

# **BOWERS WIND PROJECT**

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## **LandWorks Response to Comments from Dr. Palmer's Review of the Bowers Wind Project VIA**

May 27, 2011

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# LandWorks' Response to the "Review of the Bowers Wind Project Visual Impact Assessment" by James Palmer

May 27, 2011

## Overview

This document provides a response to the "Review of the Bowers Wind Project Visual Impact Assessment" prepared by James Palmer, Scenic Quality Consultants and dated April 28, 2011. While not specifically stated, it is our understanding that this review was conducted on behalf of the Maine Land Use Regulation Commission. Dr. Palmer provides a comprehensive and detailed review that is intended to inform the Commission and guide its decision making process, and we respect his expertise and attention to detail in conducting his review. We believe, however, in the spirit of providing the Commission with a full understanding of our approach to the VIA, that it is important to provide a response to some of the assumptions, criticisms and conclusions contained in his review. To facilitate readability of this response, we have paraphrased and shown in italicized text the principal comments in Dr. Palmer's report. Our response follows the italicized comment.

## Section 2.3 Visibility Analysis

*Dr. Palmer suggests that a more conservative approach for a forested viewshed analysis would be to include only forested areas with mature trees and a full canopy.*

Without the benefit of extensive field work, Dr. Palmer's suggestion would be appropriate. Additionally, it is also important to understand that the Maine Land Cover Data is made up of very coarse pixels that illustrate a **general** representation and do not in all areas provide an **actual** representation of conditions on the ground. For example, Dr. Palmer states for forested wetlands "total coverage [for these areas] need only be 20 percent," when in fact the metadata states it can be greater than 20%, which is why site reconnaissance is very important. Based on extensive site reconnaissance, LandWorks took into account the vegetative screening provided by forested wetland and scrub/shrub cover, in addition to the deciduous, coniferous, mixed forest cover that he suggest is the standard for a viewshed analysis.

Importantly, the screening provided by scrub shrub and forested wetlands did not impact the overall analysis. For example, the amount of scrub/shrub in the study area is insignificant and has no impact on the viewshed analysis and the overall visibility of the Project. Only 669 acres (0.37%) are identified as such, and have absolutely no affect on resources of state or national significance. Likewise, wetland forest is more dominant to the north of Route 6, where there are no resources of state or national significance anyway. For those wetland forest areas in the south, the presence of wetland forest would cause no noticeable impact on visibility to resources of state or national significance. When comparing Palmer's viewshed analysis to LandWorks (Map 5 vs. Exhibit 4), the only noticeable difference is in the area just north of Route 6 in the vicinity of the Project access road and an area south of Baskahegan Lake. Our field work concluded that much of this area was indeed forest covered, especially along the road, and was therefore included in the viewshed analysis to account for actual conditions on the ground.

As a general note, the viewshed analysis itself is simply the starting point for understanding potential project visibility and provides a framework for determining those locations that require on the ground analysis. The field work and photosimulations are a much more important tool for understanding the impact of project visibility. Nonetheless, we believe that the viewshed maps are reliable and reflect actual conditions and, in some instances, more conservative assumptions that have the effect of overestimating visibility.

*Dr. Palmer suggests that the use of a tree height of 40 feet would be more appropriate than the 45 feet tree height used in LandWorks' viewshed analysis.*

Again, the use of 45 feet was based on LandWorks' site reconnaissance and observation of actual tree height in the Project area. Moreover, this difference also has an inconsequential impact on the viewshed analysis, as apparent when comparing our analyses (Map 5 vs. Exhibit 4). The height change creates only a negligible difference, if any, at the very edges of visibility, and probably by only a few feet, if at all. Dr. Palmer's Table 4 in Section 2.8 confirms this fact, which indicates that only 2 lakes may have visibility of 1 additional blade tip, an imperceptible difference.

*Dr. Palmer states that it was an error for LandWorks to identify visibility of turbines located greater than eight miles from a scenic resource of state or national significance in the four viewshed maps.*

Dr. Palmer is correct that the presence of turbines located more than eight miles is deemed insignificant under Maine law. However, in the viewshed maps we included visibility of any turbine, including those located greater than eight miles, as a conservative measure and to ensure that readers were not misled. This approach is consistent with more typical viewshed analyses, which identify the visibility of all turbines within a combined 8-mile radius, or area of potential effect, regardless of individual distance. In Table 1 of the VIA, we identified only those turbines that were visible within eight miles of the resource and clearly stated that so the reader would not be misled.

*Dr. Palmer states that the treatment of the associated facilities is inadequate, although he also notes that this deficiency is largely addressed in the supplement to the VIA.*

We believe that it is unnecessary to prepare viewshed maps based solely on topography to assist in evaluating visibility of the associated facilities due to the location and height of these facilities, which in most cases are below treeline (except for met towers). Moreover, the visual simulations prepared for the VIA provide a better representation of the visibility of associated facilities from resources of state or national significance. The associated facilities are also discussed below in response to comments on Section 2.5.1.

## Section 2.4 Significant Scenic Resources

*Dr. Palmer notes a perceived inconsistency between the viewshed maps and Table 1, which identifies the number of turbines visible from each of the scenic resources of state or national significance.*

As noted above and acknowledged by Dr. Palmer, because the viewshed maps depict visibility of all turbines, including those beyond the eight miles specified under Maine law, they show greater visibility than is reflected in Table 1. As noted in its labeling, Table 1 identifies the number of turbines that are visible within 8 miles. Thus, Table 1 correctly notes that Horseshoe, West Mushquash and Norway Lakes will not have any views of turbines located **within 8 miles**, although there are turbines within 8 miles that are not visible from those locations.

## Section 2.5 Visual Simulations

As a general note, Dr. Palmer is using ArcScene Visualizations to verify the accuracy of the visual simulations. While this approach provides a basic understanding of what may or may not be visible (we use this program ourselves), it cannot provide an **exact** representation of visibility. This is apparent in some of the visualizations that do not show vegetative screening along the shoreline (some of these areas may be forested wetland). It also appears that Dr. Palmer is using a polygon for the vegetation and offsetting it by a height of 40 feet. When overlaying polygons on a dem or tin or elevation data in ArcScene, it is not always seamless. Often, the vegetation does not sit directly on top of the elevation data, particularly in higher elevation areas. This results in areas showing no vegetation where there should be. This is also apparent in Dr. Palmer's visualizations (see ArcScene Visualization 3: Junior Lake, which shows no vegetation or spotty vegetation on the hillsides).

*Sysladobsis Lake: Dr. Palmer notes that no visual simulation was prepared for this scenic resource of state or national significance.*

LandWorks did not prepare a visual simulation for Sysladobsis Lake because of its distance and similarity to simulations provided for other resources. Nonetheless, a simulation from Sysladobsis Lake will be provided.

*Shaw Lake: Dr. Palmer notes that additional turbines would be visible that are not shown in the photosimulation.*

Dr. Palmer is correct that the additional turbines 23-27 would be visible. They were not shown on that simulation due to the limitations of the 11x17 format and the need to use the same viewing distance for all simulations. We note that there is also one turbine visible but not reflected in the 11 x 17 format for Scraggly Lake, and the blade of one turbine visible from the Pleasant Lake Boat Launch that is also not reflected on the 11 x 17 format.

### **Section 2.5.1 Observations About the Visual Simulations**

*Dr. Palmer states that photographs of existing conditions comparable to the simulation should be provided.*

The visual simulation format that we provided has been accepted for visual assessments of numerous wind projects, and we provided large panorama photos of existing conditions with callouts in Exhibit 5: Photo Inventory. However, additional full-size panorama photos depicting existing conditions from the visual simulation vantage points will be provided for ease of comparison.

*Dr. Palmer states that use of the panoramic images of two or three photographs makes it difficult to calculate the appropriate viewing distance.*

With regard to visual simulations, we typically provide more than a single frame view for wind energy projects because 1) a single frame doesn't take into account the full breadth of visibility and 2) the fact that, for these types of projects, the viewer's horizontal cone of vision (typically considered to be 120 degrees) will take in more than what a single frame typically shows. The layout of our visual simulations is consistent with many other visual assessment projects, including wind, and the panorama format reflects how viewers actually perceive the landscape. As such, we believe it is useful and appropriate. There does appear to be a difference in our listed viewing distance, based on the method of calculation cited by Palmer (Sheppard p. 185). As indicated in Dr. Palmer's review, our simulations may overstate the size of the turbines due to the fact that our viewing distance may be too close. Using Sheppard's method, we determined that the viewing distance for all the simulations (except for Keg Lake which has an unspecified focal length), would be approximately 18.3", which is in line with Dr. Palmer's calculations. Although the width of the panoramas may have varied slightly, the height of the photos

was the same for all (7.7" prior to minor cropping). Using the proportions of a 24"x36" board, which was cited in the book's example, the associated width for the calculation would be 11.6" for all simulations, thus resulting in a viewing distance of 18.3".

*Dr. Palmer notes that the photograph used for Keg Lake was not taken at a normal lens setting and the image resolution is low.*

We agree that the photographs utilized for the Keg Lake simulation were not up to our normal professional standards, but we were unable to access the lake on our site visits and therefore had to rely on the only available photographs, which were taken by someone not trained in visual impact assessments. A note on the simulation clearly indicates our understanding of this limitation. Notwithstanding that limitation, the simulation is accurate, as Dr. Palmer concluded.

*Dr. Palmer states that the VIA's treatment of the associated facilities is inadequate, although he concedes this shortcoming is largely addressed in a supplement to the VIA that focused on visibility of the associated facilities on locally significant scenic viewpoints. He suggests that a similar Table assessing the visibility of the associated facilities on scenic resources of state or national significance should also be provided.*

The majority of the associated facilities will not be visible from the resources of State or National significance. As stated in the VIA, the express collector line, the transmission line, the O&M building, and the substation are all located on the north side of the Project ridges and will not be visible from scenic resources. The collector line is lower than the height of the surrounding trees and would only be potentially visible from relatively close distances where tree clearings allow views. In addition to the collector line, the only visual impacts from associated facilities that we anticipate would be from tree clearing and grading associated with the turbine pads and access roads. We depicted these potential visual impacts of the collector line and tree clearing and grading associated with the turbine pads and access roads in three visual simulations (Pleasant Lake Boat Launch, Junior Lake, Duck Lake) that represent a sampling of the full range of viewing angles and from the various lakes and are located at a range of viewing distances. Detailed descriptions of the potential visibility of these associated facilities were provided in the VIA for each of these simulations. As requested, a table that summarizes the potential visibility of all associated facilities from great ponds has been included in Appendix A.

## **Section 2.6 Public Use and Expectations**

*Dr. Palmer states that the discussion in the VIA on public perception of wind development and viewer expectations is general and not supported by citations, and states that the results from two surveys conducted by the Portland Research Group were not available for use in the VIA.*

Dr. Palmer correctly notes the difficulty of obtaining data on public perception and viewer expectations, however, the VIA reflects a number of sources that helped to inform

our conclusions on these issues. In addition to survey information, we used background polling, studies, guide books, publications, online media, anecdotal and interview sources, as well as general field observations, that, coupled with our years of experience in assessing recreational resources, and in participating personally in recreation in Maine, support our conclusions on user expectations. Additionally, the results from one of the surveys conducted by the Portland Research Group was available for use and contributed to our overall understanding of these two issues, although the report had not been finalized and therefore was not included with the VIA. See attached Appendix B for a list of sources that helped guide our assumptions in terms of recreational use and viewer expectations in preparing the VIA.

In addition to the sources referenced in the VIA, we have since reviewed a number of additional sources, which are also included in the attached Appendix B.

We appreciate the importance of providing clearer information on the many sources that help to inform our conclusions and hope that this response provides additional clarity on that issue.

*Dr. Palmer states that the telephone survey conducted by Portland Research Group although interesting, suffers from flaws that significantly reduce its usefulness. Specifically, he states that the sample was not random and combined different geographic groups, therefore rendering the survey unusable to estimate the "extent, nature, and duration of potential affected public uses" of the area.*

Portland Research Group, which specializes in surveys and market research, has provided a response to Dr. Palmer's specific concerns in their memo entitled Portland Research Group's Response to the Review of the Bowers Wind Project Visual Impact Assessment: Outdoor Activities Users Research (Telephone Survey and Snowmobiler Survey), which accompanies this response. Our understanding is that the data was collected and consolidated in such a manner in order increase information from people who are actually aware of and use the area, which is crucial. Despite Dr. Palmer's concerns we believe that the data is useful, but we have not relied heavily on it to form our conclusions for this Project. Instead, it is but one of many resources that contribute to a growing body of evidence regarding viewer expectations and use and enjoyment of scenic resources. In terms of understanding the "extent, nature, and duration of potential affected public uses", we have relied more on interviews with local guides, business owners, selectboard members, recreational guidebooks, and local recreational websites to understand the type and level of activity that occurs on these lakes. In addition, we interviewed the author of Quiet Waters Maine, Alex Wilson, used information gleaned from a recent interview with the owners of Maine Wilderness Camps, evaluated the results of intercept and other surveys done for other wind power projects, and reviewed the Maine State Comprehensive Outdoor Recreation Plan 2009-2014 and the LURC 2010 Comprehensive Land Use Plan. See Appendix B.

*Dr. Palmer states that the snowmobile survey is likewise of limited value due to the fact the respondents were a primarily self selected group that is willing to tolerate the presence of grid-scale turbines.*

Portland Research Group responds to Dr. Palmer's specific concerns in detail in their memo entitled Portland Research Group's Response to the Review of the Bowers Wind Project Visual Impact Assessment: Outdoor Activities Users Research (Telephone Survey and Snowmobiler Survey). Again we believe the data is useful, despite potential limitations, but we do not rely heavily on it to form our conclusions for this Project.

## **Section 2.7 Evaluation of Potential Scenic Impacts**

Dr. Palmer addresses potential scenic impacts to all the resources of state or national significance within 8 miles of the Project in this section and in greater detail with conclusions in section 4.

Sections 2.7.1 through 2.7.8

*In his review of the significance, character, use and visibility for each of the scenic resources of state or national significance within eight miles of the Project, Dr. Palmer states that the lake's management classification by LURC is not relevant to its significance under the Wind Energy Act. Dr. Palmer also evaluates the impact of an automatic ten point deduction on the scenic attributes ratings due to the presence of turbines in the viewshed.*

We respectfully disagree with Dr. Palmer on these points. First, we believe that LURC's management classification is an additional piece of information that helps inform the overall assessment of significance. For example, none of the scenic lakes within eight miles are "remote ponds," which are defined by LURC as Management Class 6 lakes that are "inaccessible, undeveloped lakes with coldwater fisheries." The visual impact standard set forth in the Wind Energy Act is whether the expedited wind energy development "significantly compromises views from a scenic resource of state or national significance such that the development has an unreasonable adverse effect on the scenic character or existing uses related to scenic character of the scenic resource of state or national significance." 35-A MRSA Section 3452 (1). A scenic resource of state or national significance is a defined term and for lakes in LURC's jurisdiction includes only those lakes designated as outstanding or significant from a scenic perspective in the Maine Wildlands Lake Assessment. *Id.* at Section 3451(9)(D). The criteria for evaluating scenic impacts include, among others, the "significance of the potentially affected resource of state or national significance." *Id.* at Section 3452(3). Thus, in evaluating the significance of the resource under Section 3452(3), we believe it is important to consider all factors that affect scenic quality. The level and type of development on a lake is certainly one such factor and we believe is a relevant consideration under the Wind Energy Act. The level of development is reflected not only in LURC's management classification for the resource, but perhaps more importantly,

from observations of current development and other features associated with the lake. Thus, although a lake may require analysis under the Wind Energy Act due to its ranking under the Maine Wildlands Lake Assessment, it is still important, indeed necessary, to consider other factors when evaluating the significance of the resource and the Project's overall impact on the users of that resource.

Dr. Palmer also provides an analysis of the impact of a ten point deduction on the ratings for scenic attributes and, in particular, whether a lake could lose its overall rating of outstanding or significant based on such a deduction. We think such an exercise is of limited value. First, the ratings reflect an assessment done in 1987 and we believe it is critical to evaluate the effect of the Project on the resources as they exist today, not as they may have been evaluated more than twenty years ago. Second, we do not believe that a deduction of ten points is appropriate in all instances.

Other than the relevance of LURC's classification of the individual lakes and the significance of the ratings for scenic attributes and deduction for assumed inharmonious development, Dr. Palmer's review of the significance, character, use and visibility as set forth in these sections of his review is generally consistent with ours and does not require specific comment in most cases. In terms of the use of these lakes described by Dr. Palmer, however, our overall assessment and interviews suggests that Pleasant Lake is not the most highly used of the lakes, as he inferred from the PRG survey. The level of use for many of these lakes is also likely lower than Dr. Palmer had assumed, as he had not yet observed the actual condition of the boat ramps, limited parking, and difficulty of access for many of the lakes. As noted above, however, LandWork has provided a more comprehensive listing of the resources that have informed our assessment of the use of these resources and the effect of the Project on the public's continued use and enjoyment of these resources, and that information provides additional context and detail that is not reflected in Dr. Palmer's summaries. Of particular note is the type of use and subsequent user expectations for Pleasant Lake, as revealed by recent interviews that are discussed in Section 4.2 and referenced in the Appendix.

### **Section 2.7.7 Visual Impact of Associated Facilities**

See LandWorks response in Section 2.5.1

### **Section 2.7.8 Overall Impact Evaluation**

*Dr. Palmer points out that the VIA incorporates terms and concepts into their evaluation matrix not specifically listed in the Wind Energy Act.*

The Project is subject to the evaluation criteria set forth by the Maine Wind Energy Act and these criteria are outlined in pp. 62-63 of Dr. Palmer's review. These are accepted criteria, as Dr. Palmer points out, and we are both in agreement that the VIA satisfies accepted standards for Visual Impact Assessment. These criteria do not specifically delineate how the Visual Impact Analysis (VIA) is to be conducted, but Dr. Palmer

provides an outline and description of the typical components of a VIA on pp. 64-66 of the review. Aesthetic experts generally agree on these evaluation methods and categories, but we believe it is important to understand that a comprehensive VIA is more than just the sum of its parts. Thus, while Dr. Palmer is correct that we have used terms and concepts not expressly set forth in the Wind Energy Act, these concepts are useful and accepted elements for evaluation among landscape professionals and provide an additional layer by which to assess the significance of visibility. The specific categories comments on by Dr. Palmer are responded to below.

*Dr. Palmer takes issue with the VIA's assessment of resource **Significance**, which is based on analysis beyond the original designation in the Maine Wildlands Lake Assessment.*

The Wind Energy Act does not specify how the Visual Impact Assessment is to be conducted, nor does it dictate how an expert is to determine the overall effect of a project on the scenic resource. The "significance of the potentially affected resources" is Criteria A in the evaluation criteria set forth in the Act. LandWorks includes in its' assessment of significance whether or not a scenic resource is unique, and this assessment informs Criteria A. We believe that this is an important consideration with regard to assessing scenic character and qualities and relates to the importance or significance of such resources. If a resource is a one of kind scenic environment, with a corresponding opportunity for the user/viewer to experience such a unique experience which cannot be experienced elsewhere, this then elevates the resource's sensitivity to change and development. This topic is also discussed in response to Section 2.7.1 through 2.7.8 above.

*DR. Palmer indicates **Character** is just another word for scenic attractiveness, which was the basis for the VIA's assessment of significance*

The "existing character of surrounding area" is Criteria B in the evaluation criteria set forth in the Act. LandWorks believes that the character of the area is comprised of a number of elements. Our understanding of the character of the Project area has relied on our work in the field and experience with other landscapes in the region. We believe that character, while contributing to our understanding of scenic attractiveness, is also about the physiography, the visual qualities of the area as well as the land uses present in the landscape. It is a description and understanding of the existing conditions and landscape type, and not just another word for scenic attractiveness. It informs our understanding of the scenic qualities by helping us to understand how sensitive that landscape may be, how distinct it is as a landscape and how that landscape, given its character, can accommodate new development. It is relevant because it effects the ability of the landscape to "visually absorb" or accommodate the development without significantly altering the quality or character of the resource. We agree that it is important to evaluate whether the presence of the wind turbines is so prominent that it will alter the overall impression that a viewer/user will have of the resource.

*Dr. Palmer suggests that the criteria **Proximity/Distance Zones** is not mentioned in the Wind Energy Act and is being misapplied in the VIA.*

As stated, LandWorks' use of proximity and distance is directly related to perceived impact and therefore we consider it to be a valuable tool that informs Criteria F, scope, scale and effect. The presence of the wind turbines, for example, in a "background zone" when seen from a particular vantage point, diminishes its perceived impact. The Act does not specify how to conduct the VIA, and proximity zones are an established methodology for visual assessment and another criterion relied in the Scenery Management System employed by the Forest Service, as cited in our report. We agree with Dr. Palmer that whether people experience individual turbines and all the visible turbines collectively as dominating the view is relevant, and proximity and distance are simply factors that inform that analysis.

*Dr. Palmer suggests that **Impact to Enjoyment** is a relatively straightforward question to incorporate into an onsite intercept survey that utilizes visual simulations and that such surveys are more reliable than professional appraisals using the types of assessment criteria used by LandWorks.*

We respectfully disagree with Dr. Palmer. Showing visual simulations in the field as part of an intercept survey can be a useful tool in order to convey the scope and scale of a project from a particular vantage point and thus understand how that might affect the user's continued use and enjoyment of that scenic resource, but is not the only or even the best tool. Based on relatively low use of these lakes and often lack of distinct access points, conducting an intercept survey that collects enough meaningful information for all the lakes would have been practically impossible. Showing a visual simulation for phone surveys is also not practically feasible. Even if it were possible through the use of a website, showing visual simulations in isolation, without all the corresponding context and analysis involved in a VIA, can be misleading. Seeing only worst-case views from particular locations could unduly skew one's impression of a project when in fact there may be many nearby public vantage points with limited or no views. It should be noted that 94% of those PRG phone survey respondents who use the Study Area have seen constructed wind projects in Maine and thus have some level of reference regarding their potential scale and appearance, without seeing visual simulations. As noted above, these surveys were helpful, but we did not heavily rely on them in reaching our conclusions.

We believe that some degree of deductive reasoning and expert experience is not only valid and useful, but is necessary. Not only is it logistically challenging, if even possible, to conduct surveys on all lakes or resources, but the results of any such survey similarly provide only a snapshot of data that may not give the complete picture of use and viewer expectations throughout all seasons. As such, intercept surveys, especially for relatively low-use areas such as this, can themselves be somewhat anecdotal in nature and cannot be relied upon exclusively to form conclusions about use and viewer expectations. As noted in our response to comments on Section 2.6, we have relied on a host of different data sources that collectively provide a more complete picture on both the use of the

resource and, importantly, allow us to make informed conclusions on the Project's impact on the public's continued use and enjoyment of these resources.

Our synthesis of the various user intercept surveys cited elsewhere in this response and in our original report, along with the insights gleaned from the PRG surveys all point to similar conclusions – that 1) the view of wind projects are viewed as positive or neutral by the majority of respondents, and 2) does not seem to greatly effect their likelihood to return. A note of caution is warranted with regard to the use of these surveys. We believe that to some extent these surveys are self-selecting insofar as only those people with a potential interest in responding do so, and thus you have response from people who want to weigh in. These are often only limited samplings given the number of respondents that typically range from a low of 50 to a high of under 150 individuals. The survey conducted on Black Mountain and on Donnell Pond for the Bull Hill Wind Project (81 interviews), for example, conducted by Market Decision in October, 2010, indicated that 1) the view of turbines would have little, if any effect on their likelihood to return to Black Mountain and Donnell Pond (for water activities), 2) that the turbines in view of Black Mountain would have a slightly negative effect on recreational enjoyment, and 3) there was almost no change in enjoyment of the resources that would result if the project was built. These findings are consistent with similar intercepts which find that neutral to positive views of wind energy projects from hiking trails in particular far outweigh negative reactions. For example, the Highland Wind Survey, conducted by Portland Research Group in March of 2010, found that hikers concluded that the view of the project from Little Bigelow Mountain would be neutral with regard to the perceived scenic value, and most importantly would have no overall effect on their likelihood to return.

In addition to the studies and publications cited, we have relied upon our extensive professional experience in order to make reasonable assumptions in terms of use and viewer expectations. LandWorks has been involved with the aesthetic assessment of wind energy development for over 15 years, beginning with our review, on behalf of the Vermont Department of Public Service, of the Searsburg Wind Farm in Searsburg, VT - the first utility-scale wind energy development in New England. We have been involved in 10 different utility-scale or net metered wind energy projects, several of which are in operation today. We have been involved in evaluating aesthetic impacts of wind and solar energy, biomass facilities, nuclear power and major transmission facilities throughout northern New England. From these experiences and the corresponding evolution of the technical means by which to conduct such analyses, we have learned that visual and aesthetic impact evaluation is an inexact science. Our ability to assess visual and aesthetic impacts, while relying heavily on technical methodologies such as visual simulations and viewshed mapping using GIS technologies, also requires the distinct capability to synthesize the technical analyses and data with a broader understanding of the project's context, it's fit within the physiography and cultural geography of the region, and its consistency overall with the intent of the legislation. Our experience has led us to a qualitative approach to determining overall scenic impact to the resource. This qualitative approach draws heavily on our field experience and observations, all of which

have informed our understanding of how the viewer engages in recreation on lakes and what they typically do and expect to see or experience. On several occasions, and without benefit of a formal intercept of survey process, we have struck up conversations with boaters and fishing parties while working in the field on wind energy projects. These informal conversations, along with other means of formal and informal analysis have helped us develop an understanding of use, expectation and orientation for those using the lakes.

*Dr. Palmer points out that **Visual Absorption** is not a criteria listed in the Wind Energy Act and suggests that is not a helpful criterion to consider in a VIA.*

Visual absorption is an established criterion among experts for evaluating visual impact and informs Criteria F of the Wind Energy Act criterion. It addresses the ability of the landscape to accommodate development and is part of our holistic approach to understanding the potential for a landscape to accommodate change and the degree to which the qualities of that landscape or perception of that landscape has been affected. Our experience in the field indicates that this concept is particularly compelling when actually viewing landscapes that will have wind turbines in view. For example, the turbine arrays may be close, but they still may not dominate the 360 degree view and instead may occupy only a small portion of the view. Other elements within that view which attract the eye and views in other directions may diminish the overall effect of turbine visibility. Visual absorption is also a criterion used in the Scenery Management System employed by the Forest Service, as cited in our report. Although visual simulations are important, the concept of visual absorption helps us understand the significance of visibility and is also helpful in understanding how the Project fits into the landscape more generally and from viewpoints where visual simulations are not prepared.

*Dr. Palmer states that **Likelihood to Return** is a criterion stated in the Wind Energy Act that was not included in the VIA.*

Dr. Palmer is correct that LandWorks did not include a separate criterion on Likelihood to Return. Likelihood to return is not a criterion under the Wind Energy Act. It is, however, captured under the more general category of impact to enjoyment and informs Criteria E, "potential effect on public's continued use and enjoyment."

*Dr. Palmer takes issue with the numerical approach utilized in the evaluation matrix, criticizing the fact that equal weight was given to each resource, and he suggests that a conclusion of overall project impact cannot be made based on numerical averaging.*

We believe that Dr. Palmer has made a valid point here, and we agree that the process of visual analysis and the resulting conclusions cannot be made on a purely numerical basis. The evaluation matrix that was prepared for the VIA was an attempt to respond to a perceived need for a more quantifiable approach. The averaging reflected in the matrix, however, was not the basis for our overall conclusions, but rather an attempt to translate an essentially qualitative judgment into a numerical matrix.

Our interpretation of similar matrices prepared by Dr. Palmer, like Table 5 prepared for his Bowers report, was that his rating of 'Overall Scenic Impact' for each resource was essentially an averaging of his rating for each criterion (low, medium, high). However, upon further review, we now understand that the matrix simply summarizes the results of his more holistic analysis regarding the scenic impact for each resource. If it were a straight averaging of the criteria, giving equal weight to each, then his ratings for overall scenic impacts would in many cases be lower. How he weighted the various criteria to determine overall scenic impact for each resource is not expressly stated so it is not possible for us to determine whether there are other factors, including field observations, that would change that weighting.

In order to address the concern regarding the numerical analysis, and in the process of responding to Dr. Palmer's comments in Section 4, we have provided a narrative-based explanation of overall scenic impact for each lake on a case-by-case basis, and we note how our conclusions compare to Dr. Palmer's. In addition, we have provided a more thorough explanation of our synthesis of the complete analysis that led to the overall conclusion of 'no unreasonable adverse impact'.

We agree that critical components to an assessment of visual impacts do not lend themselves to rating by a numerical value. Thus, in order to address the concern regarding the numerical analysis, and in the process of responding to Dr. Palmer's comments in Section 4, we have provided a narrative-based explanation of overall scenic impact for each lake on a case-by-case basis, and we note how our conclusions compare to Dr. Palmer's. In addition, we have provided a more thorough explanation of our synthesis of the complete analysis that led to the overall conclusion of 'no unreasonable adverse impact'.

## **Section 2.8 Observations about the Application of the Evaluation Criteria in the VIA**

*Dr. Palmer provides his comments on how best to address the Wind Energy Act's evaluation criteria and notes the ways in which LandWorks has informed the evolution of his thinking on this topic.*

We agree with many of Dr. Palmer's suggestions here and believe they are in many instances reflected in our analysis, although not always as directly or clearly as he advocates.

### **Section 2.8.1 Concluding Comment about Adequacy of Review**

*Dr. Palmer suggests that LURC should require post-construction monitoring to evaluate a project's visual impact, similar to what is currently required to determine a project's compliance with sound limits.*

Dr. Palmer makes an interesting point here. Although LandWorks does not believe that assessment of visual impacts lends itself to the same type of quantitative monitoring that occurs to evaluate, for example, sound levels, the presence of existing projects in the Maine landscape provides an opportunity to understand the impact of wind turbines on use and enjoyment of lakes and other resources. For example, a recent study entitled "Baskahegan Stream Watershed Recreation Use & Resource Analysis, conducted in the Summer of 2010 by Andrea Ednie, Ph.D. of the University of Maine at Machias (and Chad Everett, a student at UMM and John Daigle, Ph.D. at the University of Maine) yielded some relevant results. Baskahegan Lake, the primary waterbody focused in the study, affords extensive views of the Stetson Mountain Wind Project, which was in place at the time of the study. The results from the Baskahegan Study confirmed a number of key points that support our VIA conclusions. These include that the primary users of the Lake are people fishing and using motorboats to do so (67% as opposed to 6% kayaking and 4% canoeing). The fishing on the lake is excellent and affords great opportunities for children learning how to fish. Of significance is the fact that those individuals who were interviewed indicated that scenery was a secondary reason for their enjoyment of the lake; and this response was given with the wind project already in place. In essence, this study does serve, in part, as a de facto post construction review. For example, the key elements of the scenic and recreational qualities cited were the expansiveness of the lake and its ability to provide a sense of solitude on the water. Quietness was important. The beauty of the lake and the lack of development along the shoreline were also factors cited with regard to use and enjoyment. A lack of crowds due to the size of the lake and its rock conditions were noted. Users were queried with regard to changes in use and condition of the lake (and streams). There was a focus on the impacts of human use around the lakes. But the key finding relevant to the impact of the wind project was that none of the interviewees cited the wind project as a factor in their enjoyment, or as a detriment to the scenic and recreational qualities of the lake. This is a significant finding and warranted a follow up interview with the principal author, Professor Ednie (Phone interview conducted by Neil Kiley, May 15, 2011). She noted that while there were no specific questions with regard to the wind project in the survey, "she was equally surprised that no one referenced them in any of the responses. She assumes that people just did not attach any significance to them. By contrast she confirmed that residential development seems to be perceived much more negatively". Given the fact that the presence of the wind project did not emerge as an issue affecting use and enjoyment, it can be concluded that users of the lakes within the Bowers project area (who are most likely to be of the same demographic makeup with the same proclivities towards recreation activities) are likely to continue recreating on those lakes after the construction of the project and will not find the view of the wind turbines to be detrimental to their experience or create an unreasonable adverse effect on the recreational and scenic resources of the area.

### **Section 3. Field Review and Additional Analyses**

#### **Section 3.2 Visibility Analysis**

*Dr. Palmer states, "Potentially 'worst case' viewpoints at all state or nationally significant scenic resources need to be investigated in the field, and should also be investigated through geometrically accurate visual simulations and perhaps cross sections that include tree heights measured in the field."*

We agree with this statement, but would also suggest that providing only worst-case simulations can cause one to lose sight of the fact that a variety of views, with varying project visibility, are possible from any given resource. In most instances LandWorks provided worst-case visual simulations for all of the locations of state or national significance, except for Sysladobsis Lake (simulation forthcoming). In some cases the most highly-visited public vantage point could be considered the most important location to conduct a visual simulation. In terms of the graphic tools available, visual simulations are the most reliable means of demonstrating the screening effects of vegetation from a particular vantage point, and they depict how the human eye actually perceives objects in the landscape.

#### **Section 3.3.1 Visualizations for which there is no Photosimulation**

See Section 2.5

Photos from Sysladobsis Lake will be taken and a visual simulation will be created. It should be noted that it was our observation that such a simulation was not of necessity since the view from here is nearly identical to that of Junior Lake (except slightly farther), as shown in Dr. Palmer's visualizations.

#### **Section 3.5 Bowers Mountain Wind Project Outdoor Activities User Surveys**

*Dr. Palmer identifies several concerns with the snowmobile survey and telephone survey.*

These concerns are addressed in response to comments in Sections 2.6 and 2.7.8 above.

#### **Section 4 Evaluation of Scenic Impacts**

*Dr. Palmer compares his evaluation criteria and levels of severity with those used by LandWorks.*

LandWorks and Dr. Palmer both conducted systematic reviews of each lake and provided an overall Summary of Impacts; however, Dr. Palmer was not able to conduct the customary fieldwork at the time he prepared his comments. Dr. Palmer critiques LandWorks for using numerical analyses in Table 2, but we would contend that there is no difference between using 1, 2 and 3 to represent low, medium and high - categories

that Dr. Palmer uses - and that these are interchangeable. As stated in the overview, we believe that Section 4.1.9 of our report provides a useful and appropriate means by which to assess overall scenic impacts. LandWorks provides a narrative explaining our approach, considerations, sources of information for the validity of the analysis categories and our efforts to make the best use of these categories in developing the overall evaluation. We not only weigh and address the stated criteria of the Act, but we add additional categories that we believe are useful, informative and add more understanding to the assessment of impacts. Furthermore, while the Act identifies criteria for evaluation, it does not specify how to conduct the evaluation and what tools to use. We have chosen to consider a wide range of tools to inform our assessment. In this regard, Dr. Palmer notes on page 55 "that LandWorks has made a significant contribution in the ongoing discussion of how to further define the evaluation criteria."

### **Sections 4.2 through 4.15 Lake-by-Lake Analysis of Overall Scenic Impacts**

*Dr. Palmer evaluates the scenic impact of the Project on each of the scenic resources of state or national significance within eight miles.*

In an effort to better explain the differences between Dr. Palmer's conclusions and those reached by LandWorks, we have provided comments on Dr. Palmer's lake by lake review of scenic impacts. We have provided a more detailed discussion of Pleasant, Scraggly, and Shaw lakes, as Dr. Palmer concluded that the overall scenic impacts to those three lakes was Medium to High.

#### **Bottle Lake**

Dr. Palmer's analysis regarding overall scenic impact appears consistent with our analysis, and he determined a rating of Low-Medium. Our rating would be closer to the Low end due to many factors, including those cited in the body of our report. Of particular note is the highly visible and dense shoreline development, which affects viewer expectations, and the limited parking available at the informal, privately-owned boat launch. In addition, as Dr. Palmer notes, there is no visibility from half of the lake, the nearest visible turbine is over five miles away, and the scenic qualities are not central to the common recreational activities on the lake.

#### **Duck Lake**

Dr. Palmer's analysis regarding overall scenic impact appears consistent with our analysis, and he determined a rating of Low-Medium. Our rating would be closer to the Low end due to many factors, including those cited in the body of our report. In addition, as Dr. Palmer notes, there is no visibility from half the lake, and although the nearest visible turbines are 2.5 miles away, they will not be visually dominant. He also notes that scenic quality is not central to the common activities on the lake, such that the "public's continued use and enjoyment" will not be negatively affected.

### **Junior Lake**

Dr. Palmer's analysis regarding overall scenic impact appears consistent with our analysis, and he determined a rating of Medium.

### **Keg Lake**

Dr. Palmer's analysis regarding overall scenic impact appears consistent with our analysis, and he determined a rating of Medium. Our rating would be Low-Medium due to many factors, including those cited in the body of our report. The main factor that contributes to this rating is the difficulty of access and thus low level of use by the public.

### **Pleasant Lake**

It is interesting to note that Dr. Palmer assigns a rating of medium or low for each criterion on this lake except for 'Scope and Scale of Project Views'. From this we can infer that he has attributed extra weight to this particular criterion in determining the overall scenic impact to be Medium-High. We believe that there are a number of factors that would lead us to conclude that the overall rating should be closer to Medium.

Although the turbines are visible throughout much of the lake, we do not feel that they would be an unduly dominant visual presence. The nearest visible turbine would be 2.16 miles from the lake, and therefore under no circumstances would the viewer perceive that the turbines are 'looming' over them, as a result of their distance and the height of the turbines in relation to the surrounding vegetation and topography. Further discussion regarding the visibility of the turbines can be found in section 4.1.8 of our report. Of particular note is that there are two primary viewpoints on this lake. From Maine Wilderness Camps, no views are expected and from the boat launch on the southern shore, the nearest visible turbine will be 4.5 miles away.

With the lowest point score possible to attain a lake rating of Outstanding, we feel that Pleasant Lake and the surrounding working landscape do not possess particularly unique visual qualities that would elevate the resource to an exceptionally high level of visual sensitivity. Based on the results of the PRG survey, this lake is not well-known outside of the local area. Interviews with Kathy Whitney and the owners of the Maine Wilderness Camp, conducted after the report was complete, confirm our assumption that its scenic qualities don't appear to be the major reason for attracting visitors (see Appendix). Our understanding of the nature of the lake's use and subsequent viewer expectations do not suggest that the Project would result in a significant negative impact on use and enjoyment of the lake, and this finding is consistent with Dr. Palmer's comments that fishing is anticipated to be the primary use and the effect on continued use and enjoyment is Low.

### **Scraggly Lake**

As with Pleasant Lake, Dr. Palmer assigns a rating of medium or low for each criterion on this lake except for 'Scope and Scale of Project Views'. From this we can infer that he has attributed extra weight to this particular criterion in determining the overall scenic

impact to be Medium-High. There are a number of factors that lead us to conclude that the overall rating should be closer to Medium.

Although the turbines are visible throughout much of the lake, we do not feel that they would be an unduly dominant visual presence. The nearest visible turbine would be 3.3 miles from the lake. Under no circumstances would the viewer perceive that the turbines are 'looming' over them, as a result of their distance and the height of the turbines in relation to the surrounding vegetation and topography. Further discussion regarding the visibility of the turbines can be found in section 4.1.8 of our report.

With a lake rating of Significant, we feel that Scraggly Lake and the surrounding working landscape do not possess particularly unique visual qualities that would elevate the resource to an exceptionally high level of visual sensitivity. Based on the results of the PRG survey, this lake is not a well-known lake outside of the local area.

The moderate to low amount of use of this lake, which is surely a factor of the difficulty of access, is another factor that weighs heavily in our rating of Medium.

### **Shaw Lake**

As with Pleasant Lake, Dr. Palmer assigns a rating of medium or low for each criterion on this lake except for 'Scope and Scale of Project Views'. From this we can infer that he has attributed extra weight to this particular criterion in determining the overall scenic impact to be Medium-High. There are a number of factors that lead us to conclude that the overall rating should be closer to Medium.

Although the turbines are visible throughout much of the lake, we do not feel that they would be an unduly dominant visual presence. The nearest visible turbine would be 2.6 miles from the lake. Under no circumstances would the viewer perceive that the turbines are 'looming' over them, as a result of their distance and the height of the turbines in relation to the surrounding vegetation and topography. In addition, as Dr. Palmer notes, there is no boat launch and access requires portage from Scraggly. He also notes that scenic quality is not central to the common activities on this lake, such that the "effect on continued use and enjoyment is Low." Further discussion regarding the visibility of the turbines can be found in section 4.1.8 of our report.

With a lake rating of Significant, we feel that Shaw Lake and the surrounding working landscape do not possess particularly unique visual qualities that would elevate the resource to an exceptionally high level of visual sensitivity.

Of all the lakes with visibility within 8 miles of the project, this lake definitely has the lowest use, and it is likely not known by people outside the local area. Access is very difficult, it is not connected to any other lakes, and it is very modest in size. This lake's extremely low level of use means that very few people would even see the wind turbines from this vantage point.

## Sysladobsis Lake

Dr. Palmer's analysis regarding overall scenic impact appears consistent with our analysis, and he determined a rating of Low-Medium. Our rating would be closer to the Low end due to many factors, including those cited in the body of our report. The nearest visible turbine would be 6.3 miles from the lake, and as Dr. Palmer notes, they will not be visually dominant. Of particular note is the distance and narrow angle of view that the turbines would comprise in the overall viewshed.

## Section 5. Summary and Conclusions

*Dr. Palmer states that a comparison of his Table 5 and the Matrix in the VIA reveal "substantial differences" and that his review "anticipates more severe scenic impacts than does the VIA."*

It is difficult to reconcile Dr. Palmer's overall conclusions with his lake-by-lake assessment because in many instances, his discussion of the scenic impact of the Project on a particular lake appears at odds with a conclusion of a medium to high impact and does not support his statement that the apparent scenic impact is "Very Adverse" at some locations. For example, Dr. Palmer concludes that there are 3 lakes where the potential impacts are medium to high. Yet, he discounts the scenic qualities as secondary for all three - Shaw, Scraggly and Pleasant: "This lake and the surrounding area are not a scenic or recreation destination in Maine. While it is not heavily developed, neither is it remote. This would suggest that the scenic expectations of users would not be high" (p. 45, 47, 49). That would seem to indicate that the impacts from the Project, which can be argued are primarily scenic, would not affect the user's enjoyment, length of stay or exposure to the project. This is based solely on his numerical weighing, his interpretation of the visibility analysis, and 4 visual simulations taken from worst-case locations (and for every worst case location it can be argued that there are other sites where the project impacts would be much less visible if visible at all). This conclusion seems to discount or overlook the body of evidence - some of which he himself articulates in this and other reviews - i.e. people fishing are generally less affected by or focused on scenery.

Dr. Palmer also provides no basis for the conclusion of "severe" scenic impacts when looking at either his Table 5 or Section 4.

Dr. Palmer notes that the Project is compliant with a key goal of the Act – to promote wind energy development in those areas suitable for such development. On Page 34, Dr. Palmer defines Criteria D and indicates that "Low... means it makes a major contribution to the Wind Energy Act's goals" and "High ... means the area makes a minor contribution". In the individual discussions of each lake, he indicates that for Criteria D, "the Bowers Wind Project will make a substantial contribution to the state's wind energy goal" and provides a ranking of "High" for Criteria D, "meaning it provides a significant counterbalance to scenic impacts, and as an expansion project, it reduces the cumulative impact of wind development that would significantly affect the state's overall scenic

quality"). Although the definitions are consistent, the use of Low and High are contradictory and may be confusing for the Commission. We would suggest that Page 54 should be updated to be consistent with the definition on Page 34, and Criteria D should be "Low" for all lakes.

We would also restate the conclusion provided on page 53 of the VIA that highlights that these lakes are not unique resources that stand out as one-of-a-kind scenic environments. These lakes will not be totally altered or undermined by a wind energy development visible at a distance of 2 to 8 miles most often as part of the background view. The shorelines will remain intact, the waters will still be quiet, and the fishing will not be affected. This is not to discount the fact that there will be visual impacts, and that in some instances these impacts will be adverse insofar as they change the view. We do not believe, however, that these impacts will sufficiently alter the use and enjoyment of the resource to warrant a conclusion of unreasonable adverse impact. Section 4.1.9 of our report provides a useful and appropriate means by which to assess overall scenic impacts. We not only weigh and address the stated criteria of the Act, but we add additional categories that we believe are useful and accepted elements for evaluation among landscape professionals, and provide an additional layer by which to assess impacts to users. Nevertheless, and perhaps it is not clearly stated that this evaluation matrix is part of, but not all of the tools we rely on to come to our ultimate conclusion. We do use the simulations and we also incorporate our field observations as an integral part of our overall evaluation process. For example, when one is out on one of these lakes, there are infinite vantage points – some which may have views of the project some facing away from it. There are many vantage points from lakeshore locations, and intimate coves where the only view is of the treelined shore. If we relied on simulations only, one worst-case simulation does not provide a balanced view of what a project will look like from the resource, and consequently what the overall visual impact truly will be. Surveys and interviews cited also contribute to our understanding and conclusions. Thus the matrix is one tool among a number that we use to determine visual impact.

### **Overall Conclusion**

As stated in the introduction, the intent of this document is to provide a direct response to the specific questions and concerns raised by Dr. Palmer in his review of the LandWorks VIA. We appreciate his careful review and the opportunity to provide this response. In doing so, we believe that it is valuable, in concluding our response, to identify the key points of departure and provide an overall summary of our holistic approach that is intended to provide a broader perspective in developing the VIA and the corresponding conclusions of that Assessment.

There are two key concerns that have emerged with regard to our review of Dr. Palmer's analysis: 1) we would counter his reliance almost entirely on data driven evaluation and a purely systematic review of the resources and the potential impact to those resources; and, 2) we believe that the information provided in this response coupled with a site visit provides additional and sufficient data on which to draw conclusions, and which we

believe support the determination that this Project is consistent with the standard set forth in the Wind Energy Act and will not result in unreasonable adverse impacts to users of the resources.

Dr. Palmer's desire for a purely data driven and objective approach to conducting a visual impact assessment risks losing or inadvertently masking the qualitative aspects that necessarily inform every visual impact assessment. For better or worse, a visual impact assessment is not the same as a noise impact assessment. Averaging and weighting with points assigned to different scenic resource values is useful, but is a point of departure that must be informed by much more qualitative judgments. It should also be noted that such averaging and weighting is often itself based on subjective determinations of values to be assigned to the criteria being evaluated. There are no hard and fast dictums with regard to numerical analysis vs. weighing categories of impact, as both assign a higher or lower value as well as employ averages or thresholds. Wind energy development at a utility scale is new enough to make it difficult to analyze using established techniques and language. The lake evaluations were prepared almost 25 years ago and landscape changes have occurred along with cultural acceptance of renewable energy development. Nonetheless, the point system for rating impacts to the lake is relied on in Dr. Palmer's review, and barring any revision or update to that rating system, it has merit, as stated previously, as a point of departure for assessing impacts. In support of the fact that the landscape is changing along with our attitudes about how it can be managed and developed, Dr. Palmer points out that the conditions on some of the lakes have changed since the original evaluation.

Because the visual impact assessment relies heavily on perceptions and how a project does or does not fit in with the overall landscape, it is critical to conduct a field visit to evaluate both the existing landscape and surrounding uses and, importantly, to understand the significance of visibility. We conducted multiple site visits for this Project and not only were they critical to our overall analysis, they also provided multiple opportunities for us to interview users of the resources and observe firsthand the types of uses that were occurring or that were likely to occur given the availability or lack of access, level of shoreline development and other factors that affect use.

To conclude, it is important to highlight, if not restate, several factors that were incorporated into our VIA and resulting conclusions:

Viewer expectations are a function of their specific interest (or disinterest) in the project. We have cited elsewhere in this response that the primary use of these lakes is for fishing. This is based on our interviews with guides, surveys studied, the Baskahegan Study, and our own personal observations in the field and from our own experiences on lakes in Maine and Northern New England. Scenery is secondary; visual qualities are important but not so important to keep these "viewers" from coming back to lakes like Baskahegan, or mountains such as Black Mountain. Viewer expectations change, just as landscapes change. (The Eiffel Tower was offensive to many in Paris when first built, now, as the world knows it is the best known visual landmark in the city.) Maine residents and

visitors will be more and more accustomed to seeing wind energy facilities and therefore more accepting of its presence in the view. In fact, it can be argued that the view of wind energy facilities may result in a *positive* visual impact to certain viewers. Noted Vermont artist Sabra Field has created beautiful artworks of the Vermont landscape depicting wind turbines on ridgelines and believes such depictions are positive elements of the state's evolving landscape. Many Vermonters believe that seeing wind turbines reinforces the state's commitment to renewable energy and local power. Turbines themselves can be considered positive examples of contemporary design with their unadorned towers and tapered rotors.

In our overall analysis, LandWorks concluded that while the Project area is indeed valued for its landscape qualities and recreational resources and is appealing to those who live in and travel to the area, these resources and characteristics do not offer unique and highly sensitive qualities that preclude the addition of an array of wind turbines within the view of users on portions of the lakes. This is not a pristine landscape, and has long been a working landscape that has been used and developed for its recreational, timber and water resources. It is a similar landscape to other nearby areas and lake- region landscapes elsewhere in Maine.

It is also important to note that VIA's and their review focus on all the areas and the simulations that depict where you will be able to see the Project from and what it looks like. There are lakes within the Project area that do not have views of the Project and many locations within the viewshed overall that will have limited, if any Project visibility. It is also important to note that the region is within the Expedited Area, an indication that the Legislature considered this location to be a suitable one for considering wind energy development. Additionally, the data cited, the surveys generated, the intercept surveys reviewed, interviews conducted, and field observations noted all indicate that wind does not and will not, in this case, prevent users from returning and enjoying this region and its lakes. Taken together, these considerations and this broader perspective of wind energy and its potential visual impacts, support our conclusion that the Bowers Wind Project (and its associated facilities), in accordance with the evaluation standards of the Maine Wind Energy Act (35-A MRSA Section 3452) will not result in "an unreasonable adverse effect to the scenic character or existing uses related to the scenic character of the scenic resource of state or national significance."

## APPENDIX A

# Visibility of Associated Facilities from Resources of State or National Significance

## Bowers Wind Project

### Visibility Analysis

A summary of resources of state significance within an eight-mile radius is provided in the table below.

**Table 1. Visibility of Associated Facilities from Resources of State or National Significance**

Great Ponds	Nearest Associated Facility	Substation Visible	O&M Visible	Access Roads/Crane Path Visible	MET Towers Visible	Express Collector Visible
Duck Lake	Approx. 3.3 miles (road/clearing)	No	No	Yes (limited)	Yes	No
Junior Lake	Approx. 4.4 miles (road/clearing)	No	No	Yes (limited)	Yes	No
Pleasant Lake	Approx. 3.0 miles (MET)	No	No	Yes (limited)	Yes	No
Shaw Lake	Approx. 4.3 miles (MET)	No	No	No	Yes	No
Bottle Lake	Approx. 7.0 miles (MET)	No	No	No	Yes	No
Keg Lake	Approx. 5.2 miles (MET)	No	No	Yes (limited)	Yes	No
Scraggly Lake	Approx. 4.3 miles (MET)	No	No	Yes (limited)	Yes	No
Sysladobsis Lake	Approx. 7.7 miles (MET)	No	No	No	Yes	No
Horseshoe Lake	N/A <sup>i</sup>	N/A	N/A	N/A	N/A	N/A
West Musquash Lake	N/A	N/A	N/A	N/A	N/A	N/A
Norway Lake	N/A	N/A	N/A	N/A	N/A	N/A
Upper Sysladobsis Lake	N/A	N/A	N/A	N/A	N/A	N/A
Lombard Lake	N/A	N/A	N/A	N/A	N/A	N/A

  

National Register of Historic Places	Nearest Associated Facility	Substation Visible	O&M Visible	Access Roads/Crane Path Visible	MET Towers Visible	Express Collector Visible
Springfield Congregational Church	N/A	N/A	N/A	N/A	N/A	N/A

<sup>i</sup> N/A= Not Applicable due to no visibility within 8 miles.

## APPENDIX B

### **Summary of Sources Evaluated for Criteria E**

In order to evaluate the "extent, nature and duration of potentially affected public uses of the scenic resources ... and the potential effect ... on the public's continued use and enjoyment" (Criteria E from the Wind Energy Act), several reference materials were identified and evaluated. The information collected from these resources yielded similar results that we believe directly inform and further substantiate our understanding of both public uses and viewer expectations. Many of these sources were identified in the VIA in section 2.3.4. Additional information was identified after submission of the VIA; those sources are noted below with an asterisk.

#### *A. Tour Guide Services*

We conducted a general search for guide services that provide trips in the general vicinity of the project area. The results of this search indicated that fishing and hunting are the primary activities for which guide services are engaged.

- Sunrise County Canoe Expeditions ([www.sunrise-exp.com](http://www.sunrise-exp.com))
- Wilderness Inquiry ([www.wildernessinquiry.org](http://www.wildernessinquiry.org))
- Maine Guides Online ([www.maineguides.com](http://www.maineguides.com))
- Almanac Mountain Outfitters (Springfield, ME)
- Blue Moose Hideaway Guide Service (Lee, ME)
- Grand Lake Stream Guides Association ([www.grandlakestreamguides.com](http://www.grandlakestreamguides.com))
- Hunting and Fishing Guides – list of members (many in Grand Lake Stream)
- Canoe-Maine (Canoe Trips and Expeditions Statewide) Princeton, ME

#### *B. Guidebooks*

Because fishing was identified as one of the primary activities on these lakes, we evaluated several guidebooks that provided further information about fishing in Maine. This information provided data to support our own personal and professional understanding of the recreational resources in these lakes, compared to other locations in Maine.

- AMC River Guide, Maine
- Quiet Water Maine: Canoe and Kayak Guide (Appalachian Mountain Club) by Alex Wilson and John Hayes
- Fishing Maine Guide Book by Tom Seymour
- Fishing Maine, 2nd: An Angler's Guide to More than 80 Fresh- and Saltwater Fishing Spots
- Fisherman's Guide to Maine by Tracewski

### *C. Websites*

In addition to the specific guidebooks and tour services described above, we also reviewed several websites that provided further information about potential recreational activities available in the general vicinity of the project. Although little information was available about specific activities in specific lakes, the information on these websites was consistent with the findings from the guide services and guidebooks; fishing and paddling are primary uses for these relatively inaccessible lakes.

- [www.trails.com](http://www.trails.com)
- [www.goingoutside.com](http://www.goingoutside.com)
- [www.sunriselocations.com/cathancelake.htm](http://www.sunriselocations.com/cathancelake.htm)
- [www.wildernessinquiry.org/destinations/index.php?dest=juniorlakes](http://www.wildernessinquiry.org/destinations/index.php?dest=juniorlakes)
- [www.maine-guides.com](http://www.maine-guides.com)
- [www.bluemoosehideaway.com](http://www.bluemoosehideaway.com)
- [www.grandlakestreamguide.com](http://www.grandlakestreamguide.com)
- [www.mainewildernesscamps.com](http://www.mainewildernesscamps.com)

### *D. Reports and Fieldwork for the Project Area*

- \* "Bowers Mountain Wind Project. Outdoor Activities Users Research, Telephone Survey" Portland Research Group, January 2011.  
A summary of the preliminary findings was included in the VIA and the complete results were subsequently provided to Dr. Palmer for his review.
- \* "Bowers Mountain Wind Project. Outdoor Activities Users Research, Snowmobiler Survey" Portland Research Group, February 2011.  
This survey was not complete at the time the VIA was submitted. However, the complete results were provided to Dr. Palmer for his review.
- Results of interviews with individuals with knowledge of uses on lakes.  
LandWorks conducted multiple telephone interviews with members of the Selectboard in Lakeville, because they are likely to have information about the public uses of the five scenic lakes that are within Lakeville. During these interviews, we inquired about the recreational activities on the lakes, the number of motor boats and paddlers that were typically seen on each of the lakes, the principal uses at each of the lakes, and the proportion of tourist to local resident use for the lakes.

During fieldwork on these lakes, LandWorks also conducted multiple informal conversations with guides and other individuals on the lakes. Data gathered from these conversations were consistent with the information gathered during telephone interviews with selectboard members in Lakeville.

LandWorks also interviewed the author of *Quiet Waters Maine*, Alex Wilson.

\* In addition, an interview was conducted with the owners of Maine Wilderness Camps on Pleasant Lake in May 2011.

The findings of these interviews are included in this Appendix.

- Fieldwork in May and July 2010 provided information on public's uses of the lakes. This information was included in the individual descriptions of each lake in the VIA Section 4.1.8. In particular, public access at lakes is limited by the type of boat launch available, and amount of available parking. The primary public access points for the project are summarized below:
  - Bottle Lake has a privately-owned gravel ramp, with multiple No Parking signs in the vicinity of the ramp.
  - Duck Lake has a privately-owned gravel ramp, with limited parking locations.
  - Scraggly Lake has a gravel launch, with limited capability to support a trailered launch, and limited parking
  - Pleasant Lake has a private boat launch at Maine Wilderness Camps for guests and an informal public gravel launch on the southern side of the lake.
  - Sysladobsis Lake has the only publicly-owned ramp at any of these lakes.
  - There are also multiple informal hand-carry boat launch sites on several of the lakes but these are mostly unmarked and on private land.
  
- 1998 Recreation Study and 2008 Relicensing Report conducted by Domtar for the West Grand Lake Watershed

This information provides general information about the types of recreational activities on some of these lakes and includes information about recreational activities on other lakes not within eight miles of the Project. The information in this report was used to confirm the research and fieldwork described above.

- \* Maine Fishing Guide ([www.maine.gov/ifw/fishing/fishingGuide.html](http://www.maine.gov/ifw/fishing/fishingGuide.html))

The Maine Fishing Guide was developed by the Fisheries Division of the Maine Department of Inland Fisheries and Wildlife (MDIFW) to assist anglers in locating Maine's most common sportfish and to help plan for their next outdoor fishing adventure. This Google Earth application allows anglers to readily locate principal lake and pond fisheries for coldwater species and bass; as well as the presence of other warmwater sportfish species identified as principal fisheries or present. The application also identifies the locations of sporting camps, based on information provided by the Maine Sporting Camp Association, and identifies guides and sporting camps that have indicated they take clients to particular lakes.

No guides or sporting camps are listed for Bottle, Duck, Keg, Scraggly, Shaw, or Pleasant Lakes. One guide is listed for Junior Lake and two guides are listed for

Sysladobsis Lake. In contrast, multiple guides are listed for other lakes in the area, including Pug Lake, Junior Bay, West Grand Lake, and Baskahegan Lake.

MDIFW identifies fisheries present in each lake, as shown in Table 1. Landlocked salmon is present in three lakes while smallmouth bass is likely the primary attraction in most of the lakes.

	Pickarel	White Fish	Landlocked Salmon	Smallmouth bass	White Perch	Yellow Perch
Duck	x			x	x	x
Keg	x			x	x	x
Bottle	x			x	x	x
Junior	x		x	x	x	x
Pleasant		x	x		x	x
Scraggley	x			x	x	x
Shaw	x			x	x	x
Sysladobsis	x	x	x	x	x	x

*E. Reports Related to Other Proposed or Existing Wind Projects in Maine and New England*

Our review of the various user intercept surveys that have been conducted all point to similar conclusions – 1) that the view of wind projects are viewed as positive or neutral by the majority of respondents and 2) that view does not seem to greatly affect their likelihood to return. In addition, the results of a study at Baskahegan Lake, within 8 miles of the operational Stetson Wind Project, support these findings.

- “Public Acceptance Study of the Searsburg Wind Power Project: Year One Post-Construction,” Clinton Solutions, December 1997.
- “Critical Insights on Maine Tracking Survey: Residents’ Views on Politics, the Economy & Issues Facing the State of Maine,” Critical Insights, November 2009
- “Report to MREA: Highlights of Survey Findings,” Pan Atlantic SMS Group, May 2010
- Vermont Department of Public Service website on Vermont’s Energy Future - <http://www.vermontenergyfuture.info/Final>.
- “Bull Hill User Intercept Survey for Blue Sky East,” Market Decisions, October 2010.
- \* “Little Bigelow User Intercept Survey for Highland Wind,” Portland Research Group, Summer/Fall 2010.
- \* “Hikers Study for Highland Wind,” Portland Research Group, August 2010.
- \* “Mount Blue User Intercept Study for Patriot Renewables,” Market Decisions, September 2010.
- “Spruce Mountain User Intercept Study for Spruce Mountain Wind,” Market Decisions, May 2010.
- \* Baskahegan Stream Watershed Recreation Use & Resource Analysis,” Ednie, Andrea, Everett, C., and Daigle, J., University of Maine, Summer 2010.

#### *F. Other Reports*

The following reports are also referenced in this response or in the original VIA.

- Scenic Lakes Character Evaluation in Maine's Unorganized Towns, Maine State Planning Office, December 1986.
- Maine Wildlands Lake Assessment. Maine Department of Conservation, Land Use Regulation Commission, 1987.
- Maine's Finest Lakes: Results of the Maine Lakes Study. State Planning Office, Maine Critical Areas Program, 1989
- Maine State Comprehensive Outdoor Recreation Plan 2009 – 2014.
- Comprehensive Land Use Plan for Areas Within the Jurisdiction of the Maine Land Use Regulation Commission, 2010.
  
- Wind Power in View by Pasqualetti, Gipe, et al., (San Diego: Academic Press, 2002)
- *Development of Obstruction Lighting Standards for Wind Turbine Farms*, James W. Patterson Jr., (For the Federal Aviation Administration, 2005)
- Landscape and Images by John R. Stilgoe (Charlottesville: University of Virginia Press, 2005).
- The National Forest's Handbook on Scenery Management
- "Visual Screening Potential of Forest Vegetation" in Urban Ecology 4, Robert Brush, Julius Fabos, and Dennis Williamson, 1979
- *Landscape Aesthetics A Handbook for Scenery Management*, United States Forest Service  
Agriculture Handbook Number 701, pp. 1-15 - 1-18

## **Bowers Lake Use / Wind Power Questionnaire**

Phone Interview: Local Guide Service (prefers to remain anonymous)

Date: 9.10.10

1. Do your clients come to the area primarily for the quality of the fishing and/or hunting or for the remote quality of the environment?

*“A little bit of both- mostly for the fishing.”*

2. Do you believe that views of wind turbines on ridges adjacent to the lakes where you fish would deter your clients from wanting to fish there?

*“No, I don’t think so. Seeing windmills would be more of a curiosity, not negative.”*

3. Which lakes are the most popular in the region for recreational activities? For fishing? For motorboating? For canoeing/kayaking? For camping?

*“Grand Lake Stream, Penobscot River. Many natives go north and northwest for more remote wilderness experiences or better fishing- Caucomgomoc Lake, Allagash River. Lakes and streams in Lincoln area draw more out of state people.”*

4. How do you think the scenic beauty of the lakes in this area compares with other lake areas in Maine?

*“Lincoln is a more scenic area- popular for vacations.”*

5. How much recreational use do you think these lakes get? (low, medium, high)  
What is the principal activity?

Pleasant Lake

*“Medium- mostly fishermen.”*

Junior Lake

*“Medium-high- locals fish there, also camps and recreational boating.”*

Duck Lake

*“Medium- mostly camp owners.”*

Keg Lake

*“Low- mostly camp owners.”*

Bottle Lake

*“Medium- mostly camp owners, some access Junior Lake.”*

Scraggly Lake

*“Low- mostly bass fishing, not great boat access- not good connection from Junior Lake (small boats only).”*

West Musquash Lake  
*Low- remote location*

East Musquash Lake  
*“Medium- stocked lake popular for fishing.”*

Sysladopsis Lake (Lower)  
*“Medium-high- spring salmon fishing.”*

Upper Sysladopsis Lake  
*“Low- maybe a few camps.”*

Baskaheegan Lake  
*“High- popular bass lake.”*

Shaw Lake  
*“Low use- tough access.”*

Mill Privelege Lake  
*“Don’t know.”*

Norway Lake  
*“Don’t know.”*

Pug Lake (West Grand Lake)  
*“Don’t know.”*

Lombard Lake  
*“Low- no public access.”*

## **Bowers Wind - Lake Use Questionnaire Summary**

Three residents of Lakeville were presented the Lake Use Questionnaire, including two selectboard members and the spouse of the third selectboard member.

A summary of these responses are as follows:

### 1. Recreational activities for significant lakes within the project area include:

#### *Spring, Summer, and/or Fall Uses*

- Fishing
- Canoeing or kayaking
- Motor Boating (including watersports)
- Swimming
- Camping
- Hunting
- ATV riding

#### *Winter Uses*

- Ice Fishing
- Snowmobiling
- Hunting

2. Summer appears to receive the highest use for lakes within the project area.
3. The extent of motorboat and paddling (canoe and kayaks) usage for designated *significant or outstanding* lakes within the project area can be categorized as such:
  - Highest Use Lakes: Bottle Lake, Junior Lake, West Musquash Lake, and Sysladopsis Lake
  - Medium Use Lakes: Duck Lake, Scraggly Lake, and Pleasant Lake
  - Lowest Use Lakes: Keg Lake, Shaw Lake, Norway Lake, and Horseshoe Lake
4. The top principal uses for all lakes listed are identified as:
  - Fishing
  - Swimming & Water sports
5. All interviewees responded that these designated lakes receive a *Similar extent of use* compared to other lakes within the region.
6. Visitors (non local residents) account for between 60-75% of the recreational users of these lakes.

*Note: one respondent commented that there are 95 year round residents in the town of Lakeville, and 700 property bills sent out each year.*

7. Fishing is done predominantly from boats.
8. There is no public access to Keg Lake.

**Phone Interview:** Kathy Whitney, Lakeville Selectboard Member (*she lives next to Duck Lake*)  
**Date:** 12.22.10

### **Bowers Wind - Lake Use Questionnaire**

A phone questionnaire presented to Lakeville Selectboard members to determine recreational use types and frequency of use for lakes within the project area.

1. We have identified the following recreational activities for significant lakes within the project area:

*Spring, Summer, and/or Fall Uses*

- Fishing
- Canoeing or kayaking
- Motor Boating
- Swimming
- Camping
- Hunting
- ATV riding

*Winter Uses*

- Ice Fishing
- Snowmobiling
- Hunting

Are there any additional recreational activities for these lakes we should add? Any we should eliminate?

***“No”***

2. What months do you consider to be within the high use season for the lakes in this area?
3. For each of the following lakes, please estimate the number of motor boats that you might see at one time on an average day during the *high* use season? During the *low* use season?

***“Junior, Pleasant, and Lower Sysladopsis are highest used lakes of the lakes listed.”***

- Duck Lake  
***“4 during high use; 1 during low use; small lake”***
- Keg Lake  
***“2 during high use; 1 during low use; very small / little pond with nice camps”***
- Bottle Lake  
***“7-8 during high use; 2-3 during low use”***
- Junior Lake  
***“10 during high use; 3 during low use”***
- Pleasant Lake  
***“4 during high use; 1 during low use; one of my favorite lakes; I watch one of the camps there”***
- Scraggly Lake  
***“3 during high use; 1 during low use; this lake is used for fishing”***
- West Musquash Lake  
***“8 during high use; 3 during low use; been there fishing and seen 4-5 cars with trailers there at one time during the summer”***

- Sysladopsis Lake (Lower)  
*“10 during high use; 3 during low use; big fishing lake with alot of summer use”*
- Shaw Lake  
*“Never seen a boat on it”*
- Norway Lake  
*“Never heard of this lake and I live between Duck and Junior Lakes”*
- Horseshoe Lake  
*“3 during high use; 1 during low use; this is a tiny lake”*

4. For each of the following lakes, please estimate the number of paddlers (kayaks / canoes) that you might see at one time on an average day during the *high* use season? During the *low* use season?

*“You see more paddlers now than in the past on the lakes”*

- Duck Lake  
*“2 during high use; 1 during low use”*
- Keg Lake  
*“3 during high use; 1 during low use”*
- Bottle Lake  
*“3 during high use; 1 during low use”*
- Junior Lake  
*“6 during high use; 2 during low use”*
- Pleasant Lake  
*“5 during high use; 2 during low use”*
- Scraggly Lake  
*“2 during high use; 1 during low use”*
- West Musquash Lake  
*“3 during high use; 1 during low use”*
- Sysladopsis Lake (Lower)  
*“4-5 during high use; 1-2 during low use”*
- Shaw Lake  
*“Never seen a boat on this lake”*
- Norway Lake  
*“Never heard of this lake”*
- Horseshoe Lake  
*“2 during high use; 1 during low use”*

5. What are the top three principal uses for each lake (1 being the most frequent recreational activity)? *[Read list of uses at top again]*

- Duck Lake  
*“Fishing; swimming”*
- Keg Lake  
*“Swimming”*
- Bottle Lake  
*“Motor boating; swimming; fishing (not much for fish in this lake) ”*
- Junior Lake  
*“Fishing, swimming & water sports”*
- Pleasant Lake

*“Fishing; swimming”*

- Scraggly Lake  
*“Not much of anything; there are alot of stumps and branches in this lake”*
- West Musquash Lake  
*“Fishing; camping; this is a nice lake”*
- Sysladopsis Lake (Lower)  
*“Fishing; swimming & water sports”*
- Shaw Lake  
*“Never seen anyone there; not much for fish in this lake”*
- Norway Lake  
*“Unknown”*
- Horseshoe Lake  
*“Swimming & water sports”*

6. How do you feel the extent of recreational use of these identified lakes compares with the extent of recreational use of other lakes within the region, including West Grand Lake?

- *Higher extent of use* compared to other lakes
- **Similar extent of use compared to other lakes**
- *Less extent of use* compared to other lakes
- Unknown

7. Visitors / tourists account for approximately what percentage of recreational users of these lakes (vs. local residents)? Does it vary much from lake to lake? If so, please describe.

*“75% tourists and 25% local residents; there are 95 year-round residents and they send out 700 tax bills; most people are visitors who own camps but do not live here; it does not vary from lake to lake.”*

8. Is fishing on these lakes predominantly done from boats or from the shore?  
*“Boats”*

9. Is there public access to Keg Lake? If so, where? Is the access marked?  
*“Not that I know of.”*

**Phone Interview:** Bob Jacobs, husband of Debra Jacobs, Lakeville Selectboard Member (*they live on Bottle Lake*)

**Date:** 12.22.10

### **Bowers Wind - Lake Use Questionnaire**

A phone questionnaire presented to Lakeville Selectboard members to determine recreational use types and frequency of use for lakes within the project area.

1. We have identified the following recreational activities for significant lakes within the project area:

*Spring, Summer, and/or Fall Uses*

- Fishing
- Canoeing or kayaking
- Motor Boating ***“including watersports”***
- Swimming
- Camping
- Hunting
- ATV riding

*Winter Uses*

- Ice Fishing
- Snowmobiling
- Hunting

Are there any additional recreational activities for these lakes we should add? Any we should eliminate?

***“Watersports including waterskiing, windsurfing, and water boarding”***

2. What months do you consider to be within the high use season for the lakes in this area?
3. For each of the following lakes, please estimate the number of motor boats that you might see at one time on an average day during the *high* use season? During the *low* use season?

- Duck Lake  
***“3-4 during high use; 0-1 during low use”***
- Keg Lake  
***“2 during high use; 0 during low use; overall very low use”***
- Bottle Lake  
***“8 during high use; 2 during low use”***
- Junior Lake  
***“8-10 during high use; 2-3 during low use”***
- Pleasant Lake  
***“6-8 during high use; 1-2 during low use; there is a camping area over there”***
- Scraggly Lake  
***“4 during high use; 1 during low use”***
- West Musquash Lake  
***“6 during high use; 2 during low use; people camp on beaches”***
- Sysladopsis Lake (Lower)  
***“10 during high use; 3 during low use”***

- Shaw Lake  
“1-2 during high use; access is limited to a handcarry boat”
- Norway Lake  
“1 during high use”
- Horseshoe Lake  
“0-2 during high use”

4. For each of the following lakes, please estimate the number of paddlers (kayaks / canoes) that you might see at one time on an average day during the *high* use season? During the *low* use season?

*“You see more paddlers now than in the past on the lakes”*

- Duck Lake  
“2 during high use; 0-2 during low use”
- Keg Lake  
“3-4 during high use; 0 during low use”
- Bottle Lake  
“6-8 during high use; 2 during low use”
- Junior Lake  
“7-8 during high use; 2 during low use; summer camps take canoe trips and picnic here”
- Pleasant Lake  
“5 during high use; 2 during low use”
- Scraggly Lake  
“6 during high use; 2 during low use”
- West Musquash Lake  
“5 during high use; 2 during low use”
- Sysladopsis Lake (Lower)  
“8 during high use; 2 during low use”
- Shaw Lake  
“0-1 during high use”
- Norway Lake  
“0-1 during high use”
- Horseshoe Lake  
“1-3 during high use”

5. What are the top three principal uses for each lake (1 being the most frequent recreational activity)? *[Read list of uses at top again]*

- Duck Lake  
“Fishing (more ice fishing); not much else; this is an access lake to other lakes”
- Keg Lake  
“Fishing; this is an access lake to other lakes”
- Bottle Lake  
“Water sports including waterskiing; fishing; this is an access lake to other lakes ”
- Junior Lake  
“Mostly fishing”
- Pleasant Lake

***“Fishing”***

- Scraggly Lake  
***“Fishing”***
- West Musquash Lake  
***“Fishing”***
- Sysladopsis Lake (Lower)  
***“Fishing; water sports”***
- Shaw Lake  
***“Fishing only”***
- Norway Lake  
***“Blueberry picking; very small lake”***
- Horseshoe Lake  
***“Fishing”***

6. How do you feel the extent of recreational use of these identified lakes compares with the extent of recreational use of other lakes within the region, including West Grand Lake?

- *Higher extent of use* compared to other lakes
- **Similar extent of use compared to other lakes**
- *Less extent of use* compared to other lakes
- Unknown

7. Visitors / tourists account for approximately what percentage of recreational users of these lakes (vs. local residents)? Does it vary much from lake to lake? If so, please describe.

***“60% tourists and 40% local residents.”***

8. Is fishing on these lakes predominantly done from boats or from the shore?

***“Boats, for the lakes listed here”***

9. Is there public access to Keg Lake? If so, where? Is the access marked?

***“There is no public boat launch. At Lakeville Shore Road there is a canoe carry access but there is no public parking.”***

**Phone Interview:** Curtis Turner Jr., Lakeville Selectboard Member

**Date:** 12.20.10

### **Bowers Wind - Lake Use Questionnaire**

A phone questionnaire presented to Lakeville Selectboard members to determine recreational use types and frequency of use for lakes within the project area.

1. We have identified the following recreational activities for significant lakes within the project area:

*Spring, Summer, and/or Fall Uses*

- Fishing
- Canoeing or kayaking
- Motor Boating
- Swimming
- Camping
- Hunting
- ATV riding

*Winter Uses*

- Ice Fishing
- Snowmobiling
- Hunting

Are there any additional recreational activities for these lakes we should add? Any we should eliminate?

***“No”***

2. What months do you consider to be within the high use season for the lakes in this area?  
***“July 4<sup>th</sup> and Labor Day Weekends” are highest use times***
3. For each of the following lakes, please estimate the number of motor boats that you might see at one time on an average day during the *high* use season? During the *low* use season?

- Duck Lake  
***“2-3 during high use; not many overall”***
- Keg Lake  
***“2-3 during high use; not many overall”***
- Bottle Lake  
***“10-15 during high use; 3-4 during low use; there are approximately 80 camps on this lake”***
- Junior Lake  
***“8-10 during high use; 2-3 during low use; 40 to 50 camps on this lake; lake is 5 miles long, so it is hard to see know how many motor boats at one time”***
- Pleasant Lake  
***“Few motor boats overall; low use”***
- Scraggly Lake  
***“3-4 during high use; this lake has no camps and has limited access (only via Junior Lake)”***
- West Musquash Lake

***“6-8 during high use (summer); this is a good fishing lake (although out of the way) and is fished hard in the winter”***

- Sysladopsis Lake (Lower)  
***“12 during high use”***
- Shaw Lake  
***“0-2 during high use; this is an out of the way puddle”***
- Norway Lake  
***“Almost never used; do not see anyone on this lake when picking blueberries here”***
- Horseshoe Lake  
***“Almost never used; sees an occasional boat”***

4. For each of the following lakes, please estimate the number of paddlers (kayaks / canoes) that you might see at one time on an average day during the *high* use season? During the *low* use season?

***“You see more paddlers now than in the past on the lakes”***

- Duck Lake  
***“0-2 during high use; not a very recreational lake; only one resident”***
- Keg Lake  
***“1-2 during high use; not used that often”***
- Bottle Lake  
***“6 during high use”***
- Junior Lake  
***“2-3 during high use”***
- Pleasant Lake  
***“unknown”***
- Scraggly Lake  
***“None”***
- West Musquash Lake  
***“1-2 during high use”***
- Sysladopsis Lake (Lower)  
***“4-5 during high use”***
- Shaw Lake  
***“None”***
- Norway Lake  
***“None”***
- Horseshoe Lake  
***“None”***

5. What are the top three principal uses for each lake (1 being the most frequent recreational activity)? *[Read list of uses at top again]*

***“Almost all lakes have fishing as their principal recreational uses”***

- Duck Lake
- Keg Lake
- Bottle Lake

*“People water ski on this lake; groups of paddlers put canoes/kayacks in at this lake and paddle down through Junior and Grand Stream Lakes”*

- Junior Lake  
*“Swimming”*
- Pleasant Lake
- Scraggly Lake
- West Musquash Lake
- Sysladopsis Lake (Lower)
- Shaw Lake
- Norway Lake
- Horseshoe Lake

6. How do you feel the extent of recreational use of these identified lakes compares with the extent of recreational use of other lakes within the region, including West Grand Lake?

- *Higher extent of use* compared to other lakes
- **Similar extent of use compared to other lakes**
- *Less extent of use* compared to other lakes
- Unknown

7. Visitors / tourists account for approximately what percentage of recreational users of these lakes (vs. local residents)? Does it vary much from lake to lake? If so, please describe.

*“Many people are coming from other towns with some staying at their camps for 2 to 3 weeks out of the year. Most recreation users at the lakes are not residents. The few locals are mostly retired.”*

8. Is fishing on these lakes predominantly done from boats or from the shore?

*“Boat”*

9. Is there public access to Keg Lake? If so, where? Is the access marked?

*“No; it is only seasonally accessible via Bottle Lake stream. The lakes are dependent upon water control at the dam below.”*

From: Alex Wilson <alex@buildinggreen.com>  
 Subject: **Re: Wind turbines and Junior, Scraggly and Grand Lake**  
 Date: October 29, 2010 10:57:25 AM EDT  
 To: David Raphael <davidr@landworksvt.com>  
 Cc: Patrick Olistad <patricko@landworksvt.com>

Hi David,  
 I apologize; must have missed your original message (I often only open messages from people I recognize unless the subject line grabs my attention--particularly when I'm doing a lot of traveling); thanks for being persistent!

I'll reply to your questions below.

Founder, BuildingGreen, LLC  
 Brattleboro, VT 05301  
 802-257-7300 ext. 106  
<http://www.buildinggreen.com>  
 Twitter: <http://twitter.com/atwilson>

On Oct 29, 2010, at 10:33 AM, David Raphael wrote:

Hi again Alex,

I am sending this again as I never heard back from you...just want a minute of your time...I could call you if that would be better for you.

Any input would be most welcome ...after all we paid good money for your book!

(we are also thinking about conducting some sort of user survey.)

Thanks in advance for your time and consideration,

David

Hi Alex;

I am a landscape architect in Middlebury working on a visual impact assessment for a wind project being proposed for Bowers Mountain, over 3 miles distant to the nearest points on Junior and Scraggly Lakes. I have reviewed your book *Quiet Water Maine* and note your descriptions of the paddling in these lakes.

If you have a moment I am curious about a couple of questions which you may be able to weigh in on given your knowledge of the area and perhaps those who travel to it or paddle on the lakes I have identified.

1) Do you have any idea about the number of users (paddlers in particular) in these lakes?

These are fairly wild lakes that probably get little visitation, but I don't have any data to back that up, and have only visited once or twice.

2) Do you think they expect a wilderness experience?

Those who do explore the area certainly appreciate the wilderness feel and would likely expect a wilderness experience.

3) Do you believe the paddler's or recreationists' experience will be undermined if they have visibility of 5 to 24 turbines from the lakes?

I am admittedly biased on this, since I am a strong advocate of wind power, even as I am a strong advocate of wilderness--and a life member of The Wilderness Society, trustee of The Nature Conservancy (VT), life member of the Sierra Club, etc. If I were paddling on Scraggly--a wonderful place where I've seen moose, bald eagles, and otters--and there were wind turbines on a ridge two or three miles away, that would not bother me at all. In fact, I would appreciate the fact that those wind turbines were responsible for keeping the crisp, clear air around me cleaner. As I wrote in a letter to the Appalachian Trail Conservancy a few years ago (when that organization took a strong stand opposing a wind farm that would be visible from the Appalachian Trail), I would much rather be able to see wind turbines on a distant (or even nearby) ridge than have my view of that ridge compromised by smog.

I cannot speak for others, but for me ridgetop windfarms are not incompatible with a wilderness experience. I do have concern, though, about potential impacts in cutting roads to access those windfarms. I'd like to see very strong standards in place and--if feasible--use of helicopters to deliver and erect turbines so that heavy equipment doesn't force the construction of wide access roads.

Any time you can give me, thoughts you would share or response would be greatly appreciated....and I'd be happy to call you if that would be preferable.

Hope this is helpful;

Cheers,

-Alex

Thank you in advance,

David

David Raphael, ASLA  
 Landscape Architect + Planner, Principal

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Lecturer :: Rubenstein School of Environment + Natural Resources  
 University of Vermont, Burlington

## Memorandum

To: David Raphael  
From: Neil Kiely  
Date: May 26, 2011  
Re: Pleasant Lake Recreational Usage

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On Monday May 23<sup>rd</sup>, I met with the owners of Maine Wildness Camps, a sporting camp located on the northeast shore of Pleasant Lake in Kossuth. The owners are Bill Bowes and Charlotte Brooks. Also present was Kathy Whitney who has worked for Bill and Charlotte in the past directly managing a separate set of campgrounds by the boat launch on the south shore. Kathy will be supervising another manager of that campground this year.

Bill and Charlotte have owned their facility for fifteen years. Their primary customers are RV owners who bring in their vehicles, but they also have seven cabins as well as some campsites. The vast majority of their customers come from out of state. The primary activity for their customers is fishing on the lake or relaxing on shore although some customers also ride ATVs and snowmobiles on nearby trails.

Bill and Charlotte also have a master lease on 19 campgrounds surrounding the boat launch on the southern shore of Pleasant Lake. They utilize a manager to lease these sites out primarily to seasonal renters who park their campers on site. There are two outhouses serving the campground. The customers who utilize these sites are primarily individuals from the local area who stay over on the weekends. Their primary activity is fishing, followed by boating generally, but they also engage in a variety of other activities including waterskiing, swimming, cook-outs and other social activities. Guests are allowed, but are charged a fee for each car. In the winter, fishermen also use the boat launch as a base for ice fishing. There are also seven cabins privately owned on the peninsula to the east of the boat launch.

According to Kathy, the lake generally receives low usage compared to other lakes, but gets busier on holidays. Highest use is during July and August. During the week there may be 6-8 boats on the lake with a few more on the weekends. Usage is split between the Wilderness Camps and the boat launch.

I showed Bill, Charlotte and Kathy the two visual sims of the views of the turbines from Pleasant Lake. All three responded that they did not object to the visual sims. In fact, Bill asked for copies that he could frame and hang in their main building. Bill and Charlotte noted that they strongly support renewable energy and support the Bowers project. They did not believe that the views of the turbines would negatively impact the use and enjoyment of the lake by their customers. In fact, they noted that the opportunity to ride up towards the wind farm would be viewed positively by their customers who ride ATVs. Kathy agreed with Bill and Charlotte that she also did not believe that the views of the turbines would negatively impact the use and enjoyment of the lake by the customers who utilized the boat launch campgrounds. They all agreed that people fishing during the summer are much more focused on the fishing than the view and that ice fishermen have no view from their shacks. They added that the views of the turbines would not concern people engaged in swimming or social activities. By comparison, they felt that residential development on the lake would be viewed as a negative.



NOTES:

1. This photograph represents the existing view for Exhibit 6: Visual Simulation From Bottle Lake, Lakeville.



NOTES:

1. This photograph represents the existing view for Exhibit 8: Visual Simulation From Junior Lake, Lakeville.



NOTES:

1. This photograph represents the existing view for Exhibit 9: Visual Simulation From Keg Lake, Lakeville.



NOTES:

1. This photograph represents the existing view for Exhibit 10: Visual Simulation From Pleasant Lake Boat Launch, T6 R1 NBPP.



NOTES:

1. This photograph represents the existing view for Exhibit 11: Visual Simulation From Pleasant Lake, Near Northern Shore, T6 R1 NBPP.



NOTES:

1. This photograph represents the existing view for Exhibit 12: Visual Simulation From Scraggly Lake, Pukakon Twp.



NOTES:

1. This photograph represents the existing view for Exhibit 13: Visual Simulation From Shaw Lake, T6 R1 NBPP.