appendices 3, 7; Exh. DPS-MK-2,  
16 Figure 6. Simply put, the primary impacts are on one single-family residence.

17  
18 **5. Q. Do you have any response to Mr. Kane’s use of VVA and the study he cites as**  
19 **a basis for his conclusions with regard to visual impact?**

20 **A.** Yes. Mr. Kane states that “the [greater the] angle between a horizontal line drawn  
21 from an observer and an intersecting line drawn to a nacelle of a nearby wind turbine . . . the  
22 more likely the turbine is to be visually prominent to or, in extreme cases, loom over the



1 observer. Based on the distance from our Viewpoint A to turbine 8 the calculated VVA is 14.8  
2 degrees.” His support for use of VVA analysis consists of a study addressing the impact of  
3 visual factors on noise annoyance, rather than visual impacts *per se*. Exh. DPS-MK-2 at 16,  
4 note 17 (citing E. Pedersen, P. Larsman, The Impact of Visual Factors on Noise Annoyance  
5 among People Living in the Vicinity of Wind Turbines, *Journal of Environmental Psychology*  
6 28, 379–389 (2008)).

7  
8 He cites no application of this analysis in any other wind project in the United States, and states  
9 that it “is gaining some consideration,” without any further substantiation of its application or  
10 how many specific locations it would actually even be applicable to. We are unaware of cases of  
11 the VVA concept being applied to visual impact analyses, and we are unaware of any study that  
12 provides a breakdown of expected visual impacts based on particular VVAs.

13  
14 A review of the study demonstrates why it is inappropriate to support a Quechee analysis. The  
15 study involved a:

16 model of the influence of visual attitude on noise annoyance, also comprising the  
17 influence of noise level and general attitude, was tested among respondents who  
18 could see vs. respondents who could not see wind turbines from their homes,  
19 living in flat vs. hilly/rocky terrain, and living in built-up vs. rural areas. Visual  
20 attitudes toward the noise source was associated with noise annoyance to different  
21 degrees in different situations. A negative visual attitude, more than multi-modal  
22 effects between auditory and visual stimulation, enhanced the risk for noise  
23 annoyance and possibly also prevented psychophysiological restoration  
24 possibilities. Aesthetic evaluations of the noise source should be taken into  
25 account when exploring response to environmental noise.

26  
27 (p. 379).

1 Thus, the study does not examine how VVA affects the perception of visual impacts for residents  
2 in the vicinity of a wind project, but rather how it contributes to their responses to wind turbine  
3 noise.

4  
5 In addition to its limited relevance, the study's conclusion undermines Mr. Kane's analysis. For  
6 instance, the study concluded that VVA has a minor contribution toward noise annoyance:

7  
8 VVA has been brought forward as a factor that could be a better predictor of noise  
9 annoyance than A-weighted SPL. This study shows that the difference in altitude  
10 between the dwelling of a respondent and the hub of the wind turbine is a possible  
11 additional factor influencing noise annoyance in situations where the wind turbine  
12 is visible or could be perceived as intrusive in the landscape. The influence was,  
13 however, small and noise emission levels are possibly still the best predictor of  
14 noise annoyance, at least if situational factors are concurrently considered.  
15  
16 (p. 388).

17  
18 The study also undermines his conclusion because it found that any visual impact on noise  
19 annoyance was much greater for those living in flat terrain than in hilly terrain:

20  
21 Visual attitude was associated with noise annoyance among respondents living in  
22 a flat landscape but not among respondents living in hilly/rocky terrain, even  
23 though the visual evaluation of the wind turbines had approximately the same  
24 distribution in the two groups. It is well known that disparities in lines and shapes  
25 in the environment draw attention as the human visual processing system is  
26 specialized to detect contrasts (Kastner & Ungerleider, 2000). Wind turbines in a  
27 flat landscape, their towers like exclamation marks against the horizontal lines of  
28 the landscape, are likely to draw visual attention, in addition to auditory attention,  
29 while in a more differentiated landscape, wind turbines are less prominent.

30  
31 (p. 387).

1 Even if the VVA analysis were relevant, Mr. Kane applies the concept in an unsupportable  
2 manner. His conclusion that a VVA of 14.8% is offensive is based on the combined impact of  
3 the land mass (Lowell Mountain) and the Project, without differentiating between the  
4 contribution of each. Thus under Mr. Kane's application of the VVA analysis, a 10-foot tower  
5 on top of a 1,990 foot ridge is as offensive as a 2,000-foot tall tower.

6  
7 **6. Q. Do you have any responses to Mr. Kane's discussion of scale and the impacts**  
8 **to the Bayley Hazen Road?**

9 **A.** Clearly, the closer one is to a wind turbine, the larger it appears in scale. This fact  
10 is already well established and understood. However, there are only 3 homes within 1 mile of  
11 the Project that may have potential views.

12  
13 **7. Q. Do you have any overall conclusions with regard to Mr. Kane's conclusions**  
14 **regarding the so-called VVA, and the impacts in the area of the Bayley-Hazen Road?**

15 **A.** Yes. I do not and cannot agree with his conclusions that the use of the VVA can  
16 be applied directly to visual impacts, because it was intended for noise assessment. I do not  
17 believe that his concerns with regard to the Project's impacts on the Bayley-Hazen Road rise to  
18 the level of undue adverse impact, because the use of the road is limited and to a large extent  
19 involves activities (i.e. snowmobiles) that are less susceptible to adverse visual impacts, the short  
20 duration of the view and the fact that the primary focus of the view is away from Lowell  
21 Mountain to the east and northeast. It is important to note again that users in this area are not  
22 stationary - they are moving along the trail, there are not any specific public vantage points, and

1 only 0.22 mile of potential visibility is possible for the first section of the road just before the  
2 Albany/Lowell town line, and then for roughly 0.66 mile in the vicinity of the Nelson Farm.  
3 This level of visibility, and the lack of significant numbers of viewers mitigates the impact and  
4 keeps it from rising to an undue level.

5  
6 **8. Q. Please address Mr. Kane's conclusions regarding reasonably available**  
7 **mitigation steps.**

8 **A.** Mr. Kane states that GMP has failed to take reasonably available mitigating steps  
9 because it has not considered the Object Collision Avoidance System ("OCAS"). Mr. Kane also  
10 contends that the impact of the turbines from the east should be reduced by reducing their height,  
11 relocating them to the west or clustering them, and that the collector line should be collocated  
12 with the access road. Kane Pf. at 12-13; Exh. DPS-MK-2 at 30-31.

13  
14 Although not necessary to avoid an undue adverse effect on aesthetics, I think that the OCAS  
15 system would reduce the visual impact to some degree, and therefore would be reasonable if it  
16 can be installed, and at a reasonable cost. I understand that GMP is pursuing this approach.

17  
18 I do not believe that reduction of turbine height or relocation to the west would have a  
19 meaningful impact on aesthetics, within what I understand are the constraints associated with the  
20 size and location of the turbines. The impact of a reduction of turbine hub height from 85 meters  
21 to 78 meters is shown in **Exh. Pet.-DR-3**. The impact of a relocation to the west by a distance to  
22 reduce the perceived height by approximately 15 meters is shown on **Exh. Pet.-DR-4**.

1 I understand from GMP that it has collocated the collector line with the access road to the  
2 maximum practical extent. Based on my analysis, I do not believe that the clearings for the lines,  
3 access roads, and turbines are excessively visible or create unduly adverse changes on the  
4 hillside, when viewed from locations such as Belvidere and Tillotson Camp. See **Exh. Pet.-DR-**  
5 **2, Appendices 9B (Revised), 9G (Visual Simulation from Tillotson Camp, Lowell).**

6  
7 **9. Q. Please respond to Mr. Kane's criticisms regarding your viewshed analysis?**

8 **A.** Mr. Kane states (testimony at 7-8, Exh. DPS-MK-2 at 13-14) that our viewshed  
9 analysis understated the proportion of the Project area from which the wind turbines can be seen.  
10 In particular, he states that the portion of the ten-mile project area that may have views of the  
11 area "while likely not as high as 25%, may be as high as 15%," Exh. DPS-MK-2 at 14, whereas  
12 the visibility in my viewshed map is approximately 5%. Exh. Pet.-DR-2 at 24 & Appendix 3.  
13 He suggests that the differences reflect the fact that he evaluated visibility from the tip of the  
14 blade (135 meters), and did not include vegetation.

15  
16 Based on our field analysis, Mr. Kane's viewshed map inaccurately overstates visibility. For  
17 example, Green River Reservoir is illustrated on his map as having visibility across the entire  
18 lake, with all 21 turbines visible on more than half. We field checked the access area from this  
19 lake and found limited to no visibility at this location, consistent with our map. The same holds  
20 true for other lakes in the region. For instance, we field checked Great Hosmer and Belvidere  
21 Ponds during our analysis and we found no visibility, as reflected in our map, whereas Mr.  
22 Kane's analysis indicates nearly full visibility.

1 We also assessed the visibility conclusions in Mr. Kane's map to more accurately assess the  
2 effect of intervening topography through use of a 3-D model. See **Exh. Pet.-DR-5**. As the  
3 exhibit indicates, the Project is not visible from Route 118/Belvidere Pond in Eden or from  
4 Route 5/Cuttingsville Road in Irasburg, due to intervening topography, even though Mr. Kane's  
5 map indicates otherwise. For these reasons, we believe Mr. Kane's viewshed analysis overstates  
6 Project visibility.

7  
8 **10. Q. Do you have a response to the testimony of Green Mountain Club's expert**  
9 **witness, Ms. Vissering?**

10 **A.** Yes. Although Ms. Vissering does not conclude that the Project is shocking or  
11 offensive, she does indicate that there are undue adverse impacts unless certain mitigation  
12 measures are pursued. Vissering Pf. at 13-14. In particular, she recommends that the Petitioner  
13 pursue OCAS, removal of up to three of the southernmost turbines, restoration of the area as  
14 close to its current conditions as possible following decommissioning, and off-site mitigation  
15 measures. She reaches these conclusions primarily based on the potential view of the Project  
16 from the Tillotson Camp on the Long Trail. Vissering Pf. at 12-13.

17  
18 Based on our analysis, field investigations, and review of Ms. Vissering's arguments, I cannot  
19 come to the same conclusion. It is very important to emphasize that she identifies only two Long  
20 Trail locations where views of the Project are possible – the summit of Belvidere Mountain and  
21 from Tillotson Camp. Although she and Mr. Page describe at length the rural nature of this  
22 section of the Long Trail, she does not mention nor analyze the view from any other vantage

1 points along the Long Trail within the 10-mile radius of the Project. We do not believe, for  
2 instance that the “lights would occupy nearly the entire view opening seen from the shelter.”  
3 Vissering Pf. at 14. Nor does it appear from her testimony that she acknowledged or experienced  
4 the view from within the camp shelter itself, the window or from the front step. Based on two  
5 visits to the camp, and the photographs contained in **Exh. Pet.-DR-6**, there is much more to view  
6 than just the Lowell Range. In fact, there are distant views of the White Mountains, and direct  
7 views of Belvidere Mountain above the camp site, which are as, if not more, compelling than the  
8 view to the Lowell Range.

9  
10 Nor are the views from this area as pristine as she and Mr. Page suggest. Visible patterns of  
11 woods roads, forest management and other activity are discernible from the summit of Belvidere  
12 Mountain and Tillotson Camp. See **Exh. Pet.-DR-7**. From the fire tower, for instance, the  
13 abandoned asbestos mine (Exh. Pet.-DR-2 at 37), Mount Mansfield radio towers, and Jay Peak  
14 tram house and ski trails are visible. From other areas, road clearings and some remnant  
15 “striping” on Lowell Mountain that evidence past logging activity are visible. In complete  
16 darkness, lights in the valley below, car headlamps and some residential structures are visible as  
17 well.

18 The view from the primary vantage point at Tillotson Camp is not necessarily from the Fire Pit,  
19 which is the focus of her analysis, but rather from the “picture” window at the shelter itself and  
20 in front of which sits the shelter’s primary gathering space. Although there is a partial view of  
21 the Project from the step in front of the shelter—another logical viewing point (one can actually

1 sit comfortably on the step)—the panorama also includes Norris, Hadley, and Belvidere as  
2 prominent elements.

3  
4 It should also be noted that, based on my observations, the view from the camp is not naturally  
5 occurring. Instead there has been recent trimming of trees and shrubs at the front of Tillotson  
6 Camp. Without this clearing, it is obvious that foreground trees will grow up and block views  
7 completely. This is readily apparent in **Exh. Pet.-DR-2, Appendix 9G (Visual Simulation**  
8 **from Tillotson Camp, Lowell)**, which shows branches just below the panoramic view. In fact  
9 the *Long Trail Guide* states on page 208 that “[f]rom the front of the camp there are limited  
10 views of the Lowell Range to the east.”

11  
12 **11. Q. What conclusions do you have regarding the view from Tillotson Camp at**  
13 **night?**

14 **A.** At night, the view from the so-called fire pit area does include the full Project, but  
15 nighttime fires will greatly obscure the impact of the lights. In addition, the focus is typically the  
16 fire itself and not views off into the distance. The blinking lights at a distance of 6.8 miles could  
17 be conceived more as a curiosity and not necessarily an annoyance.

18  
19 Based on my observations, the two existing blinking lights are not overly bright lights, do not  
20 create any glare, and at the distance of 6.8 miles, do not dominate or specifically undermine the  
21 experience of being at Tillotson Camp, even when one considers that there will be 5 to 7  
22 additional lights added when the Project is built. See **Exh. Pet.-DR-8**. The blinking is a gradual



1 on and off, rather than a flash. The view to the Project itself and the lights at night are so far  
2 away that the Project does not occupy a major portion of the sky view and is very low on the  
3 horizon line of the total sky dome. It does not occupy a large part of the sky dome, and in fact, is  
4 so low on the horizon that it has minimal impact on night sky viewing. I was able to see stars  
5 and the moon without any distraction or compromise. Based on the position of the Project on the  
6 horizon, and the fact that night sky viewing is not typically focused on the horizon, I do not  
7 believe that night sky viewing and star gazing will be directly affected by the Project.

8  
9 My conclusions are supported by other information. Since the meteorological tower lights were  
10 installed in April 2010, there has not been a single comment among the 212 entries in the log  
11 book at Tillotson Camp. In fact, there was only one comment about wind power in that time  
12 period, which was entered on October 3, 2010: *"The beauty of windmills? Perhaps more lovely*  
13 *in an oil-constrained world?"*

14  
15 **12. Q. Please address Ms. Vissering's mitigation proposals.**

16 **A.** As noted above, although not necessary to avoid an undue adverse effect on  
17 aesthetics, I think that the OCAS system would reduce the visual impact to some degree, and  
18 therefore would be reasonable if it can be installed, and at a reasonable cost. I also believe that  
19 other less expensive mitigation measures are possible. For instance, clearing evergreens to the  
20 south would create a more open view from the Camp that reduces any focus on the Lowell  
21 Range. This would open up the nearby view to Belvidere Mountain, which is dramatic and

1 engaging. Through clearing, a continuous panorama with the Lowell Range and Belvidere could  
2 be provided, thus eliminating a framed view of the Project.

3 I also believe that some form of interpretive information about the view contained online and in  
4 site signage would be an appropriate mitigation measure. It could highlight and address the  
5 connection with our forests and their health, forest recreation, global warming, and wind power,  
6 in terms of the overall efficacy of this form of power production in relation to its environmental  
7 footprint.

8  
9 I do not believe that Ms. Vissering's proposal to remove three turbines will substantially change  
10 or mitigate the Project's visual presence. It will still be observed as a linear array of turbines  
11 along the Lowell Mountain Ridge. See **Exh. Pet.-DR-2, Appendix 9G (Alternative Visual**  
12 **Simulation from Tillotson Camp, Lowell)**. When this exhibit is compared to **Exh. Pet.-DR-2,**  
13 **Appendix 9G (Visual Simulation from Tillotson Camp, Lowell)**, it is evident that removal of  
14 the three turbines does not greatly reduce the visual impact nor alter the night sky viewing.

15  
16 Although I understand Ms. Vissering's concerns relating to restoration of the site to its current  
17 condition, I believe the actions GMP proposes are reasonable. First, it should be noted that the  
18 area is currently subject to extensive logging and the lower section of the proposed road provides  
19 access to a future 5 lot housing subdivision. GMP proposes to remove all above ground  
20 infrastructure and remove all foundations and other infrastructure to 2 feet below grade. I am not  
21 aware of a requirement in prior approvals of wind projects that the road itself be revegetated on  
22 an accelerated basis. In addition, based on the revised simulations identifying the project cleared

1 areas, I do not believe that accelerated revegetation is necessary from an aesthetics perspective.

2 Despite these considerations, Mr. Pughe describes a proposal for accelerated revegetation and its  
3 associated costs, should the Board believe this is necessary.

4  
5 Finally, Mr. Dostis summarizes GMP's efforts in connection with off-site mitigation.

6  
7 **13. Q. Please respond to Ms. Gail Henderson-King's testimony concerning the**  
8 **Project's impact on Craftsbury.**

9 **A.** Ms. Henderson-King describes the views of the Project from various locations in  
10 Craftsbury and claims that our report does not evaluate views from the town. She sponsors a  
11 simulation from North Craftsbury Road and states that GMP did not adequately consider lighting  
12 mitigation. Henderson-King Pf. at 5-7; Exh. CFT-GHK-2. She does not, however, apply the  
13 Quechee test or identify any manner in which the Project should be modified.

14  
15 I do not agree with Ms. Henderson-King's conclusions. Concerning her claim that views from  
16 other areas of Craftsbury should be considered, in response to discovery Ms. Henderson-King  
17 conceded that she did not conduct a field analysis on the roads in Craftsbury she claims are  
18 representative. She relies on one visual simulation from a secondary road that has no public  
19 vantage points or property from which a person, other than someone stopped briefly in a car,  
20 could actually stand outside and view the Project. Furthermore, she admits that the only view  
21 from Craftsbury Common is at the end of a parking lot in front of the library, which is actually  
22 off of the Common. During the site visit, we had to travel well off of the Common (where there

1 were no direct or obvious views possible of the Project). This location does not appear to be one  
2 that would directly affect public use and enjoyment, because it is at the end of a parking lot for  
3 the library and not a place where people congregate or recreate. In addition, the view was  
4 through a treeline and only a partial view at that.

5  
6 It is also important to note that the site visit does not provide an accurate sense of Project  
7 visibility insofar as the focus is always on those places where the Project is most visible, rather  
8 than the key locations such as the Common itself where views are highly limited. The emphasis  
9 skews the impression of overall visibility, because for every place with a view, there are at least  
10 several other locations as prominent and as important where a view is not possible.

11  
12 **14. Q. Please respond to the testimony of Mr. Brooks and Mr. Blair, on behalf of**  
13 **Lowell Mountains Group (“LMG”) and Mr. Buck, on behalf of the Agency of Natural**  
14 **Resources (“ANR”).**

15 **A.** The witnesses express concerns as to the views from Lake Eden, the Eden dog  
16 sledding operation, and the West Branch Wildlife Management Area (“WMA”).

17  
18 On Lake Eden, portions of up to 4 of the more distant turbines will be visible from perhaps 3 to 6  
19 residences along Lake Shore Road, although it is possible that the blade tips of other turbines  
20 may be visible. See **Exh. Pet-DR-2, Appendix 9H**. The light on the met tower was barely  
21 visible above the hills at night, and only from a very limited area.

22

1 The Eden Dog Sledding Center will have views of the Project and this will change the viewshed  
2 from portions of the open lands around the lodge and residence itself. Most of the center's land  
3 and trails, however, are in the woods and therefore without prominent views of the Lowell  
4 Range.

5  
6 The only possible view I observed from the WMA is from one section where the road crosses a  
7 wetland. There is no public pull off or stopping point at this location. I do not believe that these  
8 limited views will rise to the level of undue, nor affect the recreational activity or ambience of  
9 these areas.

10  
11 **15. Q. Do you have any concluding observations regarding the testimony of other**  
12 **witnesses?**

13 **A.** Yes. Only two witnesses (Kane and Vissering) apply the Quechee analysis, and  
14 neither of them explicitly propose rejection of the Project. Instead, they propose pursuit of  
15 various mitigation options. I have identified the aesthetic impact of their proposals and Mr.  
16 Pughe addresses the economic impact. Except for OCAS, I do not believe the mitigation  
17 proposals offer a significant beneficial aesthetic impact, separate and apart of issues concerning  
18 increased Project cost.

19  
20 I believe that the threshold for an undue adverse determination for this Project has not been  
21 reached. The Lowell Mountains are not identified in the local or regional plan as a significant  
22 visual or recreational resource. No town within the 10-mile radius prohibits wind power. The

1 number of residences with potential visibility in the immediate Project vicinity is low. The  
2 Project is located in a town that has overwhelmingly voted to host it. Approximately 80% of the  
3 area is forested and the region thrives on the working landscape. The array will not overwhelm  
4 the regional viewshed. Instead, the viewshed can absorb this Project because it is hilly, because  
5 it is wooded, and because there are many different views and many different aspects.

6  
7 To more and more people, wind turbines and their qualities are becoming more familiar.  
8 Projects in Vermont, New York, Maine, New Hampshire, and beyond have now been built, and  
9 thus, the proposal for this Project is much less likely to offend. In Vermont, public sentiment  
10 favors wind power, as demonstrated by the DPS's public engagement process, an executive  
11 summary of which is contained in **Exh. Pet.-DR-9**. Based on this analysis:

- 12 a. Participants were largely interested in power supplies that were clean, locally  
13 owned, and sustainable;
- 14 b. 94% believed that Vermont should obtain its energy from renewable sources of  
15 energy;
- 16 c. 69% wanted to see the electricity used by Vermonters produced mostly or entirely  
17 (13% entirely) inside Vermont;
- 18 d. Wind, solar, and efficiency were seen as extremely friendly to the environment;  
19 and
- 20 e. 90% supported (74% strongly) a wind farm's being built even if it were visible  
21 from where they live.

1   **16.   Q.    Can you describe the revisions you made to the visual simulations and how**  
2   **you produced them?**

3           **A.**    At the Board's request, we revised the simulations to portray the visual impact of  
4   cleared areas associated with access roads, electrical line corridors, and turbine pads. We used  
5   the civil engineer's clearing limits to modify the tree cover in our 3D Analyst model. We then  
6   created views of the model from the visual simulation viewpoints and superimposed them over  
7   the visual simulations. We then rendered these clearings to have a photo-realistic appearance by  
8   depicting potential notches in the tree line, exposed terrain, and shadows associated with  
9   clearing. From some vantage points, the clearing is difficult to discern due to distance, lighting,  
10   or angle of view. From other vantage points some clearing impacts are more visible. Areas of  
11   exposed terrain have been rendered a gray color to depict the worst-case scenario of exposed  
12   ledge. In reality, much of the exposed terrain outside of the access roads would be allowed to  
13   naturally revegetate and would have a natural green color. See **Exh. Pet.-DR-2, Appendices**  
14   **9A-F (Revised).**

15  
16   In producing these updated renderings we noticed a slight discrepancy between the DEM terrain  
17   data that was used to create our 3D terrain model and the surveyed terrain data that the civil  
18   engineer utilized to produce turbine pad elevations. This discrepancy between data sources was  
19   also mentioned in Mark Kane's report in reference to their visual simulations. In order to ensure  
20   that our simulations were depicted as accurately as possible, we made slight adjustments in the  
21   positions of the turbines (height adjustments less than 24') in order to rectify this discrepancy.  
22   This change is difficult to detect visually in the simulations.

1   **17.   Q.    Please describe the visual impact of the additional turbines under**  
2   **consideration by GMP.**

3           **A.    Overall, the difference in turbine dimensions will be difficult to distinguish on a**  
4   **visual basis from the turbines used for purposes of the simulations. See Exh. Pet.-DR-10.**

5  
6   **18.   Q.    Please comment on GMP's proposal to retain Met Tower A for the life of the**  
7   **Project and to erect a similar, 80 meter tower in connection with the OCAS system.**

8           **A.    Because the met tower is in place, there is no need for a simulation to assess the**  
9   **visual impact. The proposed OCAS tower is very similar in tower type and height as the met**  
10   **tower. In each case, the incremental visual impact is very small, due to the small size of the**  
11   **towers relative to the proposed turbines, and therefore the two proposals do not result in a**  
12   **material adverse visual impact.**

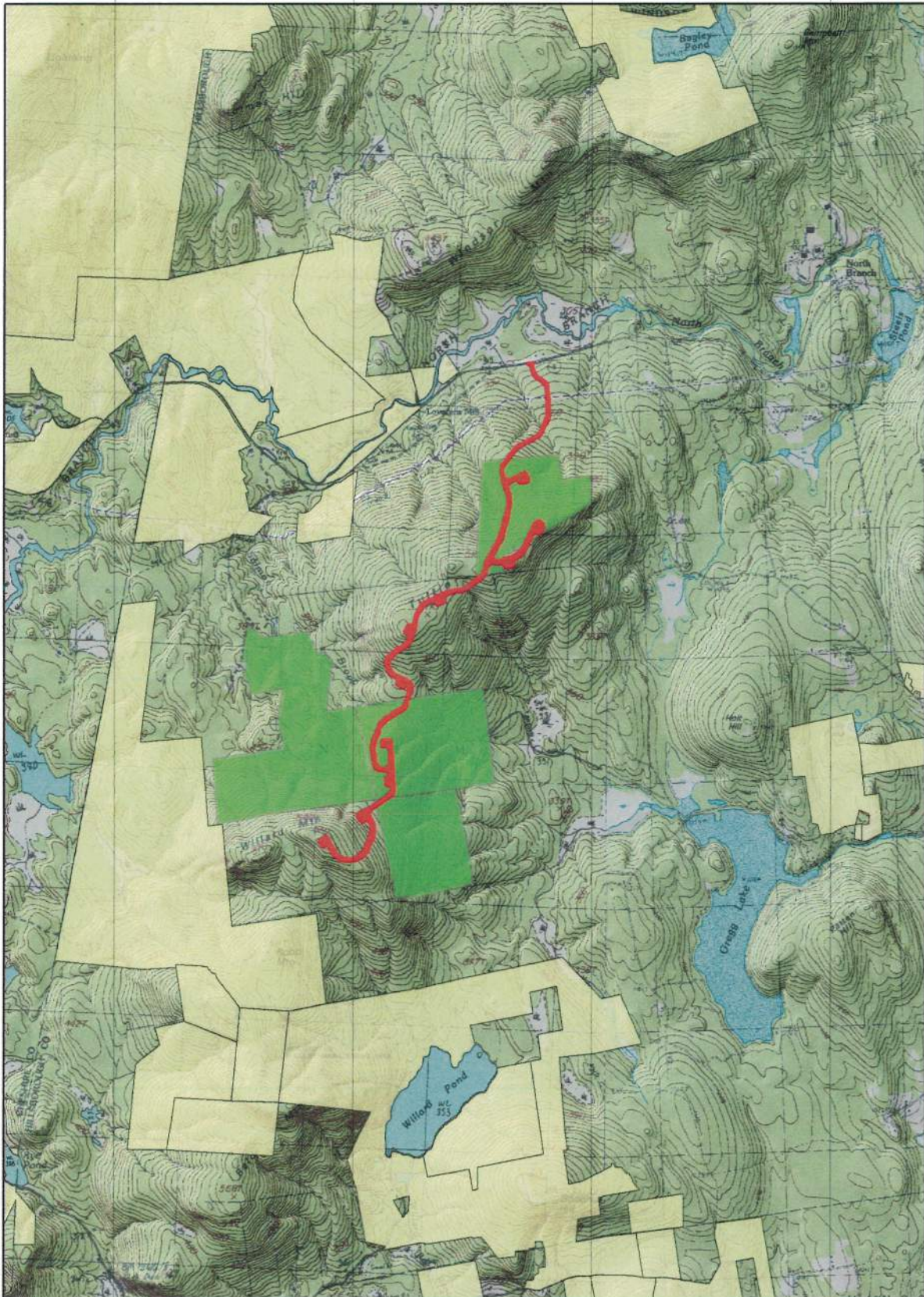
13  
14  
15   **19.   Q.    Does this conclude your testimony?**

16           **A.    Yes.**



## APPENDIX B

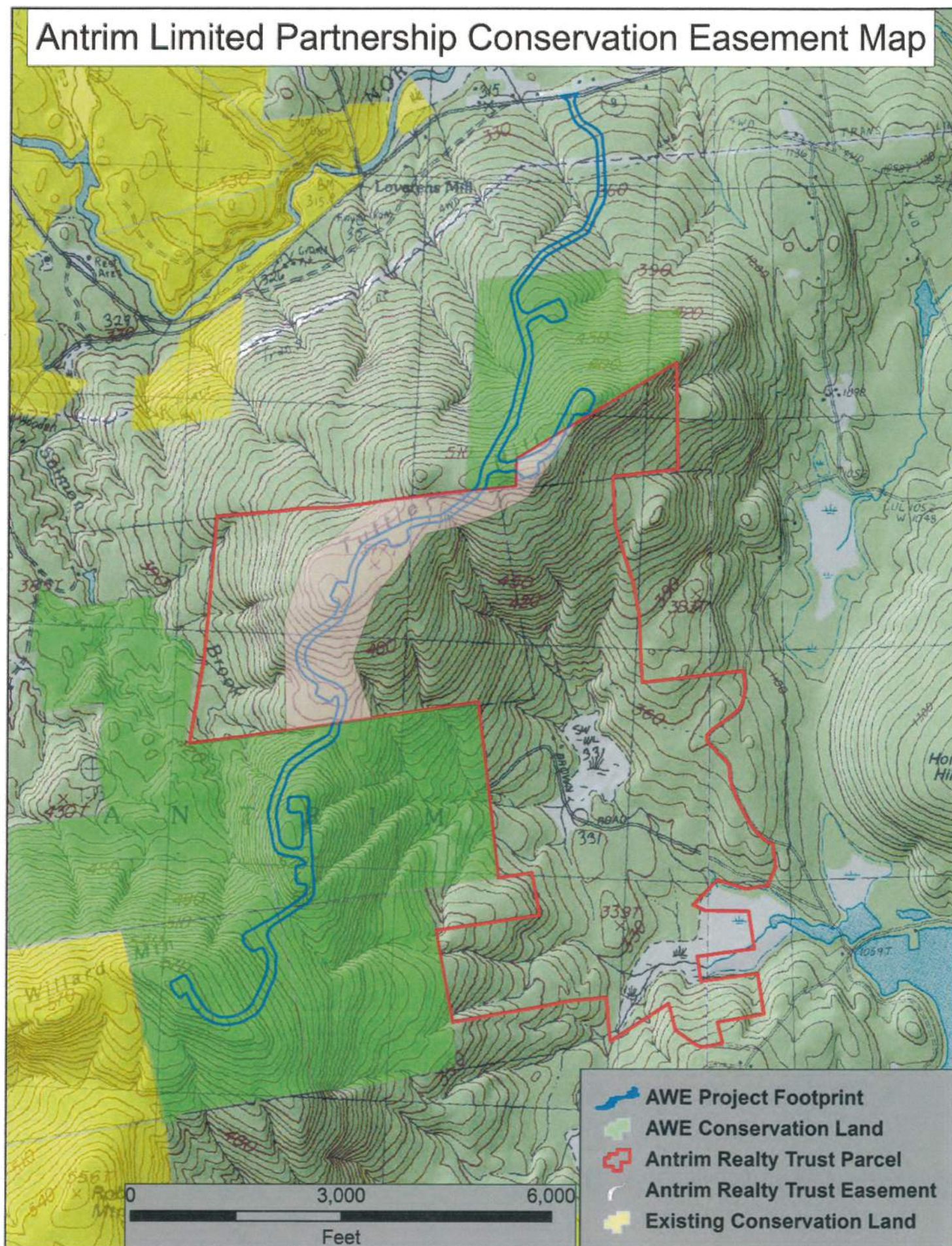
Attachment JK-4



LEGEND: Dark Green -- Project Conservation Parcels  
Light Green -- Other Conservation Lands  
Red Line -- Project Area



# Antrim Limited Partnership Conservation Easement Map







Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
2601 Meacham Boulevard  
Fort Worth, TX 76193

## APPENDIX C

Aeronautical Study No.  
2014-WTE-5441-OE

Issued Date: 03/31/2015

Drew Kenworthy  
Antrim Wind Energy, LLC  
155 Fleet Street  
Portsmouth, NH 03801

### **\*\* NOTICE OF PRESUMED HAZARD \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine AWE 3
Location:	Hillsborough, NH
Latitude:	43-03-41.26N NAD 83
Longitude:	72-00-32.62W
Heights:	1758 feet site elevation (SE) 489 feet above ground level (AGL) 2247 feet above mean sea level (AMSL)

Initial findings of this study indicate that the structure as described exceeds obstruction standards and/or would have an adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Pending resolution of the issues described below, the structure is presumed to be a hazard to air navigation.

If the structure were reduced in height so as not to exceed 291 feet above ground level (2049 feet above mean sea level), it would not exceed obstruction standards and a favorable determination could subsequently be issued.

See Attachment for Additional information.

Further study has been initiated by the FAA.

**NOTE: PENDING RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE, THE STRUCTURE IS PRESUMED TO BE A HAZARD TO AIR NAVIGATION. THIS LETTER DOES NOT AUTHORIZE CONSTRUCTION OF THE STRUCTURE EVEN AT A REDUCED HEIGHT. ANY RESOLUTION OF THE ISSUE(S) DESCRIBED ABOVE MUST BE COMMUNICATED TO THE FAA SO THAT A FAVORABLE DETERMINATION CAN SUBSEQUENTLY BE ISSUED.**

**IF MORE THAN 60 DAYS FROM THE DATE OF THIS LETTER HAS ELAPSED WITHOUT ATTEMPTED RESOLUTION, IT WILL BE NECESSARY FOR YOU TO REACTIVATE THE STUDY BY FILING A NEW FAA FORM 7460-1, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION.**

If we can be of further assistance, please contact our office at (816) 329-2528. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2014-WTE-5441-OE.

**Signature Control No: 231063059-247633258**

( NPH -WT )

Cindy Whitten

Specialist

Attachment(s)

Additional Information

Map(s)

## **Additional information for ASN 2014-WTE-5441-OE**

Section 77.17 (a) (2): A height above ground level or established airport elevation, whichever is higher, exceeding 300 feet within 4 miles; would exceed by 133 feet for the 8B1 airport.

Section 77.17(a)(3): A height that increases a minimum instrument flight altitude within a terminal area (TERPS criteria): 2247 feet AMSL, Boston Consolidated TRACON, MA. A90\_MHT\_MVA\_2014 Minimum Vectoring Altitude (MVA), increase Section G MVA from 3000 to 4200, NEH 2049 feet AMSL.



