VISUAL IMPACT ASSESSMENT

For the Proposed Bowers Wind Project

OCTOBER 2012

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1. EXECUTIVE SUMMARY

1.1 Overview

Champlain Wind, LLC ("Champlain") is proposing the Bowers Wind Project (Project), a utility-scale wind energy facility in Penobscot County and Washington County, Maine. The Project includes up to 16 wind turbines, associated access roads, a 34.5-kilovolt (kV) electrical collector system, an express collector line, an electrical collection substation, an Operations and Maintenance (O&M) building, and one permanent 90-meter meteorological (met) tower.

The Project will be constructed on two ridges in the project area: Bowers Mountain in Carroll Plantation and Dill Hill in Kossuth Township. Access roads will connect each turbine location and will provide construction and maintenance access from Route 6. The electrical collector system will connect each turbine location and then an express collector line will travel north for approximately 5 miles towards a proposed substation located adjacent to Line 56.

Within the eight-mile viewshed[1] (or study area), there are no national or state parks; national natural landmarks, federally designated wilderness areas or other comparable outstanding national or cultural features; scenic rivers or streams identified as having state or national significance; scenic viewpoints on state public reserve land, or on a trail that is used exclusively for pedestrian use designated by the Department of Conservation; Maine Department of Transportation scenic turnouts on scenic highways; or scenic viewpoints located in the coastal area. There is one National Historic Register site, Springfield Congregational Church, but the Project is not visible from this location. There are 14 great ponds identified within the Project viewshed having outstanding or significant scenic quality. Of those, only 2 will have potential visibility[2] of the Project within 3 miles and include the following:

1. *Duck Lake* – Up to 14 turbines may be visible within 8 miles primarily as middleground views, but the majority of views within 3 miles will be of less than 8 turbines, or portions thereof. The closest visible turbine is approximately 2.7 miles away.
2. *Pleasant Lake* - Up to 16 turbines may be visible within 8 miles primarily as middleground views. The closest visible turbine is approximately 2.4 miles away.

There are 7 other lakes of scenic significance in the study area that have potential visibility of the Project within 3-8 miles and include:

[1] A viewshed is generally defined as the geographic areas from which a project can be seen or has the potential to be seen. For the purposes of this project and the regulatory review requirements, the viewshed is all areas within an 8-mile radius of any of the project's turbine locations. The project viewshed is presented in *Exhibit 1: Viewshed Map*. See also Section 2.3.2 of this VIA.
[2] Potential visibility is based on *Exhibit 4: Viewshed Map [topography and vegetation/from the hub]*

1. *Bottle Lake* – Up to 10 turbines may be visible within 8 miles primarily as background views. The closest visible turbine is approximately 5.1 miles away. Views will be from a limited portion of the lake.
2. *Junior Lake* – Up to 13 turbines may be visible within 8 miles primarily as middleground views. The closest visible turbine is approximately 3.2 miles away.
3. *Keg Lake* – Up to 12 turbines may be visible within 8 miles primarily as middleground views. The closest visible turbine is approximately 3.7 miles away.
4. *Pug Lake* - Up to 6 turbines may be visible within 8 miles primarily as middleground, approaching background, views. The closest visible turbine is approximately 7.7 miles away.
5. *Scraggly Lake* - Up to 16 turbines may be visible within 8 miles primarily as middleground views. The closest visible turbine is approximately 4.1miles away.
6. *Shaw Lake* – Up to 14 turbines may be visible within 8 miles primarily as middleground views. The closest visible turbine is approximately 3.5 miles away.
7. *Sysladobsis Lake* – Up to 10 turbines may be visible within 8 miles as background views. The closest visible turbine is approximately 6.3 miles away.

Five additional lakes of state or national significance will have no Project visibility within eight miles. Viewshed mapping for West Musquash Lake indicates a small area of visibility, but the turbines that are visible are beyond 8-miles. Due to intervening topography, Horseshoe Lake, Lombard Lake, Norway Lake and Upper Sysladobsis Lake, will not have any visibility of the Project.

A review of associated facilities was also conducted as part of this assessment pursuant to the visual standard set forth in Maine's Wind Energy Act. Throughout most of the study area, topography, forest cover, and roadside vegetation constrain or block views of the Project's associated facilities, limiting visibility. There are no significant views of the associated facilities from any resources of state or national significance. Further, these facilities are not significantly visible from any local resources.

1.2 Conclusion

The VIA was prepared in accordance with the scenic impact assessment requirements of the Wind Energy Act (found at 35-A M.R.S.A.§ 3452, et seq.). As a result of our work, we have concluded that **the proposed Project conforms with the provisions of the Act, is well sited and designed and would not have an unreasonable adverse effect on the scenic character or existing uses related to the scenic character of any scenic resource of state or national significance.**

There is one National Historic Register site, Springfield Congregational Church, but the Project is not visible from this location. There are 14 great ponds identified within the Project viewshed having outstanding or significant scenic quality: 2 lakes will have potential visibility of the

Project within 3 miles; 7 lakes will have potential visibility of the Project within 3-8 miles; and 5 lakes will have no visibility of the Project within 8 miles.

Although the Project area is valued for its landscape qualities and recreational resources and is appealing to those who live in and travel to the area, these resources do not possess unique and highly sensitive qualities that preclude the addition of an array of wind turbines within their viewshed. 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. Landscapes that are very scenic or outstanding and are more sensitive to visual change usually have prominent distinctions between landforms, such as a flat open field in combination with a steeply rising mountain, or have unique focal points and distinct, memorable profiles. Those types of features are not present here and, as a result, the landscape in the Project area is generally able to accommodate the presence of turbines without fundamentally changing the scenery or adversely impacting recreational uses of the lake resources.

In addition, there is a growing body of evidence that the presence of wind turbines in the viewshed of the types of resources present here will not unreasonably adversely impact either scenic quality or, importantly, the continued use and enjoyment of those resources. This evidence includes intercept surveys conducted in the study area and elsewhere in Maine, surveys of users of a lake where there is significant visibility of the Stetson project, studies done in New England and elsewhere on the impact of wind turbines on tourism in the area, public polling, and more anecdotal information gathered from people who live, work and recreate in the Project area.

2. INTRODUCTION

2.1 Background

LandWorks has developed a Visual Impact Assessment (VIA) of the Proposed Bowers Wind Project (Project) on behalf of Champlain Wind, LLC, the Project developer. This assessment is designed to be in conformance with and in response to the applicable guidelines and regulations promulgated by the State of Maine, and specifically follows the requirements set forth in 35-A M.R.S.A. § 3452. This report begins with an overview of the applicable regulations and the methodology employed by LandWorks in preparing the assessment. It includes a project description, presentation of existing conditions, an inventory of scenic resources of state or national significance, and an analysis and conclusion on the overall scenic impact on any potentially affected scenic resource taking into account each of the review criteria set forth under 35-A M.R.S.A. § 3452.3.

2.2 Regulatory Purview

The Legislature has identified areas suitable for expedited permitting of grid-scale wind energy development to help reduce disagreement over siting. As stated in the Wind Energy Act:

> …it is in the public interest to reduce the potential for controversy regarding siting of grid-scale wind energy development by expediting development in places where it is most compatible with existing patterns of development and resource values when considered broadly at the landscape level. Accordingly, the Legislature finds that certain aspects of the State's regulatory process for determining the environmental acceptability of wind energy developments should be modified to encourage the siting of wind energy developments in these areas. 35-A M.R.S.A. §3402(2).

The Bowers Wind Project has been sited in an expedited area that has been determined from a landscape level to be compatible with the existing land use patterns and is therefore subject to review under the Legislature's enacted standards specific to wind power. The applicable criteria were enacted in 2008 as part of "An Act To Implement Recommendations of The Governor's Task Force on Wind Power Development" (the Act). In making its determination whether a project has an "unreasonable adverse effect on the scenic character and existing uses related to scenic character of a scenic resource of state or national significance," the Maine Department of Environmental Protection (DEP) must consider the following six criteria outlined in 35-A MRSA §3452.3:

A. The significance of the potentially affected scenic resource of state or national significance;
B. The existing character of the surrounding area;

C. The expectations of the typical viewer;
D. The project purpose and the context of the proposed activity;
E. The extent, nature and duration of potentially affected public uses of the scenic resource of state or national significance and the potential effect of the generating facilities' presence on the public's continued use and enjoyment of the scenic resource of state or national significance; and
F. The scope and scale of the potential effect of views of the generating facilities on the scenic resource of state or national significance, including but not limited to issues related to the number and extent of turbines visible from the scenic resource of state or national significance, the distance from the scenic resource of state or national significance and the effect of prominent features of the development on the landscape.

Because the impact of visibility diminishes with distance, a formal assessment of project visibility on scenic resources located more than 3 miles away is not automatically required. Nonetheless, this VIA extends to the full eight miles to ensure that visibility on all scenic resources of state or national significance within eight miles is fully assessed. In addition, this assessment evaluates visibility of the Project's associated facilities (i.e. access roads, express collector line, O&M building, etc.).

2.3 Methodology

Our assessment identifies scenic resources of state or national significance within an eight-mile study area as defined under 35-A MRSA §3451.9, and evaluates the visual impact of the Project on scenic character and existing uses related to scenic character of those designated resources. The methodology to determine potential effect includes visual and cartographic analyses, document and statutory research, and site inventory and photographic review. Our approach provides a comprehensive and analytical means by which to consider and assess the potential visual and aesthetic impacts that may result from a wind power project and its associated elements. This approach has been well established by visual resource and aesthetic experts and is an accepted means by which to assess the potential visual impacts that may result from the construction of wind energy generation facilities.

2.3.1 Viewshed Analysis

A viewshed analysis has been conducted using ArcMap GIS software to identify areas with potential visibility. It is based on the elevation values of the National Elevation Dataset (NED), the primary elevation data product of the USGS, at a resolution of 1/3 arc-second (about 10 meters). Four viewsheds were completed, which include:

1. Exhibit 1: Viewshed Map [topography only/from the tip] – this map identifies potential visibility from the blade tip (140 m) and does not account for the screening effects of vegetation, buildings and other structures that may block views.
2. Exhibit 2: Viewshed Map [topography only/from the hub] – this map identifies potential visibility from the turbine hub (84 m) and does not account for the screening effects of vegetation, buildings and other structures that may block views;
3. Exhibit 3: Viewshed Map [topography and vegetation/from the tip] – this map identifies potential visibility from the turbine tip (140 m) and accounts for the screening effects of three types of vegetation. Adding a standardized height of 40 feet to the three classes identified as forest (Classes 41, 42, and 43 of the USGS 2006 National Land Cover Database[3]) provides a more realistic yet still conservative representation of potential visibility; and,
4. Exhibit 4: Viewshed Map [topography and vegetation/from the hub] – this map identifies potential visibility from the turbine hub (84 m) and accounts for the screening effects of three types of vegetation. **This map represents the most reasonable approach to potential visibility, since turbine blades that rise above treeline are not typically visible or dominant**.

The viewshed maps prepared for this Project do not account for other factors such as buildings and structures, actual tree height and density, site specific vegetation and/or removal, variations in eyesight, and atmospheric and weather conditions. In particular, 40-foot tree height is very conservative for this area and can have a significant impact on potential visibility. Tree heights in this region are more characteristically 65 feet or higher, as was confirmed in a site visit conducted with Dr. James Palmer on May 18-19, 2011. Limiting vegetation to only the three forest classes is also conservative because other areas may have vegetation that screens views (e.g. wooded wetlands).

It is our experience that viewsheds generated from the hub provide a more realistic representation of potential visibility, since the view of a hub and rotor has a greater impact than turbine blades, and the difference in overall percent of visibility between hub and tip of the blade is usually insignificant. As such, the numbers of turbines visible and percent of visibility represented in this analysis are taken from viewsheds generated from the hub.

[3] **FOREST** - *areas characterized by tree cover (natural or semi-natural woody vegetation, generally greater than 6 meters tall); tree canopy accounts for 25% to 100% of the cover.*
41 **Deciduous Forest** - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species shed foliage simultaneously in response to seasonal change.
42 **Evergreen Forest** - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species maintain their leaves all year. Canopy is never without green foliage.
43 **Mixed Forest** - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. Neither deciduous nor evergreen species are greater than 75% of total tree cover.

The viewshed maps also include visibility of any turbine, including those located greater than eight miles, as a conservative measure and to ensure that readers are not mislead. Although the presence of turbines located more than eight miles is deemed insignificant under Maine law, this approach is consistent with more typical viewshed analyses, which identify the visibility of all turbines from within an 8-mile radius, or area of potential effect, regardless of individual distance.

Viewshed analyses are used mainly as a point of departure for identifying areas with potential visibility. Due to the coarseness and uncertainty of the quality of the raster data, viewsheds cannot be relied upon to represent what will actually be seen on the ground from a specific location. While a viewshed can indicate how many observer points can be seen from each location (i.e. 3 of 16 turbines will be visible), it can not specify how much (just the tip of a blade or the entire turbine), which one (when there are multiple observation points), or perspective (how big or small it will appear in the landscape). Therefore, a viewshed analysis provides the first step in identifying what areas might have visibility. Additional visual studies (e.g. visual simulations, line-of-sight sections, 3-D modeling) are necessary to understand the details of a view from a specific location.

2.3.2 Field Investigations

Using the viewshed mapping as a point of departure, LandWorks conducted field studies on June 5, July 16, and July 17 of 2010, and May 18 and June 27 of 2011. We visited all scenic resources of state or national significance that would have potential views of the Project. The lakes were accessed by a guided motorboat and by canoe; the church was accessed by vehicle. Additionally, the routes to each of the areas, including sections of Route 6, Amazon Road, Bottle Lake Road, and some hiking trails and Class 4 roads to access the lakes, were evaluated to obtain a better understanding of the character of the area. LandWorks used viewshed maps, topographic maps, field guides, books, brochures, pamphlets, websites, local information sources and the Maine Atlas & Gazetteer to provide additional information regarding the use of the areas visited, access to the sites, and to orient and determine visibility in the field. Field notes were recorded from all locations visited.

Throughout the inventories, two types of digital photographs were taken: 1) to provide information on area context and to illustrate scenic views or intervening vegetation or structures, and, 2) for the purpose of developing visual simulations. For general photographs of the project area, LandWorks used a Canon PowerShot SD850 IS set at varying focal lengths to capture the intended image (See Exhibit 5. Photo Inventory). For visual simulations, LandWorks used a Canon EOS Digital Rebel XT with a 35 mm lens for the photography and the Earthmate PN-40 GPS to collect waypoint data.

2.3.3 Visual Simulations

Simulations were developed using the following methodology:

Step 1: Data Gathering

A. Site Visit

Site information for simulation viewpoint is recorded, including view location (GPS point), date, time and weather.

B. Site Photography

Site photographs are taken for use in simulation. Camera type, focal length (approx. 50-55mm), camera elevation, direction of view, and horizontal angle of view are noted.

Step 2: Model Creation

A. Base map & Terrain Model

A digital base map is created of the project and view areas. GIS data acquired from www.megis.maine.gov/catalog and the client; Aerial photographs and USGS maps used as needed. Utilizing the base map and GIS data, a 3D digital terrain model is created. Where forested, the terrain model is adjusted to account for the additional height contributed by trees (40').

B. Turbine Model

Using data and drawings obtained from the turbine manufacturer, a 3D digital model is created of the turbine. This model is then merged with the terrain model, placing the turbines at their appropriate proposed locations and elevations.

C. View Setting

The existing conditions photograph is imported into the terrain model. The data gathered from the site visit is then inputted into the modeling program (VectorWorks 2008), and a "camera view" matching the original site conditions is created. A digital image of this view is exported for use in the next step.

Step 3: Simulation Rendering

A. Conditions Overlay

Using a photo editing and rendering program (Photoshop CS5), the exported digital image of the perspective view is precisely overlaid and registered to the original existing conditions photograph. Simulations are typically composed of panorama photos (50% overlap on either side of center frame) in order to represent the way views are actually perceived given the normal range of eye and head motion.

B. Turbine Placement

High resolution images of the turbine model (from SketchUp Pro 7) are placed at proper locations, scale and perspective to match the exported view image.

C. Final Rendering

Turbines are adjusted to mimic quality of light, distance and detail in site photograph. Vegetation and other visual obstructions are accounted for. Visual impacts from

associated facilities (including access roads, collector lines and associated clearing) are rendered and reflected in all the visual simulations (using a perspective view created in 3D Analyst that models required project clearing).

Visual simulations provide a photo-realistic perspective view of proposed project elements in the landscape, thereby allowing people to clearly visualize how a project will look from a particular vantage point. Visual simulations are useful in terms of revealing the nature and extent of potential visibility of a project from key vantage points, providing more accurate and refined information than a viewshed analysis can provide. They often reveal how topography and vegetation can limit or block project views, sometimes in surprising ways. Visual simulations from each of the scenic resources with potential visibility were prepared for this Project.

The simulations typically represent a point within an area identified by the viewshed analysis that has the highest range of turbines potentially visible **that are within 8 miles**. Because maximum number of turbines visible does not necessarily translate into highest impact, other factors affecting scenic impact were taken into consideration, including the nature of view, distance and context as well as proximity to areas of higher use (i.e. boat launches).

The weather and atmospheric conditions presented in the visual simulations depict a range of conditions experienced during our site visits. Due to the highly variable and changing weather of the northeast, not all photos depict sunny, blue-sky conditions. However, the visual simulations depict a range of weather and light conditions that are typical of the area. In some instances where the color of the sky as captured by the photograph was too light to allow the turbines to be seen in the simulation, the turbines were artificially darkened. If artificial darkening is used there is a note on the simulation to that effect. Turbines in the simulations thus may appear more visible than they would actually appear under certain light and atmospheric conditions. In addition, rotors are typically depicted from a broad view in simulations, whereas their visual presence could be less in reality, depending on wind direction and orientation. See Exhibit 24: Visual Simulation and Post-Construction Photos.

In order to mimic the perceived scale of the views in the field, the recommended viewing distance for the simulations is approximately 19". The simulations represent the central angle of view, which occurs within 40-60 degrees, and is the area that most highly influences human perception of a scene given a fixed viewing direction.[4]

[4] The viewing distance was calculated using the method described in "Visual Simulation: A User's Guide for Architects, Engineers and Planners," by Stephen R. J. Sheppard. Based on a single image (7.8" high x 11.52" wide) formatted on an 11x17 sheet. With a horizontal angle of view of approximately 35 degrees for a single image, three images were typically merged in order to widen the field of view to be approximately 45 degrees. These calculations apply to every simulation that utilize photos taken by LandWorks. The simulations for Keg Lake, Sysladobsis Lake and Pug Lake utilize photos taken by others, but they have been adjusted in their presentation to be consistent with the others in terms of viewing distance.

2.3.4 Research and Publications

Information used to develop this report was derived from a multitude of sources such as background polling, user surveys, studies, guidebooks, publications, online media, anecdotal and interview sources, as well as general field observations and professional expertise. Collectively, the different data sources provide a more comprehensive understanding of the scenic resources to be evaluated, and the potential effect the Project may have on users of those resources. The information assembled from this multitude of resources yielded similar results that we believe directly inform and further substantiate our understanding of the scenic resources in the study area, and the Project's impact on those resources. The following provides a summary of sources gathered and general results. Additional analysis gleaned from this information is provided in subsequent sections of this report.

A. Guide Services

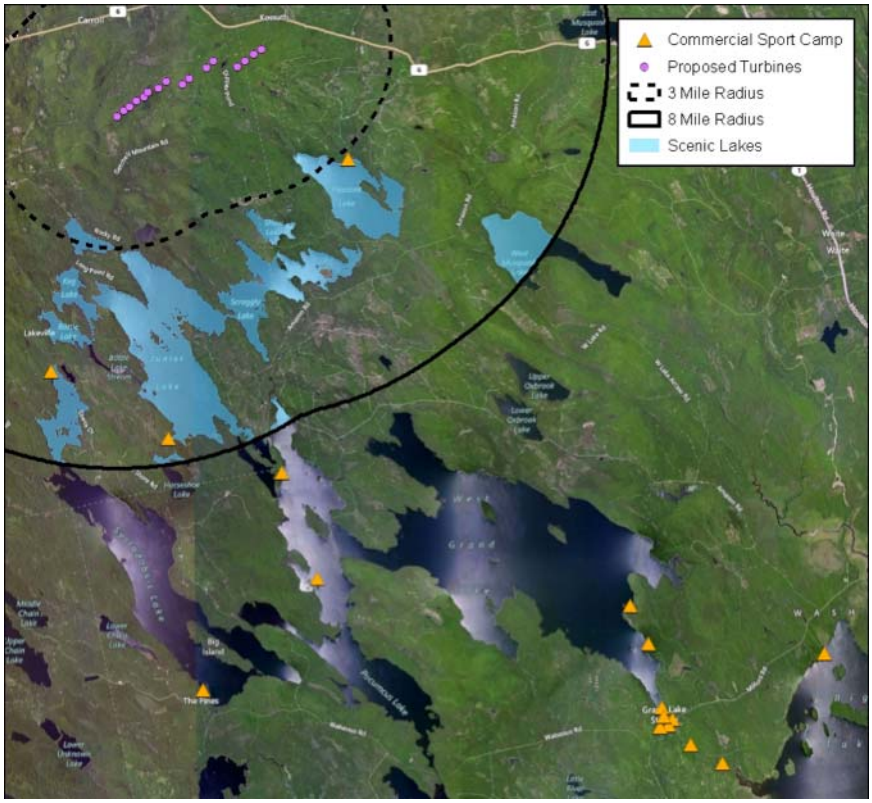
Guide services that offer trips within the study area were reviewed. The results of this search indicated that fishing and hunting are the primary activities for which guide services are procured. Research also indicates that the lakes located within the study area are not key destinations. Testimony of the Guides during review of the previous Bowers project suggest that they heavily use the Project area lakes. However, in our extended research and review of guide services online, only one referred to any of the lakes in the study area—custom guided canoe trips in the "Junior Lakes Region" by Wilderness Inquiry. Rather, the Grand Lake Stream area, which is located more than 18 miles from the nearest turbine, and at least an hour's drive from Springfield, is most commonly identified as the central location for activities.

1. The Maine Professional Guides Association Online (www.maineguides.com)
2. Grand Lake Stream Guides Association (www.grandlakestreamguides.com)
3. Sunrise International (www.sunriseexpeditions.com, www.mainecanoe.com, www.sunriselocations.com)
4. The Maine Hunting Guide (www.themainehuntingguide.com)
5. Almanac Mountain Outfitters (Springfield, ME)
6. Blue Moose Hideaway Guide Service (www.bluemoosehideaway.com)
7. Denny's River Guide Service (www.dennysriverguide.com)
8. Hawkeye Hunting (www.hawkeyehank.com)
9. Outdoors with Ed (www.sites.google.com/site/outdoorswithed)
10. Runaway Heath Guide Service (www.runawayheathguides.com)
11. Weatherby's (www.weatherbys.com/registered-maine-guides)
12. Wilderness Inquiry (www.wildernessinquiry.org/destinations/index.php?dest=juniorlakes)

B. Sporting Camps and Lodging

In addition to guide services, sporting camps and lodging within the Downeast Lakes area were compiled and reviewed, primarily based on the Maine Sporting Camps Association website

(www.mainesportingcamps.com). Several commercial sporting camps expressed concern about the Project in their testimony from the previous Bowers filing. Only three commercial camps are located within the study area. The one closest to the Project, Maine Wilderness Camps on Pleasant Lake, expressed support for the Project. A second, Wild Fox Cabins on Junior Lake, appears not to be currently operating. The third, Spruce Lodge Campground, is located 6 miles from the nearest turbine. Most other camps are located 15 miles and beyond from the Project. Of the 21 camps reviewed that are located outside the 8-mile Project radius, only two specifically mention at least one of the study area lakes on their websites.



Map of commercial sporting camps in the region – 16 of the 24 listed here are shown.

1. Canalside Cabins (www.canalsidecabins.com)
2. Chet's Camps (www.chetscamps.com)
3. Colonial Sportsmen's Lodge (no website)
4. Darrow Wilderness Camps (www.darrowcamping.com)
5. Down River Camps (www.downrivercamps.com)
6. Eagle Lodge and Camps (www.eaglelodgemaine.com)
7. Grand Lake Lodge (www.grandlakelodgemaine.com)
8. Grand Lake Stream Camps (no website)
9. Grand Lake Wilderness Retreat (www.grandlakewildernessretreat.com)
10. Great Pond Wilderness Lodge and Sporting Camps (www.greatpondwildernesslodge.com)
11. Greenland Cove Cabins (www.greenlandcovecabins.com)
12. Hazelwoods Cottages (www.hazelwoodsofmaine.com)
13. Indian Rock Camps (www.indianrockcamps.com)
14. Leens Lodge (www.leenslodge.com)
15. Maine Wilderness Camps (www.mainewildernesscamps.com)
16. Nicatous Lodge and Camps (www.nicatouslodge.com)
17. The Pines Lodge and Camps (www.thepineslodge.com)
18. Rideout's Lakeside Lodges & Cottages (www.rideouts.com)
19. Robinson's Cottages (www.robinsonscottages.com)
20. Shoreline Camps (www.shorelinecamps.com)

21. Spruce Lodge Campground (no website)
22. Weatherby's Resort (www.weatherbys.com)
23. Wheaton's Lodge and Camps (www.wheatonslodge.com)
24. Worster's Wild Fox Cabins (www.wildfoxcabins.com)

C. Guidebooks

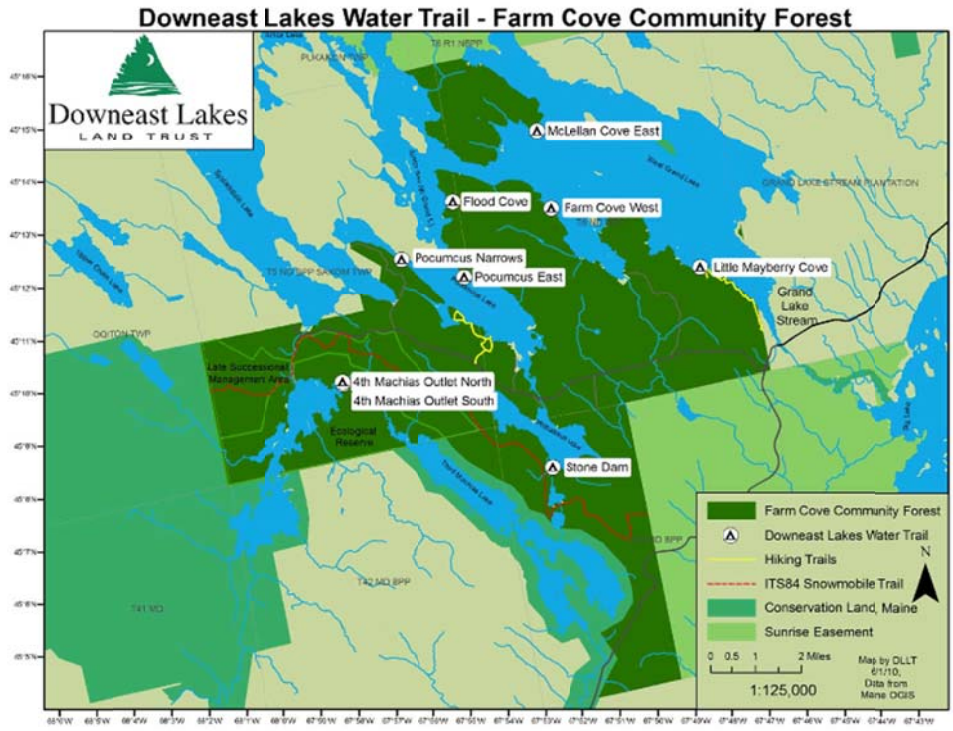
We evaluated several guidebooks that provided further information about fishing and recreational opportunities in this area of Maine. This information offered additional insight into the activities that occur on these lakes, as well as the popularity and significance of the lakes within the study area. Results again confirm that fishing is the most popular activity in the area and that the most popular spots identified are primarily located outside the project study area (e.g. West Grand Lake, Big, Pocumcus, Wabassus). The AMC Quiet Water Guide does describe a paddling trip that begins roughly 15 miles away from the Project, and loops through some of the study area lakes. This trip is further described in Section 4.6.

1. *AMC River Guide*, Maine
2. *An Explorer's Guide to Maine 16th Ed.* By Christina Tree & Nancy English
3. *Quiet Water Maine: Canoe and Kayak Guide* (Appalachian Mountain Club) by Alex Wilson and John Hayes
4. *Fishing Maine* by Tom Seymour
5. *Fishing Maine, 2nd: An Angler's Guide to More than 80 Fresh- and Saltwater Fishing Spots* by Tom Seymour
6. *A Fisherman's Guide to Maine* by Kevin Tracewski

D. Other Websites

In addition to the specific guidebooks, sporting camps and guide services described above, several other tourism and recreational websites were reviewed that provided further information about potential activities within the study area. Although little information was available about specific activities on specific lakes, the information on these websites was consistent with the findings from the guide services, sporting camps and guidebooks referenced above – that fishing and hunting are the primary activities for this area, and that the lakes within the study area were not usually mentioned.

1. Maine Office of Tourism (www.visitmaine.com): no mention of lakes or activities within project area
2. Maine Tourism Association (www.mainetourism.com/content/4030/DownEast__Acadia/): no mention of lakes or activities within the project area
3. Grand Lake Stream Area Chamber of Commerce (www.grandlakestream.org): no mention of lakes or activities within project area
4. Downeast Lakes Land Trust (www.downeastlakes.org): no mention of lakes or activities within project area



This map, available on the Downeast Lakes Land Trust website, does not extend to any lakes in the Bowers study area

5. Trails.com: features Junior Lake on map of Downeast Maine fishing locations (www.trails.com/activity.aspx?area=15042)
6. GoingOutside.com: reviews of Junior Lake (www.goingoutside.com/lake/104/1041944_Junior_Lake_Maine.html) and Sysladobsis Lake (www.goingoutside.com/lake/104/1043677_Sysladobsis_Lake_Maine.html)
7. Orvis Fishing Report (http://www.orvis.com/fishing_report.aspx?locationid=7408): mentions Junior and Sysladobsis in its Downeast Lakes description

E. Books, Surveys and Reports Related to Wind

We reviewed over thirty various books, surveys, and reports that have been prepared in relation to wind power and people's attitudes toward wind. Collectively, the results point to similar conclusions: 1) that views of wind projects have minimal or no impact on use and/or enjoyment by the majority of users, and 2) that a wind project in view has minimal or no affect on respondents' likelihood to return.

Surveys for Bowers Project

1. "First Wind Outdoor Activities Users Research," Portland Research Group, January 2011
2. "First Wind Stetson Snowmobiler Survey," Portland Research Group, February 2011

3. Results of informal telephone interviews conducted by LandWorks, September and December 2010
4. "Bowers Wind Project User Surveys," Kleinschmidt, September 2012
5. "Assessment of the Kleinschmidt Bowers Mountain Wind-Farm and Baskahegan Lake Recreational User Surveys," Expert Report of Kevin J. Boyle, PhD., October 1, 2012
6. "Downeast Lakes User Survey," Partnership for the Preservation of the Downeast Lakes Watershed, 2011

Other Pre-Construction Surveys for Wind Projects in Maine

7. "Bull Hill User Intercept Survey for Blue Sky East," Market Decisions, October 2010
8. "Little Bigelow User Intercept Survey for Highland Wind," Portland Research Group, Summer/Fall 2010
9. "Hikers Study for Highland Wind," Portland Research Group, August 2010
10. "Mount Blue User Intercept Study for Patriot Renewables," Market Decisions, September 2010
11. "Spruce Mountain User Intercept Study for Spruce Mountain Wind," Market Decisions, May 2010
12. "Passadumkeag Mountain Wind Power Project Intercepts," Market Decisions, October 2011
13. "Pleasant Lake/Mattawamkeag Lake Wind Power Project Intercepts," Market Decisions Research, October 2011

Post-Construction Studies at Wind Projects in New England

14. "Public Acceptance Study of the Searsburg Wind Power Project: Year One Post-Construction," Clinton Solutions, December 1997
15. "Baskahegan Lake User Surveys Report," Kleinschmidt, September 2012

Other Wind/Tourism Studies throughout New England and Internationally

Of the twenty-two studies reviewed below, only two indicated that the impact on the likelihood to return would be high. The NFO study (number 32 in the list below) indicated that 25% of respondents were least likely to or would not return. Additionally, the "Hot Air…" study (number 36 in the list below) indicated that 70% of respondents would not return. This must be qualified, however, with the fact that the survey only included 100 renters by cottage owners.

16. "Critical Insights on Maine Tracking Survey: Residents' Views on Politics, the Economy & Issues Facing the State of Maine," Critical Insights, November 2009
17. "Critical Insights: Maine Voter Preference Survey," Critical Insights, March 2011
18. "Report to MREA: Highlights of Survey Findings," Pan Atlantic SMS Group, May 2010
19. Vermont Department of Public Service website on Vermont's Energy Future - http://www.vermontsenergyfuture.info/Final
20. "Baskahegan Stream Watershed Recreation Use & Resource Analysis," Ednie, Andrea, Everett, C., and Daigle, J., University of Maine, Summer 2010
21. "Wind Energy Report: Views of Residents of PEI and Visitors to PEI," Tourism Research Centre at University of PEI School of Business, September 4, 2008

22. *1998 Recreation Study and 2008 Relicensing Report* conducted by Domtar for the West Grand Lake Watershed
23. *Wind Power in View* by Pasqualetti, Gipe, et al., (San Diego: Academic Press, 2002)
24. "Wind Turbines in Tourism Landscapes," Frantal and Kunc, *Annals of Tourism Research*, Vol. 38, No. 2, at 499-519 (April 2011)
25. "Do Wind Farms Affect Tourism?" Réseau de Veille en Tourisme (Quebec Tourism Intelligence Network, UQAM), December 9, 2009
26. "Economic Research Findings: The Economic Impacts of Wind Farms on Scottish Tourism," The Scottish Government, March 2008
27. "Cornwall Holiday Survey," Cornwall Tourist Board, 2000
28. "Delabole Wind Farm," Nicholas Pearson Associates, May 1996
29. "Wind Farm Public Attitudes and Tourism Studies in Scotland," A. Hinton, Natural Power Consultants, for Fred Olsen Renewables, October 2006
30. "Fullabrook Wind Farm Proposal, North Devon—evidence gathering of the impact of wind farms on visitor numbers and tourist experience," Aitchison, University of the West of England, 2004
31. "North Cornwall Tourists Survey," Robertson Bell Associates, September 1996
32. "Martin's Hill Tourism Survey," Center for Sustainable Energy, 2002
33. "A Study into the Attitude of Visitors, Tourists and Tourism Organisations towards Wind farms on the Boundaries of the Lake District National Park," V. Campey et al., Star Consultants, Leeds Metropolitan University, October 2003
34. "Investigation into the potential Impact of Wind Farms on Tourism in Wales," NFO for Wales Tourist Board, 2003
35. "Appraising renewable energy developments in remote communities: the case of the North Assynt Estate," N. Hanley and C. Niven, *Scotland Energy Policy*, 1999
36. "Investigation into the Potential Impact of Wind Farms on Tourism in Scotland," NFO System Three, for Visit Scotland, 2002
37. "Tourist Attitudes Towards Wind Farms," research study conducted for Scottish Renewables Forum and British Wind Energy Association, MORI Scotland, 2002
38. "Wind Energy Policy, Planning and Management Practice in the UK: Hot Air or a Gathering Storm?" Peter A. Strachan and David Lal, *Regional Studies* 38(5): 549-569, November 2005

F. Other Studies and Reports

A number of additional studies and reports were reviewed or used as reference in this report, which helped inform the development of indicators used in the evaluation of the statutory criteria, and include:

1. The National Forest's Handbook on Scenery Management
2. "Review of the Spruce Mountain Wind Project Visual Impact Assessment," James Palmer, June, 2010

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

3. Project Description

3.1 Wind Turbines

Multiple turbine models are being considered for the civil and electrical design described in the permit application. For purposes of this Visual Impact Assessment, the tallest turbine model was incorporated using the Vestas 3.0 MW turbine model, which is 275'-6" (84 m) to the center of the hub, and a total of 459'-3" (140 m) to the tip of a fully extended blade. Fourteen of the turbines will be located in Carroll Plantation, while the remaining two will be in Kossuth Township. The turbines will span from Bowers Mountain across to Dill Hill. The turbine rotors and towers will be a light or white color, which is the best choice for enabling the structures to blend into background sky and atmospheric conditions. Following construction, the grading and disturbed areas around each turbine pad will be allowed to revegetate.

3.2 Access roads

The primary access road for the Project, beginning at Route 6, is 24 feet in width. Between turbines, portions of the access roads will be 35 feet in width to accommodate the crane during construction. Many of the proposed turbine sites and portions of the Project area have been or are being used for commercial forestry operations and the Project area contains logging roads that will be upgraded and used, where appropriate, to minimize new construction, clearing and wetland impacts. Roads are sited to work with the existing topography and therefore minimize cut and fill. In most instances, existing mature trees will screen views of the roads. Access roads and clearing are accounted for in the visual simulations. Additional visibility analysis of associated facilities is provided in Section 5.0.

3.3 Electrical Collection System / Substation

Power from the turbines will be collected in an overhead 34.5-kV "mountaintop" collector line between turbines and delivered north across Route 6 along an "express" collector route to a proposed substation located adjacent to the existing Line 56 transmission line in Carroll Plantation. The poles for the electrical collection lines between turbines will range from 35 to 60 feet high, and require up to approximately 80 feet of clearing in areas between turbine locations. The poles for the "express" collector will range from 40 to 80 feet and general corridor clearing of up to 100 feet (150' at corners). Clearing for the mountaintop collector and express collector is accounted for in the visual simulations. The collector will run north of the ridgeline and primarily north of Route 6 to a proposed substation typical in size to many throughout Maine. Additional visibility analysis of associated facilities is provided in Section 5.0 (see Exhibit 6: Express Collector Viewshed Map and Exhibit 7: O&M and Substation Viewshed Map).

3.4 Operations and Maintenance Facility

An O&M building of up to approximately 7,000 square feet is planned for a location north of Route 6. This single-story building will be painted a neutral color to blend with its surroundings. Additional visibility analysis of associated facilities is provided in Section 5.0 (see Exhibit 7: O&M and Substation Viewshed Map).

3.5 Meteorological Towers

There will be one permanent meteorological tower. The permanent tower will be up to 90-meters high (295 feet) by approximately 18" wide. Due to its narrow profile and light color, its visibility is relatively minimal. Additional visibility analysis of associated facilities is provided in Section 5.0 (see Exhibit 8: Meteorological Tower Viewshed Map).

3.6 Project Lighting

The wind turbines and permanent met tower will be illuminated in accordance with FAA recommendations for turbine lighting in order to address aviation safety. Based on the Lighting Plan (see Applicant's Exhibit 30D), the met tower and approximately 50% of the turbines will be lit at night. As shown on Exhibit 9: Turbine Night Lighting Viewshed Map, turbines 1, 3, 6, 8, 10, 12, 13, and 16 will have red aviation warning lights that will be lit at night. The plan calls for red lights on the met tower and turbines that will flash simultaneously with a rapid discharge strobe (slow-on, slow-off profile), which will remain on at night to warn aircraft of the existence of the structures. According to the governing FAA standard[5], lights typically used in these types of applications are omni-directional, L-864 Red Flashing Lights (incandescent or rapid discharge [strobe]) with a minimum 750 candela with a 3-degree vertical beam spread. An evaluation of where lit turbines will be visible from scenic resources of state or national significance has been conducted and described in Section 4.4 of this report. See also Exhibit 10, which includes annotated visual simulations with an arrow identifying which turbines will be lit.

Although the impact of the required nighttime lighting is minimized through use of a limited vertical beam spread and other mitigating factors, Champlain has proposed use of radar-assisted lighting system to reduce the effects of nighttime lighting. Although not yet approved by the FAA for use on wind turbines in the United States, the new nighttime lighting mitigation systems utilize radar mounted on the turbines or in close proximity to the turbines to detect aircraft when they are approaching the structure at night and automatically turn on the FAA lights. The lights then automatically turn off once the aircraft has left the airspace in proximity to the wind farm. These systems permit wind turbine obstruction lights to remain off at all times unless an aircraft is operating in the vicinity of the wind farm, thus greatly reducing nighttime lighting at these

[5] U.S. Department of Transportation Federal Aviation Administration. Obstruction Marking and Lighting Chapter 13, February 2007. (FAA AC 70/7460-1K)

wind projects. Champlain proposes to install the technology as soon as it obtains the necessary approvals from FAA and is able to contract with vendors for installation of the technology. This mitigation technology will essentially eliminate the impacts of nighttime lighting on potential recreational users of the Project area lakes.

3.7 Project Area

The proposed Project is part of two hills ranging in elevation from about 760 to 1120 feet above sea level and consist of moderately steep to gentle sloping sides. The relief as viewed from lakes in the area is not dramatic or unique. All of these rolling hills are located directly south of Route 6 and cross the town boundary from Carroll to Kossuth. Together they form a divide between stream drainages to the Baskahegan Stream in the north, and to streams flowing to lakes and ponds in the south. This area is identified as the Eastern Lowlands biophysical region[6], which is primarily dominated by a regenerating Beech-Birch-Maple forest.

Much of the land in the study area is privately owned and has been heavily harvested, showing evidence of extensive historic and recent forest management activity. There are also a number of publicly and privately conserved lands in the 8-mile study area, which includes nearly 31,500 acres of the Sunrise Conservation Easement, and the 890-acre lot owned by the Bureau of Parks and Lands (BPL) situated between Keg and Duck Lakes. As discussed below, the Sunrise Conservation Easement is part of a larger conservation effort to support the continued use of the area as a working forestry, to conserve and enhance wildlife habitat, to maintain an undeveloped shoreline, and to protect historic public recreation. It is owned by Typhoon, LLC and managed by Wagner Forest Management, primarily for commercial timber operations. The BPL land is currently managed primarily for forestry and wildlife related uses. In addition, there are two Native American lands within the study area – the Passamaquoddy in Pukakon Township and the Penobscot in Lakeville. Specifically, the Passamaquoddy Tribe holds significant lands along the shores of Junior, Scraggly, Shaw and Sysladobsis lakes. The Penobscot Tribe holds significant lands along the shore of Sysladobsis lake.

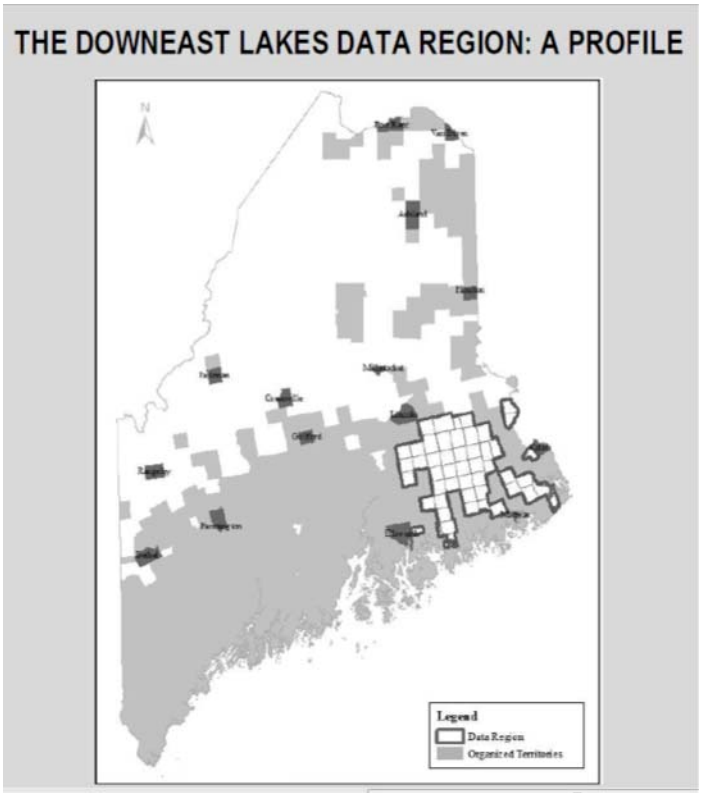
The 8-mile study area has very low population, undeveloped areas, wildlife habitat and vast woodlands. It is a working landscape on which the region's residents have depended for centuries, including the harvesting and processing of forest products, evidence of which can be seen in the hillsides and the network of logging roads throughout the area. There is also some evidence of farming in the region, with a few open fields found along Route 6. Likewise, most of the development, which is predominantly residential, is located along this key road. All of the region's major employment centers, like Lincoln, are more than 25 miles away. The immediate area around the Project Site is used locally but is not a popular destination area for tourism (see Section 4.2.3). Thus, most of the commercial and retail activity is found outside the study area.

[6] Maine State Planning Office, 1993.

In general, residential development is very low density, scattered amongst open fields and roadside clearings. For example, the population for Carroll Plantation from the 2010 Census was 153, with a population density of only 3.45 people per square mile. This compares to the Penobscot County average of about 43.29 people per square mile. The only area of somewhat concentrated density is in the settled area of Springfield, approximately 5 miles from the closest turbine, where there is a church, school and grocery. There is also an approved 66-lot subdivision on nearly 3,150 acres of land in Carroll Plantation immediately southeast of Bowers Mountain, which includes 17.5 miles of interior roadway.

Much of the region, however, is characterized by seasonal camps scattered throughout the area (see Diagram 2). Bottle Lake features the highest number of camps and homes along the water's edge, with additional residential development located along the shores of the other lakes in the area including Keg, Lombard, Sysladobsis, Upper Sysladobsis, Junior and Duck. Many seasonal camps are occupied for limited periods of time, primarily for hunting and fishing. In fact, the most identifiable activities for this area, aside from forestry, include snowmobiling, hunting, boating and fishing. In the 8-mile study area there are several boat launches, a number of primitive campsites, and a network of snowmobile and ATV trails including access to Maine's Interconnected Trail System.

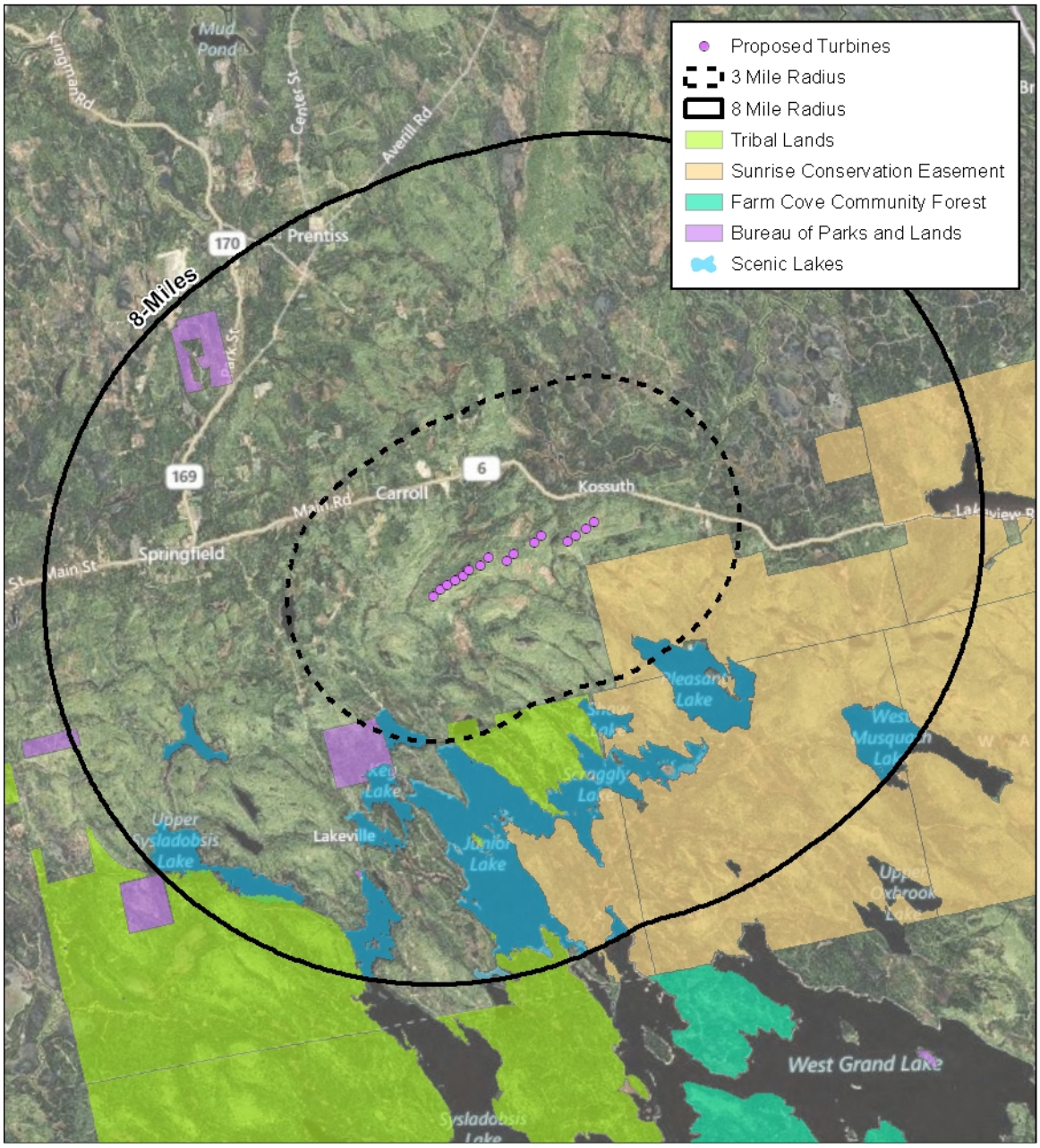
Compared to other regions of the state, this area has a minor road network and traffic volumes remain very low. The area's primary roads include Route 6, which runs east-west just north of the Project Site, Routes 170/169, which head north from Springfield, and a network of unimproved logging and other access roads. In fact, most of the activity along these roads is for forestry related purposes, and carry much of the logging truck traffic. The majority of roads are set within the surrounding topography, trees, and vegetation, which constrain views of the Project and provide limited long distance views of the regional landscape.



Source: 2010 CLUP, page 54

Although the Project area is not itself a tourist destination, it is located at the northern edge of the Downeast Lakes Data Region. The Downeast Lakes Data Region is one of seven regions identified in the 2010 Comprehensive Land Use Plan (CLUP) and consists of 1,169,000 acres or 11% of the Jurisdiction. It extends from Route 1 on the south and east, to Route 6 on the north, and

Interstate 95 to the West. Route 9 traverses the area. See CLUP at 54. The CLUP recognizes the Downeast Lakes Region for its natural features, including lakes and forests, and acknowledges the importance of the traditional forestry and fishing uses that occur therein and the communities they support. The region also includes significant conservation lands – most notably the Downeast Lakes Forestry Partnership's conservation project, which encompasses nearly 25% of Washington County (see map that follows). The project includes a mixture of easements, fee acquisitions, management plans, and other protective measures, ultimately conserving nearly 400,000 acres of forestland, a 500-foot-wide corridor along fifty miles of Spednic Lake and the St. Croix River (this corridor is now owned by the State of Maine), a 312,000-acre working forest conservation easement extending over lands south and east of the Bowers Project (the "Sunrise Easement"), and more than 33,000 acres of fee purchases owned by Down East Lakes Land Trust. The Sunrise Easement is located at the northern edge of the Downeast Lakes Region and lies just south of the Project area. The easement is primarily a working forest conservation easement, and it guarantees that the affected land will forever remain available for use as a commercial working forest with the perpetual ability to produce forest products, while conserving forest and wildlife habitats, undeveloped shoreline, and historic public recreation opportunities. The map below shows a portion of the lands within the Downeast Lakes Forestry Project, which themselves are part of a larger block of more than 1.3 million contiguous acres of protected lands along and near the Maine-New Brunswick border. The Project area sits outside of this area of protected lakes, rivers, streams and forests, and the 8-mile study area includes only the very periphery of this expanse of conserved land.



The CLUP also notes the unique community in and around Grand Lake Stream Plantation. CLUP at 54. This area, which is surrounded by the Downeast Lakes Forestry Partnership conservation lands, is host to a number of commercial sporting camps and guiding activity. See map on page 11. This area is located more than 18 miles from the Project and was specifically excluded from the expedited wind permitting area at the time of designation. In contrast, the Project area is part

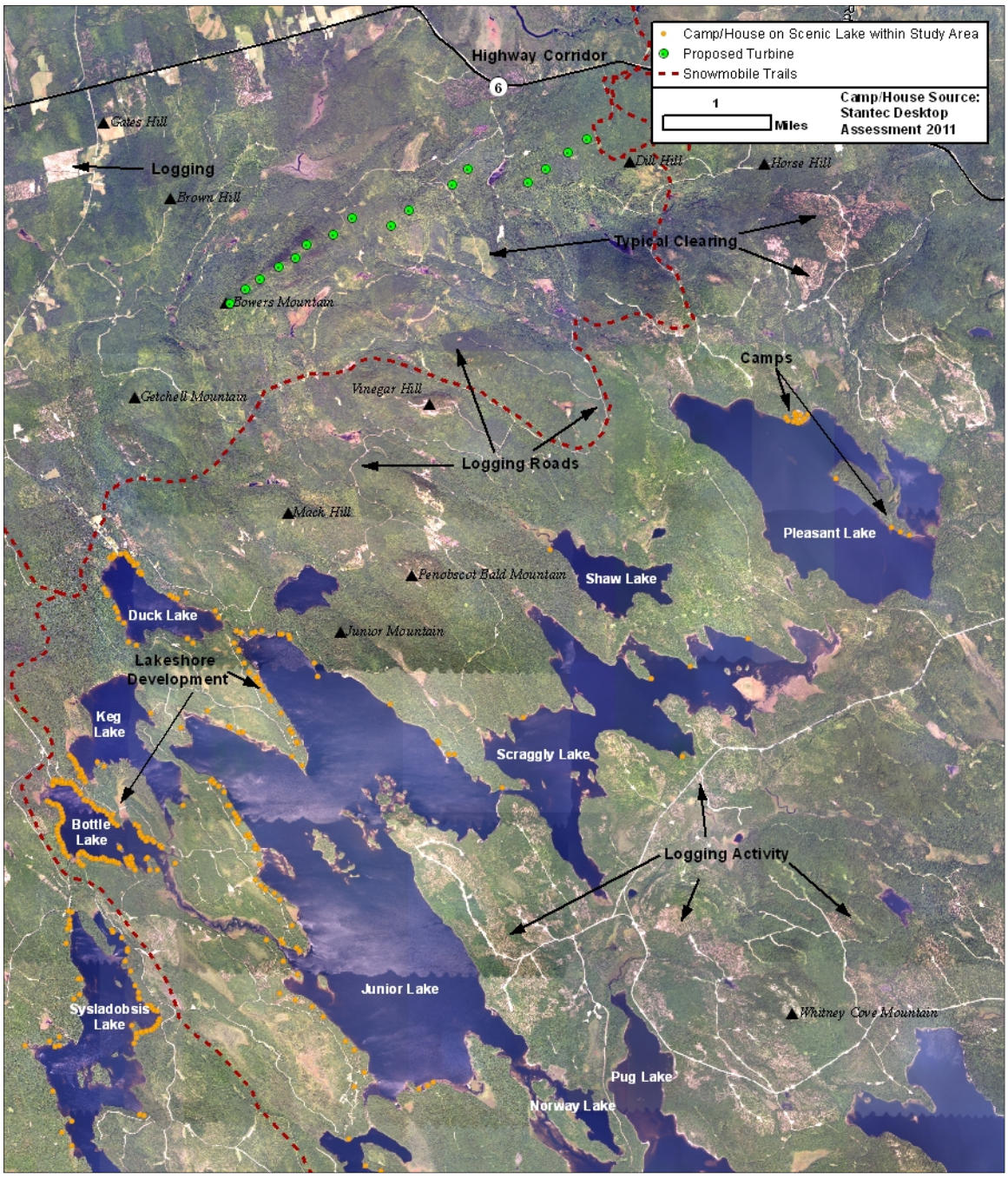
of the expedited wind permitting area and as such was specifically determined to be appropriate for siting wind power.[7]

[7] The portion of the Project located in Carroll Plantation was determined by the Legislature to be appropriate for wind power when it enacted the Wind Energy Act. The portion of the Project located in Kossuth was subsequently added to the expedited permitting area by the Commission, when it determined that the proposed addition: 1) involved a logical geographic extension of the currently designated expedited area; 2) was important to meeting the State's goals for wind energy development; and 3) would not compromise the principal values and goals of the CLUP. Maine Land Use Regulation Commission Guidelines for the Review of Petitions for the Addition of Lands to the Expedited Permitting Area for Windpower Development at 4 (March 3, 2010, Revised April 6, 2011).

Diagram 1. Logging Activity

This aerial photo illustrates the extensive logging and associated clearing and access roads seen throughout the region. Logging activities are clearly visible from Pleasant Lake and several other lakes in the study area.

Diagram 2. Existing Land Use



4. The Visual Impact Assessment

4.1 Visual Impacts on Resources of State or National Significance

In determining whether a Project has the potential for significant adverse effects, 35-A MRSA §3451.9 specifically defines what constitutes a “scenic resource of state or national significance”:

> "Scenic resource of state or national significance" means an area or place owned by the public or to which the public has a legal right of access that is:
> A. A national natural landmark, federally designated wilderness area or other comparable outstanding natural and cultural feature, such as the Orono Bog or Meddybemps Heath;
> B. A property listed on the National Register of Historic Places pursuant to the National Historic Preservation Act of 1966, as amended, including, but not limited to, the Rockland Breakwater Light and Fort Knox;
> C. A national or state park;
> D. A great pond that is:
> (1) One of the 66 great ponds located in the State's organized area identified as having outstanding or significant scenic quality in the "Maine's Finest Lakes" study published by the Executive Department, State Planning Office in October 1989; or
> (2) One of the 280 great ponds in the State's unorganized or deorganized areas designated as outstanding or significant from a scenic perspective in the "Maine Wildlands Lakes Assessment" published by the Maine Land Use Regulation Commission in June 1987;
> E. A segment of a scenic river or stream identified as having unique or outstanding scenic attributes listed in Appendix G of the "Maine Rivers Study" published by the Department of Conservation in 1982;
> F. A scenic viewpoint located on state public reserved land or on a trail that is used exclusively for pedestrian use, such as the Appalachian Trail, that the Department of Conservation designates by rule adopted in accordance with section 3457;
> G. A scenic turnout constructed by the Department of Transportation pursuant to Title 23, section 954 on a public road that has been designated by the Commissioner of Transportation pursuant to Title 23, section 4206, subsection 1, paragraph G as a scenic highway; or
> H. Scenic viewpoints located in the coastal area, as defined by Title 38, section 1802, subsection 1, that are ranked as having state or national significance in terms of scenic quality in: (1) One of the scenic inventories prepared for and published by the Executive Department, State Planning Office: "Method for Coastal Scenic Landscape Assessment with Field Results for Kittery to Scarborough and Cape Elizabeth to South Thomaston," Dominie, et al., October 1987; "Scenic Inventory Mainland Sites of Penobscot Bay," Dewan and Associates, et al., August 1990; or "Scenic Inventory: Islesboro, Vinalhaven, North Haven and Associated Offshore Islands," Dewan and Associates, June 1992; or (2)

> A scenic inventory developed by or prepared for the Executive Department, State Planning Office in accordance with section 3457.

A summary of scenic resources of state or national significance that are located within an eight-mile radius of the generating facilities is provided in Table 1 below. Detailed descriptions and evaluations for each resource follow. Note that visibility is based on viewshed analysis from the hub and accounting for topography and 40-foot vegetation[8]. Viewshed analyses are used mainly as a point of departure for identifying areas that may have potential visibility. Viewsheds cannot be relied upon to represent what will actually be seen on the ground from a specific location. Not all turbines, or all parts of turbines, will be seen from every location.

Table 1. Summary of Resources of State or National Significance Within 8 Miles

	Town	Status [Significant (S), Outstanding (O)]	Nearest Visible Turbine	Distance to Nearest Visible Turbine[1]	# of Turbines Potentially Visible within 8 Miles[1] (16 total)
GREAT PONDS					
Within 3 miles of the Project					
Duck Lake[2]	Lakeville	State (S)	T 1	2.7 mi.	0-14
Pleasant Lake[3]	Kossuth Twp & T6 R1 NBPP	State (O)	T 13	2.4 mi.	0-16
Within 3-8 miles of the Project					
Bottle Lake	Lakeville	State (S)	T 1	5.1 mi.	0-10
Horseshoe Lake	Lakeville	State (S)	No Project Visibility within 8 Miles		
Junior Lake	Lakeville & Pukakon Twp	State (S)	T 1	3.2 mi.	0-13
Keg Lake	Lakeville	State (S)	T 1	3.7 mi.	0-12
Lombard Lake	Lakeville	State (O)	No Project Visibility within 8 Miles		
West Musquash Lake	Talmadge & T6 R1 NBPP	State (O)	No Project Visibility within 8 Miles		
Norway Lake	Pukakon Twp	State (S)	No Project Visibility within 8 Miles		
Pug Lake, West Grand Lake	Pukakon Twp	State (O)	T 1	7.7 mi.	0-6
Scraggly Lake	Pukakon Twp & T6 R1 NBPP	State (S)	T 1	4.1 mi.	0-16
Shaw Lake	Pukakon Twp & T6 R1 NBPP	State (S)	T 13	3.5 mi.	0-14
Sysladobsis Lake	Lakeville	State (S)	T 1	6.3 mi.	0-10
Upper Sysladobsis Lake	Lakeville	State (S)	No Project Visibility within 8 Miles		

[8] 40-foot tree height is very conservative for this area and can have a significant impact on potential visibility. Tree heights in this region are more characteristically 65 feet or higher.

	Town	Status [Significant (S), Outstanding (O)]	Nearest Visible Turbine	Distance to Nearest Visible Turbine[1]	# of Turbines Potentially Visible within 8 Miles[1] (16 total)
NATIONAL REGISTER OF HISTORIC PLACES					
	Town		**Project Visibility**		
Springfield Congregational Church	Springfield		None		

[1]Based on visibility from the hub and accounting for topography and 40-foot vegetation.
[2]About 3/4 of the lake is within the 3-mile radius.
[3]About 1/4 of the lake is within the 3-mile radius.

4.1.1 National Natural Landmarks

There are no national natural landmarks, federally designated wilderness areas or other comparable outstanding natural or cultural features such as the Orono Bog or Meddybemps Heath within 8-miles of the Project.

4.1.2 National Register of Historic Places

There is one property within the 8-mile radius of the Project that is listed on the National Register of Historic Places: Springfield Congregational Church. The gothic revival church, built in 1852, is located along Route 6 in Springfield, more than 5 miles from the nearest turbine. There will be no visibility of the Project from this location due to intervening topography and surrounding vegetation.

4.1.3 National or State Park

There are no national or state parks within 8-miles of the Project.

4.1.4 Segment of River or Stream

There are no segments of a scenic river or stream of state or national significance within 8-miles of the Project.

4.1.5 Scenic Viewpoint

There is state land on shores of other scenic resources of state or national significance, but there are no scenic viewpoints located on state public reserved land or on a trail that is used exclusively for pedestrian use designated by the Department of Conservation within 8-miles of the Project.

4.1.6 Scenic Turnout

There are no scenic turnouts constructed by the Department of Transportation on public roads designated as scenic highways within 8-miles of the Project.

4.1.7 Scenic Viewpoints in Coastal Areas

There are no scenic viewpoints in coastal areas, as defined by Title 38, section 1802, subsection 1, within 8-miles of the Project.

4.1.8 Great Ponds with Outstanding or Significant Scenic Quality

There are two great ponds located within 3-miles of the Project, and twelve within 3-8 miles that are listed in one of the two designated state inventories ("Maine's Finest Lakes" study or "Maine Wildlands Lakes Assessment") as having outstanding or significant scenic quality. Five of these lakes do not have any visibility of any turbine within eight miles and include Horseshoe, Lombard, West Musquash, Norway and Upper Sysladobsis Lakes. An evaluation of the potential impact to the other 9 lakes with visibility of the generating facilities within 8 miles was conducted using the six criteria outlined in 35-A MRSA §3452.3, and as identified in Section 2.2 of this report. The detailed analysis is provided in Section 4.3 that follows.

4.2 Considerations for Evaluating Scenic Impact

4.2.1 Methodology for Evaluating the Statutory Criteria

LandWorks has outlined the methods and indicators used in this analysis that were used to evaluate each of the criteria set forth in the Act. The indicators, taken collectively, help determine each criterion's contribution to or potential effect on scenic impact.

Based on the evaluation of the indicators, each criterion is given a rating of Low, Medium or High (i.e. if the significance of a resource [criterion A.] is found to be Low, then that criterion's potential effect on scenic impact is also Low). Likewise, one criterion can affect the interpretation of another criterion (e.g. the character of the surrounding area [criterion B.] can influence viewer expectations [criterion C.]). For example, a pristine lake with a unique and diverse landscape would have a greater effect on viewers' expectations of scenic quality than a highly developed lake with discordant intrusions.

The factors considered for each of the statutory criterion include:

A. *Significance of the Scenic Resource* – The assessment of this criterion is based on official state documentation of the resources, field observations and subsequent analysis, surveys conducted for the project, and research of recreational and tourism guides/websites. Indicators include but are not limited to:
   - resource ratings as designated or defined in the Maine Wildlands Lake Assessment ("Assessment"), Scenic Lakes Character Evaluation in Maine's Unorganized Town's[9] ("Evaluation"), Maine's Finest Lakes, The Results of the Maine Lakes

[9] Findings from this report were used to identify which lakes were ranked as "Outstanding" or "Significant" in the Maine Wildlands Lake Assessment using a scoring and rating system. Specific rating numbers are only provided for lakes characterized as "Outstanding". Lakes that are ranked "Significant" or "Scenic" are given ratings of High, Medium, Low or None in the appendices. Scores for individual criteria are therefore assumed for "Significant" lakes based on the methodology in the study that defines the range of points for Low, Medium, and High, which include:
- Relief: High=30, Medium=20, Low=10
- Physical Features: High=25 points, 4 of 7 features, Medium= 15 points, 2-3 of 7 features, Low= 10 points, 1 of 7 features. Additional points were given if a single feature was dominant or if the density and distribution of islands was high.

Study ("Study"), and LURC's (now LUPC) 2010 Comprehensive Land Use Plan[10] ("CLUP"). Much has changed since the Maine Wildlands Lake Assessment and Maine's Finest Lakes reports were completed more than twenty years ago. Lakeshores have been developed, access roads have been cleared and people's perceptions have changed. Accepted methodologies for determining scenic quality and significance have also been clearly defined and adopted. While these important studies identify which lakes need to be evaluated under the Act, the studies are not the only indicator of significance.

- frequency of use – in some instances but not necessarily all a well-used resource could indicate a higher value or significance ascribed to that resource, if the high use is due to the resource's exceptional or one-of-a-kind feature(s).
- the unique, distinctive or exceptional character of the scenic resource as it exists today – is the resource typical of the region, or does it have special, memorable qualities unlike any other in the area? This indicator considers the physical character of the resource (i.e. landform, vegetation, shoreline configuration, and other special features), and the integrity and condition of the landscape. It takes into account what is established by the reports in bullet point 1, and applies those criteria to the resource, as it exists today. This indicator is informed by data research, relevant reports (i.e. 2010 CLUP), accepted methodologies, and most importantly, field study. Often, the greater the physical diversity and intactness of a landscape, the higher its scenic quality and significance. Landscapes that are very scenic or outstanding usually have intact, prominent distinctions between landforms, such as open water in combination with a steeply rising mountain, or have unique focal points and distinct, memorable profiles. The striking view of Mount Katahdin from the Penadumcook Lakes is a good example of a unique and memorable feature, as compared to the undifferentiated profile of Bowers Mountain from Pleasant Lake (see photos that follow); and,

- Shoreline Configuration: High= 15 points, Medium= 10 points, Low= 5 points
- Vegetation Diversity: High=15 points, 3 or more vegetation communities, Medium=10 points, 2 vegetation communities and superstory trees, Low=5 points, 2 vegetation communities
- Special Features: High=15 points, Medium= 10 points
- Inharmonious Development: -20 points=Lakes with drastic fluctuation in water level. -10 points for "high" dominance of inharmonious feature, -5 points for "moderate" features, no points subtracted for inharmonious development rated "Low or None".

[10] CLUP Appendix C – Lake Management Program provides "Management Class" ratings for each of the lakes, which are defined as:
2 Esp high value, accessible, undeveloped
3 Potentially suitable for development
4 High valued, developed lakes
5 Heavily developed lakes
7 All lakes not otherwise designated

View of Mount Katahdin from Penadumcook Lake

View of Bowers Mountain from Pleasant Lake

- scenic attractiveness – this indicator is derived from the USFS articulation of "scenic attractiveness" as part of its overall Scenery Management System set forth in the publication *Landscape Aesthetics*.[11] It assesses "vividness", which relates to the presence of variety and contrast in the landscape and "unity" or "intactness" which implies that the landscape is coherent, lacks intrusive or uncharacteristic elements and thus promotes a sense of order and balance and provides the viewer or user with a memorable experience based on the visual qualities of the landscape alone.

B. *Existing Character of the Surrounding Area* – The assessment of this criterion is based primarily on field observations and analysis of aerial photography as well as document research. Indicators include but are not limited to:
   - the overall landscape of the scenic resource and its surrounding environs – what is the natural character of the surrounding area in terms of geology/hydrology, forest cover, topography, etc.? Are there diverse vegetation types, distinct geological formations, water bodies, etc. within the immediate area? Observing the character of the surrounding area helps to inform our understanding of the scenic qualities and sensitivity of the landscape to change.
   - the types of land uses and activities that occur in the vicinity of the resource, which include not only what you see from the resource, but what you see as you approach the resource or what is present in the area of the resource but not necessarily visible (i.e. chainsaws, gravel extraction, ATV's) – does one travel through a remote, pristine wilderness as they approach the resource, or are there other land use activities and development that would affect the perceived character of the resource (i.e. power lines, logging roads, residential development, etc.). Observing the character of the surrounding area helps to inform our understanding of the scenic qualities and sensitivity of the landscape to change.

[11] *Landscape Aesthetics* A Handbook for Scenery Management, United States Forest Service Agriculture Handbook Number 701, pp. 1-15 - 1-18.

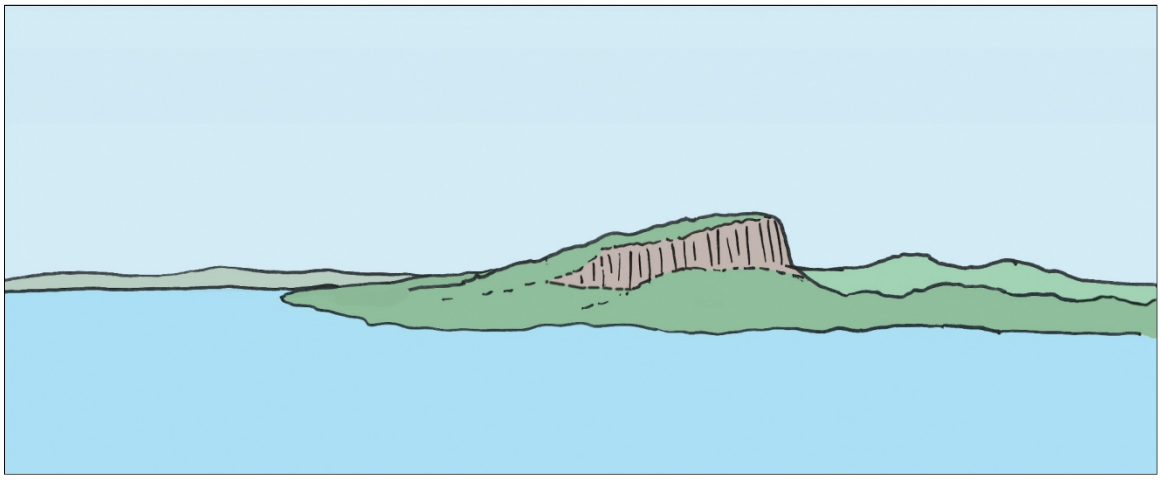


Diagram 3. Example of a distinct landscape with unique or singular scenic qualities due to the geology and geomorphology of the terrain.

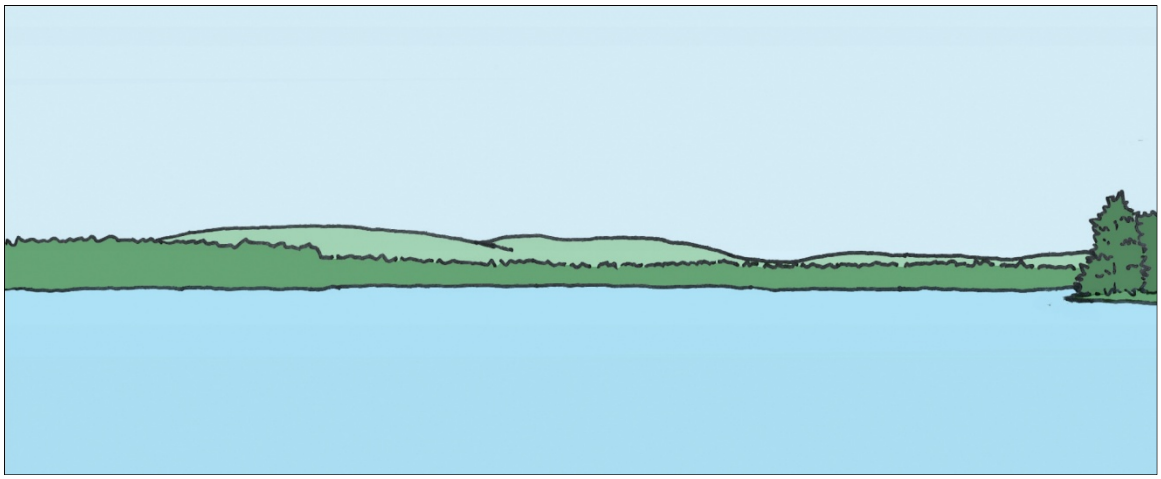


Diagram 4. Typical character of the landscape and terrain as viewed from lakes within the vicinity of the Project Site. Note the subtle, rolling terrain with low ridges and hills that lack unique scenic values or qualities and do not include distinctive geomorphological characteristics.

C. *Typical Viewer Expectations* – The assessment of this criterion is based on a multitude of sources such as background polling, user surveys, studies, guide books, publications, online media, anecdotal and interview sources, as well as general field observations and professional expertise. These sources are all listed in section 2.3.4 of this report and provide an objective and comprehensive body of evidence. As such, this assessment requires a judgment informed by both quantitative *and* qualitative data. Indicators include but are not limited to:
   - demographics of the user – this includes: age, which can influence a person's attitude (i.e. younger people are generally more acceptable to change); location – a local resident or property owner can have an inherent bias (i.e. they have a vested interest or emotional tie), as compared to a tourist or visitor who may not;

- the type of users – who is using the resource and what activity are they engaged in? Scenic quality may not be central to some types of activities like fishing, swimming, and boating, as compared to other activities such as hiking or paddling, where scenery may be more important.
- landscape character (developed or not) – what is the level of landscape alteration (e.g. timber harvesting clearings, recreational use areas, residential development, roads, etc.)? Are the alterations dominant and out of scale, or are they present but subordinate to the overall character of the resource? A viewer's expectation to change in the landscape may be tempered or influenced by the level of alteration already present within and surrounding the resource.

Defining The Typical Viewer

The wind energy statute relies on the assessment of potential effects on the Typical Viewer (or User). There are potentially many facets to the typical user, and for the purposes of this analysis, we have focused on those who would typically be using the resource, in this case the lake and environs, and what is their primary activity. The typical users and their behaviors are summarized in this section as a means of understanding how a wind energy project will affect their use and enjoyment. The typical user in the Bowers Project area may be broken down into 4 categories:

1. An out-of-state visitor, or visitor from elsewhere in Maine who is less familiar with the area. This user group could include one-time or first-time camp renters as well.
2. A local year-round resident, normally expected to use or visit the resource as a primary recreation destination.
3. A camp owner or regular camp renter. It should be noted that camp owners may have a vested or financial interest in resisting development or change. For example, camp owners often voice concern with regard to the impact of development on their property values, and thus have an opinion or subjective view regardless of the nature or extent of the project's potential impacts. Camp owners, as well as those who recreate primarily in the project area, also tend to elevate their sense of the scenic value present, as they may be emotionally attached to the location, and less able to objectively balance the local scenic resource values in comparison to other more highly prized scenic resources found elsewhere.
4. Tribal users - The Passamaquoddy Tribe has significant land holdings along the shores of Junior, Scraggly, Shaw and Sysladobsis lakes, and have used the area lakes for many years. They have indicated that they do not believe visibility of the Project will negatively impact their traditional uses of the lakes, including for fishing, hunting, snowmobiling, camping and hiking.

For the Bowers Project area, the typical users identified include anglers, paddlers (canoe and kayak), motorboat enthusiasts, campers, ice fishermen, hunters, snowmobilers and ATV riders. Additionally, individuals come to the lakes in the project area for picnicking, wildlife viewing and to find relaxation. This review addresses the primary winter and summer users.

Anglers

Anglers come to the region for both warm and cold water fishing and may fish from shore, from a non-motorized boat or a power boat. Years of observation have yielded the conclusion that most anglers tend to fish along shorelines or in coves, rather than out in the broad lake areas, where rougher waters and boat traffic can affect fishing. Additionally, there is some evidence that scenic quality is less important to people engaged in fishing and motor boating as opposed to hiking and paddling. Guided fishing appears to be limited in the project area due, in part, to its distance from the locus of the guide services in the Grand Lake Stream area.

Paddlers
Paddlers include those using canoes and kayaks, or in some instances rowboats. Canoes are flat-water boats (unless motorized, and even at that are not amenable to larger waves or wind that can be regularly found in the lakes of the project area). Canoes are commonly used for short distance paddling, with the key exception of canoe camping trips. Although paddlers tend to be more interested in scenery, their focus is not on one fixed object over long periods of time – it is almost impossible when on a water body for the eye to remain fixated on one object. In fact the proximity to the water and the shore, where paddling for the most part occurs except when going from point to point across a waterbody, is what draws the paddlers interest, attention and focus. Wildlife is more likely to be observed close into shore. Nesting birds, waterfowl, otters, moose, for example, and the interest of the shoreline is what adds substantially to paddler's enjoyment. That is not to say that paddlers do not enjoy and take in longer distant scenic views – they do. Their focus though is on the breadth of views, not a single object for long periods of time. Each of the lakes in the project area has 360° views of hills, shorelines, islands, camps, etc. and these are elements that draw the paddler's eye. In fact, field study has led to a conclusion that once a paddler takes in a wind energy project and acknowledges it's presence, other elements and views do draw the eye, and the prominence or presence of the turbines diminish in a focus.

Campers
Most of the tent sites on these lakes are set in wooded locations and will not have full on or extensive views of the project turbines. Campers are typically engaged in food preparation, reading and relaxation, perhaps swimming and fishing once their paddling or boating activity for the day is over. The highlight of many camping adventures is the time spent around the campfire and in the evening hours after a day's adventure.

Given that the tent sites are not directly in the project's viewshed, and that the activities are typically focused around the campsite itself, the camping experience will not be significantly affected by a wind energy project. Night lighting of selected turbines might be a factor for stargazing – but only as a distraction, not as an element that will directly affect night sky clarity or visibility. As stated elsewhere in this assessment, it is planned that the project will employ lighting that is only triggered when aircraft are in the vicinity – and thus in that case there will be negligible, if any impact to campers from the Project at night. As stated, campers are also using the lake for swimming and other water related activities. There is evidence in other surveys and analyses that impacts to this user group are not unacceptable.

Snowmobilers/ATV users
There is specific evidence and information that those who recreate with motorized vehicles are less sensitive to wind energy development, and, in fact, embrace it. These recreationists enjoy the thrill of traveling through the landscape and are not typically fixated on scenery nor do they typically require peace and tranquility and unfettered views as a key component of their experience.

The letter of support from the Maine Snowmobile Association submitted to the LURC and dated 7-20-2011, is evidence that this user group does not object to visibility of turbines and specifically finds this project compatible with their recreational uses and interests.

Ice Fishing
Ice fishing enthusiasts typically cluster in areas where the fishing is best. Ice fishing is conducted both inside and outside of ice fishing shacks that commonly appear in season. There is not extensive documentation about how this group views scenic resources, but generally speaking, anglers are focused on the fishing – not the view – and enjoy the camaraderie of fellow anglers.

D. *Purpose and Context of the Proposed Activity* – indicators include:
   - This criterion directs the agency to take into account the purpose of the project, which is to generate clean renewable energy, and the context of the project, which is part of a broader policy to encourage the siting and development of wind energy projects within the expedited permitting area. This criterion is not site-specific, but is a more general requirement that the agency consider state policy to encourage the siting of wind energy projects within the expedited permitting area when determining the reasonableness of the visual impacts. 35-A M.R.S.A. §3402(2). Because it is not a resource-specific factor, this is not included in the lake-by-lake discussion. For consistency with evaluation practices prepared for other projects, we have included it in Table 2.

E1. *Extent, Nature and Duration of Public Use of the Scenic Resource* – The assessment of this criterion is based on a multitude of sources such as background polling, user surveys, studies, guide books, publications, online media, anecdotal and interview sources, as well as general field observations and professional expertise. These sources are all listed in section 2.3.4 of this report and provide an objective and comprehensive body of evidence. As such, this assessment requires a judgment informed by both quantitative *and* qualitative data. Note that this criterion does not assess impact to scenic quality, but simply what is the use and how frequently is it used and by whom. This criterion then provides the information necessary to assess viewer expectations and effect on continued use and enjoyment of the resource.[12] Indicators include but are not limited to:
   - the type of users – who is using the resource and what activity are they engaged in?
   - frequency and duration of use – this indicator asks the question, how many people use the resource, how often, and for how long? A resource that receives low use could but does not always indicate a resource of lower significance. Low use does indicate that fewer people would be affected. Do people fish from a particular shore location or is most fishing from boats at numerous locations throughout the lake? Are there typical patterns of boat travel?
   - ease of access – resources that are more difficult to access are typically less visited and therefore experience lower overall use.
   - extent and types of facilities – resources with available and attractive facilities such as campgrounds, boat launches, picnic areas or beaches, tend to draw in more users.

[12] Note that a resource that receives low use (and subsequently a low rating for E1) but has high scenic quality, such as a remote pond, could still receive a high overall scenic impact rating based on contributions from other criteria. Likewise, a resource that has a high use (and subsequently a high rating for E1) but has low scenic quality due to shoreline development or other considerations could still receive a low overall scenic impact rating based on contributions from other criteria.

E2. *The Project's Effect on Continued Use and Enjoyment of the Scenic Resource* – The assessment of this criterion is based on a multitude of sources such as background polling, user surveys, studies, guide books, publications, online media, anecdotal and interview sources, as well as general field observations and professional expertise. These sources are all listed in section 2.3.4 of this report and provide an objective and comprehensive body of evidence. As such, this assessment requires a judgment informed by both quantitative *and* qualitative data. Indicators include but are not limited to:

- a number of factors can inform this indicator, including the viewer's association with the resource (e.g. landowner), attitude towards wind, the type of activity the viewer is engaged in, the nature and extent of visibility, and whether there are options for experiencing the resource without viewing the Project, if visibility of the Project is considered undesirable by the user. In effect, this is the key issue in terms of impact to users of the resource – will they come back? This criterion is analyzed by synthesizing all the information reviewed under the other criteria as well as through the application of user surveys and other available data.

F. *Scope and Scale of Visibility from the Scenic Resource* – The assessment of this criterion is based primarily on desktop analysis of project visibility using a variety of tools (e.g. viewshed analysis, visual simulations, spatial analysis), in concert with field observations and professional expertise. This analysis helps reveal both the qualitative nature of the project and the quantitative aspect of potential project visibility. Indicators include but are not limited to:

- the number and extent of turbines visible - this category accounts for the number of turbines visible and the extent of that visibility i.e. how much of the individual structures and rotors are visible, such as 1) most of or a portion of the tower and all of the nacelle and blades, 2) just the nacelle and blades, or 3) just portions of the blades. Visibility in the landscape does not automatically translate to an adverse or high scenic impact.
- proximity or distance of turbines - aesthetic experts agree that the visual impact of wind turbines diminishes over distance. They employ techniques that assess background, middleground and foreground views. The *National Forest's Handbook on Scenery Management*, which is based on years of research and work in the National Forest, and is relied on as a basis for visual assessment by professional and regulatory review bodies, identifies the fact that visual impact is based, in part, on the "degree of discernible detail" and that the background of a view has less detail, insofar as "texture has disappeared and color has flattened." The Handbook also sets forth the use of distance zones and indicates that with increased distance the "concern" level for visual impact or impacts to overall scenic integrity lessens. As such, the use of distance zones is used in this Visual Impact Assessment as one methodology for helping to determine the impact of the Project's visibility. This

analysis uses the following classes, which are derived by the work of the Forest Service, but are refined and based on our own experience with wind projects:

- **Foreground: 0 to 2 miles**[13]
  This is the distance from which details can be perceived, such as color, texture, and form. Turbines may appear very large and can dominate the view.
- **Middleground: 2 to 5 miles**
  Individual forms are still distinguishable, such as trees or large boulders, but are generally viewed as a mass or part of the broader landscape. Color, texture, and other details become subordinate to the greater whole. With increasing distance, turbines will appear smaller and smaller. At 5 miles, turbines will be visible, but will not typically dominate the view since they are viewed as a part of the overall landscape. However, visual impact must be determined on a case-by-case basis to account for distance, context, landform, human activities, and other contributing features.
- **Background: Beyond 5 miles**
  Texture is no longer distinguishable and color is invariable. Ridgelines and horizon lines are the prevailing visual characteristics. Intervening and/or nearby visual conditions, development and landscape elements reduce the eye's tendency to focus on more distant objects in the background. Atmospheric conditions have an increasing affect on visibility of forms and details in the background zone, in particular on cloudy or haze days common in Maine. The visibility of individual blades, which are usually around 6 feet plus or minus at their widest point, and the entire rotor assembly, is diminished with distance. The perceived size of turbines in this zone is greatly reduced, rendering them less prominent and often insignificant in the overall view. Beyond 7 miles there is widespread agreement among aesthetic experts that the "visual presence" of wind turbines diminishes sufficiently so as to render the project's visual impact insignificant.[14] The Act has determined that the visual impact of wind turbines beyond 8 miles is insignificant.

- angle of view – a turbine array that occupies a narrow angle of view typically has less visual impact than one that occupies a wide angle of view. Numerous factors can affect the angle of view from a given vantage point, including number of visible turbines, distance, and location of viewer in relation to the turbine array alignment (i.e. broad view vs. head-on view down a line of turbines). The human field of view for stereoscopic vision is approximately 120 degrees, while our peripheral vision extends to approximately 180 degrees. The central angle of view occurs within 40-60 degrees and is the area that most highly influences human perception of a scene,

[13] Because turbines are larger than other elements normally viewed in the landscape, and the details of which can be perceived beyond the ½ mile limit established by the Forest Service distance zone criteria, foreground distance in this assessment has been extended out to 2 miles.
[14] *Wind Energy and Vermont's Scenic Landscape: A Discussion Based on the Woodbury Stakeholder Workshops* by Jean Vissering, Landscape Architect

given a fixed viewing direction. The simulations prepared for this report depict this central angle of view. Vantage points within open areas such as lakes typically allow for 360-degree views, and in such cases a proposed project may occupy a limited portion of this overall view (See Exhibit 23: Pleasant Lake 360 Degree Panorama). The accompanying diagram presents the effect of distance on angle of view. When observing a project on hilly terrain, however, the angle of view from a closer vantage point can sometimes be reduced as some turbines become obscured by intervening topography and/or vegetation.

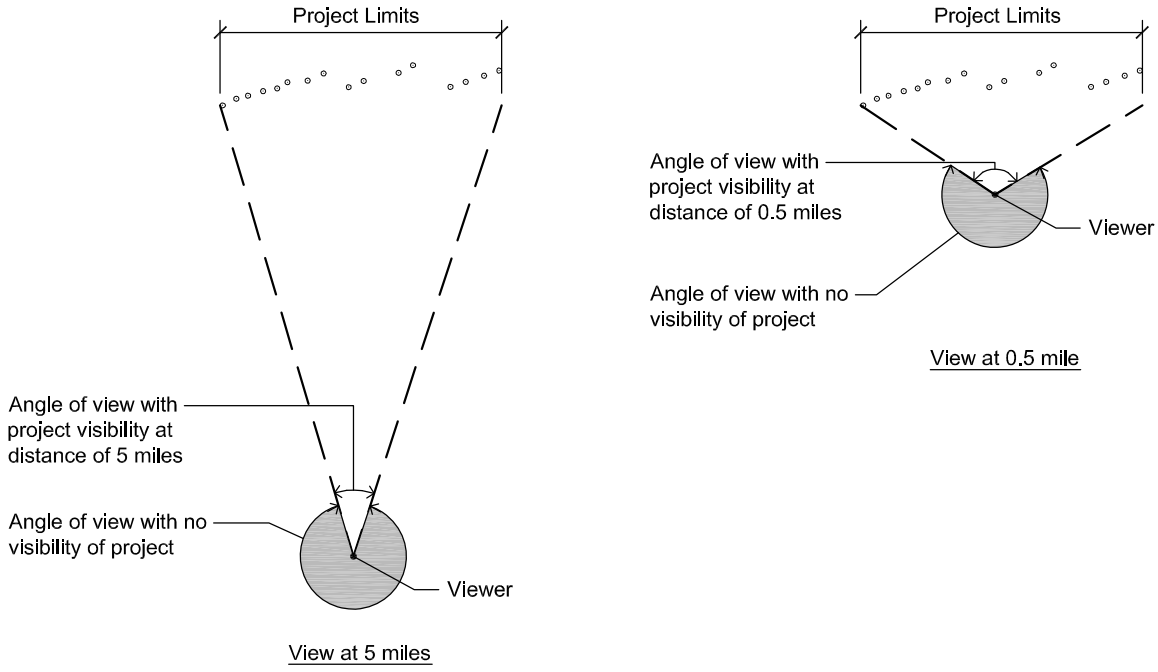


Diagram 5. Effect of Distance on View Angle

- duration of view – this indicator is based on whether a user will have a fixed and involuntary view of a project (higher potential for impact) or if the user will have a more limited exposure to the view (lower potential for impact) either due to the limited extent of visibility from the resource or because the context and nature of the user's activity allows for other unaffected views. For example, a scenic pull-off with static, unchanging views focused entirely on a project site would have a higher potential impact, even though a visitor may only stay at the site for 5 to 10 minutes. This would compare to a fisherman on a lake who may have continuous views of a project, but those views would be tempered by the activity (i.e. focusing on the water and not the extended view), shifting location and altering context and viewpoint, and access to 360° views. In this situation, the potential for impact lessens, because, although views would be present, they would be ever-changing and mitigated by the activity.

- visual absorption – the Forest Service employs a concept called visual absorption capability (VAC) as a tool to assess a landscape's susceptibility to visual change caused by man's activities. In other words, it is a measure of a land's ability to absorb alteration, yet retain its visual integrity. 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. A landscape defined by numerous rolling hills is more able to visually absorb a wind project than one that is located on a sole hill surrounded by a flat landscape. Landscape Aesthetics: A Handbook for Scenery Management, a key reference document in the field of aesthetic assessment, lists a number of factors affecting VAC, including:
  - Variety or diversity of landscape pattern- particularly the amount and extent provided by landform, rockform, waterform, or vegetative cover-affects visual absorption capability.
  - Tall vegetation, such as trees, screen and break up the visual continuity of landscape alteration. Short vegetation, such as grasses and low shrubs, does not.
  - Heavily patterned and diverse, dense vegetative cover, especially if mixed with waterforms like lakes, rivers or streams, break up the perceived continuity of landscape alterations. Homogeneous vegetative cover and lack of waterforms does not.

Example of landscape with LOW visual absorption capability: Big Spencer Mountain as seen from Lazy Tom Bog in Kokadjo, Maine, is a prominent feature in the landscape surrounded by relatively flat bog land and patches of woodland, with minimal topography and tree cover to limit views in the surrounding area.

Example of landscape with MODERATE visual absorption capability: The many hillsides and topographical diversity around Bowers Mountain combined with a predominantly wooded landscape lessens potential project visibility and focuses viewers' interest in a number of directions.

In previous wind application proceedings, the term "looming" has been used, which can be defined as "to come into view as a massive, distorted, or indistinct image." We use the term "visual dominance" instead, since looming implies a negative connotation, or the highest degree of impact, before evaluation has even been conducted. Visual dominance, on the other hand, can vary in its degree of impact and allows for a more thorough understanding of potential effect (i.e. ranging from low to high to none at all).

- visual dominance – this indicator considers the scale of the project in relation to the vantage point and the project surroundings. Do the turbines command the attention of the viewer away from all other aspects of the landscape? Are there other ridges without turbines visible from a give resource? Turbines often appear most prominent if they are seen at close range (within a half-mile), in the center of an important view, and/or in close visual association with an important natural or cultural focal point. In addition, the height of the turbines in relation to the height and mass of the landforms below them affects visual dominance. Depending on factors such as distance and quality of the light, wind turbines can appear rather slender and light in comparison with the dark wooded landforms around them.
- landscape coherence/visual clutter – clusters of turbines or structures of different designs can create a potentially discordant appearance and reduce the coherence of the landscape. Turbines spaced in a linear fashion at regular intervals can be more aesthetically pleasing than turbines that overlap each other and appear jumbled.

4.2.2 Weather and the Effects of Atmospheric Conditions

Weather and lighting conditions can have a dramatic effect on the visibility of turbines. This region of Maine has a median daily cloud cover of 68% (partly cloudy) to 87% (mostly cloudy), with May and November being the cloudiest months.[15] White turbines in front of a white sky can be very difficult to discern even without the screening effects of low clouds or fog. Turbine visibility can sometimes be more pronounced on cloudy days, however, when thick clouds cast turbines in shadow with a light sky backdrop. Due to shifting cloud movements, lighting levels and quality can change significantly from one moment to the next (see photos that follow).

View of Sheffield Wind Project from Crystal Lake: with the project ridge cast in shadow, turbines are readily visible against a cloudy sky background.

[15] http://weatherspark.com/averages/29744/Bangor-Maine-United-States "This report describes the typical weather at the Bangor International Airport (Bangor, Maine, United States) weather station over the course of an average year. It is based on the historical records from 1974 to 2012."

View of Sheffield Wind Project from Crystal Lake: with diffused sunlight on the project ridge, the light turbines are very difficult to discern against a cloudy sky background.

The effects of weather and atmospheric conditions become more pronounced with distance. The photos of the Stetson Wind Project from Baskahegan Lake (shown below) illustrate how the shifting light conditions on a mildly cloudy day can dramatically affect turbine visibility from a relatively far distance.

View of Stetson Wind Project from Baskahegan Lake: with direct morning sunlight on the project ridge, the white turbines are readily visible against the darker sky background.

View of Stetson Wind Project from Baskahegan Lake: with diffused sunlight on the project ridge, the turbines are very difficult to discern against a light sky background.

Even on sunny blue-sky days, white turbines do not necessarily stand out in a striking way against a blue background when viewed from a distance. It is typically when turbines are heavily shadowed, which is dependent on the relative positions of the sun, turbines and viewer, their three-dimensional forms become more distinct. Backlighting of turbines can cast them in heavy shadow. The photo below shows turbines viewed in half-shadow from a location in Vermont. The effect of backlighting is minimized for the scenic resources of the Bowers Project, however, since the turbines are viewed generally from the south and looking north. For projects in which the viewer is on the north side, turbines would appear cast in shadow for much longer times of the day as the sun makes its arc across the southern sky.

View of Kingdom Community Wind project from Lowell: bright sunlight casts the turbines in half-shadow, making their 3-dimensional forms apparent against a blue sky background.

4.2.3 Tourism

The Downeast lakes area attracts tourists for fishing, hunting, boating, and other activities. The nearest tourist destination to the Bowers Project is the West Grand Lake and Grand Lake Stream area, located approximately 18 miles away. Project opponents have placed emphasis on the area's importance as a tourist destination and its centrality to the region. We do not dispute that West Grand Lake and the village are important tourist areas, but they are located well beyond the 8-mile limit set by the Act for evaluating impacts to scenic and recreational resources. The removal of turbines from Dill Hill has eliminated visibility of the Project from the village. The evidence indicates that recreational and guiding activities based out of that area take place predominantly on West Grand Lake and in the immediate vicinity, not on the lakes within the 8-mile Project radius.

Within the 8-mile Project radius, there are very few tourist attractions. Only three sporting camps, one of which is not operational, are located within the Project area. In online listings of hunting and fishing guides within the Downeast lakes region, there are limited guides based within the Project radius. Of nine individual guides' websites, only one includes any mention of a lake within the 8-mile radius. In the Kleinschmidt survey of lake users, only one person, out of 69 respondents total, reported using a registered Maine guide service. Nearly half of the people surveyed (45%) owned property on the lakes, and 87% were year-round or part-time Maine residents. Thus, visibility of turbines from the lakes within the Project radius is not expected to significantly impact the tourist activities based out of the West Grand Lake and Grand Lake Stream area. While the Project lakes are indeed used for boating and fishing, the comprehensive body of evidence reviewed suggests that they are not a significant tourist destination for the region.

Furthermore, there is evidence that the presence of turbines would not be incompatible with the recreational uses of the area. The area around the Project is a hub of commercial forestry, and

millions of surrounding acres are in active forest management. For more than 100 years, these uses have existed in concert with one another. Outdoor recreation and commercial forestry are not mutually exclusive pursuits, and the network of land management roads constructed by timber companies is used by thousands of hunters, fishers, boaters, wildlife watchers and other outdoor enthusiasts. Similarly, and as our experience and investigation here has shown, the presence of turbines in the viewshed of the lakes in the Project area and the continued recreation and use and enjoyment of those lakes are not mutually exclusive pursuits. Indeed, as the Baskahegan Study discussed in Section 4.2.4 demonstrates, visibility of turbines in the viewshed of Baskahegan Lake, which shares important attributes to the Project lakes, has not adversely impacted scenic quality or recreational use of that lake.

4.2.4 Public Perception of Wind

A. Overview

While utility scale wind turbines and arrays of such turbines - often referred to as "wind farms" - are relatively new to the New England region and the Maine landscape, wind generated power, and windmills themselves, have been in use in America since the first one was built on Manhattan Island in 1633. In fact, the seal of the City of New York has a windmill design as its centerpiece. Lithographs of Nantucket in the early 1800s show windmills above the bustling harbor. From the 1940s on, grid scale wind power has been developed in Vermont, with turbines on Little Equinox Mountain from 1986 to 1994 and with the Searsburg Wind Farm, which was developed in the late 1990's and is still in operation. Thus, the form and shape of the classic windmill is not new, nor is the notion of wind power being interconnected with and part of the working landscape.

The working landscape is now changing to accommodate new forms of energy generation, as represented by wind, solar and biomass. As John Stilgoe pointed out in his book *Landscape and Images*, "...the American vernacular landscape will change and change again, ceaselessly reflecting the unprecedented complexity and rate of economic, technical and social change...the vernacular landscape is often the first to indicate changes in lifestyle and attitude, because it is the built form that shapes the lives of most Americans."[16] Wind energy represents an example of technical change to accommodate the changing values and needs of our population. But change is often difficult to accept. When large scale manufactured metal silos were introduced into the agrarian landscape of New England in the mid 20th century, there were initial concerns about their visual impacts - they represented a change from the smaller scale wood strip and tile sided silos which were dwarfed by the larger, newer designs - those manufactured "Harvestore" type silos can now be seen on scenic postcards and are an accepted part of the pastoral landscape.

There is also an assumption among some that wind projects inevitably result in adverse visual impacts. However, it can be argued that many viewers see wind turbines as representative of

[16] John R. Stilgoe, *Landscape and Images*, (Charlottesville: University of Virginia Press, 2005).

technological innovation and beautiful examples of modern design that are representative of the well established design ethic of "form follows function." When considered in this context, wind turbines, with their towers and rotors, are simple, unadorned and elegant elements in the landscape that visually represent their purpose.

Research presented in the publication "Wind Power In View" has also highlighted increased public understanding and acceptance of wind generation as a viable alternative to fossil fuels; of relevance to placing wind farms in the Maine landscape is the view presented by noted landscape architect Robert Thayer, who stated that well designed and "well sited wind energy projects can achieve a serviceable beauty common to other working landscapes."[17]

In response to these factors and insights, and in relation to grid-scale wind projects in Maine, it is important to consider a number of key factors when assessing visual impacts from wind projects. These factors include: 1) the historic working landscape of the state that has tapped into its renewable resources; 2) a tradition of a resource based landscape that is not pristine and, in fact, has been utilized for extensive logging; and, 3) the public's increasing recognition that wind provides an alternative to other forms of more harmful and unsustainable energy generation.

There is also ample evidence that people adapt to changes they initially view as undesirable, in particular wind turbines. A number of local, national and international studies and reports have been conducted, which have addressed the public reaction to and acceptance of utility scale turbines, their towers and the associated landscape modifications required for the siting of such installations. While some of this has included misinformation, including a barrage of negative publicity that the Bowers project has received from organized opposition groups, there is a growing body of evidence which validates that **the presence of wind turbines does not unreasonably adversely impact either scenic quality or, importantly, the continued use and enjoyment of scenic and recreational resources.** This evidence includes intercept surveys conducted in Maine, surveys of users of a lake where there is significant visibility of the Stetson project, studies done in New England and elsewhere on the impact of wind turbines on tourism in the area, and public polling (see Section 2.3.4 for complete list).

B. Polls and User Surveys Relevant to Maine

Polling in Maine has demonstrated public support for wind power, including in areas of high scenic value. For example, a September 2009 Critical Insights on Maine survey, a comprehensive, statewide public opinion survey of registered voters that covers a variety of topics, indicated that 90% of Maine people support wind power development as a way to reduce our dependence on fossil fuels and produce jobs and other economic benefits.[18] A poll conducted

[17] Pasqualetti, Gipe, et al., *Wind Power in View*, (San Diego: Academic Press, 2002).
[18] Critical Insights, *Critical Insights on Maine* Tracking Survey: Residents' Views on Politics, the Economy & Issues Facing the State of Maine, November 2009

by the Pan Atlantic SMS Group for the Maine Renewable Energy Association (MREA) in May 2010, found that 88% support wind power statewide and 83% in the "rim counties," which are the rural counties where development of wind facilities is more likely.[19] A Critical Insights Maine voter preferences survey conducted in March 2011 found that 82% support development of wind power as a source of electricity.[20]

A number of wind power projects in Maine have utilized intercept surveys to evaluate public use, user expectations, and impact of project visibility on use and enjoyment of scenic resources. Although there are limitations to the intercept and other forms of surveys, they provide information on recreational uses and user expectations that, when synthesized with other data, helps inform our evaluation of the review criteria under the Wind Energy Act.[21] Portland Research Group, a professional market research firm, conducted two studies specific to the Project area. The first study was a telephone survey of users of outdoor resources in Maine (the "Telephone Survey"). The purpose of the study was to measure awareness and use of the lake resources in the Project area, and to understand both user expectations and the potential impact of turbine visibility on those users. Key findings from this survey include:

- **The Study Area is not well known as a tourist or recreational destination.** More than one-third of respondents (37%) are not aware of any of the lakes in the Study Area. Out of all the individuals asked, only five percent use at least one of the eight lakes mentioned from the Study Area more than just rarely.
- **The primary recreational use in this region is fishing.** Two-fifths (42%) of those who use the Study Area reported fishing as the outdoor activity they most frequently participate in, followed distantly by hiking (19%), camping (10%) and canoeing or kayaking (10%).
- **Users not adversely effected by seeing a wind farm.** The majority (52%) said seeing a wind farm would have no effect or a positive effect on their enjoyment of their visit.
- **Users are likely to return if a wind farm were in view.** Over two-thirds of the respondents (68%) were either more likely to return or would be unaffected by seeing a wind farm.
- **Users could go elsewhere if the view of a wind farm affected them.** Most respondents (84%) indicated that they could go elsewhere in Maine to participate in their outdoor activity of choice; three quarters (73%) of respondents for whom seeing wind farms would have a negative impact indicated that they could go elsewhere.

Although the Telephone Survey has its limitations, as noted in his expert report, Kevin Boyle concluded that it provides credible information to inform decisionmaking. See "Assessment of the Kleinschmidt Bowers Mountain Wind-Farm and Baskahegan Lake Recreational User Surveys," Expert Report of Kevin J. Boyle, PhD., October 1, 2012 ("Boyle Report"). Dr. Boyle

[19] Pan Atlantic SMS Group, *Report to MREA: Highlights of Survey Findings*, May 2010
[20] "Critical Insights: Maine Voter Preference Survey," Critical Insights, March 2011
[21] Surveys often times are self-selecting because only people with an interest in responding do so. Additionally, due to typically limited samplings, the results may not be statistically significant or necessarily reflective of broader trends. With that cautionary note, we believe the surveys done for this Project and others provide helpful insights.

notes that the similarity of findings provides "what researchers refer to as convergent validity; two different surveys provide similar results." Specifically, the telephone survey reinforces the results of the intercept surveys conducted by Kleinschmidt on four of the Project Lakes. Boyle Report at 18.

In his response to concerns raised by Dr. James Palmer on the Telephone Survey, Bruce Lockwood, the study's author, also noted that the results were consistent with other surveys and showed remarkably consistent attitudes toward wind farm development and its potential impact on recreational activities. See Lockwood Rebuttal Testimony in DP 4889 at 11.

Finally, Dr. Palmer noted that as compared to the age distribution reflected in Maine's 2009 SCORP, people between 18-44 years old were significantly underrepresented. The results, however, are consistent with the Kleinschmidt User Surveys, in which 76% of the respondents were 45 or older. Kleinschmidt User Surveys, Table 6. Thus actual users of the Project Lakes exhibit a different demographic than is reflected in the 2009 Maine SCORP data. Compare Maine DOC 2009 SCORP at A-36. Again, the consistency of results between the Telephone Survey and the Kleinschmidt User Surveys reinforces the strength of those results.

The second study was an intercept survey of snowmobilers who attended a ride-in at the Stetson Mountain project (the "Snowmobile Survey"). That study also sought to evaluate awareness and use of the lake resources in the Project area. Findings from this survey are very similar to the telephone survey and include:

- **The primary recreational use in the region is fishing.** Two-thirds of respondents (66%) indicated that fishing is their most frequent outdoor activity in the Study Area, followed by ATV riding (59%), and motor boating (52%)
- **Wind power in Maine is highly supported.** Almost three-quarters of respondents (72%) support the development of commercial-scale wind energy in Maine. One-quarter (25%) is neutrally disposed to it; none of those interviewed indicated a negative disposition.
- **Overall a wind farm in view would not negatively impact users enjoyment of the resource.** One-half (50%) indicated that seeing a wind farm would have a positive effect on their overall enjoyment, while only 5% indicated that this would have a negative effect.
- **Users would be likely to return if a wind farm were in view.** One-half (50%) indicated that seeing a wind farm would make them more likely to return to the region, while less than one-tenth (8%;) would make them less likely to return.

The Snowmobile Survey also has its limitations and cannot by itself be used to draw broader generalizations about impacts to other user groups. As noted by the study's author, Bruce Lockwood, however, there is evidence that the snowmobile respondents are users of the Project Lakes. The results are also consistent with other surveys. The Maine Snowmobile Association, which represents 288 snowmobile clubs statewide, indicated they support the Project and the

recreational opportunities it will provide. See July 20, 2011 Statement from Bob Meyers, Executive Director of the Maine Snowmobile Association. Accordingly, there is credible evidence that snowmobilers are a user group that does not object to the presence of turbines and does not believe that the Project will adversely affect their recreational experience. To the contrary, there is evidence that the Project will enhance their experience.

The Kleinschmidt Report provides the results of a comprehensive survey of recreational visitors to the Bowers Project Area. Information with regard to Respondent characteristics, Trip characteristics, Quality of experience, Scenic values, and Repeat visitation provides a clear sense of viewer expectations and responses to the proposed Bowers Wind Project. A total of 486 people and 123 boats were observed during the 12 days of survey work between May 25 and August 11, 2012, or an average of 5 boats per day. Approximately 1/2 of the surveys were conducted on Pleasant Lake, with the remaining split between Junior and Scraggly. No recreational users were observed on Shaw Lake.

Boat observations during surveying and separate boat counts on Junior Stream in 2011 and 2012 all provide insight regarding the type of boaters that most commonly use the lakes. Of the 31 boats intercepted during the 12 days of survey work, 29 (94%) were motor boats and only one was a canoe. Only one person out of 69 survey respondents reported using guide services. Kleinschmidt at 21. The Junior Stream boat counts, carried out over 11 days from July 4 to July 15, 2011, and 27 days between May 25 and August 11, 2012, showed a similar trend. In 2011, 39 boats were counted in total, of which 82% were motor boats, 15% were canoes, and 3% were Grand Lakers. The 2012 boat counts were spread out over a longer stretch of time in order to capture months that guides had indicated they used the lakes. Of the 90 boats observed in 2012, 82% were motor boats, 8% were Grand Lakers, 6% were canoes, 3% were kayaks, and 1% were freighter canoes. Kleinschmidt at 13. These results demonstrate that overall use of these lakes is low, and that the predominant use is motorboat use with very limited evidence of guiding or paddling.

Survey respondents did indicate there would be a diminishment of scenic values once the Project was completed, but a majority of respondents (55%) indicated that the Project, if constructed, would have no effect or a positive effect on their enjoyment of the lakes. In terms of the likelihood of visitors to return to the lake once the simulated conditions were in place (i.e. the Project was built), 80% indicated that the Project would have no effect or a positive effect on their likelihood to return. These results are provided in more detail and on a lake-by-lake basis in the Report, but the conclusions are instructive and support the permitting of this Project.

Dr. Kevin Boyle's review of both the Baskahegan and Bowers surveys reinforces this conclusion. As Professor Boyle states in the Executive Summary of his report: "The survey results indicate that the effect of the wind farm's 'presence on the public's continued use and enjoyment of the scenic resource will be minimal'. "He cites the fact that "while some people fear the construction

of the wind farm, the data (from the survey work) show that the Bowers Mountain wind farm is not going to have a significant adverse impact on recreational use and enjoyment of the lakes within eight miles of the project". The Baskahegan Lake surveys reinforce professor Boyle's conclusions by readily demonstrating that the Stetson Wind Project, already in place, has not substantially reduced recreational user's perception of scenic qualities on that lake. This is demonstrated by the continued use and enjoyment of the lake and its resources, all within direct view of the Stetson turbines.

Boyle continues in his review to address the survey process as being a "best practice" approach "consistent with established survey-research procedures." (p. 5). This is a clear indication of the reliability of these surveys and supports the reliance on their findings in developing this visual assessment and its related conclusions. Additionally, Professor Boyle's background in user studies with regard to natural resources in Maine and elsewhere and his research on how lake qualities affect lake user preferences further substantiates his expertise and enables LandWorks to incorporate both the findings of the surveys and Professor Boyle's conclusions in our understanding of how the Project will affect the lake based recreational activities of the typical user. Professor Boyle interprets the survey results in detail, noting differences in responses from lake to lake and providing a basis for understanding these differences.

Overall, the conclusions in both the Kleinschmidt Report and Professor Boyle's Assessment reinforces findings from other surveys administered in concert with proposed wind energy projects. The one exception is a survey conducted by the Partnership to Preserve Downeast Lakes Watershed (PPLDW). Professor Boyle provides specific reasons for why the "Downeast Lakes User Survey" is not reliable nor has been conducted within established protocol for such surveys - it relies, on, for example, a pre-selected set of respondents. The findings from the Bowers and Baskahegan Surveys, in contrast, and other similar surveys conducted for wind energy projects in Maine reflect a random sampling and credible data sets. Although the PPDLW survey cannot be used to draw more general conclusions about the Project, we have considered the information in that report in our evaluation.

The Kleinschmidt and Boyle Reports reinforce the conclusion that 1) while there may be some diminishment in the rating of scenic values associated with resources that are within view of proposed (or constructed) wind energy projects, 2) this impact is not so extensive or significant to ultimately affect the typical user's experience and enjoyment, or 3) their likelihood to return to the resource (lake) for recreational activities in the future.

In addition to these three surveys specific to the Project area, there have been a number of user surveys at other wind power project sites in Maine, including the Spruce Mountain Project, the Saddleback Ridge Project, the Bull Hill Project, the Wind Highland Project, the Oakfield II Project and the Passadumkeag Project (see also Table 2 of the Boyle Report pg. 9). The key themes that emerge from these user surveys include the following:

- Visibility of wind projects is viewed as positive or neutral by the majority of respondents.
- Visibility of wind projects overall does not have a negative impact on recreational users' enjoyment of the resource.
- Visibility of wind turbines does not seem to greatly affect recreational users' likelihood to return.
- Visibility of other forms of human activity, such as ski trails and facilities, second home development, power lines, clear cuts, and other industrial facilities from scenic / recreational areas is considered much less desirable than views of wind projects.

Collectively, these surveys confirm that wind energy projects do change the landscape, but the typical user will still visit the resource and enjoy their experience there. This is critical - it substantiates one of the most important conclusions with regard to visual impacts from wind energy projects, and the Bowers' Wind Project in particular: that the potential (or resultant) impacts are not so significant or extensive to result in an unreasonable, adverse impact on scenic resources and the use and enjoyment of those resources. This is the finding on which this VIA bases, in part, its overall conclusion that the Bowers Wind Project **will not** "significantly compromise views from a scenic resource of state or national significance such that the development has an unreasonable adverse effect on the scenic character of the scenic resource(s) of state or national significance."

C. The Stetson Experience

The presence of existing projects in the Maine landscape also provides an opportunity to understand the impact of wind turbines on use and enjoyment of lakes and other resources. For many people, visibility of turbines is compatible with the continued use and enjoyment of the resource. Indeed, a 2010 study entitled "Baskahegan Stream Watershed Recreation Use & Resource Analysis," conducted 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) (the "2010 Baskahegan Study") provides evidence that visibility of turbines on a lake that receives relatively high recreational use has not had any impact, let alone an adverse impact, on the public's continued use and enjoyment of that lake. The purpose of the 2010 Baskahegan Study was to evaluate recreation use patterns and site conditions around the Baskahegan watershed area, including Baskahegan Lake, which is 7,145 acres in size and is described as the "defining feature of the landscape." 2010 Baskahegan Study at 1. At its closest distance, the lake is approximately 5.1 miles from the existing Stetson Mountain Project and there are expansive views of up to 55 turbines from the lake.

Although the 2010 Baskahegan Study did not evaluate visibility of the Stetson Project on recreational uses (indeed the study did not address wind power or the Stetson Project in any manner), it nonetheless provides useful information that contributes to our understanding of the

significance of turbine visibility on recreational uses in the region. It also confirmed a number of key points that support our VIA conclusions. 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 serves, in part, as a de facto post construction review. The study identified several key conclusions resulting from the recreational use monitoring, including the following:

- The primary users of the Baskahegan Lake are people who fish; the fishing on the lake is excellent and affords great opportunities for children learning how to fish (67% as opposed to 6% kayaking and 4% canoeing).
- The lakes and streams also provide a special place for family groups to enjoy the scenery, the quietness, and the opportunity to camp.
- The undeveloped shorelines, recreational access, and wild character of the resource are important to visitors and should be protected.
- Items that required improvement related to infrastructure (parking, outhouse facilities, and boat launching improvements or changes).

2010 Baskahegan Study at 16. Certain frequent and long-term users were also queried with regard to changes in use and condition of the lake (and streams). **What is particularly telling is that not a single person interviewed mentioned the presence of the turbines in the viewshed. No one cited the wind project as a factor in their enjoyment, or as a detriment to the scenic and recreational qualities of the lake.** This was such a significant finding that we followed up with the principal author, Professor Ednie (Phone interview conducted by Neil Kiely May 15, 2011). She noted that while there were no specific questions regarding the wind project in the survey or interviews, she was equally surprised that no one referenced turbines 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.

More recently, Kleinschmidt conducted a study[22] on Baskahegan Lake to learn if recreational visitation to and enjoyment of Baskahegan Lake are influenced by the presence of the Stetson Project (the "2012 Baskahegan Study"). The study builds upon the 2010 Study by "specifically asking lake users the extent to which the visibility of the Stetson Wind Farm has impacted scenic quality, their use and enjoyment of Baskahegan Lake, and their likelihood to return to Baskahegan Lake." (p. 3) This study is especially significant and relevant because it is the first post-construction survey conducted in Maine. As such, it evaluates *actual* perception and impact of turbine visibility on recreational users rather than *anticipated* impacts. Moreover, its conclusions are consistent with the Searsburg post-construction study discussed in Section __ below. The 2012 Baskahegan Study demonstrates that:

[22] Baskahegan Lake Users Study by Kleinschmidt, September 2012

- the wind farm has no effect or a positive effect on scenic value (81%);
- the wind farm has no effect or a positive effect on the quality of their experience (93%); and,
- the wind farm has no effect on their likelihood to return (93%).

2012 Baskahegan Study, Tables 10, 12.

Baskahegan Lake shares common attributes to the Project Lakes. They are in the same general region, scenic value is high, and the primary recreational activity is fishing. 2012 Baskahegan Study at 22. Additionally, 50% of those surveyed in 2012 also visit one or more of the Pleasant, Scraggly, Shaw and Junior lakes. As described in Kevin Boyle's expert report the Baskahegan Survey demonstrates that visibility of a wind farm on a scenic lake does not substantially diminish recreational users' enjoyment of the lake or their rating of the scenic quality of the lake. Boyle Report at 2.

In his report, Kevin Boyle confirms "The collective results of the two [Baskahegan] studies indicate that the wind farm has not caused users…to shift their recreation to other lakes without views of wind turbines." (p. 10) He also states that since the vast majority of users are repeat visitors (86%), this is conclusive evidence that people have not stopped visiting Baskahegan due to the Stetson Project. (p. 11)

The fact that the presence of the Stetson wind project did not emerge as an issue affecting use and enjoyment on Baskahegan Lake suggests 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.

D. Polls and User Surveys Outside of Maine

The results of Maine polls and user surveys are consistent with surveys conducted outside of Maine. A recent poll conducted by the Vermont Department of Public Service found that 90% supported a wind farm being built within the view of their home, with 75% strongly supporting the development of a wind farm within view of their home.[23]

The pre-filed testimony to the Vermont Public Service Board submitted by Todd Comen[24], an Associate Professor of Hospitality and Tourism Management at Johnson State College in Johnson, Vermont, and Managing Director of the Institute for Integrated Rural Tourism, draws conclusions from a number of studies regarding wind power impacts on tourism as well as

[23] Vermont Department of Public Service website on Vermont's Energy Future - http://www.vermontsenergyfuture.info/Final.
[24] Prefiled Direct Testimony of Todd Comen on Behalf of the East Haven Windfarm, November 17, 2003, State of Vermont Public Service Board. Docket #7192.

original research conducted among visitors to the Northeast Kingdom of Vermont and the area near the Searsburg wind power project in southern Vermont. Searsburg and the Northeast Kingdom have a number of geographic and cultural similarities with the Bowers Project Area, with a similar demographic of recreational visitors. Comen concludes, based in part on interviews with local tourism industry representatives, that wind energy development can actually be a positive element for tourism.

In his testimony, Comen references James Palmer's Searsburg Study,[25] which concluded that after the Searsburg wind power project was built, project opponents' views all became more positive, and most improved substantially (p. 51). One year after the project had been in operation, 89% of respondents to a survey sent to Searsburg residents were either supportive or very supportive of the project. 80% of respondents were either supportive or very supportive of the existing wind power project doubling in size by adding 11 new turbines (p. 19). Initially, non-supporters had fearful expectations about the impacts of the turbines on wildlife, the noise they might produce, their conspicuous visibility, and likely unreliability. Over time, opponent's views moved to more neutral ratings, indicating that they are unsure whether there are any real disadvantages, or possible advantages (p. 51).

Todd Comen also conducted intercept surveys of tourists in the vicinity of the Searsburg Wind Project. He found that after the project was built in Southern Vermont, a major tourism destination in New England, 100% of the visitors interviewed "said that the wind farm did not deter them from visiting specific attractions in the area. 100% also said that additional wind towers would not deter them from visiting the Southern Vermont Region in the future." (p. 26) Additionally he interviewed the owners of 5 local businesses in the hospitality industry. "All of those interviewed observed no negative impact on their business and in fact were proud that the wind farm was located in their region of Vermont." (p. 23)

Several international studies have also been conducted in recent years concluding that tourists, including hikers, boaters, and other outdoor recreational enthusiasts, are either unaffected or positively affected by the presence of wind energy projects. All of these studies conclude that wind energy development in view of tourist destinations does not negatively impact tourism overall. For example, the 2008 study conducted in Scotland[26], in which 380 tourists were surveyed near operational wind power facilities, found that the vast majority (93-99%) of tourists that had seen a wind farm in the local area suggested that the experience would not have any effect on their decision to return to that area, or to Scotland as a whole (Section 4.3: Survey Results). Approximately 25% of those surveyed were engaging in wilderness-related outdoor activities like hiking and wildlife watching. The conclusions included the following:

[25] Public Acceptance Study of the Searsburg Wind Power Project: Year One Post-Construction, James F. Palmer, December 1997
[26] Economic Research Findings: The Economic Impacts of Wind Farms on Scottish Tourism, The Scottish Government, March 2008

- Only 4% of tourists who have viewed a nearby wind farm indicated that the turbines affect their intention of returning to the area (2% said it would increase the likelihood of return and 2% said it would decrease the likelihood of return);
- 72% of visitors were either positive or neutral about the statement "I like to see wind farms";
- Among hikers, for whom landscape was expected to be a major factor, only 19% indicated a negative attitude toward wind farms, whereas 25% of all respondents indicated a negative attitude; 45% of hikers indicated a positive attitude toward wind farms, while only 39% of all respondents held a positive view; and
- Respondents that had seen a wind farm were less opposed to wind power development than those who had not seen a wind farm.

Part 3 of the 2008 Scottish report includes a comprehensive literature review of other European studies and surveys on the impact of wind farms on tourism. The authors summarized 15 different studies that addressed visitors' return likelihood, including six from England, five from Scotland, two from Wales, one from Germany, and one from Denmark. Of these, five studies are based on revealed likelihood of returning and ten are based on stated likelihood. Based on this literature review, the report concludes:

- None of the five studies based on revealed behaviors found turbines to have an effect on visitors' likelihood of returning;
- Of the ten studies based on stated likelihood, seven found that wind turbines would negatively impact the likelihood of returning for less than 6% of respondents;
- The remaining three surveys found negative effects for 32%, 25%, and 70% of respondents, though the authors questioned the reliability of these surveys based on methodological concerns; and
- Overall, the authors conclude that while residents sometimes believe wind farms will have a negative impact on tourism, there is no significant evidence that turbines discourage visitors from returning.

In 2011, VisitScotland[27] released a report summarizing results from two surveys on consumer attitudes about wind farms, one in the UK with 2,000 respondents and the other in Scotland with 1,000 respondents. The surveys included only people who had taken a holiday or short break in the UK in the past year, and who intended to do so again. The report concludes that the majority of respondents (80 and 81.3%) do not find wind farms offensive. Similarly, the majority (82 and 83%) would not change their travel patterns to avoid areas with wind farms. Roughly a quarter (24%) of respondents believe that "using wind farms in the promotion to tourists would provide an added appeal to visitors."

[27] http://www.visitscotland.org/default.aspx?page=2371

A 2008 Prince Edward Island study,[28] which used surveys from 1,676 people, of which 1,313 were tourists, included findings with regard to the visual impacts of several operational wind energy facilities on a region that is proximate and similar to Maine:

- With respect to the statement "wind farms ruin the view in the areas they are located," 63% of respondents disagreed or strongly disagreed, while only 5% of respondents strongly agreed;
- While only 44% of both residents and visitors either agreed or strongly agreed that a wind farm adds to the attractiveness of the area where it is located, about 81% of both residents and visitors either disagreed or strongly disagreed that wind farms are a poor use of PEI's land base; and,
- 71% of resident respondents either agreed or strongly agreed that wind farms are an attraction for visitors to PEI.

A recent peer-reviewed study conducted in two rural areas of the Czech Republic that host nature-based recreational activities such as hiking, camping and fishing, catalogued the views of 156 tourists and 73 business owners to determine the impact of wind power development on tourism.[29] The study found that over 90% of tourists said that the presence of turbines did not influence their choice of destination, and only 6% of tourists stated that they would not visit an area where turbines are located. (pg. 510) In addition, the study revealed that tourists were much more likely to view turbines favorably than were local residents. (pg. 512)

E. Conclusion

Collectively, this literature provides evidence that wind energy development is gaining support and that the consequent visual impacts of wind are not always necessarily negative or adverse. We believe that this large body of evidence strongly supports this VIA's conclusion that the construction of the Project will not result in the rejection of the area as a place to visit and recreate, nor will it degrade scenic character or the recreational experience for most users.

[28] Wind Energy Report: Views of Residents of PEI and Visitors to PEI, Tourism Research Centre at University of PEI School of Business, September 4, 2008
[29] Wind Turbines in Tourism Landscapes, Frantal and Kunc, Annals of Tourism Research, Vol. 38, No. 2, at 499-519 (April 2011)

4.3 Lake-by-Lake Visual Analysis

4.3.1 BOTTLE LAKE

A. Significance of the Scenic Resource[30]

Bottle Lake is identified as "Significant" for scenic quality, and has a Management Class rating of 5, indicating that it is a heavily developed lake, approaching heavily developed status. The following table provides a summary of the ratings and scores assigned to Bottle Lake in the "Evaluation". Bottle Lake achieved an intermediate score for "Significant" eligibility.[31]

CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Relief	Two types of relief were evaluated - complex or dramatic.	Low	30	10
Physical Features	Presence of scenic physical features (Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands and beaches)	Medium	25	15
Shoreline Configuration	Index of complexity of shoreline based on a lake's variation from a perfect circle.	Low	15	5
Vegetation Diversity	Presence and diversity of mixed hardwoods or softwoods, softwoods, marsh and the presence of super-story trees	Low	15	5
Special Features	Water clarity and probability of observing wildlife	None	15	0
Inharmonious Development	Camps lining the edge of a lake, heavily eroded shorelines, powerlines or roads that are site intrusively, dammed lakes with drastic drawdowns, dams that are intrusive, etc	Lo/N	-20	0
Total			**100**	**35**

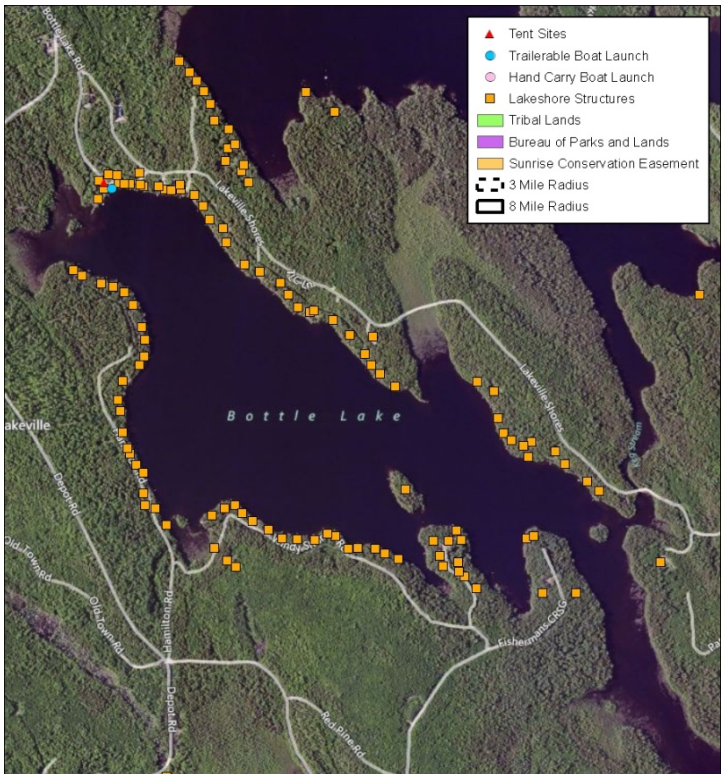
It should be noted that the 1986 "Evaluation" varies greatly from the 2010 "CLUP" class rating, in that the Evaluation indicates low or no inharmonious development, while CLUP states it is highly developed. This is an indication of the dramatic change of land use over 25 years and that the "Evaluation" may be outdated and unreliable for some of these lakes. As such, it should not be used as the only indicator for identifying a resource's significance. It is critical to consider the significance of the resource, as it exists today, because that is how the public experiences the resource. Presently, the lake contains several intrusive elements such as power lines, extensive camp development and a communication tower, which do not promote a memorable experience based on the visual qualities of the scenery alone. It has an undifferentiated landscape and does not have any unique or outstanding qualities or geomorphic elements. ***Based on all of these factors, the significance of the scenic resource is LOW.***

[30] Resource ratings as designated or defined in the Maine Wildlands Lake Assessment ("Assessment"), Scenic Lakes Character Evaluation in Maine's Unorganized Town's ("Evaluation"), Maine's Finest Lakes, The Results of the Maine Lakes Study ("Study"), and LURC's (now LUPC) 2010 Comprehensive Land Use Plan ("CLUP").

[31] Lakes scoring between 20 and 45 points, were rated as "Significant". Lakes receiving 50 or more points were rated as "Outstanding."

B. Existing Character of the Surrounding Area

Bottle Lake, located in the town of Lakeville within Penobscot County, is approximately 258 acres, all of which are located within 8 miles of the Project. This lake is located 5.1 miles from the nearest visible turbine. Mixed forest cover and low-lying hills and mountains surround the lake. Views to the northwest are most prominent (away from the Project), with Lombard and Almanac Mountains relatively nearby and visible. From the southwestern edge of the lake a small portion of Bowers Mountain is visible above the intervening ridge.



The general character of Bottle Lake can be described as a rural recreational, developed lake. It is the most densely developed lake within the Project study area with roughly 100[32] camps or homes concentrated around most of the shoreline. Many of the older camps or homes are relatively modest, while the newer camps, interspersed throughout the lake, are larger and more pronounced. Many of the camps are close to the shore with little intervening tree screening, and are quite visible. Private docks and recreational equipment can be seen near the water's edge in several locations. In addition, power lines are visible from the lake at a few locations along the shoreline. They can be seen in one area over a wetland marsh near the northeastern shoreline of the lake, just south of the boat launch; and over a wetland marsh area, paralleling Bottle Lake Road. A communication tower located on top of Almanac Mountain is also visible from the lake. ***Based on all of these factors, the character of the surrounding area is LOW.***

C. Typical Viewer Expectations

Fishing, boating, and paddling are common recreational uses of this lake. A local fishing and hunting guide confirmed that this lake receives medium to high frequency of use by anglers (in boats), notably in the spring during salmon fishing season. Bottle Lake was not included in the Kleinschmidt Bowers Survey, so quantitative user ratings for scenic quality are not available.

[32] Structures were identified by Stantec based on the 2009 NAIP imagery for Penobscot and Washington counties as well as the 24K USGS quads, and LURC parcel maps.

This is one of the most developed lakes in LURC's jurisdiction, however, and therefore users must expect to see evidence of that development. Furthermore, the Quiet Water Guide refers to the lake in this manner: "Bottle Lake's heavy development represents the kind of place we prefer to paddle through as quickly as possible." (p. 145) Due to its high development and high use***, the typical viewer expectations are LOW.***

E1. Extent, Nature and Duration of Public Use of the Scenic Resource

Boating, water skiing, paddling, fishing and swimming are the predominant recreational uses, while winter activities would likely include snowmobiling as well. Bottle Lake is joined to Junior Lake to the southeast via Bottle Lake Stream. This stream is a wide, shallow, marshy channel passable by motorboats when seasonal water levels are high, and passable only to kayaks and canoes when seasonal water levels are low. This lake can also be accessed by a quasi-public motorboat launch, located at the northwest end of the lake, at the end of Bottle Lake Road. No public parking is available at this location. In addition, paddlers can also use Bottle Lake as a means of accessing a half-mile portage to Sysladobsis Lake (Lower). There are no publicly owned campgrounds or campsites on Bottle Lake. Due to the amount of residential development on the lake, and the fact that Bottle Lake is the principal access point for people wanting to visit Junior Lake and other connected lakes, it experiences some of the highest use in the 8-mile viewshed. ***Based on these factors, the extent, nature and duration of public use is HIGH.***

E2. Project's Effect on Continued Use and Enjoyment of the Scenic Resource

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. This is a highly developed lake that receives some of the highest use in the study area. It is often used as a passage and transportation route to other larger lakes in the region. The visibility of the Project is also limited to a small portion of the lake. ***Given all of these factors, the effect on continued use and enjoyment of the scenic resource is LOW.***

F. Scope and Scale of Visibility from the Scenic Resource

According to viewshed mapping, up to 10 turbines within 8 miles may be visible from limited portions of the southern shore of Bottle Lake, where visibility of the most turbines is possible. At over 5 miles away, these turbines would be considered background views. Seventy-three percent (73%) of the lake, however, would have no visibility of the Project, including the boat launch. From those limited portions of the southern shore with visibility, the seven southern turbines on Bowers Mountain would likely be seen, with the blades of others potentially visible (see Exhibit 11: Visual Simulation from Bottle Lake). The ridge itself, however, is barely visible above the shoreline trees. These seven turbines would take up an insignificant portion of the overall view – 7° or less than 2% of a 360° view, which occupies a small portion of the human field of view and therefore has decreased visual impact (See Diagram 6 below).

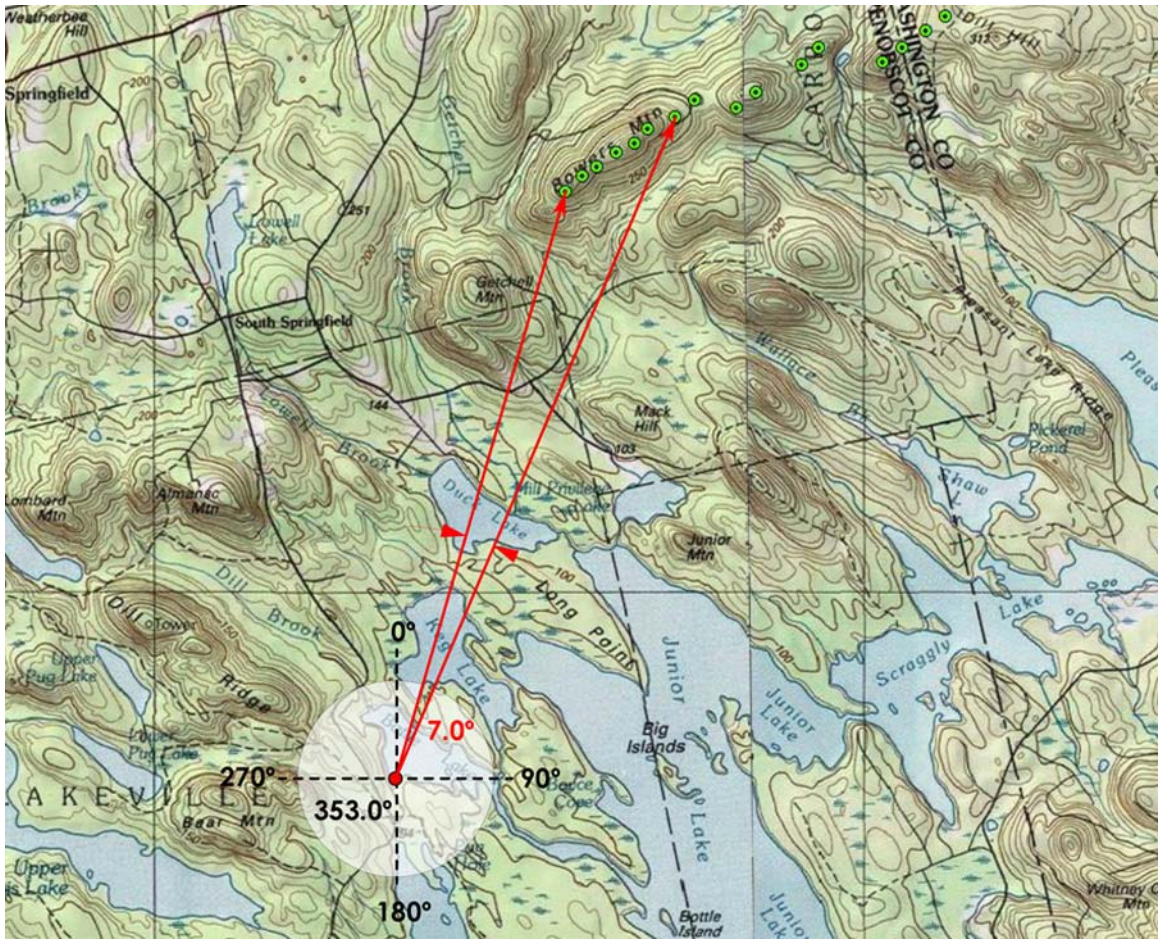


Diagram 6. Extent of view within 360° panorama at Bottle Lake from the visual simulation location. Potential angle of view would only be 7° from this point.

Fewer turbines would be visible as you travel toward the Project site due to intervening shoreline vegetation and topography. From the center of the lake and north, no turbines would be visible. There would be no visibility from the boat launch, where user activity and duration is typically greatest. This lack of visibility continues along the expected transportation route that boats, kayaks and canoes would take to connect to Junior Lake via Bottle Lake Stream. Where visible, the turbines will not appear prominent since they are not in the center of an important view, nor are they in close visual association with an important natural or cultural focal point. As noted, the terrain of the Project site is barely visible and the overall view in that direction is defined by a rather flat and undifferentiated landscape. Therefore, the viewer's eye is drawn more to distinct hills to the northwest, including Almanac Mountain, which has a communications tower clearly visible. In addition, the ordered distribution of turbines along the ridge presents a harmonious layout and does not create a sense of visual clutter. ***Based on all of these factors, the scope and scale of visibility is LOW.***

G. Bottle Lake Overall Scenic Impact

Bottle Lake is perhaps the most highly developed lake in the project area, a fact further emphasized by the relatively smaller size of the lake when compared to others in the project area. The boat access is privately-owned with limited public access and lacks a sufficient parking area and thus is not readily used or accessed by the general public. The sense of the lake is clearly one where the natural features and scenic qualities are diminished by the development that wraps around the entire lakeshore.

View to the northwest towards Bottle Lake Boat Launch

Bottle Lake is a highly developed lake lacking in any distinct or unique features. In fact, in the evaluation set forth in the Evaluation indicates that there are no special features on this lake. The CLUP, which reflects more recent assessment of the resource, indicates the lake is highly developed.

View of Almanac Mountain to the west – the Project is to the north

The visibility of the Bowers Project on Bottle Lake is limited. The visibility of the project is highly limited, and only a portion of the project and portion of the turbines will be visible. Turbines will be over five miles distant when viewed from the southwestern shoreline, and over 5.1 miles at the closest point of visibility from the lake where only the tips of the rotors will be visible. The remaining portion of the turbines will be screened by shoreline vegetation and the woodland areas beyond the shoreline. The Bottle Lake simulation depicts the proposed wind project as a worst case - where the view is the most extensive of the turbines. Only about 27% or less of the area of Bottle Lake will have visibility of 7 turbines. From the point at which the simulation was taken, the visibility of the turbines will continue to diminish as one moves further to the northeast, with no visibility of the project from the center of lake. The entire eastern, northeastern, northern and northwestern shoreline will not have any visibility of the project, along with the adjacent surface waters of the lake. It should also be noted that there will be no project visibility in the Bottle Lake Stream portion of the lake which connects with Junior Lake. This ensures that the use of this quiet shallow, much less developed area will not be at all affected by the proposed project.

Project visibility will not unreasonably affect the use, duration or enjoyment of the typical user. The view of the project from Bottle Lake will be of a project in the distance, and from the bulk of the lake the lack of visibility means that users on the lake will be minimally affected by the project. Given that the **closest** visible turbine is 5.1 miles distant, the project will not appear dominant nor overly distracting to the typical user, which in the case of Bottle Lake would be local individuals and those staying in camps who are engaged in summertime lake-based recreation. The view to the Project from the location on the lake where the most turbines are visible is a highly limited angle of view of 7 degrees as set forth in Diagram 6. This very little portion of the 360 degree view horizon surrounding the lake will be taken up by the visible elements of the project. Taking all these factors into account it can be concluded that project visibility and the nature of that visibility will not appear to be extensive, dominant or overly distracting to the typical users of the lake.

Based on all of these factors, the overall scenic impact to Bottle Lake will be LOW.

4.3.2 DUCK LAKE

A. Significance of the Scenic Resource

Duck Lake is identified as "Significant" with a Management Class approaching 5, indicating that it is "approaching heavily developed status." The following table provides a summary of the ratings and scores assigned to Duck Lake in the "Evaluation". Duck Lake achieved closer to the minimum score for "Significant" eligibility.

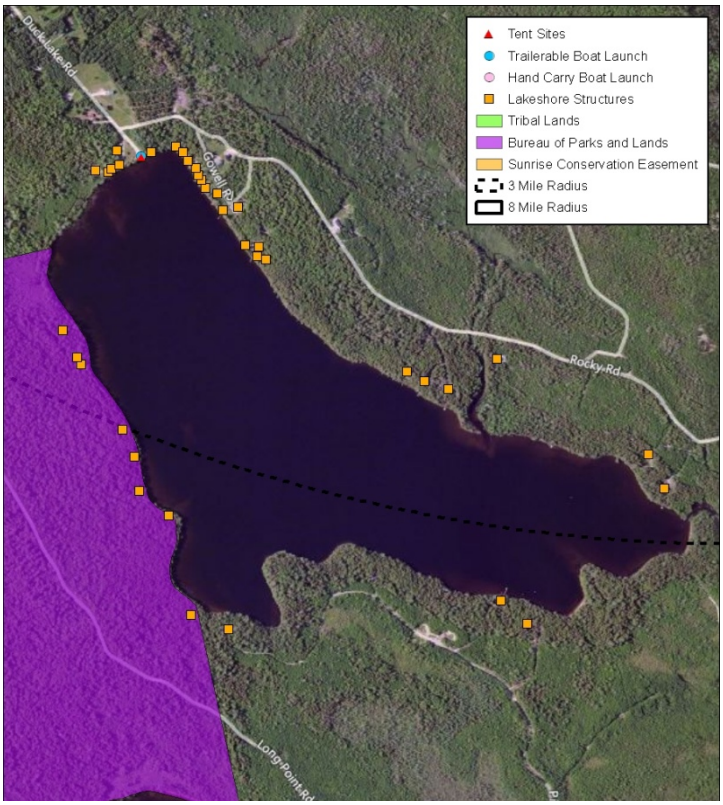
CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Relief	Two types of relief were evaluated - complex or dramatic.	Low	30	10
Physical Features	Presence of scenic physical features (Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands and beaches)	Medium	25	15
Shoreline Configuration	Index of complexity of shoreline based on a lake's variation from a perfect circle.	Low	15	5
Vegetation Diversity	Presence and diversity of mixed hardwoods or softwoods, softwoods, marsh and the presence of super-story trees	None	15	0
Special Features	Water clarity and probability of observing wildlife	None	15	0
Inharmonious Development	Camps lining the edge of a lake, heavily eroded shorelines, powerlines or roads that are site intrusively, dammed lakes with drastic drawdowns, dams that are intrusive, etc	Lo/N	-20	0
Total			**100**	**30**

Presently, the lake contains some intrusive elements such as residential and camp development as well as a communication tower. A trailerable boat launch at the northwestern end of the lake

provides easy access for motorboats and promotes a transportation route for kayaks and canoes to Junior Lake via a narrow stream connection at the southeast end of the lake. The landscape itself is undifferentiated and does not have any unique or outstanding qualities or distinctive geomorphic elements. ***Based on all of these factors, the significance of the scenic resource is LOW.***

B. Existing Character of the Surrounding Area

Duck Lake, located in the town of Lakeville within Penobscot County, is approximately 262 acres. This lake is one of the closet lakes to the Project site, second to Pleasant Lake, and is located 2.7 miles from the nearest visible turbine. Mixed forest cover and low-lying hills and mountains surround this lake, and the shoreline is wooded and interspersed with marsh areas. The lake is joined to Junior Lake to the south by a narrow stream. From the southern shoreline, the top of Bowers Mountain is visible just above the intervening tree lined ridge. The most prominent topographic feature from Duck Lake is nearby Getchell Mountain to the north. A communications tower located on Almanac Mountain is also visible above a nearby ridge to the southwest.



A fair amount of camp or home development can be found on this lake, with approximately 37 structures. The highest density is in the vicinity of the boat launch along the northern shore. The character and size of these camps or homes vary. Some of the newer camps are quite large and visible, while others are small, secluded and screened by vegetation. Many camps have private, visible docks. Approximately three quarters of the shoreline is privately owned and developed. The remaining quarter, located along the western shore, is designated as Maine Public Reserved Land, but is interspersed with private residential development. ***Based on all of these factors, the character of the surrounding area is LOW.***

C. Typical Viewer Expectations

This lake and the surrounding area are not highly scenic and it is not a particularly popular destination in Maine. The lake is more developed and while visitors expect to get away, it can not be assumed that their expectations for a pristine environment are high. The most common activity appears to be fishing and boating and based on the surveys discussed in Section 4.2.4 above, such users may be less sensitive to changes in scenic quality. Duck Lake was not included

in the Kleinschmidt Bowers Survey, so user ratings for scenic quality are not available. ***Based on these factors, the typical viewer expectations are LOW.***

E1. Extent, Nature and Duration of Public Use of the Scenic Resource

Fishing, boating, and paddling appear to be the predominant activities on this lake, while winter activities would likely include snowmobiling as well. A motorboat launch located at the northwest end of the lake, at the end of Duck Road, provides public access. Most boats can access this lake from Junior Lake via a narrow stream connection at the southeast end of the lake, although its seasonal navigability is unknown. The lake's warm water temperatures, which are not conducive to an abundance of desirable coldwater species such as salmon and brook trout, discourages the use of Duck Lake as a fishing destination. There are no publicly owned campgrounds or campsites on Duck Lake. Based on its relatively small size and less than desirable fishing quality, this lake is most likely used by camp owners and experiences low to moderate use. ***Based on these factors, the extent, nature and duration of public is LOW.***

E2. The Project's Effect on Continued Use and Enjoyment of the Scenic Resource

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. The visible presence of camp and home development along the northern shore serves to lessen the expectation of scenic quality. Moreover, because fishing and boating are common activities not typically focused solely on scenic quality, impact to enjoyment is not likely to be high. Given that scenic expectations are low for this resource due to existing development , low use, and nature of the activity, the Project's impact on likelihood to return is also considered low. ***Given all of these factors, the effect on continued use and enjoyment of the scenic resource is LOW.***

F. Scope and Scale of Visibility from the Scenic Resource

Although viewshed mapping suggests that up to 14 turbines within 8 miles may be visible from a very limited portion of the southern cove of Duck Lake, the visual simulation confirms that only the six southern turbines on Bowers Mountain would likely be visible from this location (see Exhibit 12: Visual Simulation from Duck Lake). At 3-4 miles away, these turbines would be considered middleground views. The turbines will not appear prominent, even those within the foreground view at 2.7 miles, since they are not in the center of an important view, nor are they in close visual association with an important natural or cultural focal point. Only the top portion of Bowers Mountain is visible from Duck Lake, and it is dwarfed by the closer and taller form of Getchell Mountain. In addition, the eye is drawn to more distinct hills within view to the east, including Penobscot Bald Mountain (with highly visible ridgeline logging) and Junior Mountain (see photo inventory, Exhibit 5). These six turbines would take up an insignificant portion of the overall 360° view – only 8° or 2.2%, which occupies a small portion of the human field of view and therefore has decreased visual impact (see Diagram 7).

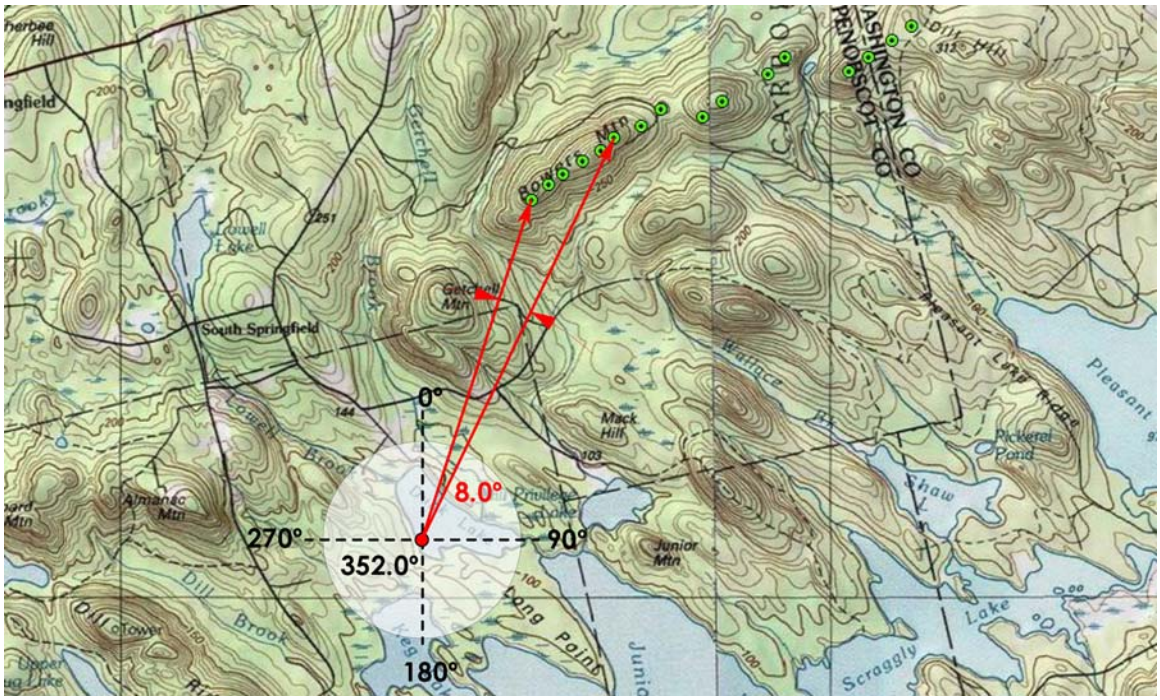


Diagram 7. Extent of view within 360° panorama at Duck Lake from the visual simulation location. Potential angle of view from this location would only be 8°.

For the remaining potentially visible turbines, only small portions of them, such as a blade or portion of a rotor, might be visible just above the tree line (see Exhibit 12). Fewer turbines would be visible as you travel toward the Project site due to intervening shoreline vegetation and topography. Due to the screening effects of the landscape and the dominant landforms around the turbines, the landscape is capable of visually absorbing the project. From the public boat launch, the viewshed map indicates that there is no potential visibility of the project. This lack of visibility continues along the likely transportation route that kayaks and canoes would take to connect to Junior Lake. In addition, the ordered distribution of turbines along the ridge presents a harmonious layout and does not create a sense of visual clutter. ***Based on all of these factors, the scope and scale of visibility is LOW.***

G. Duck Lake Overall Scenic Impact

Duck Lake is a moderately developed lake that is situated about 2.7 miles from the closest shoreline to the nearest visible turbine of the project. As with Bottle Lake, there are no significant topographic features in the immediate environs and the lakeshore presents a uniform, wooded character with some rock outcrops. It has a relatively low rating with regard to the scenic criteria in the Evaluation, and as with Bottle Lake, it's scenic values are diminished by the lack of special features and the presence of inharmonious development. In fact, the communications tower on Almanac Mountain is readily visible to the west of the lake at 2 miles to the closest shoreline. Almanac and other mountains in the distance such as Getchell and Penobscot Bald will serve to draw the viewer's eyes and diminish the Bowers ridge as a focal point.

The visibility of the Bowers Project on Duck Lake is limited. While Duck Lake is one of the closest lakes to the project area, the number and extent of the turbines visible limits potential impacts to individuals staying in camps as well as those recreating on the lake. While the overall potential visibility of the project from the lake covers over half of the lake surface, that visibility is only of 6 turbines which occupy an 8 degree angle of view of the total 360 degree panorama of the lake, when viewed from the highest visibility location of the simulation site. This view does not exist from the northwest, north, northeast and most of the easterly shoreline, and thus there are extensive stretches of the lake where individuals and parties may fish or paddle out of sight of the project, if so desired. Additionally, as access to and from this lake to Junior Lake is via a stream that will not have project visibility, and is only accessible or even navigable by kayaks or canoes, there will be no impact to those who wish to take advantage of lake connectivity.

Duck Lake' s scenic values and user activities will not be unreasonably diminished by the presence and visibility of the proposed wind project. Duck Lake's scenic values and user activities, which are focused on lake-based recreation, will not be unreasonably diminished by the presence and visibility of the proposed wind project. This factor, coupled with the lower level of use compared to other lakes in the project area (given, for example, the nature of the fishery on the lake) leads to the conclusion that ***the overall scenic impact to Duck Lake will be LOW***.

4.3.3 JUNIOR LAKE

A. Significance of the Scenic Resource

Junior Lake is identified as "Significant" with a Management Class of 7, indicating that it has not been designated. The following table provides a summary of the ratings and scores assigned to Junior Lake in the "Evaluation". Junior Lake achieved the highest possible score for "Significant" eligibility.

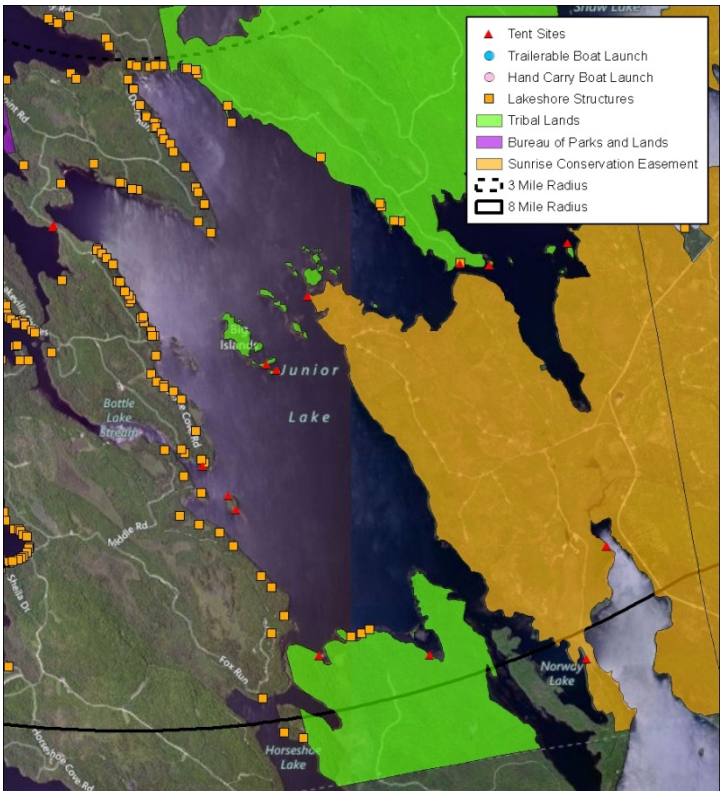
CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Relief	Two types of relief were evaluated - complex or dramatic.	Low	30	10
Physical Features	Presence of scenic physical features (Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands and beaches)	Medium	25	15
Shoreline Configuration	Index of complexity of shoreline based on a lake's variation from a perfect circle.	Medium	15	10
Vegetation Diversity	Presence and diversity of mixed hardwoods or softwoods, softwoods, marsh and the presence of super-story trees	Medium	15	10
Special Features	Water clarity and probability of observing wildlife	None	15	0
Inharmonious Development	Camps lining the edge of a lake, heavily eroded shorelines, powerlines or roads that are site intrusively, dammed lakes with drastic	Lo/N	-20	0

CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
	drawdowns, dams that are intrusive, etc			
Total			**100**	**45**

Presently, the western shore of the lake contains the bulk of residential development, yielding more intrusions on that side than the eastern side of the lake. Evidence of logging on nearby ridges is also visible in several locations across the lake. The scenery is generally indistinct throughout much of this large lake, but the shoreline complexity and the presence of several rocky islands provide some added visual interest. There are a few hills and ridges visible to the west-northwest. ***Based on all of these factors, the significance of the scenic resource is MEDIUM.***

B. Existing Character of the Surrounding Area

Junior Lake, located in Lakeville and Pukakon Twp, is one of the largest lakes in the 8-mile region at approximately 4,000 acres and nearly 29 miles of shoreline. It is located 3.2 miles from the nearest visible turbine. The character of this lake is not unique to the region with low hills and mixed forest cover. The scenery of the surrounding landscape is generally indistinct, except for views to the west-northwest, which include Almanac Mountain, Lombard Mountain, and Dill Ridge. Because of its large size, there are expansive views, particularly to the south. A number of rocky islands in the vicinity of McKinney Point add visual interest to the landscape.



While a portion of the eastern shore is conserved through the Sunrise easement, Junior Lake has seen much development in recent years, and there are approximately 87 camps and homes on large lots along the shoreline, many of which are along the western shore. These structures are generally set back from the shore and somewhat obscured by shoreline vegetation. Private docks, play equipment, and patio furniture can be seen near the water's edge in some locations. Although not terribly obtrusive due to setbacks, the residential development on the western shore gives that side of the lake a more developed feel than the eastern side of the lake. Portions of the eastern and southern shorelines are owned by the Passamaquoddy Tribe. A sporting camp is located at the southeast corner of the lake in a secluded bay, but it is no longer conducting business regularly. Evidence of logging on nearby ridges is visible. ***Based on all of these factors, the character of the surrounding area is MEDIUM.***

C. Typical Viewer Expectations

Of the viewers interviewed for the Bowers Survey, 81% rated Junior Lake as having high scenic value. Although this would suggest that viewer expectations could be relatively high for these users, other evidence suggests that viewer expectations could be lower based on the most common recreational activities on the lake (i.e. fishing and boating) and when considering a broader interpretation of the typical viewer. Moreover, the results of the 2012 Baskehegan study also indicate that while people rate Baskahegan Lake as having high scenic value, most users (80%) are likely to return. Given that Baskahegan has 41 more turbines visible than Junior, it can be inferred that turbines will not necessarily detract from viewers expectations of Junior. This lake is not widely known outside of the local area, as supported by the Telephone Survey and our analysis of guidebooks and other tourism resources. ***Based on these factors, the typical viewer expectations are MEDIUM.***

Looking west at the Big Islands near McKinney Point (away from from Project)

Typical shoreline development along the western shore of Junior Lake

E1. Extent, Nature and Duration of Public Use of the Scenic Resource

According to the Bowers Survey, the most popular activities are fishing, motor boating, relaxing, observing wildlife, and enjoying/viewing the scenery. Winter activities would likely include snowmobiling as well. Locals tend to fish here, and there is a relatively high amount of recreational boating, especially when motorboat access is possible from Bottle Lake Stream in late spring early summer. The Bowers Survey recorded an average of approximately 7 boats and 3 people on shore during a half-day period, with a maximum of 20 boats and 8 people on shore recorded. Of the lakes studied in this survey (excluding Shaw), this represented the highest average boat count and the lowest average people on shore count. According to one website source, "it is almost impossible to fish this lake without a boat."[33] There are no publicly owned campgrounds or campsites on Junior Lake, but users can take advantage of up to 10 privately maintained primitive

[33] www.trails.com/tcatalog_trail.aspx?trailid=XFA051-060

tent sites accessible to the public. Four of these tent sites are only accessible via boat. Junior Lake does not have any public boat launches, but it can be accessed from the public boat launch at Bottle Lake via Bottle Lake Stream. This passage becomes difficult for motorboats in mid to late summer as the water level drops. As with the connection to Scraggly Lake, this continues to be a viable paddling connection for canoes and kayaks throughout the season. Junior Lake can also be accessed by boat via Junior Stream, which connects to Junior Bay. Access from Duck Lake may be possible for most boats via a narrow stream connection at the northern tip of the lake, although its seasonal navigability is unknown. ***Based on these factors, the extent, nature and duration of public use is MEDIUM.***

E2. The Project's Effect on Continued Use and Enjoyment of the Scenic Resource

The recent survey results and our understanding of the nature of the lake's use suggest that the Project would not result in a significant negative impact on use and enjoyment of the lake. The Bowers Survey found that 74% of respondents stated that simulated conditions (depicting the proposed wind project) would have no effect on their decision to visit in the future or their likelihood to return. The survey also found that 40% of respondents stated that simulated conditions would have no effect or positive effect on enjoyment of their visit. While 60% said the Project would adversely affect their use and enjoyment, as explained in Boyle Report, there is likely some bias reflected in the survey responses due to significant public opposition and outreach by PPDLW. Additionally, the results of the 2010 and 2012 Baskahegan surveys discussed in Section 4.2.4 above provide strong evidence that the impact of visibility will not adversely affect scenic quality and recreational uses. Although a considerable portion of the lake has potential visibility of the project, there are a number of areas that provide visual isolation, including the northern and eastern shorelines and the many islands on this lake. The islands, in fact, represent one of the most striking feature of the lake while on the water, and the visual appreciation of this foreground feature would be unaffected by middleground or background views of turbines. The publicly accessible campsite on McKinney Point would continue to have views of the Big Islands and the distinct landform of Almanac Mountain, while no turbines would be visible from that vantage point. The other primitive camping areas are for the most part set back from the water's edge and with a focus on the shoreline. Only 3 of the total campsites on the lake are oriented in the project direction or have potential project visibility, although very limited due to intervening vegetation. ***Based on all of these factors, the effect on continued use and enjoyment of the scenic resource is LOW.***

F. Scope and Scale of Visibility from the Scenic Resource

According viewshed mapping, up to 13 turbines within eight miles could potentially be visible from a very insignificant area within the southern third of the lake. Much of the western shore of Junior Lake has potential visibility of 10 turbines, while the number of visible turbines decreases when traveling northeast on the lake. At over 5 miles long, and stretching away from the Project site, the character of the Project's visibility from Junior Lake differs noticeably depending of the position of the viewer. Although the viewshed map indicates that more turbines are potentially

visible from the southern half of the lake, these include turbines that are beyond 8-miles. They also represent background views with overall viewing distances greater than 6 miles.

From the northern half of the lake, fewer turbines are potentially visible but they represent middleground views. From the southern end of the lake, a wide panorama of hills is visible to the north, with Getchell Mountain and Penobscot Bald Mountain appearing more distinct than the Project ridges. Because the lake is so large, the landscape has a feeling of expansiveness when viewed from the water. As a result of this vastness, the nature of the topography and the distance from the turbines, the landscape is capable of visually absorbing the views of the proposed Project without undermining its essential visual qualities. Even from the northwest shore of the lake, where the majority of camps and homes are located, the turbines do not dominate the view due to the relationship between the number and scale of visible turbines and the topography (see Exhibit 13: Visual Simulation from Junior Lake). At this viewpoint, the turbines would take up a very small portion of the 360° view – 17.25° or only 4.8% of the 360° view, which occupies a small portion of the human field of view and therefore has decreased visual impact (see Diagram 8). Alternatively, Diagram 9 shows another vantage where additional turbines may be visible according to the viewshed analysis, but 4 of these turbines would be visible at a distance beyond eight miles. Even at this location, the turbines within 8 miles would still take up a small portion of the overall 360° view – 13.26° or 3.7% of the 360° view. The intervening topography of Vinegar Hill completely blocks views of two turbines from this vantage point.

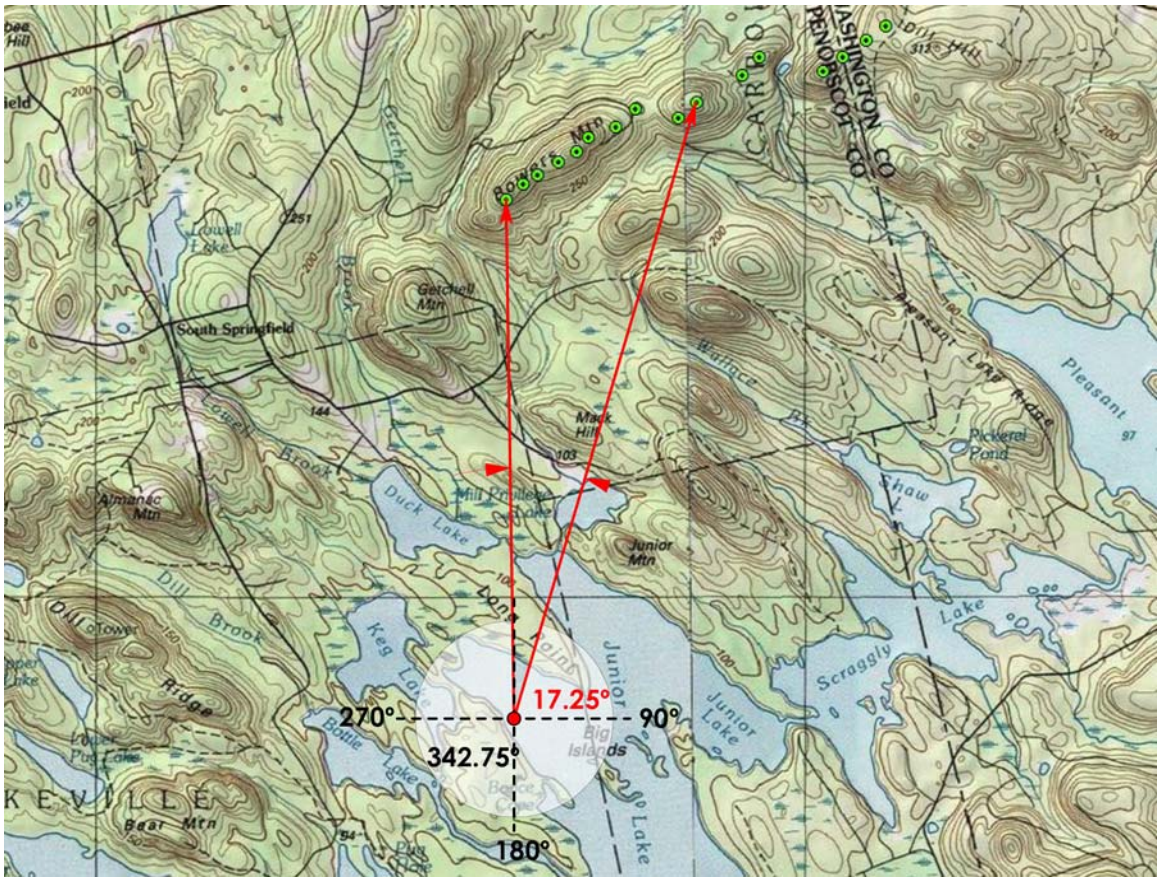


Diagram 8. Extent of view within 360° panorama at Junior Lake from the visual simulation location. Potential angle of view from this spot would only be 17.25°.

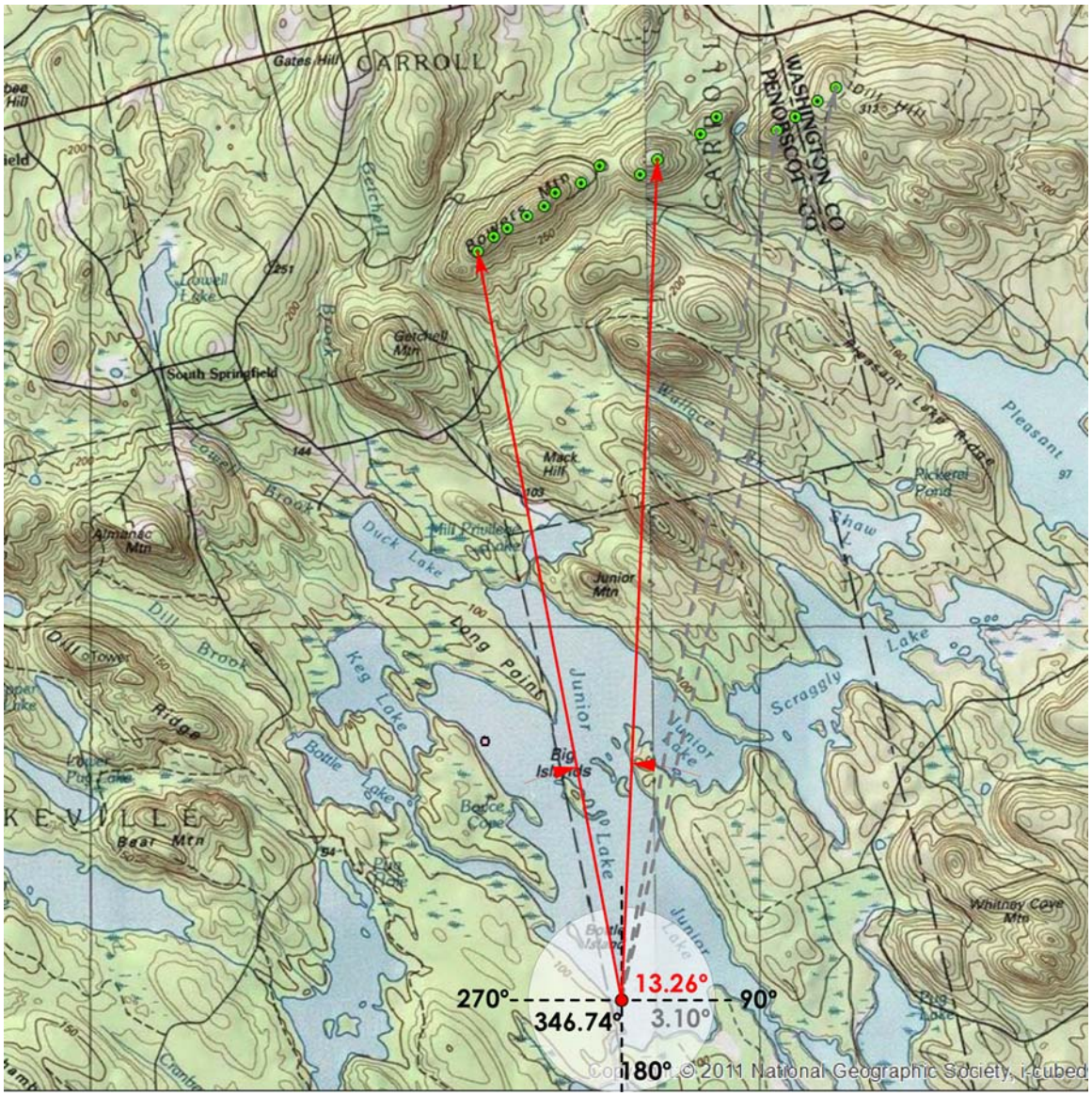


Diagram 9. Extent of view within 360° panorama at Junior Lake from the southern end of the lake. Potential angle of view of turbines within 8 miles from this spot would be 13.26°. The grey angle depicts angle of view for turbines located farther than 8 miles.

Although a considerable portion of the lake has potential visibility of the Project (86.8%), the majority of the lake would only have potential visibility of nine or fewer turbines within eight miles at any one time. This view would not be static and can change dramatically on the lake depending on the direction of travel, location of view and the activity of the user (i.e. from no turbines visible to all nine turbines visible). There are a number of areas that provide visual isolation, including portions of the northern and eastern shorelines and the many islands on this lake. The islands in fact represent perhaps the most striking feature of the lake, and the visual appreciation of this foreground feature would be unaffected by middleground or background views of turbines. The publicly accessible campsite on McKinney Point would continue to have

views of the Big Islands and the distinct landform of Almanac Mountain, while no turbines would be visible from that vantage point. The other island campsites were not visited to confirm visibility of the Project site, but 3D analysis and viewshed mapping indicate it is likely that they will not have visibility as well due to intervening vegetation and topography. The ordered distribution of turbines along the ridge presents a harmonious layout and does not create a sense of visual clutter. The ordered distribution of turbines along the ridge presents a harmonious layout and does not create a sense of visual clutter. ***Based on all of these factors, the scope and scale of visibility is MEDIUM.***

G. Junior Lake Overall Scenic Impact

As stated in the foregoing analysis, Junior Lake has some developed sections intermingled with areas where shoreline configurations and small rocky islands may draw the interest of the typical user – motor-boaters, fishermen, paddlers – and in winter snowmobilers and those engaged in ice fishing. It has a moderate rating with regard to the scenic criteria in the Evaluation, and as with Bottle and Duck Lakes, it's scenic values are diminished by the lack of special features and the presence of inharmonious development. The exception to this character is the presence of a range of hills visible from large areas of the lake, some of which are developed (for example, Almanac with its communications towers) and logged (with harvesting areas readily visible on Penobscot Bald). The lake does afford a complex shoreline, with a number of coves and peninsulas. There is relatively little in the way of tourist amenities, with one B&B and a sporting camp no longer in regular operation. Primitive campsites are available via boat access. There are no public boat launches, and thus primary access is from other lakes in the area, reducing boat traffic.

The extent and nature of the visibility of the project is reduced by the physical character of the lake and the limited spread of the project on the horizon line. The extent and nature of the visibility is diminished by the lake's variety of views, the continuous surrounding landscape of wooded shoreline and low ridges, the near and far shorelines, and the limitless ways in which a user can orient themselves or focus on close or long distance views. While the viewshed analysis does indicate widespread visibility of the project from the lake's surface waters, this visibility is qualified and reduced by a number of important factors and indicators. The angle of view to the project, as taken from the visual simulation location, is only 4.8% of the 360° view, and this indicates that an individual on the lake has to be directly focused on the project to take it in. As soon as the viewer is drawn to another object or view, the project recedes into peripheral vision, or out of view.

The visibility of the project is not so extensive and dominant as to deter the typical user, and will not substantively reduce use and enjoyment. Given the breadth of Junior Lake and the variety of shoreline and island configurations, as well as the presence of surrounding hills, the landscape variety better absorbs the view of the project within this context. There are no views closer than 3 miles, and the far end of the lake stretches almost 8 miles away from the nearest turbine. The combination of the turbine scale and the lack of mass (slender rotors, narrow

towers) with the constantly changing atmospheric conditions of these lakes greatly reduces the sense of the project within the landscape, and this has been confirmed in actual field studies conducted to assess projects already constructed.

Based on the foregoing analysis, the overall scenic impact to Junior Lake is MEDIUM.

4.3.4 KEG LAKE

A. Significance of the Scenic Resource

Keg Lake is identified as "Significant" with a Management Class of 7, indicating that it has not been designated. The following table provides a summary of the ratings and scores assigned to Keg Lake in the "Evaluation". Keg Lake achieved the minimum possible score for "Significant" eligibility.

CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Relief	Two types of relief were evaluated - complex or dramatic.	Low	30	10
Physical Features	Presence of scenic physical features (Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands and beaches)	Medium	25	15
Shoreline Configuration	Index of complexity of shoreline based on a lake's variation from a perfect circle.	Low	15	5
Vegetation Diversity	Presence and diversity of mixed hardwoods or softwoods, softwoods, marsh and the presence of super-story trees	None	15	0
Special Features	Water clarity and probability of observing wildlife	None	15	0
Inharmonious Development	Camps lining the edge of a lake, heavily eroded shorelines, powerlines or roads that are site intrusively, dammed lakes with drastic drawdowns, dams that are intrusive, etc	Lo/N	-20	0
Total			**100**	**30**

Presently, the lake contains some moderate camp development that diminishes the significance of the visual quality. It also has an undifferentiated landscape and does not have any unique or outstanding qualities or geomorphic elements. ***Based on all of these factors, the significance of the scenic resource is LOW.***

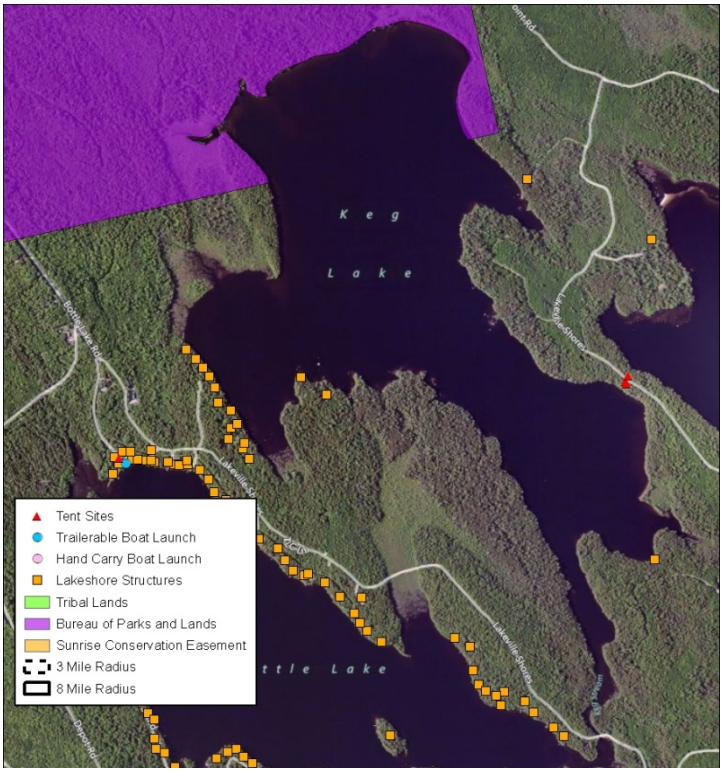
B. Existing Character of the Surrounding Area

Keg Lake, located in the town of Lakeville within Penobscot County, is approximately 371 acres. This lake is located 3.7 miles from the nearest visible turbine. The character of Keg Lake is similar to adjacent Duck Lake, with mixed forest cover, low-lying hills and less extensive development. The western cove of the lake has moderately dense development, with about 15 camps or homes, while the remaining shoreline is largely undeveloped, with a portion of the

northern shore being part of the Bureau of Parks and Lands. ***Based on all of these factors, the character of the surrounding area is LOW-MEDIUM.***

C. Typical Viewer Expectations

Like nearby Duck and Bottle, this lake and the surrounding area are not highly scenic and it is not a particularly popular destination in Maine. The most common activity appears to be fishing and perhaps limited paddling. The lake is somewhat developed and while visitors expect to get away, it can not be assumed that their expectations for a pristine environment are high. However, since there is no easily accessible public boat launch, it is expected that many users are camp owners and camp visitors, who are more likely to have an elevated sense of scenic value. Keg Lake was not included in the Bowers Survey, so user ratings for scenic quality are not available. ***Given these factors, the typical viewer expectations are LOW-MEDIUM.***



E1. Extent, Nature and Duration of Public Use of the Scenic Resource

Boating, fishing, and paddling are the primary activities on this lake, while winter activities would likely include snowmobiling as well. It is connected to Bottle Lake to the south via a narrow, long marshy stream, which provides a seasonally navigable passage by kayaks and canoes. However, Bottle Lake Road spans over the stream, limiting boat connections between the two lakes. Passage under this road at this location only allows for small boats, if any. Portage may be necessary. As there is no designated parking area at this bridge or clear area to launch a paddling or small motorboat, it is assumed this is not a designated public boat access site. There is another unofficial canoe carry access at Lakeville Shore Road, but, again, there is no public parking. There are no other identified public boat launches on the lake. There are no publicly owned campgrounds or campsites on Keg Lake, but there are two primitive privately maintained wooded tent sites near the eastern shore that are available for public use. Due to limited public access, including no public boat access or designated public parking, the lake is primarily used by private camp owners. Moreover, as this lake supports predominately warm water fish, and does not stock coldwater fish due to the lack of suitable habitat, Keg Lake is not considered a fishing destination and receives very low use overall. ***Based on these factors, the extent, nature and duration of public use is LOW.***

E2. The Project's Effect on Continued Use and Enjoyment of the Scenic Resource

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. As noted, the common activity is likely fishing and some paddling, primarily by camp owners. As such, they are still likely to continue to visit and use the resource. ***Based on all of these factors, the effect on continued use and enjoyment of the scenic resource is LOW.***

View from the western shoreline of Keg Lake looking north toward Getchell Mountain

F. Scope and Scale of Visibility from the Scenic Resource

Based on viewshed mapping, up to 12 turbines might be visible from the western cove of Keg Lake as middleground and background views. Overall, this still represents a relatively limited percentage of the 360° view - 15° or only 4.2%, which occupies a small portion of the human field of view and therefore has decreased visual impact (see Diagram 10).

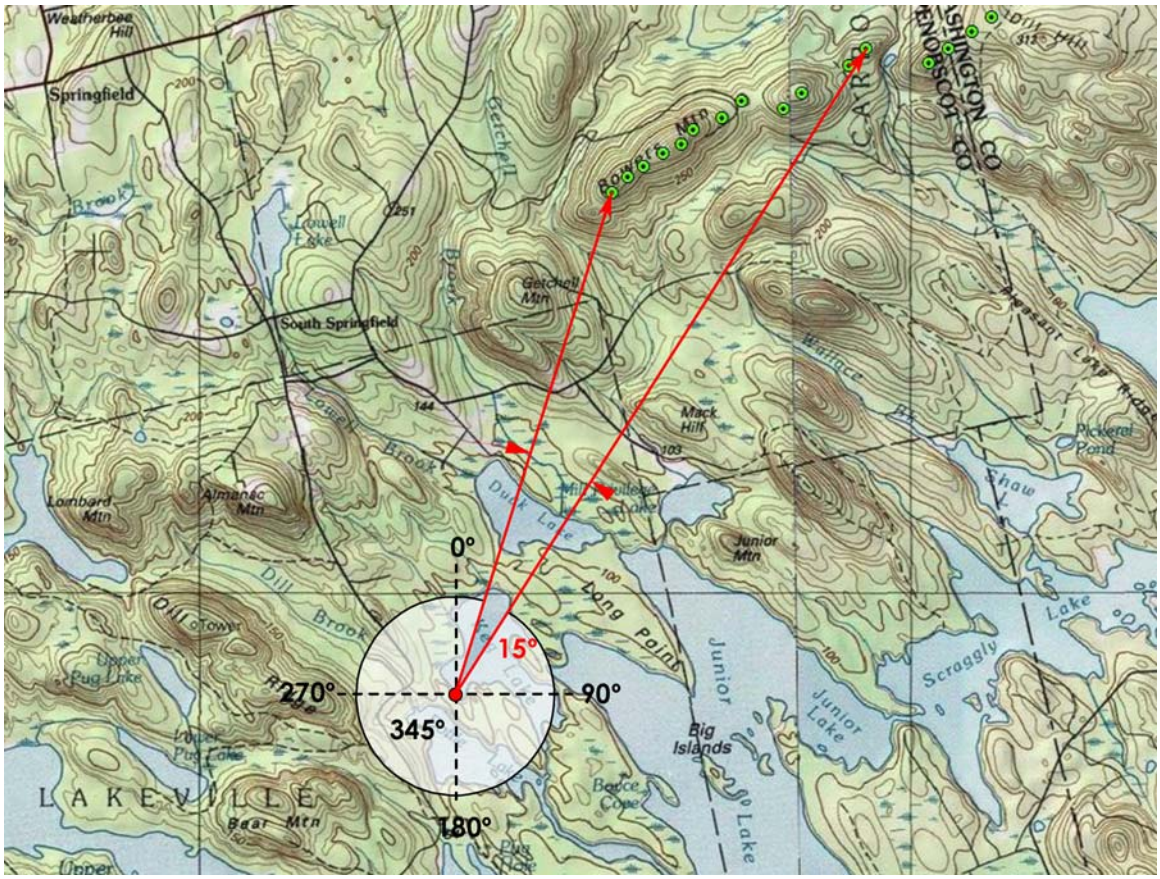


Diagram 10. Extent of view within 360° panorama at Keg Lake from the visual simulation location. Potential angle of view from this spot would only be 15°.

As seen in Exhibit 14: Visual Simulation from Keg Lake, the 10 southernmost turbines on Bowers Mountain are likely visible. Only portions of the blades/hubs of the remaining turbines to the north appear to have potential visibility due to the intervening topography of 'South Peak' and Vinegar Hill. Depending on the viewer's position, Getchell Mountain and/or Penobscot Bald Mountain would remain visually dominant due to their height and mass and would block views to the Project for most of the southern portion of the lake. Additional areas without project visibility include the northern shoreline of the lake. In addition, the ordered distribution of turbines along the ridge presents a harmonious layout and does not create a sense of visual clutter, despite some minor clustering of turbines to the northeast. ***Based on all of these factors, the scope and scale of visibility has a MEDIUM potential effect on scenic impact.***

G. Keg Lake Overall Scenic Impact

Keg Lake is another lake within the project area that has camp development on its shores, and low values with regard to its scenic quality designation as "significant" in the Assessment. There are similarities with the shoreline and contextual attributes of Bottle and Duck Lakes, and its scenic values are diminished by the lack of special features and the presence of inharmonious

development. The lake lacks vegetative diversity, is surrounded by low hills and undifferentiated wooded shoreline.

Project Visibility is limited and not overly dominant. Project visibility is limited to a typical 15 degree angle of view when calculated from the simulation site, which has the most extensive view of the project. Ten turbines would be visible from this location, with only the rotors of 5 others barely detectable above the treeline and an intervening ridge. Of the project visibility from the lake, about ½ of the viewshed area would have up to 8 turbines in view. The northern and eastern shorelines are likely to have no views of the project whatsoever.

The Bowers Wind Project will not have an adverse, unreasonable effect on scenic values and existing uses of Keg Lake. Limited public access, the difficulty of motorboat access to the lake from Bottle Lake, and the lack of a public boat launch limits recreational uses, and as identified, the primary user group here will be those staying at one of the private lakeshore camps. Keg Lake is not a well-known or attractive destination for visitors to this region, and, as stated, lacks the fishing conditions to attract those seeking sport-fishing opportunities.

In addition, there are extensive areas of the lake where the project will not be visible, and the distance of the lake between 3.6 and 5.1 miles to the closest turbine reduces the perceived visual presence. The lack of diversity and unique scenic values further reduces the potential for impacts from this project.

Based on the foregoing conclusions, the overall scenic impact to Keg Lake is LOW-MEDIUM.

4.3.5 PLEASANT LAKE

A. Significance of the Scenic Resource

Pleasant Lake is identified as "Outstanding" with a Management Class of 2, indicating that is of especially high value, accessible, and undeveloped. The following table provides a summary of the ratings and scores assigned to Pleasant Lake in the "Evaluation". Pleasant Lake achieved the minimum possible score for "Outstanding" eligibility.

CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Relief	Two types of relief were evaluated - complex or dramatic.	Low	30	10
Physical Features	Presence of scenic physical features (Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands and beaches)	Medium	25	15
Shoreline Configuration	Index of complexity of shoreline based on a lake's variation from a perfect circle.	Low	15	5
Vegetation Diversity	Presence and diversity of mixed hardwoods or softwoods, softwoods, marsh and the presence of super-story trees	Medium	15	10

Special Features	Water clarity and probability of observing wildlife	Medium	15	10
Inharmonious Development	Camps lining the edge of a lake, heavily eroded shorelines, powerlines or roads that are site intrusively, dammed lakes with drastic drawdowns, dams that are intrusive, etc	Lo/N	-20	0
Total			**100**	**50**

The lake contains some pleasing attributes due to the undeveloped nature of the shoreline, but the configuration of the lake itself is ordinary and the vegetation is typical of the region. There are no other dramatic or unique scenic features. Evidence of logging is visible on the nearby hills indicating that this is not a pristine or intact wilderness area. The campground at the southeastern shore, which generally hosts RV campers visible from the lake, some of them year-round, also interrupts the idea that this is an untouched landscape. ***Based on all of these factors, the significance of the scenic resource is MEDIUM.***

B. Existing Character of the Surrounding Area

Pleasant Lake, located in Kossuth Twp and T6 R1 NBPP, is approximately 1,550 acres and situated 2.4 miles from the nearest visible turbine. The scenery and topography visible from the lake is typical of the region with low rolling hills and mixed forest cover. It has a pleasant, but not dramatic or unique, scenic quality. The majority of the shoreline is conserved as a working forest and is undeveloped, aside from Maine Wilderness Camps and a few camps along the eastern shore, with a mix of white cedar and other evergreen trees. Evidence of logging is visible on nearby Bowers Ridge, and aerial photographs indicate logging activity in extensive areas around the lake, most notably in the vicinity of the Project site (see Diagram 2). Accessing Pleasant Lake from Amazon Road, which clearly serves as a major access road for logging, also sets a tone of being in a working landscape. ***Based on all of these factors, the character of the surrounding area is MEDIUM.***

C. Typical Viewer Expectations

The lake receives a moderate amount of use for the area and is used mostly by fishermen as well as for camping and paddling. Of the viewers interviewed for the Bowers Survey, 93% rated Pleasant Lake as having high scenic value. Although this would suggest that viewer expectations could be high for these users, other

evidence suggests that viewer expectations could be lower based on the most common recreational activities on the lake (i.e. fishing and boating) and when considering a broader interpretation of the typical viewer. This lake is not widely known beyond the region, as supported by the Telephone Survey and our analysis of guidebooks and other tourism resources. Interviews with Kathy Whitney, former manager of the campground, and the owners of the Maine Wilderness Camp, confirm that its scenic qualities don't appear to be the major reason for attracting visitors. ***Given these factors, typical viewer expectations are MEDIUM-HIGH***.

E1. Extent, Nature and Duration of Public Use of the Scenic Resource

According to phone interviews[34] conducted by LandWorks, Pleasant Lake gets a moderate amount of use for the area and is used mostly by fishermen. According to the Bowers Survey, the most popular activities are relaxing, observing wildlife, enjoying/viewing the scenery, and camping. Winter activities would likely include snowmobiling as well. The Bowers Survey recorded an average of approximately 6 boats and 29 people on shore during a half-day period, with a maximum of 12 boats and 56 people on shore recorded. Of the lakes studied in this survey (excluding Shaw), this represented the middle of the average boat counts and the highest average people on shore count. With Maine Wilderness Camps on the northern shore, which offers canoe outfitting and boat rentals, it is certain that there are a number of people who also take rental boats (including motor boats) out on the lake from the private boat launch and some who embark on canoe camping trips from this point. A short portage is required to access Scraggly Lake to the south and thereby enter the Grand Lake Chain of Lakes, over 40 miles of connected lakes and ponds. Although there are no publicly owned campgrounds on Pleasant Lake, camping is available at Maine Wilderness Camps and at a campground located on the southern shore, which is also owned by Maine Wilderness Camps. Accessed off of Amazon Road, this wooded campground offers tent sites and accommodates large 5th-wheel trailers/RV's, in addition to a boat launch and picnic tables accessible to the public. The access road is approximately 6 miles from Route 6. ***Based on these factors, extent, nature and duration of public use is MEDIUM.***

E2. The Project's Effect on Continued Use and Enjoyment of the Scenic Resource

The recent survey results and our understanding of the nature of the lake's use suggest that the Project would not result in a significant negative impact on use and enjoyment of the lake. The Bowers Survey found that 86% of respondents stated that simulated conditions (depicting the proposed wind project) would have no effect their decision to visit in the future or they are likely to return. The survey also found that 70% of respondents stated that simulated conditions would have no effect or positive effect on enjoyment of their visit. In addition, fishing is the primary use, which is an activity where there is evidence that people do not place as high a value on scenic quality with regard to their overall enjoyment. ***Based on all of these factors, the effect on continued use and enjoyment of the scenic resource is LOW.***

[34] Telephone interviews conducted by LandWorks, September and December 2010

F. Scope and Scale of Visibility from the Scenic Resource

Based on viewshed mapping, up to 16 turbines, or portions of turbines, may be visible at the southeastern end of the lake as middleground views. At this viewpoint, the turbines would take up a limited portion of the 360° view – 30° or only 8.3% of the 360° view, which occupies a small portion of the human field of view and therefore has decreased visual impact (see Diagram 11).

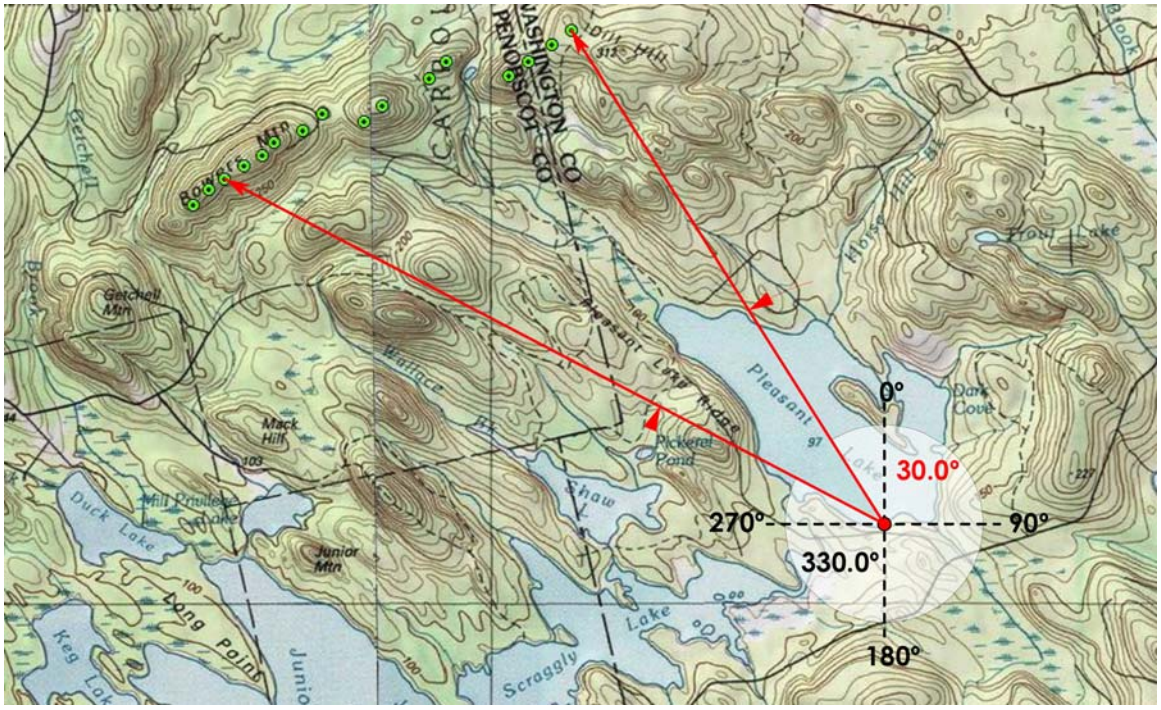


Diagram 11. Extent of view within 360° panorama at Pleasant Lake from the visual simulation location at the boat launch. Potential angle of view from this spot would be 30°.

Due to orientation and intervening vegetation, no views of the Project are expected from Maine Wilderness Camps. From the boat launch, the closest turbine visible will be on Dill Hill 5.1 miles away, and the farthest on Bowers Mountain 6.6 miles away (see Exhibit 15: Visual Simulation from Pleasant Lake Boat Launch). From this view, sixteen turbines will be visible. The intervening topography of Pleasant Lake Ridge blocks much of Bowers Mountain, and only a sliver of Dill Hill is visible above the hills southeast of Dill Hill. This has the effect of visually reducing the height of a number of turbines since only upper sections of their towers or portions of their blades are visible.

When traveling toward the Project, these turbines would become more obscured by intervening topography and fewer would be visible when approaching the northwestern shore, with limited to no visibility along portions of the northern shoreline (see Exhibit 16: Visual Simulation from Pleasant Lake, West). Eleven turbines will be visible from this location. Even though turbines are closer, the angle of view decreases to just 8° or 2.2% of the 360° view in some spots (see

Diagram 12). Visual isolation would also be possible within portions of Dark Cove, which is considered to be the most desirable section of the lake for paddlers and fisherman.

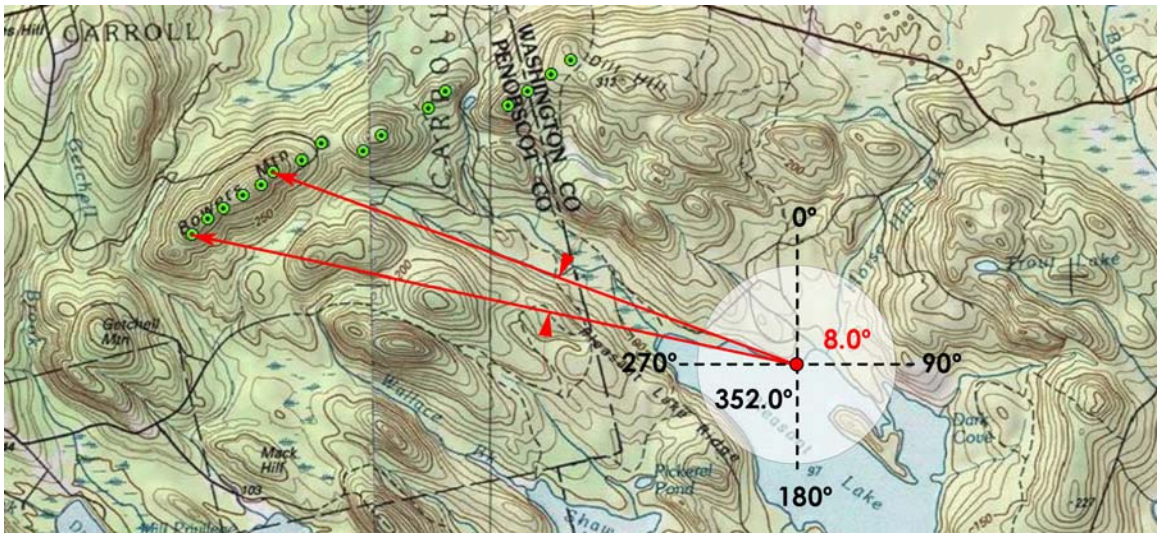


Diagram 12. Extent of view within 360° panorama at Pleasant Lake from a location near the northern shore. Potential angle of view from this spot would only be 8°.

Although the turbines are visible throughout much of the lake, they would not be an unduly dominant visual presence. The nearest visible turbine would be 2.4 miles away at the northwest end of the lake, but even at this location the turbines would not appear visually dominant as a result of their distance and the height of the turbines in relation to the surrounding vegetation and topography. In addition, the ordered distribution of turbines along the ridge presents a harmonious layout and does not create a sense of visual clutter. ***Based on all of these factors, the scope and scale of visibility is MEDIUM.***

G. Pleasant Lake Overall Conclusion

Pleasant Lake clearly has scenic value based on some features and characteristics of its shoreline landscape and configuration, vegetative mix, water clarity and lack of shoreline development - with the one exception being the area directly surrounding the boat launch. The evaluation set forth in the Evaluation assigned the bare minimum of points to result in this lake being "outstanding." Nonetheless, it can be concluded that while this threshold has been crossed in terms of the original evaluation, the lake does not possess any unique or individually outstanding features. West Musquash Lake, for example, is another lake rated "Outstanding" for scenic quality within eight miles of the Project, and it is more accessible, and yet more secluded, less developed, and with greater relief visible closer to its shorelines - clearly a lake with greater scenic qualities than Pleasant, and one offering an alternative experience to the recreational user.

The immediate surroundings of the lake's public camping and boat launch area, is also indistinct and not overly scenic - typical for this area. Also typical for this area is the presence and extent of

logging activity, a fact that directly influences user expectations by diminishing the potential for this area and the lake itself to be viewed as a pristine, unaffected landscape. In fact, logging activity is visible from many portions of the lake. These characteristics and considerations tie in directly with the viewer expectation that this lake is within a working landscape that is based on cultivating the resources presence. Wind energy projects are consistent with the region's reliance on local products for economic and social benefits - in this instance the wind resource.

The surveys conducted and relied on for this analysis, as reviewed and summarized elsewhere in this report, along with the results of a case study of Baskahegan Lake, all lead to the conclusion that the project will not unreasonably impact the extent, duration and use of Pleasant Lake.

A key source of "typical user" activity, the Maine Wilderness Camps does not have direct views of the project, and the owners of this tourist destination, (one of the few in the project area), have clearly stated that they do not believe that the project will unacceptably affect their business, or the use and enjoyment of their guests. In fact, in testimony before the LURC in the original Bowers review, they stated that their customers do not find wind projects unreasonable with regard to their activity and enjoyment, and even seek out wind energy facilities as destinations for the recreational activities (email from Neil Keily, May 26, 2011).

This project will be visible from the main body of the lake, but given the extent of the turbine array and its distance, the nature of that visibility will not be overwhelming or inescapable. The view is one direction and the angle of view from the main body of the lake is limited enough so that the viewer has to be looking directly at the project to take it all in. Our experience and that of other individuals engaged in lake-based activities is that one does not typically (nor can one typically) stay focused for extensive periods of time on a distant object. There are many portions of the lake from which the project will not be visible or minimally visible, particularly from coves and shorelines to which paddlers and those fishing typically gravitate (add to this fact the consideration that a broad lake such as Pleasant can be subject to winds which make the center of the lake less hospitable to small craft on many days). Whether paddling, fishing, boating, camping or swimming, the eye and the experience takes in many views, near and far, and in all directions, and one does not typically fixate on one view as they might from a mountain summit vantage point. This consideration, coupled with the visual qualities of the individual turbines and rotors as thin, vertical elements rather than massive singular objects, lessens the visual presence and dominance of the project at the distances the project

View from the public boat launch at the southeastern corner of Pleasant Lake looking towards the Project.

will be viewed from. Our field experience confirms that the effects of sun angle, cloud cover, wind (on the lake itself), time of day and time of year, all diminish the visual impacts of the wind turbines when seen from the farthest and closest point. In fact cloud cover or background clouds can substantially diminish the visibility of these objects, given their light coloring and slender forms.

The pattern of the layout also influences the visual qualities - and given that the view will be of a regular linear, pattern - a recognized pattern that limits visual impacts. Taken together, the considerations of the lake characteristics and setting, the visual qualities of the project itself, and the findings of the user analyses, all lead to the conclusion that while the project will potentially result in a ***MEDIUM overall scenic impact to Pleasant Lake***, that impact in no way exceeds a threshold of being unreasonable.

4.3.6 PUG LAKE (WEST GRAND LAKE)

A. Significance of the Scenic Resource

West Grand Lake, of which Pug Lake is a part, is identified as "Outstanding" with a Management Class of 3, indicating that it is potentially suitable for development. The following table provides a summary of the ratings and scores assigned to West Grand Lake in the "Evaluation." West Grand Lake achieved a lower score for "Outstanding" eligibility.

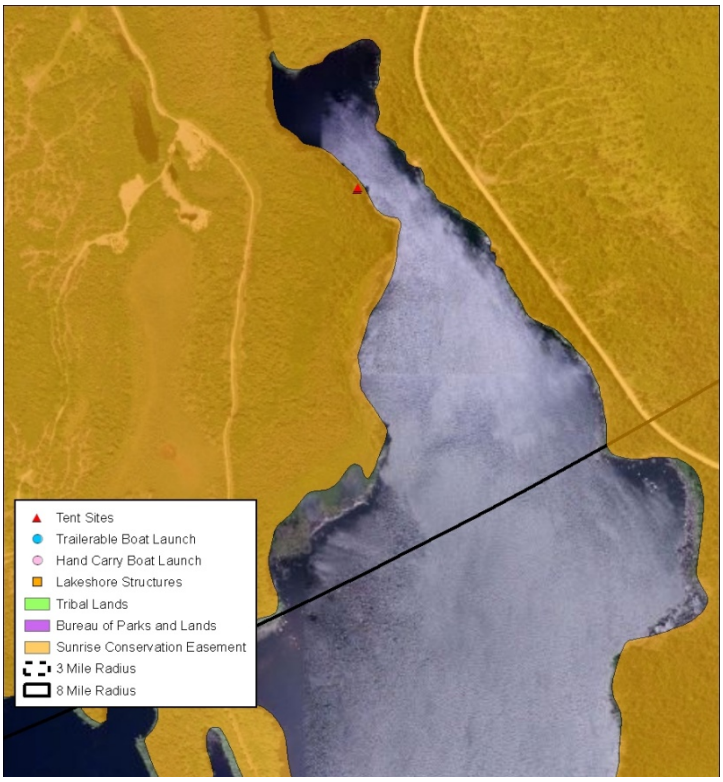
CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Relief	Two types of relief were evaluated - complex or dramatic.	Low	30	10
Physical Features	Presence of scenic physical features (Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands and beaches)	High	25	25
Shoreline Configuration	Index of complexity of shoreline based on a lake's variation from a perfect circle.	High	15	15
Vegetation Diversity	Presence and diversity of mixed hardwoods or softwoods, softwoods, marsh and the presence of super-story trees	Medium	15	10
Special Features	Water clarity and probability of observing wildlife	Medium	15	10
Inharmonious Development	Camps lining the edge of a lake, heavily eroded shorelines, powerlines or roads that are site intrusively, dammed lakes with drastic drawdowns, dams that are intrusive, etc	Medium	-20	-5
Total			**100**	**65**

It is important to note that the ratings given by the "Evaluation" are based on West Grand Lake as a whole. Taken individually, Pug Lake would likely not receive the same scores or scores even high enough to be considered "significant" or "outstanding". In particular, the configuration of the lake itself is ordinary and the vegetation is typical of the region. There are no dramatic or

unique physical features and this portion of the lake itself is not particularly scenic. The landscape is generally flat or rolling and indistinct. ***Based on all of these factors, the significance of the scenic resource is LOW.***

B. Existing Character of the Surrounding Area

Pug Lake is one of the farthest lakes from the Project with the nearest visible turbine 7.7 miles away. Only a very small portion of the lake is within the Project's 8-mile radius, approximately 97.2 acres. Mixed forest cover generally surrounds this portion of the lake. Although there is no development at this location, roads run on either side of the lake, indicating that one is not within a remote wilderness. This portion of the lake is surrounded by the Sunrise Conservation Easement, which is managed primarily for forestry, wildlife habitat and recreation. It is not characterized by any distinct or dramatic physical features. ***Based on these factors, the existing character of the surrounding area is LOW.***



C. Typical Viewer Expectations

While Pug Lake is considered a part of West Grand Lake, which is a notable destination in the area, this small portion of the lake is not directly adjacent to the main body of water, nor is it along the route that connects Junior Bay to Junior Lake. One would have to intentionally travel up to this most northerly piece of West Grand Lake. However, there are no outstanding scenic qualities that would prompt someone to do so. Alternatively, there is a public boat launch at this point, which may increase the number of users, but it is more likely that this area of the lake is strictly used as a launching point to areas south of here, and not a place where one remains to enjoy the scenery. Pug Lake was not included in the Bowers Survey, so user ratings for scenic quality are not available. ***Based on all of these factors, typical viewer expectations are LOW.***

E1. Extent, Nature and Duration of Public Use of the Scenic Resource

Although Pug Lake is considered a part of West Grand Lake, this portion is located at the very northeastern extreme of the main body of water. While there is a boat launch here, it is likely that most users are only launching their boats and then continuing on to all locations south. With a primitive tent site near the boat launch, camping and fishing are possible activities at Pug Lake, while winter activities could likely include snowmobiling as well. ***Based on all of these factors, the extent, nature and duration of public use is LOW.***

E2. The Project's Effect on Continued Use and Enjoyment of the Scenic Resource
This particular area (within the Project's 8-mile radius) would not be a place where one stays to enjoy the scenery. Even if fisherman do stay for longer periods, they are most likely nearer to the shoreline, where there is no Project visibility. Given the low use of this portion of the lake and importantly the very limited visibility of the Project, ***the effect on continued use and enjoyment is LOW.***

F. Scope and Scale of Visibility from the Scenic Resource
Based on viewshed mapping, up to 6 turbines, or portions of turbines, may be visible within eight miles at a very limited area within the northern end of the lake. With the closest visible turbine at approximately 7.7 miles, this would be a background view. The turbines would take up a very small portion of the 360° view – 5.32° or only 1.5% which occupies a small portion of the human field of view and therefore has decreased visual impact (see Diagram 13). As can be seen in the visual simulation, only the hub of 1-3 turbines would have potential visibility, depending on viewer orientation in relation to dips in the shoreline vegetation, while the blades of a fourth turbine might be visible. Given their limited visibility and small appearance, these turbines would potentially be difficult to discern amongst the shoreline trees. ***Based on all of these factors, the scope and scale of visibility is LOW.***

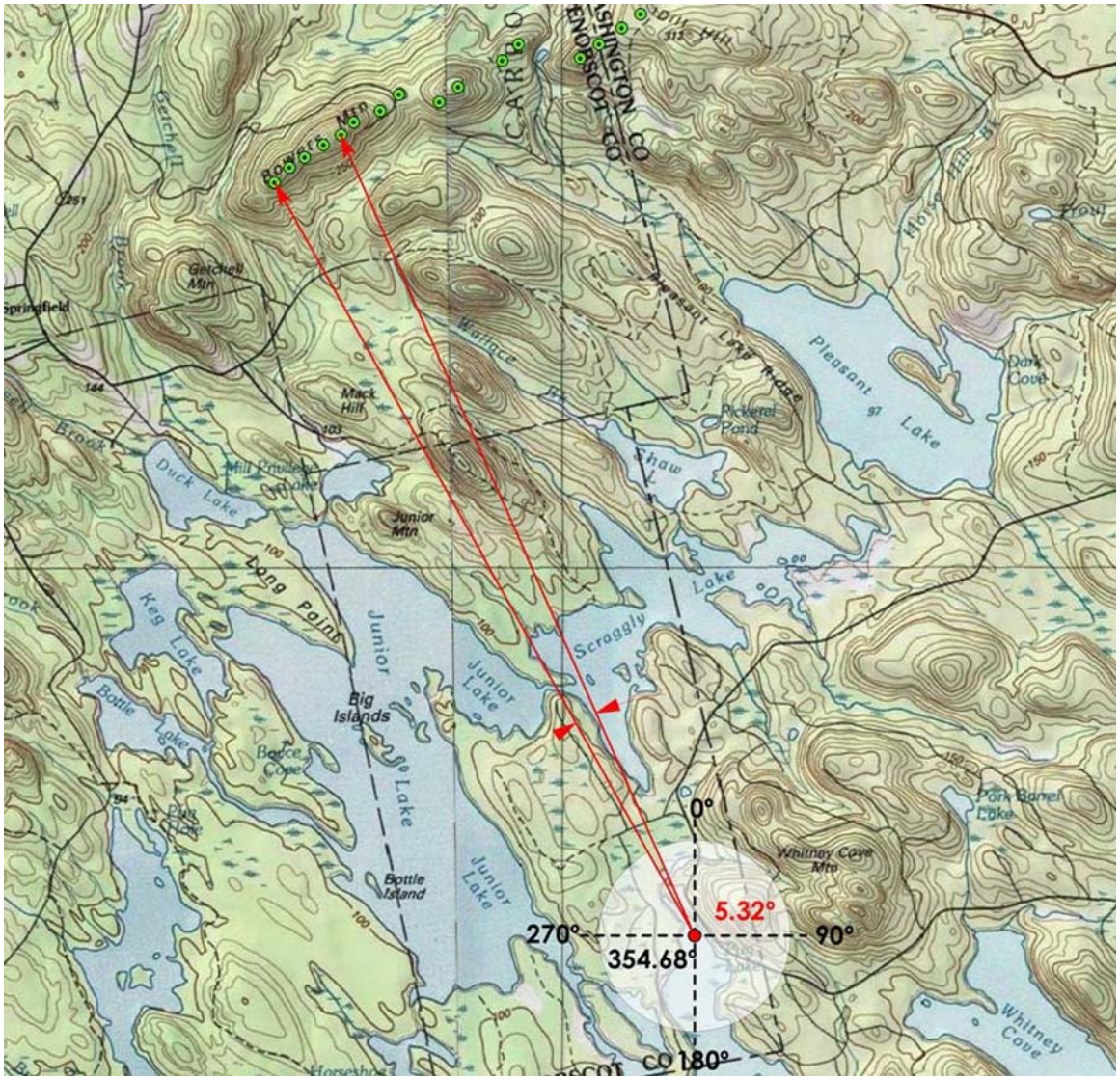


Diagram 13. Extent of view within 360° panorama at Pug Lake from the visual simulation location. Potential angle of view from this spot would be 5.32°.

G. Pug Lake (West Grand Lake) Overall Scenic Impact

It is important to note that less than half of Pug Lake is included in the 8-mile radius of the project. The Maine Lakes Assessment covers a much larger area outside of the 8-mile radius, including West Grand Lake, of which Pug Lake is actually a part. Thus, the overall assessment is only directly applicable to this small portion of Pug Lake. Based on the criteria for evaluating scenic quality, this portion of West Grand Lake would not qualify as significant or outstanding.

The distance of this lake from the turbine site and the portion of the individual turbines that will be visible greatly reduce the potential for visual impact. There is only a small portion of this lake that will have any visibility of the project, and this visibility would be at a distance of just under 8 miles. The visibility will be limited to the hubs of 1-3 turbines and the blades of a

fourth from limited vantage points only, and these elements will be difficult for users on the lake to discern given their presence within, rather than above, the surrounding treeline of predominantly white pines. This visibility assessment also assumes a 40 foot tree height. The actual height of trees in this area will have a critical impact on whether any hub or rotors would be visible at all (i.e. trees greater than 70 feet will block any potential views of the Project).

There will be minimal effect on the use and enjoyment of the typical user. Given the limited project visibility on Pug Lake and the nature of that visibility it is highly unlikely that there will be a substantive effect on users within the portion of the lake that is within the project area. ***Based on all of these factors, the overall scenic impact to Pug Lake (West Grand Lake) is LOW.***

4.3.7 SCRAGGLY LAKE

A. Significance of the Scenic Resource

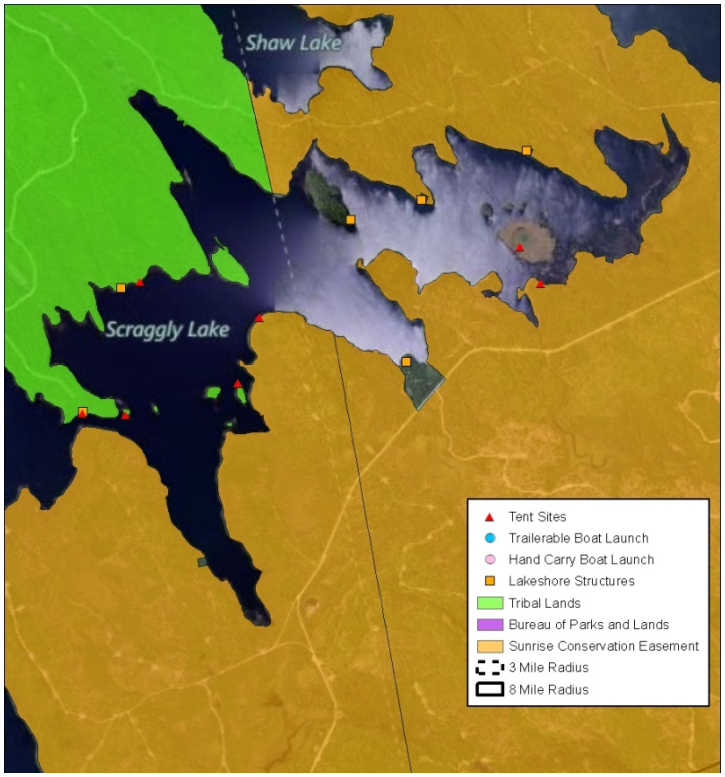
Scraggly Lake is identified as "Significant" with Management Class of 7, indicating that it has not been designated. The following table provides a summary of the ratings and scores assigned to Scraggly Lake in the "Evaluation". Scraggly Lake achieved the highest possible score for "Significant" eligibility.

CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Relief	Two types of relief were evaluated - complex or dramatic.	Low	30	10
Physical Features	Presence of scenic physical features (Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands and beaches)	Low	25	10
Shoreline Configuration	Index of complexity of shoreline based on a lake's variation from a perfect circle.	Medium	15	10
Vegetation Diversity	Presence and diversity of mixed hardwoods or softwoods, softwoods, marsh and the presence of super-story trees	High	15	15
Special Features	Water clarity and probability of observing wildlife	None	15	0
Inharmonious Development	Camps lining the edge of a lake, heavily eroded shorelines, powerlines or roads that are site intrusively, dammed lakes with drastic drawdowns, dams that are intrusive, etc	Lo/N	-20	0
Total			**100**	**45**

Scraggly Lake has very limited lakeshore development scattered along the nearly 20 miles of shoreline. While the scenery is generally undifferentiated and indistinct throughout much of this wide lake, the shoreline complexity, marshy coves and islands provide some added visual interest. Evidence of logging on nearby ridges is also visible in several locations across the lake. ***Based on all of these factors, the significance of the scenic resource is MEDIUM.***

B. Existing Character of the Surrounding Area

Scraggly Lake is approximately 1,641 acres and is 4.1 miles from the nearest visible turbine. Nearly three-quarters of the lake is surrounded by the Sunrise Conservation Easement, while the remaining is tribal land. The scenery and topography visible from the lake is typical of the region, with low rolling hills, mixed forest cover, and marshy coves, while the irregularity of the shoreline and the presence of some small islands does add a level of visual interest. From the majority of the lake, Penobscot Bald Mountain represents the tallest and most distinct landform when looking toward the Project, thereby drawing the eye. Vinegar Hill and the unnamed hill northeast of it completely or partially block views of Bowers Mountain. While the lake is only 3.5 miles long, the varied shoreline extends nearly 20 miles through marshy coves and remote islands. There is a hand-carry boat/canoe launch at Hasty Cove off of Amazon Road. Located approximately 9 miles from Route 6, the access road to the boat launch is very rough and requires a high-clearance, off-road vehicle. Scraggly Lake can also be accessed by boat via Junior Lake, although this narrow passage is shallow and rocky during certain times of the year. The lake is also accessible from a half mile or less portage from Pleasant Lake. The difficulty in accessing the lake may create a feeling of remoteness. However, scattered camps and evidence of logging clearly visible from the lake introduces human intrusions that counter this idea of isolation. Accessing Scraggly Lake from Amazon Road, which clearly serves as a major access road for logging, also sets a tone of being in a working landscape. ***Based on all of these factors, the character of the surrounding area is MEDIUM.***



C. Typical Viewer Expectations

Of the users interviewed for the Bowers Survey, 100% rated Scraggly Lake as having higher scenic value. Although this indicates that viewer expectations are high for these users, other evidence suggests that overall viewer expectations could be lower based on the most common

The varied shoreline of Scraggly Lake

Logging activity is evident on the approach to many of the lakes, particularly along Amazon Road

recreational activities on the lake (i.e. fishing and boating) and when considering a broader interpretation of the typical viewer. Moreover, the results of the 2012 Baskehegan study also indicate that while people rate Baskahegan Lake as having high scenic value, most users (80%) are likely to return. Given that Baskahegan has 39 more turbines visible than Scraggly, it can be inferred that turbines will not necessarily detract from viewers expectations of Scraggly. The difficulty in accessing the lake and limited development along the shoreline does create a feeling of remoteness (but it is not designated as remote by LURC). However, this feeling is tempered somewhat by the viewer's awareness that the lake is located in a working landscape with some visible logging activity. The lake also sees a moderate amount of use for the area even though access is not easy. ***Given these factors, the typical viewer expectations are MEDIUM-HIGH.***

E1. Extent, Nature and Duration of Public Use of the Scenic Resource

According to the Bowers Survey, the most popular activities on Scraggly Lake are observing wildlife, enjoying/viewing the scenery, camping, and fishing. Winter activities would likely include snowmobiling as well. Scraggly Lake sees a moderate to low amount of fishing, boating, paddling, and camping. The Bowers Survey recorded an average of approximately 3 boats and 5 people on shore during a half-day period, with a maximum of 10 boats and 25 people on shore recorded. Of the lakes studied in this survey (excluding Shaw), this represented the lowest average boat count and the middle of the average people on shore counts. There is one hand-carry boat launch on the eastern shore of Hasty Cove, and motorboat access is only possible by connecting through Junior Lake. At times paddlers are more common due to access issues- in particular when low water levels makes travel from Junior Lake to Scraggly Lake difficult. Quoting one website "…wild and remote, this is the paddler's ideal lake: too shallow for most motorboaters and far enough from road access that you have to do some work to get here."[35] There are no publicly owned campgrounds or campsites on Scraggly Lake, but there are six primitive privately maintained tent sites that are available for public use, three of which are only

[35] http://www.trails.com/tcatalog_trail.aspx?trailid=CGN022-047

accessible by boat. Scraggly Lake is connected to the Grand Lake Chain of Lakes, and camping is available at three primitive sites accessible to the public. ***Based on these factors, the extent, nature and duration of public use is LOW.***

E2. The Project's Effect on Continued Use and Enjoyment of the Scenic Resource

The recent survey results and our understanding of the nature of the lake's use suggest that the Project would not result in a significant negative impact on use and enjoyment of the lake. The Bowers Survey found that 77% of respondents stated that simulated conditions (depicting the proposed wind project) would have no effect their decision to visit in the future or their likelihood to return. The survey also found that 50% of respondents stated that simulated conditions would have no effect or positive effect on enjoyment of their visit. ***Based on all of these factors, the effect on continued use and enjoyment of the scenic resource is LOW.***

F. Scope and Scale of Visibility from the Scenic Resource

Based on viewshed mapping, up to 16 turbines, or portions of turbines, may be visible within 8 miles from portions of the lake as middleground to background views. From the boat launch, there are direct views of Bowers Mountain, but Dill Hill is obscured by shoreline vegetation. As such, any visibility of the four turbines on Dill Hill would be very limited from this vantage point. From the majority of the lake, Penobscot Bald Mountain represents the tallest and most distinct landform when looking toward the Project, thereby drawing the eye. Vinegar Hill and the unnamed hill northeast of it completely or partially block views of some turbines on Bowers Mountain, serving to visually break-up views of the Project. Shoreline vegetation obscures portions of the turbines on Dill Hill as well, thereby lessening their visual impact (see Exhibit 18: Visual Simulation from Scraggly Lake). From the simulation viewpoint, the turbines would take up a limited portion of the 360° view – 36.4° or only 10.1% of the 360° view, which occupies a small portion of the human field of view and therefore has decreased visual impact (see Diagram 14). Even at a closer location on the lake, the angle of view still occupies a limited human field of vision – 43.23° or only 12% of the 360° view (see Diagram 15).

Scraggly Lake has a complex shoreline with several coves, many of which would provide visual isolation from the turbines. The numerous wooded islands would also buffer or block views of the Project, and the enjoyment of their picturesque qualities would not be undermined. Few to no turbines would be visible when approaching the northern shore of the lake due to intervening topography and vegetation.

Although the turbines are visible throughout much of the lake, they would not be an unduly dominant visual presence. The nearest visible turbine would be 4.1 miles away at the northwest end of the lake. Under no circumstances would the viewer perceive that the turbines are visually dominant, as a result of their distance and the height of the turbines in relation to the surrounding vegetation and topography. In addition, the ordered distribution of turbines along the ridge

presents a harmonious layout and does not create a sense of visual clutter. ***Based on all of these factors, the scope and scale of visibility is MEDIUM.***

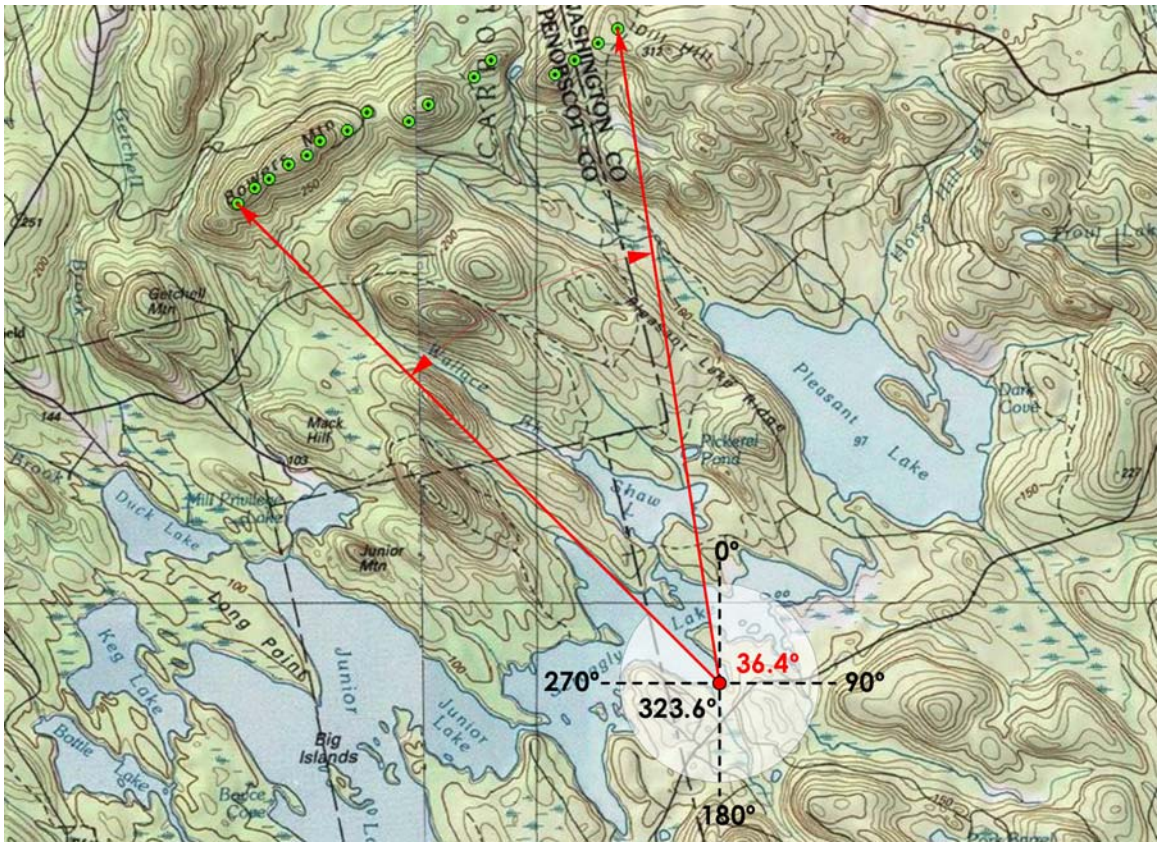


Diagram 14. Extent of view within 360° panorama at Scraggly Lake from the visual simulation location. Potential angle of view from this spot would be 36.4°.

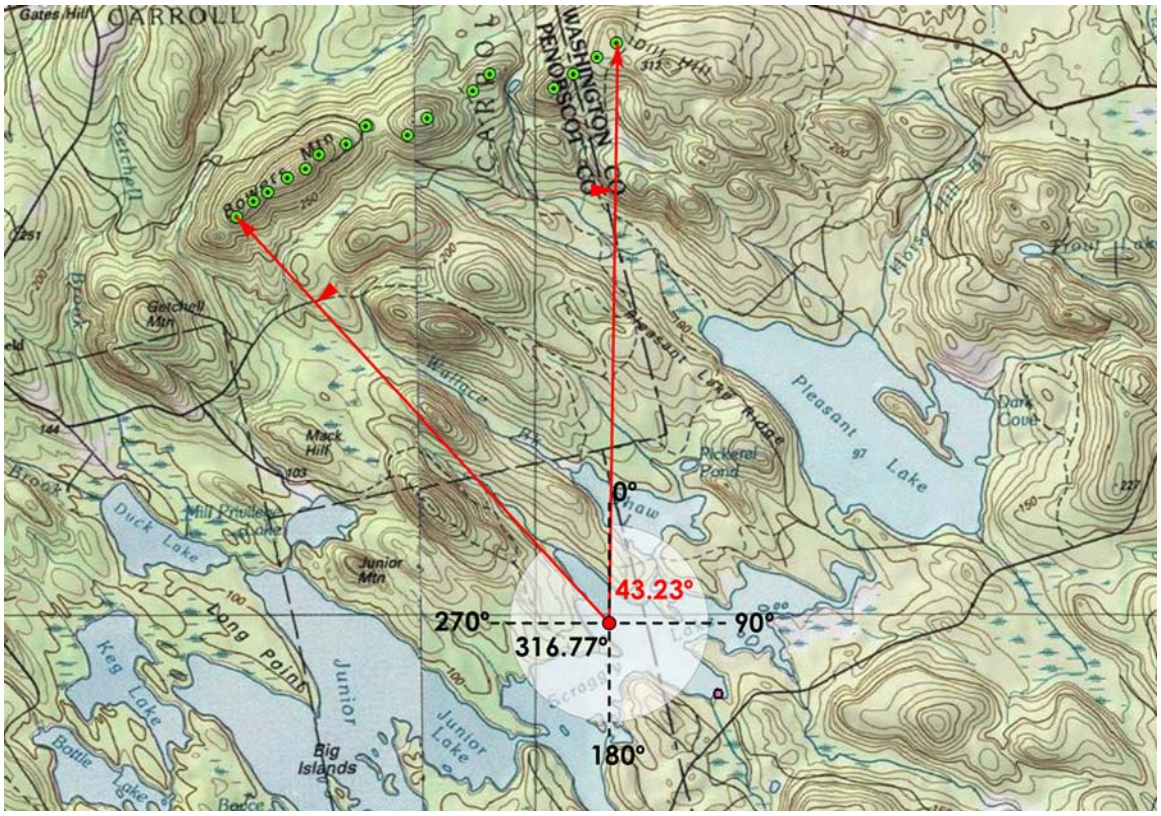


Diagram 15. Extent of view within 360° panorama at Scraggly Lake from a second location. Potential angle of view from this spot would be 43.23°.

G. Scraggly Lake Overall Scenic Impact

Scraggly Lake is listed as "significant" in the Maine Wildland Lakes Assessment and rates high for vegetative diversity, but low for other important scenic characteristics such as "presence of scenic physical features" and relief. There are no special features identified. A distinguishing feature of this lake is the actual rock strewn shoreline configuration with its many coves and beaches. This character provides opportunities for close-to-shore paddling and fishing, whereas the overall orientation of the lake provides for long fetches where the prevailing winds can build and create rough water. Scraggly Lake is a difficult lake to access due to the condition of the boat launch access. Low water levels also, as stated, limit access and use. Survey results indicated that Scraggly Lake gets less than 1/2 the use that Pleasant or Junior receive. The lake does have distinct scenic qualities, but it is also within the context of extensive timber harvesting, a fact reinforced by the drive to the lake where logging activity is readily present, and the view of timber harvesting on the hills surrounding the lake where cuts and logged areas are clearly visible.

The visual qualities of the lake and project layout diminish the overall perceived project impact. The potential visual effects (or impacts) of the project are qualified by the distance of the nearest visible turbine at 4.1 miles. This factor coupled with the continuous foreground and midground "roll" of the landscape diminishes the prominence of the turbine array. It can also be

posited that the extent of the project and linear layout reduces the potential for the view of the project to act as a distinct focal point that will continually draw the eye.

The variety of coves and shoreline elements, along with the general configuration of the lake and the resulting patterns of use provide many options for water travel, direction and orientation. Although the viewshed indicates that the project will be potentially visible in many sections of the lake, this visibility is also qualified by the habits of the users. For example, and as described in the section on the "Typical User", paddlers tend to hug shorelines, and anglers tend to focus on the fishing and float in particular locations that may or may not be in view of the project.

The potential impacts to the lake user do not rise to the level of being unreasonable. First of all, the access to the lake limits the overall user numbers, and thus the potential number of recreationists who might be affected by the project. As stated, the lake's configuration and numerous islands and coves provide extensive areas from which the project will not be visible. Secondly, and perhaps the most important consideration, is the fact that the surveys conducted indicate that for 73% of the respondents they will be likely to return or the project will have no effect on their likelihood to return to this lake after the project is constructed. (Kleinschmidt, Table 4.3-1, p.26) This is the true test of project impacts – that they are not unacceptable, or will prevent people from continuing to use the lake as they do currently. ***Based on all of these factors, the overall scenic impact to Scraggly Lake is MEDIUM.***

4.3.8 SHAW LAKE

A. Significance of the Scenic Resource

Shaw Lake is identified as Significant with a Management Class of 7, indicating that it has not been designated. The following table provides a summary of the ratings and scores assigned to Shaw Lake in the "Evaluation". Shaw Lake ranked in the higher range of scores for "Significant" eligibility.

CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Relief	Two types of relief were evaluated - complex or dramatic.	Low	30	10
Physical Features	Presence of scenic physical features (Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands and beaches)	Medium	25	15
Shoreline Configuration	Index of complexity of shoreline based on a lake's variation from a perfect circle.	Low	15	5
Vegetation Diversity	Presence and diversity of mixed hardwoods or softwoods, softwoods, marsh and the presence of super-story trees	Medium	15	10
Special Features	Water clarity and probability of observing wildlife	None	15	0
Inharmonious	Camps lining the edge of a lake, heavily eroded	Lo/N	-20	0

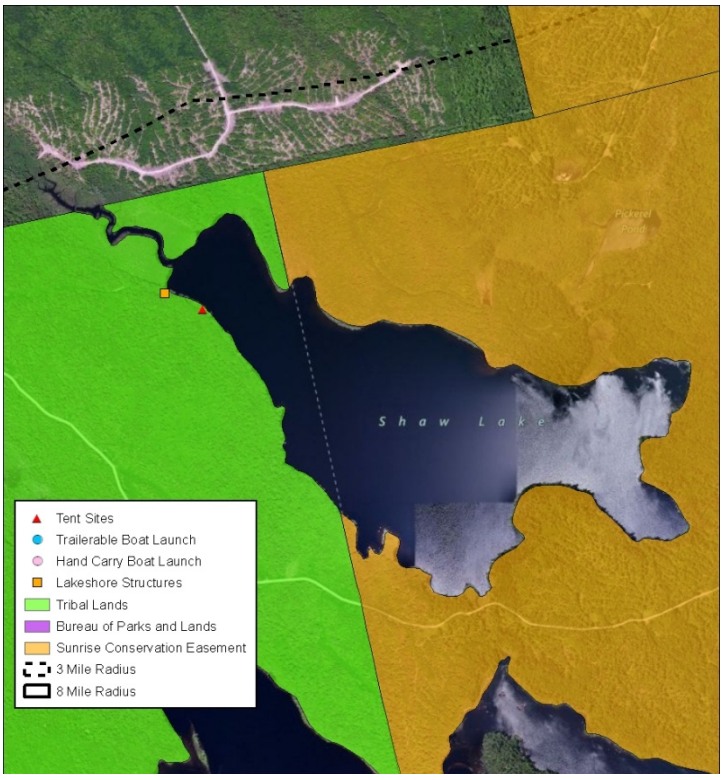
CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Development	shorelines, powerlines or roads that are site intrusively, dammed lakes with drastic drawdowns, dams that are intrusive, etc			
Total			**100**	**40**

Shaw Lake has virtually no visible lakeshore development and is isolated due to its primitive accessibility and public amenities. While the scenery is generally undifferentiated and indistinct, a horizontal ridge to the north provides some added visual interest. ***Based on all of these factors, the significance of the scenic resource is MEDIUM.***

B. Existing Character of the Surrounding Area

Shaw Lake, located in the townships of T5 R1 within Penobscot County and T6 R1 within Washington County, is approximately 251 acres. This lake is located 3.5 miles from the nearest visible turbine. There is no development on the shoreline of the lake and access is only possible by way of a single gravel road, which is only passable during limited times of the year and typically only by 4x4 vehicles. Roughly three-quarters of the lake is surrounded by the Sunrise Conservation Easement, with the remaining bordering tribal land to the west and north. Just beyond the lake to the north is the 66-lot Vinegar Hill Subdivision, situated on nearly 3,150 acres. To date, there are approximately 40 houses or seasonal camps located within the subdivision, which is served by more than 17 miles of interior roads that have been developed to Commission standards that require 15-foot wide gravel roads.

The landscape and topography around this lake is typical of the region with only a few, low rolling hills visible. A relatively horizontal ridge, visible just above the tree line, defines the majority of the long distance views to the north. Mixed forest characterizes the hillside vegetation, while the undeveloped shoreline is dominated by evergreen tree species. Shaw Lake is the third closest lake to the Project, but views of Bowers Mountain and a portion of Dill Hill are blocked due to intervening topography. ***Based on all of these factors, the character of the surrounding area is MEDIUM.***



C. Typical Viewer Expectations

Although scenic ratings were not available for the Bowers Survey due to absence of any users, one could infer that the high scenic rating for Pleasant Lake would apply to Shaw Lake, due to similarity in terms of scenic quality (See Boyle report). 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 (there is no publicly designated boat launch), it is not connected to any other lakes, and it is very modest in size. The difficulty in accessing the lake and limited development along the shoreline does create a feeling of remoteness (but it is not designated as remote by LURC), but this is tempered somewhat by the viewer's awareness that the lake is located in a working landscape with logging activity and neighbors a large subdivision with high density build-out. When activity does take place on this lake, it is assumed to be fishing and paddling. ***Based on these factors, typical viewer expectations are LOW-MEDIUM.***

E1. Extent, Nature and Duration of Public Use of the Scenic Resource

Use of this lake is very limited (no one was observed during the course of the Bowers study conducted by Kleinschmidt) and is most likely limited to the occasional adventurous, inveterate paddlers and anglers. Winter activities could likely include snowmobiling as well. According to a 1974 MDIFW survey, the lake provides good habitat for warm water gamefish, and is noted for its smallmouth bass fishery. Access to the lake is very difficult. There are no publicly designated boat launches, and only a single primitive tent site. Although there is a logging road that passes by the lake to the south, it appears to be impassable. Shaw Lake can be accessed from Scraggly Lake to the south, less than 1/8 of a mile away, via a canoe or kayak portage over the logging road which divides the two lakes, along an unclearly marked, densely wooded streamside path, leading to a debris filled shallow stream which connects to Shaw Lake upstream. ***Based on these factors, the extent, nature and duration of public use is LOW.***

E2. The Project's Effect on Continued Use and Enjoyment of the Scenic Resource

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. Of all the lakes with visibility within 8 miles of the Project, this lake definitely has the lowest use as confirmed in the Bowers Survey, and it is likely not known by people outside the local area. However, just because use is extremely low, it does not automatically translate into a remote and pristine lake that would be negatively impacted. Indeed, in this case the lake's proximity to a 66-lot subdivision would preclude it being designated as "remote." It is simply a lake that is not used very often because it lacks any defining characteristics that would normally draw people to it. In that case, continued use and enjoyment would not be negatively impacted by the Project because use is already low due to

View of Shaw Lake from adjacent access road

factors other than scenery. ***Given these considerations, the effect on continued use and enjoyment of the scenic resource is LOW.***

F. Scope and Scale of Visibility from the Scenic Resource

According to viewshed mapping, up to 14 turbines may be visible within 8 miles from the southern shore of Shaw Lake, with the closest turbine being in the midground at 3.5 miles away. For as many as 5 of these turbines, however, only views of blades would be likely. While Dill Hill is visible from Shaw Lake, the other ridges with proposed turbines are not visible due to the intervening topography associated with Vinegar Hill and unnamed ridges. As such, the majority of the visible turbines tend to visually 'hug the ridgeline,' thereby lessening their potential visual impact (see Exhibit 19: Visual Simulation from Shaw Lake). From the simulation viewpoint, the turbines would take up a limited portion of the 360° view – 44.7° or 12.4% of a 360 degree view, which occupies a small portion of the human field of view and therefore has decreased visual impact (see Diagram 16) The viewer would not perceive that the turbines are visually dominant in relation to the terrain. Dill Hill has a very flat and indistinct form from this vantage point, while Vinegar Hill and the peak directly northeast of it appear as the most pronounced hills when looking toward the Project site. As indicated in the visual simulation, the visual forms of these hills would remain dominant compared to the turbines visible around them. In addition, the ordered distribution of turbines along the ridge presents a harmonious layout and does not create a sense of visual clutter. ***Based on all of these factors, the scope and scale of visibility is MEDIUM.***

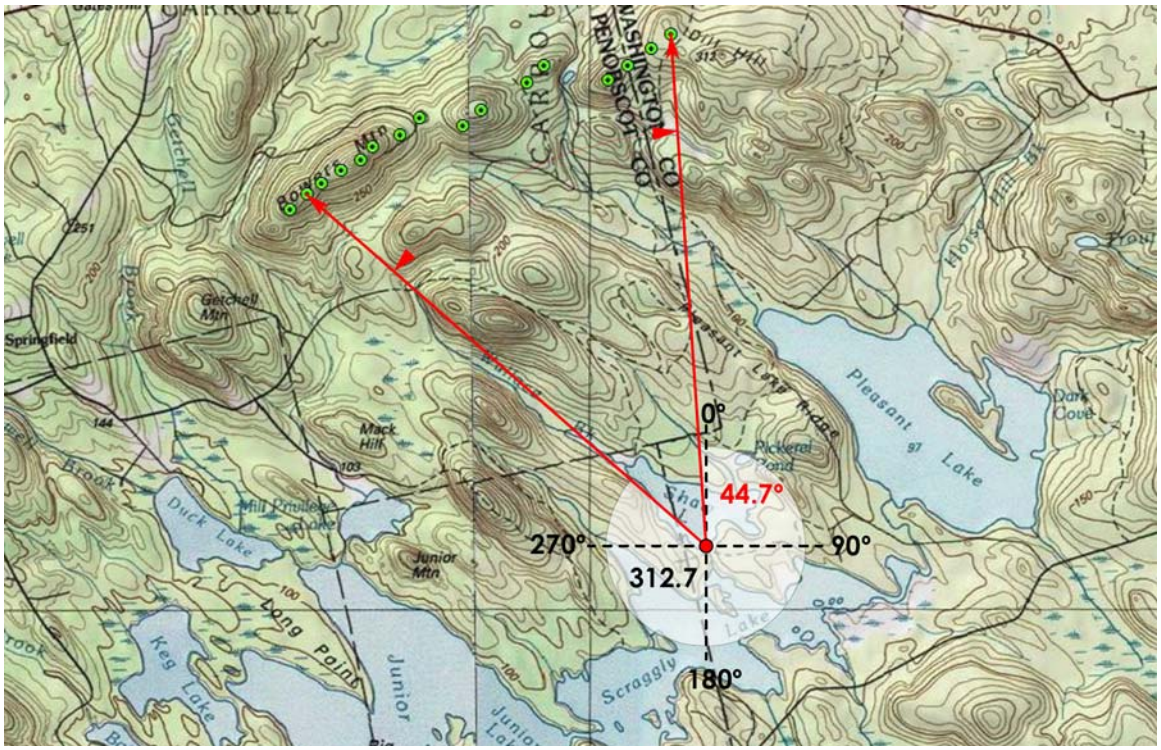


Diagram 16. Extent of view within 360° panorama at Shaw Lake from the visual simulation location. Potential angle of view from this spot would be 44.7°.

G. Shaw Lake Overall Scenic Impact

The most important aspect of Shaw Lake for the purposes of this review is the lack of suitable access which translates into very low use of this resource. This low use was evidenced by the survey process, which during the 2012 monitoring effort, no individuals were observed using this lake. The lake, which has a rating of "significant", has not been designated as remote under LURC classifications and therefore is not considered to be a wilderness setting where the presence of turbines would potentially affect that quality. This is another lake that received no points for special features. The nearest visible turbine will be 3.5 miles from the lake. Only about 1/2 the lake will have views of 9 to 14 turbines, although intervening topography will block portions of both Bowers Mountain and Dill Hill and portions of the project.

The project will not appear overly dominant. Despite the proximity of the lake to the project site, the topographic forms of the low ridges near to the lake to the north/northwest and the Bowers Mountain and Dill Hill landforms will continue to be the primary visual element when looking towards the project. The regular pattern and linear nature of the array reflects accepted practice for reducing visual impact by providing order and pattern to the turbine siting. Thus, the project visibility in and of itself is not necessarily a negative factor to the experience of the lake.

The project will not unreasonably affect users. The low number of users for this lake coupled with the overall survey results of both the Baskahegan and Bowers project area lakes reinforce the fact that having wind turbines in view does not necessarily diminish the likelihood of users to return to this resource. As Professor Boyle has stated in his report, "The survey results indicate that the effect of the wind farms "presence on the public's continued use and enjoyment of the scenic resource" [35-A M.R.S.A. Section 3452(3)] will be minimal". ***Based on all of these factors, the overall scenic impact will be LOW-MEDIUM.***

4.3.9 SYSLADOBSIS LAKE

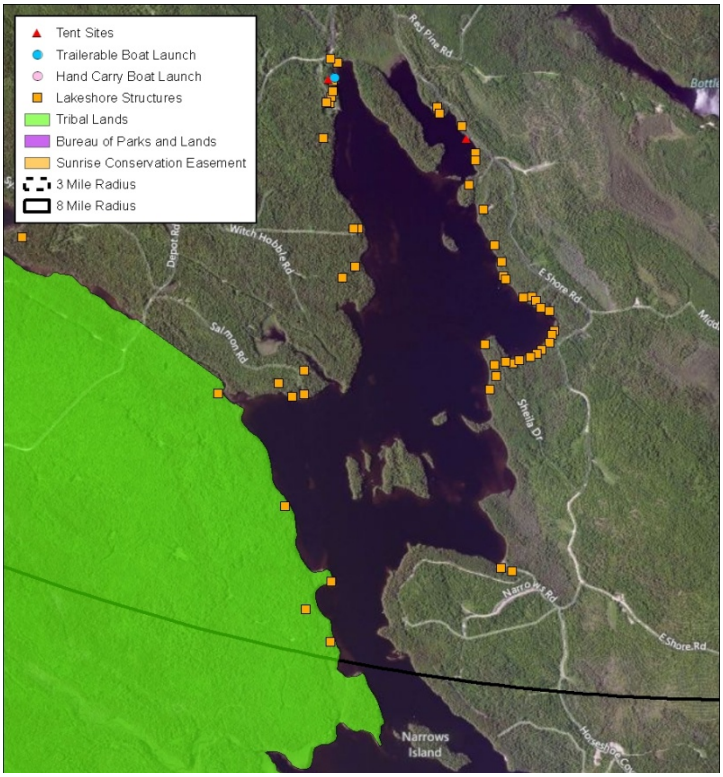
A. Significance of the Scenic Resource

Sysladobsis Lake is identified as "Significant" for scenic quality with a Management Class of 4, indicating that it is a high valued, developed lake. The following table provides a summary of the ratings and scores assigned to Sysladobsis Lake in the "Evaluation". Sysladobsis Lake achieved the highest score for "Significant" eligibility.

CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Relief	Two types of relief were evaluated - complex or dramatic.	Low	30	10
Physical Features	Presence of scenic physical features (Cliffs, vertical ledges, slab ledges, rockslides, boulders,	Medium	25	15

CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
	islands and beaches)			
Shoreline Configuration	Index of complexity of shoreline based on a lake's variation from a perfect circle.	High	15	15
Vegetation Diversity	Presence and diversity of mixed hardwoods or softwoods, softwoods, marsh and the presence of super-story trees	Low	15	5
Special Features	Water clarity and probability of observing wildlife	None	15	0
Inharmonious Development	Camps lining the edge of a lake, heavily eroded shorelines, powerlines or roads that are site intrusively, dammed lakes with drastic drawdowns, dams that are intrusive, etc	Lo/N	-20	0
Total			**100**	**45**

It is important to note that the ratings given by the "Evaluation" are based on Sysladobsis Lake as a whole. Only a small portion of this large lake is located within the 8-mile viewshed and may not, on its own, receive the same scores as the entire lake. Many camps and homes line the shoreline in this portion of the lake, with particular concentration on the eastern side. The scenery in this portion is generally undifferentiated and indistinct, aside from a somewhat varied shoreline and some dispersed islands. There are no dramatic or unique physical features and this section of the lake itself is typical of other lakes in the region. ***Based on all of these factors, the significance of the scenic resource is LOW-MEDIUM.***



B. Existing Character of the Surrounding Area

Sysladobsis Lake, located in the town of Lakeville and stretching across Washington and Penobscot Counties, is approximately 5,401 acres with the upper 689 acres located within 8-miles of the Project. About one-quarter of the lake within the 8-mile study area borders tribal land on the west. This lake is 6.3 miles from the nearest visible turbine. Consistent with the character of the surrounding region, this lake is surrounded by low hills and mixed forest cover. The lake is narrow and long with a generally rocky shoreline, interspersed by several sandy beaches. There are several shoals and rocky points, and at least eight identified islands throughout the lake, adding to the lake's interest. At the upper end of the lake, coves with marshy, weedy shorelines are evident. The lake is impounded with a dam located at the

southeastern end that raises the water level approximately six feet. Coldwater and warm water fish are present.

Within 8-miles of the Project, there are about 52 private camps and homes scattered along the lakeshore, with more concentrated development on the eastern shore. A private campground is located along the northwestern shore near the public boat launch, but it is unclear whether or not it is still in business. ***Based on all of these factors, the character of the surrounding area is LOW.***

C. Typical Viewer Expectations

While not widely known for its scenery, Sysladobsis is a moderately used lake with a significant amount of development, indicating that scenic expectations of users would not be high. Because it is annually stocked with fish, the lake is commonly used by anglers and boaters as well as campers, whose focus is not typically on scenic quality but quality of the fisheries. Sysladobsis Lake was not included in the Bowers Survey, so user ratings for scenic quality are not available. ***Given these factors, typical viewer expectations are LOW.***

E1. Extent, Nature and Duration of Public Use of the Scenic Resource

Fishing, boating, paddling, swimming and camping are common recreational uses of this lake. Winter activities would likely include snowmobiling as well. There is one motorboat launch and up to two campgrounds located in the portion of the lake within the Project's 8-mile radius. Annually stocked salmon, and the presence of bass, perch and pickerel draw fishing enthusiasts to this lake, but not necessarily this section of the lake. A local fishing and hunting guide suggests that this lake receives medium to high frequency of use by anglers, notably in the spring during salmon fishing season, but this is for the entire lake in general. This particular portion of the lake likely sees fewer users and less activity. ***Based on these factors, the extent, nature and duration of public use is LOW.***

E2. The Project's Effect on Continued Use and Enjoyment of the Scenic Resource

Sysladobsis Lake was not included in the Bowers Survey, so ratings on continued use and enjoyment are not available. 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. In addition, fishing is anticipated to be the primary use and Palmer (1999) found that fishing was an activity where people did not appear to place as high a value on scenic quality as people who hiked or paddled." ***Based on all of these factors, the effect on continued use and enjoyment of the scenic resource is LOW.***

F. Scope and Scale of Visibility from the Scenic Resource

Looking south from the northernmost boat launch on Sysladobsis

Viewshed mapping indicates that up to 10 turbines may be visible within eight miles as background views, but the majority of visibility (roughly 2/3) will be of less than 7 turbines, with the closest visible turbine being 6.3 miles away. The turbines visible on Dill Hill would appear small and clustered due to distance and angle of view. The majority of the lake is beyond 8 miles. Even for the portion of the lake within 8 miles of the Project, many areas of the lake would be without visibility, notably along the northern and eastern shore. The cove that connects to Upper Sysladobsis Lake would have no visibility, and the large islands on the lake would buffer or block views as well. The boat launch and two tentsites at the northern end of the lake will also have no visibility. Due to the distance and angle of view, the most visible turbines would appear relatively clustered and small, taking up only 2.8% (or 10.25°) of the 360° view from the simulation viewpoint, which occupies a small portion of the human field of view and therefore has decreased visual impact (see Diagram 17). In addition, Getchell Mountain is the proximate landform in view, and it would serve to provide visual balance to the turbines on the adjacent Bowers Mountain (see Exhibit 20: Visual Simulation from Sysladobsis Lake), contributing to the landscape's ability to visually absorb the Project. The surrounding landforms such as Chamberlain Mountain and Almanac Mountain to the west would also provide visual interest and draw the eye. Aside from minor clustering of turbines to the east, the distribution of turbines along the ridge presents a harmonious layout and does not create a sense of visual clutter. ***Based on all of these factors, the scope and scale of visibility is LOW.***

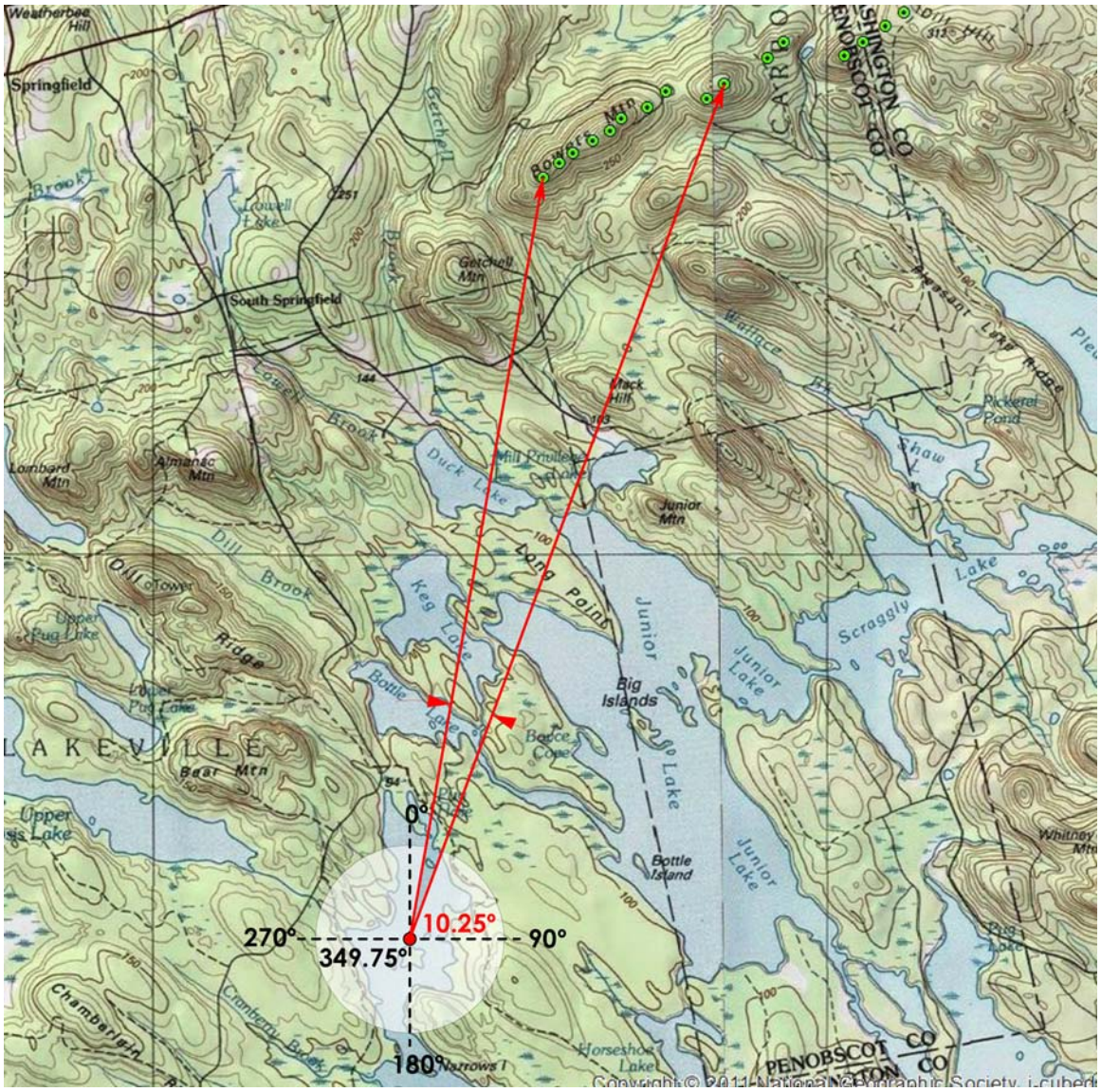


Diagram 17. Extent of view within 360° panorama at Sysladobsis Lake from the visual simulation location. Potential angle of view from this spot would be 10.25°.

G. Sysladobsis Lake Overall Scenic Impact

Sysladobsis Lake is designated a "significant" lake in the Maine Wildlands Lake Assessment. Only a small portion of the northerly extent of Sysladobsis Lake is within the 8 mile project area, and of this portion 58% will have potential views of the project. The closest visible turbine is 6.3 miles. The section within the project area has extensive camp development, and most of these camps do not have orientation towards the project. As stated, there is one commercial campground listed in this area, Spruce Lodge Campground, but no listing for the campground was found (so it cannot be confirmed if it is still operating), and the mapped site for the campground will not have any views of the project. There are no special features associated with this portion of the lake as established in the Assessment.

The lake as a whole is considered to have good fishing and is readily accessible via a number of launches for motorboats, although these are some distance from that portion of the lake within the project area – the closest being over 3 miles.

The distance of the project from the lake and the extent of project visibility significantly reduces the potential for visual impact. The closest visible turbine as shown in the simulation for this lake is 7.1 miles and the array is clustered in a manner that greatly reduces its visual presence on the lake. At this distance the turbines appear to be quite small, and the slender forms of both turbine tower and turbine rotors reduce their visibility in a wide range of atmospheric and sun angle conditions. The angle of view at the simulation site, 10.25°, confirms this fact and indicates that only a very small portion of the shoreline will have the view of the project beyond.

The project will not result in an unreasonable effect on scenic character or existing uses related to that scenic character. The project will not be a dominant presence on the lake, as demonstrated by the analysis, and therefore should not overly distract or deter users from enjoying this portion of the lake, or returning to it in the future.

Based on all of these factors, the overall scenic impact is LOW.

4.2.10 Summary Matrix of the Lake-by-Lake Analysis

The matrix that results from this approach is presented in Table 2 that follows and yields an overall ranking of scenic impact on a resource-by-resource basis. This table and the individual and overall rankings inform the findings and conclusions of this Visual Impact Assessment.

Table 2. Summary of Statutory Criteria's Effect on Scenic Impact

NA = the Project is not visible from the resource or there are no turbines within 8 miles that are visible, therefore the criteria is not evaluated for its effect on scenic impact
Low = the criteria's effect on scenic impact is low
Med = the criteria's effect on scenic impact is medium
High = the criteria's effect on scenic impact is high

SCENIC RESOURCE OF STATE OR NATIONAL SIGNIFICANCE	[2]STATUTORY EVALUATION CRITERIA							OVERALL SCENIC IMPACT
	A.	B.	C.	D.	E.1[1]	E.2	F.	
Bottle Lake	Low	Low	Low	Low	High	Low	Low	**Low**
Duck Lake	Low	Low	Low	Low	Low	Low	Low	**Low**
Horseshoe Lake	NA	NA	NA	NA	NA	NA	NA	**NA**
Junior Lake	Med	Med	Med	Low	Med	Low	Med	**Med**
Keg Lake	Low	Low-Med	Low-Med	Low	Low	Low	Med	**Low-Med**
Lombard Lake	NA	NA	NA	NA	NA	NA	NA	**NA**
Norway Lake	NA	NA	NA	NA	NA	NA	NA	**NA**
Pleasant Lake	Med	Med	Med-High	Low	Med	Low	Med	**Med**
Pug Lake (West Grand Lake)	Low	Low	Low	Low	Low	Low	Low	**Low**
Scraggly Lake	Med	Med	Med-High	Low	Low	Low	Med	**Med**
Shaw Lake	Med	Med	Low-Med	Low	Low	Low	Med	**Low-Med**
Sysladobsis Lake	Low-Med	Low	Low	Low	Low	Low	Low	**Low**
Upper Sysladobsis Lake	NA	NA	NA	NA	NA	NA	NA	**NA**
West Musquash Lake	NA	NA	NA	NA	NA	NA	NA	**NA**
Springfield Congregational Church	NA	NA	NA	NA	NA	NA	NA	**NA**

[1]Note that this criterion does not assess impact to scenic quality. A resource that receives low use (and subsequently a low rating for E1) but has high scenic quality, such as a remote pond, could still receive a high overall scenic impact rating based on contributions from other criteria. Likewise, a resource that has a high use (and subsequently a high rating for E1) but has low scenic quality due to shoreline development or other considerations could still receive a low overall scenic impact rating based on contributions from other criteria.

[2]Statutory Criteria
A. Significance of the Scenic Resource
B. Existing Character of the Surrounding Area
C. Typical Viewer Expectations
D. Purpose and Context of the Proposed Activity
E.1 Extent, Nature and Duration of Public Use of the Scenic Resource
E.2 The Project's Effect on Continued Use and Enjoyment of the Scenic Resource
F. Scope and Scale of Visibility from the Scenic Resource

4.4 Nighttime Lighting

One critical element of visual impact resulting from utility scale wind projects is night lighting. Night lighting of this project will potentially affect users of all the lakes and ponds analyzed as part of the VIA. While nighttime impacts are greatly diminished by the fact that recreation is limited during the night time hours, those users who are camping, fishing at dusk, out for moonlit paddle, or camp owners with visual access to the project will be affected.

Despite the fact that the nighttime lights do not produce glare and do not directly impact the viewing of the night sky, there is an annoyance factor associated with the continuous on-off operation of the beacons, as required for aircraft safety. The night sky is a cherished resource and the impact cannot be overlooked. The applicant has committed to installing a radar-assisted lighting system to mitigate any impacts once the FAA has approved it for wind applications in the United States, and this Project. Until such time, red-flashing lights per FAA standards will need to be used. As such, an analysis of these temporary conditions has been conducted as part of the VIA.

For any of these lake resources from which turbine lights may be seen, the number of lights visible will vary depending on the position of the observer on the surface of the water (see also Exhibit 8: Meteorological Tower Viewshed Map, Exhibit 9: Turbine Night Lighting Viewshed Map, and Exhibit 10: Annotated Visual Simulations).

- Bottle Lake. No lights will be visible for most of the northern half of the lake. Along the southern portion of the lake 3-4 lights will most likely be visible with up to seven lights visible in the cove along the southern shoreline. The met tower light will not be visible from Bottle Lake. There are no publicly owned or maintained campgrounds or campsites on Bottle Lake.

- Duck Lake. No lights will be visible along the northern/eastern shoreline. Four lights will be seen over most of the lake, with up to 7 lights visible for a small portion along the southernmost shoreline. An insignificant area on Duck Lake may have the potential to see the met tower light. There are no publicly owned or maintained campgrounds or campsites on Duck Lake.

- Junior Lake. No lights will be visible from the northernmost shoreline and most of the eastern shoreline. From the northern half of the lake (above the islands), anywhere from 1-4 lights will be visible. From the southern half of the lake, anywhere from 5-7 lights will be visible with the most visibility east and south of Bottle Island. The met tower may also be visible from this area, as well as a small area in the northeasternmost portion of the lake. There are no publicly owned or maintained campgrounds or campsites on Junior Lake. There are several tent sites situated around the lake that are available for public use, but are privately maintained:

- McKinney Point Tent Site – located on western side of peninsula and will have no views of the Project.
- Mosquito Island Tent Site – located on the southern shore of the island and will have no views of the Project.
- Big and Bline Island Tent Sites – campsites are wooded with only partial views possible through the trees, depending on viewer location and type of forest cover, tree height, and branching density. Based on the viewshed analysis turbine lights may be visible at the water's edge.
- Bottle Island Tent Sites (2) – located on western and southern shores of the island and will have no views of the Project.
- Junior Lake Tent Site – campsites are located near, but not on, the shoreline and may have partial views possible through the trees, depending on viewer location and type of forest cover, tree height, and branching density. Based on the viewshed analysis turbine lights may be visible at the water's edge.
- Junior Lake Cove Tent Site – campsites are heavily wooded with only glimpses possible through the trees. Based on the viewshed analysis turbine lights may be visible at the water's edge.

- Keg Lake. No lights will be visible along the northern and eastern shorelines, as well as the westernmost cove. Most of the lake will see 3-5 lights, while a portion along the western shore may see up to 6 lights. An insignificant area on Keg Lake may have the potential to see the met tower light. There are no publicly owned or maintained campgrounds or campsites on Keg Lake.

- Pleasant Lake. Portions of Dark Cove and along the northernmost shoreline will have no visibility of the lights. Anywhere from 1-8 lights will be visible from the remainder of the lake, with the least visibility in the northwestern most cove and the most visibility from the center of the lake and points south. There are no publicly owned or maintained campgrounds or campsites on Pleasant Lake. There is one private campground located on the southeastern shore at the boat launch. The site is mostly wooded, and there will be limited visibility from campsite facilities (i.e. fire pit, picnic tables). There may be partial visibility of some lights through the trees, and up to 8 lights would be visible for campsites at the water's edge. The met tower light may also be visible for about three quarters of the lake, including the boat launch. There will be no visibility of night lights from Maine Wilderness Camps, a commercial camp located at the northern end of the lake.

- Pug Lake. Up to 3 lights may be visible from Pug Lake, but actual tree heights and tree density will likely limit or block any possible views. The met tower light will not be visible.

- Scraggly Lake. No lights will be visible along the northern shoreline. About half of the lake will have visibility of up to 5 lights. Anywhere from 6-8 lights will be visible from the remainder of the lake, with the most visibility in a portion of Hasty Cove. The met tower light may be visible for portions of the lower half of the lake. There are no publicly owned or maintained campgrounds or campsites on Scraggly Lake. There are several tent sites situated around the lake that are available for public use, but are privately maintained:

    - Scraggly Island Tent Site – campsites are wooded with only limited views possible through the trees, depending on type of forest cover, tree height, and branching density. Based on the viewshed analysis turbine lights may be visible at the water's edge.
    - Hasty Cove Tent Site – campsites are heavily wooded with only glimpses possible through the trees and a narrow view window through the boat launch. Based on the viewshed analysis turbine lights may be visible at the water's edge.
    - Scraggly Point Tent Site – campsites are wooded with only limited views possible through the trees, depending on viewer location and type of forest cover, tree height, and branching density. Based on the viewshed analysis turbine lights may be visible at the water's edge.
    - Rock Table Island Tent Site – campsites are wooded with only partial views possible through the trees, depending on viewer location and type of forest cover, tree height, and branching density. Based on the viewshed analysis turbine lights may be visible at the water's edge.
    - Scraggly Lake Inlet Tent Site – campsites are wooded with only glimpses possible through the trees, depending on viewer location and type of forest cover, tree height, and branching density. Based on the viewshed analysis turbine lights may be visible at the water's edge.

- Shaw Lake. No lights will be visible from the northern shoreline. The majority of visibility will be from the southern half of the lake, with up to 6 lights visible and 7 lights potentially visible in a limited location along the south eastern shore. As one travels north the visibility of lights diminishes. The met tower may be visible from the lower half of the lake. There are no publicly owned or maintained campgrounds or campsites on Shaw Lake.

- Sysladobsis Lake. No lights will be visible from about half of the lake (within the 8-mile radius), particularly in the northern portion. Anywhere from 1-5 lights will be visible, with the most visibility just north and west of the islands with up to 8 lights, and the least visibility on the eastern half of the lake. The met tower light may be visible from a very insignificant are just north of the islands, but the majority of the lake will not have visibility. There are no publicly owned or maintained campgrounds or campsites on Sysladobsis Lake within the 8-mile study area.

The visual impact from the required night lighting of the Project is not unreasonable for several reasons:

1. The visibility will be reduced due to the limited vertical beam spread. Warning lights must be visible horizontally from the light and higher and do not direct light of any significant intensity below minus 10 degrees of the horizontal plane created by the direct cast of the light itself. Because of the limited vertical beam spread, visibility is reduced since viewers typically do not see these lights directly, and they do not create glare or untoward light impacts to the naked eye situated below the tower base.
2. There is no impact to night sky viewing and the quality of the night sky (except on the horizon lines beyond or in the vicinity of the lights, but stargazing or the night experience is not typically focused on the horizon).
3. FAA studies have suggested that the use of red light emitting diode or rapid discharge style fixtures limits exposure time, thus creating less of a nuisance (as compared to a constant red light).
4. The visibility of these lights will be mitigated by the distance of the lights from potential viewing locations, an average of 4 miles and beyond.
5. Exposure to lake users is limited. Very few people paddle or fish at night, primarily for reasons of safety, orientation, navigation and overall enjoyment. Fisherman and others may see the lights at dawn and at dusk when they are arriving or departing from the lakes, but this would only be for limited duration and users are typically focused on preparing and launching their boats and gathering their equipment.
6. There are no publicly owned or maintained campgrounds or campsites within the study area. There are however several privately maintained campsites available for public use. Most campsites are in wooded locations or are situated away from the Project and therefore will not have visibility, or will only have limited visibility. In instances where visibility is possible, impacts are diminished because views are filtered through the trees and campers are usually focused visually on a campfire or other campsite activities (i.e. cleaning dishes, socializing, etc.).
7. Primary impact would be to camp owners although a) many camps are oriented away from project or are out of view; b) lights from these camps often create direct glare on the lakes, are brighter or more noticeable, and have greater impacts in some regards than the night lighting of turbines. Overall impact would be one of annoyance to camp owners, but would not substantively impact use and enjoyment at night as this use is so highly limited.

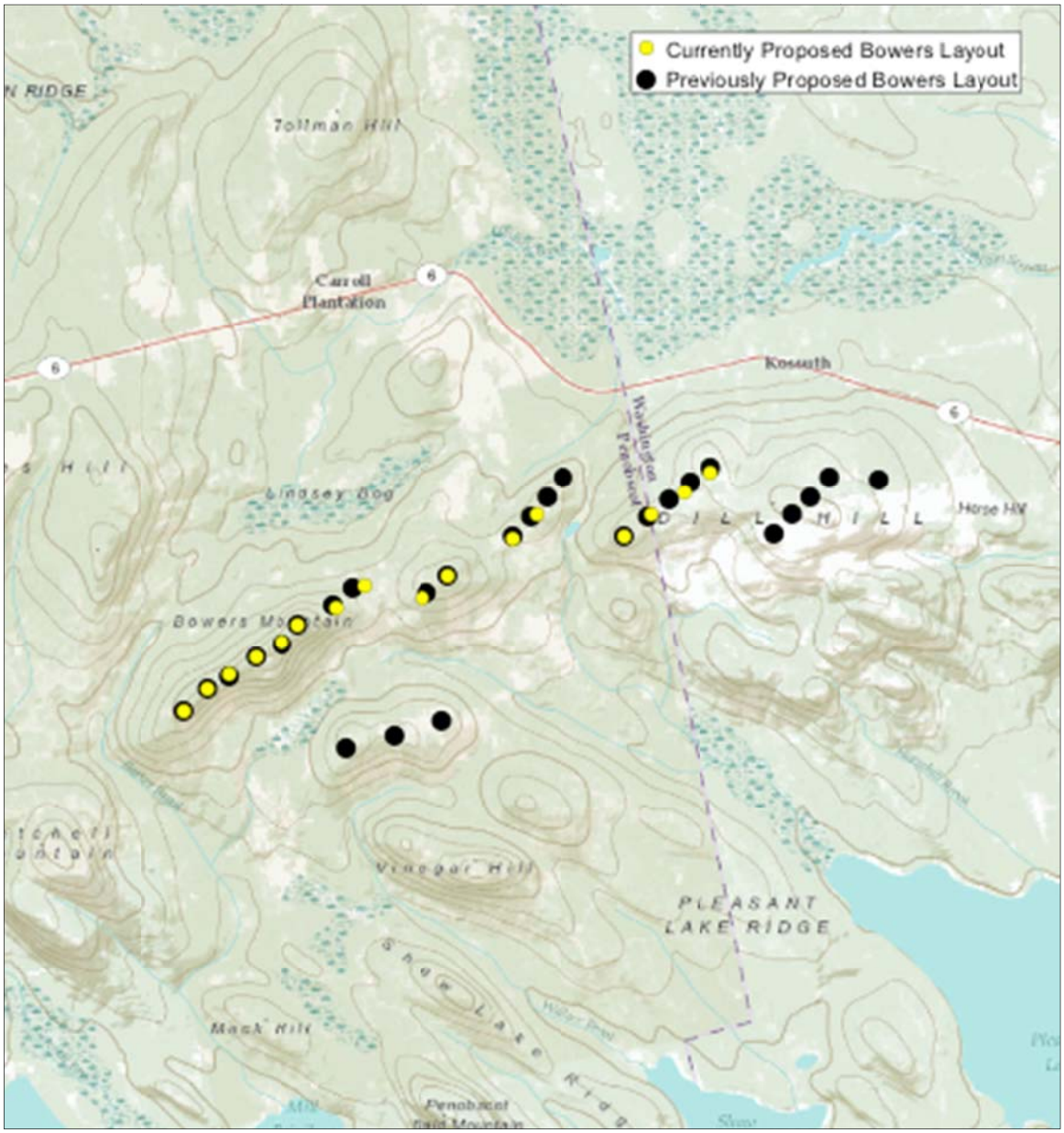
Overall, night lighting is very difficult to simulate. While it is possible to create simulations, a static photo of one moment in time does not accurately capture the effects of the lighting and we have not found that simulations provide an accurate depiction of the experience of observing night lighting. Even video type representations can be misleading. The primary reason for this is that night lighting visibility and effects are totally subject to atmospheric conditions and the viewer's position, even more so than during the day. Some nights that are overcast or when there

is precipitation will completely obscure the lighting. Given that more than half of the days in the region are cloudy, it is therefore likely that the visual presence and consequent impact from night lighting will be greatly diminished. Hot and humid nights also create ground fog or air that is less clear given its ability to hold moisture and particulate matter. This, too, will diminish the visibility and effect of night lighting.

Only on very clear, still nights will there be substantial reflectivity on the water. Once the water is disturbed with wind or boat traffic, reflections are disrupted. The visibility of such reflections are highly dependent on viewer location and orientation, distance from the project, intervening landscapes, screening vegetation and, as stated, weather and air quality conditions. Often the viewer's eye is more focused on the bright lights and reflections from camps on the water. In fact, this type of lighting can create glare and visual impacts that are arguably more significant and more visible than the beacons on telecommunication towers and wind turbines.

4.5 Mitigation

In response to feedback obtained during the prior permitting proceeding, Champlain has taken significant measures to reconfigure the Project in a manner to reduce turbine visibility on scenic resources of state or national significance. Specifically, the Project has been reduced in size from 27 turbines to 16 turbines, a 40% reduction in the number of turbines.



The reduction in turbines results in a reduction in associated facilities such as the mountaintop collector line, crane path, and clearing. The number of permanent met towers has also been reduced from up to four in the original project to one. Importantly, turbines previously located on "South Mountain," the closest location to most Project lakes have been removed, as have the five turbines located furthest to the East on Dill Hill. The elimination of turbines from South Mountain has had the effect of increasing the distance of the closest visible turbines on six lakes. As a result, only two lakes now have potential turbine visibility within three miles, whereas previously four lakes had potential visibility within three miles. The elimination of 11 turbines has reduced the number of turbines visible on Project lakes as summarized in the following table:

Lake	Reduction in number of potentially visible turbines within 8 miles[1]
Bottle Lake	3
Duck Lake	4
Junior Lake	9
Keg Lake	4
Pleasant Lake	11
Pug Lake	1[2]
Scraggly Lake	10
Shaw Lake	9
Sysladobsis Lake	12

[1]Based on viewshed analysis (visibility from the hub and accounting for topography and 40-foot vegetation).
[2]Visibility would be of tips only and highly dependent on tree height. While visibility information regarding Pug Lake was not included in the original VIA, it was later provided in a memo dated July 5, 2011, as a follow up to the LURC public hearing.

As indicated above, the reduction in potentially visible turbines is most noticeable on Junior Lake, Pleasant Lake, Scraggly Lake, Shaw Lake, and Syladobsis Lake. Although the turbine height and rotor diameter is larger in the current design, the number of turbines has a more significant effect on visual impact than turbine height. As noted in Environmental Impacts of Wind-Energy Projects, "The difference between a 200-foot turbine and a 360-foot turbine (hub or nacelle height) can be difficult to perceive, especially when the turbines are seen against the sky. Size may make a difference if the height of the landform begins to be overwhelmed by the height of the turbine. Generally, fewer larger turbines can result in a better visual outcome than a larger number of smaller turbines."

The reduction in turbines resulted in a reduction in angle of view (between 12 and 18 degrees) for a number of resources, including Pleasant Lake, Duck Lake, Shaw Lake and Scraggly Lake. The combination of fewer turbines and a smaller angle of view reduces the visual impact of the turbines.

Finally, as discussed in Section 4.4 above, Champlain has proposed use of radar-assisted lighting to reduce potential impacts of required FAA lighting for the turbines and met tower. This is a significant mitigation measure and would be the first proposed on a project in Maine.

4.6 Cumulative Impact

MDEP guidance promulgated in connection with the Natural Resources Protection Act, another environmental statute administered by the MDEP, directs applicants to consider the effects of past, present and reasonably foreseeable activities when evaluating potential cumulative impacts. MDEP Guidance Doc. Num. DEPLW00630-A2004. Reasonably foreseeable future activities are activities for which there is a high likelihood they will proceed, i.e., valid permits have been granted, they are in the construction phase, or applications are currently under consideration. Id.

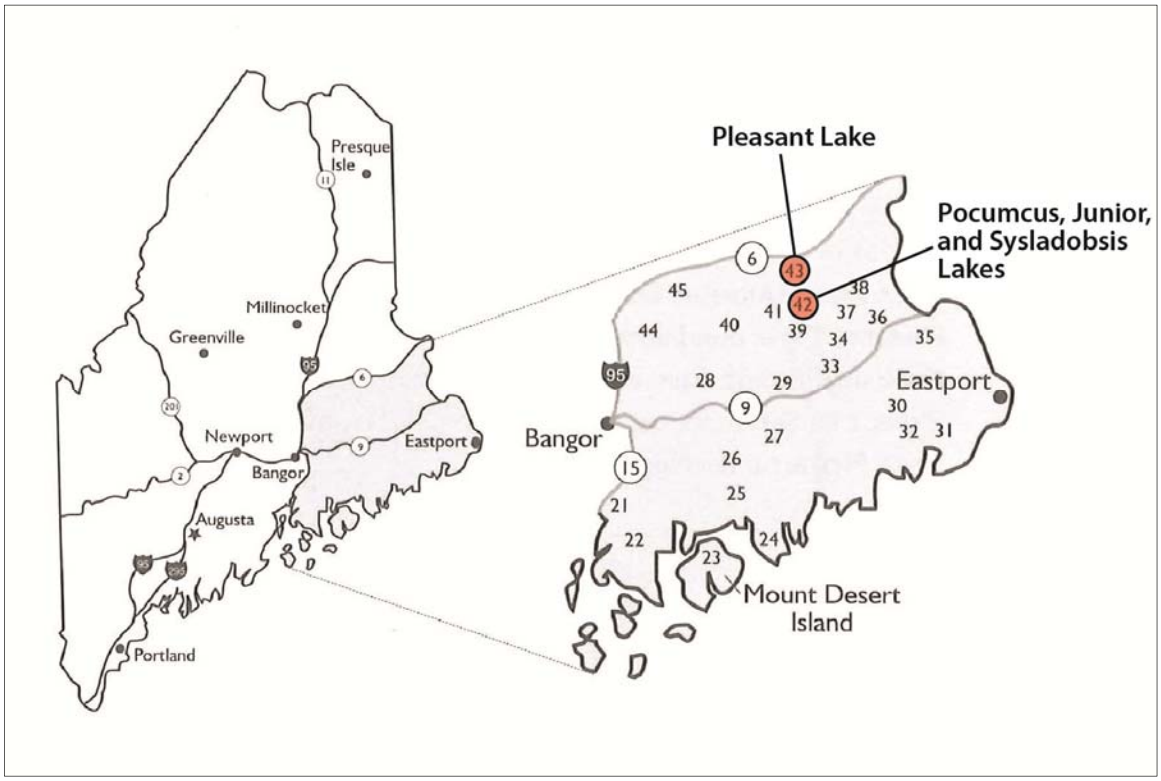
There are three other existing or as defined by the MDEP reasonably foreseeable wind projects in the region that should be considered when evaluating the potential for cumulative impacts. As shown on Exhibit 21: Other Wind Projects in the Region, the existing Stetson project is located to the north of the Project. The closest turbine is approximately 5.7 miles from Project turbines and 8.2 miles from the nearest scenic resource of state or national significance within the 8-mile Project viewshed, which is Pleasant Lake. Although a viewshed analysis was not conducted for Stetson, or the other existing and proposed wind projects in the region, field verification and 3D analysis demonstrates that the Stetson turbines will not be visible from Pleasant Lake, or indeed from any of the scenic resources of state or national significance within the Project 8-mile viewshed due to intervening vegetation and topography. The existing Rollins project is located to the west of the Project. The closest turbine is approximately 16 miles from the Project turbines and 10.7 miles from the nearest scenic resource of state or national significance within the 8-mile Project viewshed, which is Lombard Lake. Based on intervening vegetation and topography and verified through 3D analysis, none of the Rollins turbines will be visible from any scenic resource of state or national significance within the 8-mile Project viewshed. The Stetson, Rollins and Bowers projects are all First Wind projects and either connect (or in the case of Bowers would connect) to Line 56, a 38-mile generator lead constructed as part of the Stetson project, and which connects those projects to the electrical grid at the Keene Road substation.

The proposed Passadumkeag project is located to the south and west of the Project. It is not a First Wind project and would not utilize Line 56 to connect to the electrical grid. The closest Passadumkeag turbine is located approximately 21.1 miles from the Project turbines and 13.2 miles from the nearest scenic resource of state or national significant within the 8-mile Project viewshed, which is Upper Sysladobsis Lake. Due to intervening vegetation and topography and verified through 3D analysis, none of the Passadumkeag turbines will be visible from any scenic resource of state or national significance within the 8-mile Project viewshed.

Because none of the existing or proposed turbines associated with other wind projects in the region will be visible from scenic resources of state or national significance within the 8-mile Project viewshed, there will be no cumulative impacts.

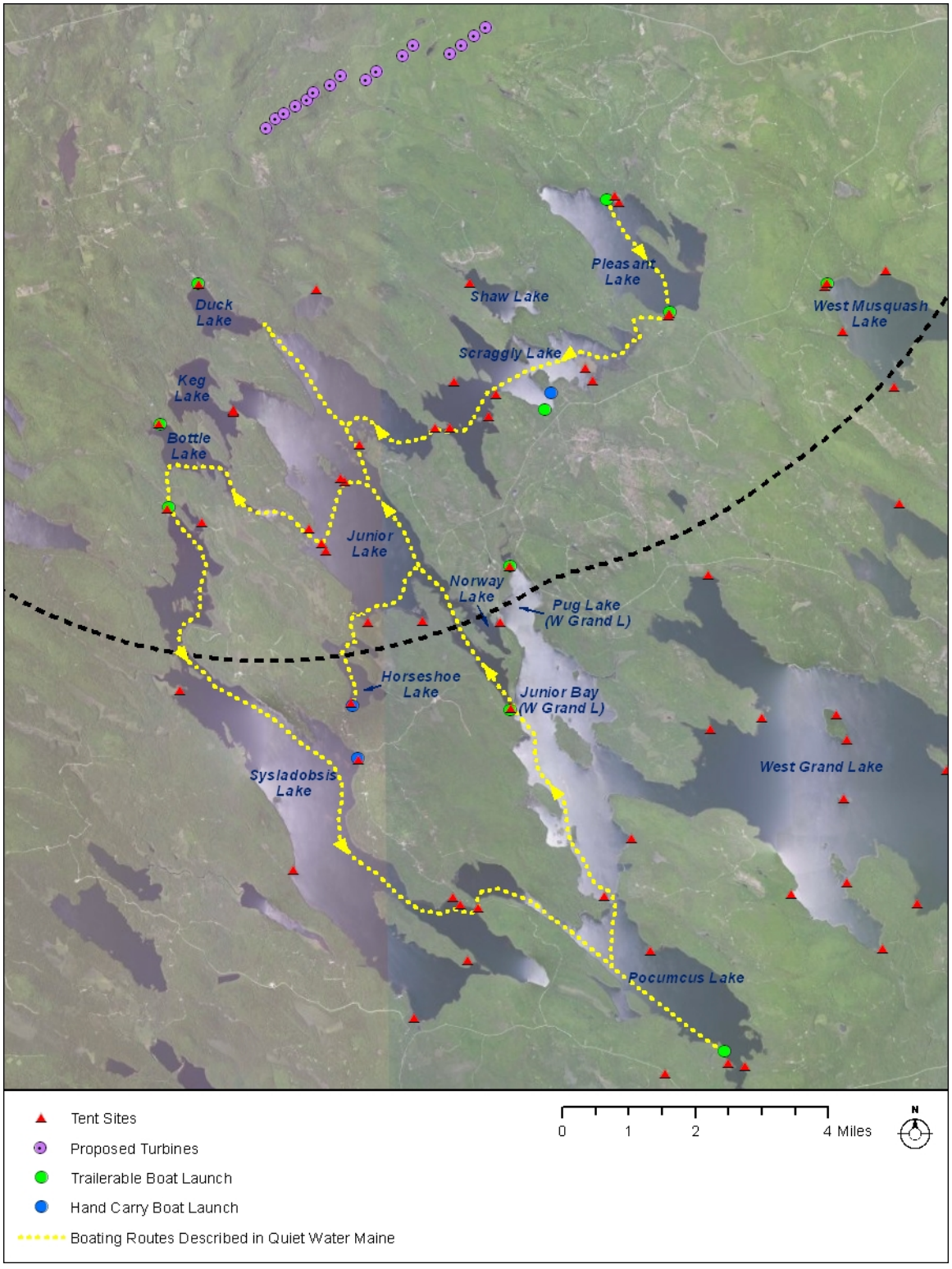
4.7 Continuous Visibility

The *Quiet Water Maine Canoe & Kayak Guide, 2nd Edition* describes 25 different paddling routes in the Downeast region. Two routes pass through part of the 8-mile study area (routes 42 and 43, highlighted in the map below).



Source: Quiet Water Guide, p. 61

Specifically, the authors describe a loop trip through Pocumcus, Junior, and Sysladobsis Lakes, and a common one-way trip beginning from the Maine Wilderness Camps on Pleasant Lake (see map below).



The Pocumcus, Junior, and Sylsladobsis paddle is described as one of the best extended quiet-water loop trips. It begins at the southern end of Pocumcus Lake, at the Elsemore Landing

campground and boat launch, over 15 miles away from the nearest turbine. If following this route, paddlers would travel northwest through Pocumcus Lake and Junior Bay, heading closer to the proposed turbines but still outside of the 8-mile study area. Paddlers would eventually enter the study area while traveling along Junior Stream, which leads from Junior Bay into Junior Lake.

Out of the entire suggested route, Junior Lake would have the greatest visibility of the project, with up to 10 turbines visible within 8 miles along the western side, and another three visible that are located beyond 8 miles At this end of the lake, the closest visible turbines would be 6 to 7 miles away. If paddlers headed to the northern end of the lake, near the stream connecting it to Duck Lake, the nearest visible turbine would still be over 3 miles away, and fewer turbines would be visible. Along much of the northeastern shores of Junior Lake, the turbines would be fully obscured from view by the adjacent forested hillsides. Within the center of the lake, the Big Islands would likely be the primary focus of view and interest. The authors described Junior Lake as having the roughest water along the route, especially towards the middle of the lake where waves reached up to two feet high. Paddlers in these conditions would be unlikely to focus their gaze on the turbines in the distance because of the more pressing concern of navigating choppy waters.

Although the authors describe three potential detours branching off of Junior Lake, of which two could take boaters closer to the proposed turbines—northeast into Scraggly Lake or northwest to Duck Lake—the primary route heads farther west into Bottle Lake. The turbines would not be visible along Bottle Lake Stream, but some turbines could come into view on the right as the stream opens up into Bottle Lake. The authors describe Bottle Lake, as "the kind of place we prefer to paddle through as quickly as possible" because of "heavy development." Thus, it is unlikely that paddlers would linger at the lake or be offended by the view of turbines in the distance beyond the heavily developed shores.

After Bottle Lake, the route heads south, turning away from the turbines via a portage into Sysladobsis Lake. Although there is some turbine visibility from the northern part of Sysladobsis Lake, the turbines would be located behind paddlers following the suggested route. Continuing into the main part of Sysladobsis, paddlers would leave the 8-mile study area. At the far southeast end of Sysladobsis Lake, paddlers would portage around a dam back into Pocumcus Lake, and then finally return to Elsemore Landing.

The second route described in the *Quiet Water Guide* travels through Pleasant and Scraggly Lakes. This route is less specific than the first, as the authors in fact explored these lakes as a detour on the Pocumcus, Junior, and Sysladobsis Lakes loop trip. However, they note that a common trip through Pleasant and Scraggly Lakes is one-way, beginning at the Maine Wilderness Camps on the northern shore of Pleasant Lake. Beginning at Maine Wilderness Camps, paddlers would head primarily southeast towards the portage into Scraggly Lake, and thus would be facing away from the proposed turbines. Continuing southwest on Scraggly Lake,

the proposed turbines would be visible five to six miles away on the right. Visibility would be limited on the northwestern side of the lake, but up to 16 turbines could be visible from parts of the southeastern shores of the lake. However, because paddlers would likely turn frequently as they wind their way along Scraggly Lake's meandering shorelines, the turbines would come in and out of view even in these areas of greater visibility. Beyond Scraggly Lake, the authors note that paddlers may continue on to either Pocumcus Lake or West Grand Lake, which are both outside of the 8-mile study area.

When these *Quiet Water Guide* boating routes are considered in the context of turbine visibility and the actual experience of paddling, it is unlikely that turbine visibility will significantly detract from paddlers' enjoyment of the lakes (see also *Sheffield Case Study – A Paddlers Experience* in the text box that follows, and Exhibit 22). For the majority of these routes, paddlers would be either outside of the 8-mile study area or facing away from the turbines, or hills and trees may obscure views of the turbines. Even when turbines would come into view, paddlers would often be more focused on immediate water conditions, the action of paddling and shoreline scenery, instead of focusing on turbines on the distant hillsides. Certainly the turbines would draw the viewer's eye at times, which could bother some paddlers while enhancing the experience for others. Alex Wilson, co-author of the AMC *Quiet Water Guide*, was contacted to ascertain his opinion on the prospect of encountering a wind energy project while paddling on one of the project lakes. In an email dated 10-29-10, Mr. Wilson says "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 2 or 3 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…for me ridgetop windfarms are not incompatible with a wilderness experience."

Finally, there was little evidence of paddlers using these lakes during the boat count and intercept surveys described in the Bowers Wind Project User Surveys (Kleinshmidt 2012). During the July, 2011 boat counts at Junior Stream, 82% of the boats were motor boats, 0% were kayaks, and 15% were canoes. During the 2012 boat counts at Junior Stream, 82% of the boats were motor boats, 3% were kayaks, and 6% were canoes. See Table 2 of Kleinschmidt 2012 Report. Similar results occurred during the intercept surveys on Pleasant, Scraggly and Junior lakes, where 123 boats were observed and almost all were motor boats. Of those boats that were intercepted for interviewing, 94% were motor boats, 3% percent were canoes and no kayaks. See Table 4 of Kleinschmidt 2012 Report. As a result, there is no evidence of significant use of the Project lakes for paddling.

SHEFFIELD CASE STUDY – A PADDLERS EXPERIENCE

Due to certain similarities compared to the Bowers Wind Project, the Sheffield Wind Project in northeast Vermont serves as a relevant case study with regard to the effect of a wind energy project on recreational use of scenic resources. In particular, there are similarities between Vermont's Crystal Lake and Pleasant Lake, one of the scenic resources identified in the Bowers

assessment (see Exhibit 22: Sheffield Case Study). At Pleasant Lake, as is the case at Crystal Lake, the turbines would be visible in the hills across the lake from the boat launch/picnic area. From the Crystal Lake State Park beach, all 16 turbines of Sheffield Wind are visible. The nearest turbine is 5.6 miles away from the beach, and 3.2 miles from the closest point on the lake. From the Pleasant Lake boat launch, 14 of 16 of the Bowers Wind Project turbines would be visible. The nearest proposed turbine would be 5.1 miles from the boat launch, and 2.4 miles from the closest point on the lake.

Crystal Lake receives a moderate to high amount of use, with typical users being beach goers, picnickers and paddlers (canoes and kayaks), with some motorboating and fishing. While there is some moderate development along the eastern shore of the lake, the western shore is mostly undeveloped except for a small cluster of modest historic cabins that are set back into the woods.

On September 10, 2012, David Raphael and another staff member from LandWorks paddled kayaks on Crystal Lake from the beach at the State Park towards the turbines at the opposite end of the lake to gain first-hand experience of paddling with turbines in full view. This experience yielded several distinct conclusions with regard to the effect and visibility of turbines on the paddler's experience:

1. The atmospheric conditions directly affect the "visual presence" of the turbines in the viewer's eyes. On a late summer's day with clouds and sun, and a backdrop of clouds, turbine visibility and prominence receded to render the project an almost negligible visual presence. At other times the silhouettes of the turbines cast in shadow were readily visible against a light cloudy background.
2. From these distances, the slender nature of the both the towers and the rotors minimized their visual presence and prominence. Although a turbine may be quite tall, the form does not have a feeling of great mass.
3. The requirements and experience of paddling diminished the visual presence of the project in view. As conditions on the lake became windier, there was an increased need to focus on the paddling and the conditions in the immediate surroundings. In addition, paddlers tend to follow the shoreline for protection from longer fetches and to observe shoreline interest.
4. When approaching the near shore, the visual presence of the turbines did not noticeably increase. Even when two miles closer, the increased size of the turbines was difficult to discern and topography began to limit project visibility. There was some sharpening of form and detail at the closer distance.

4.6 Overall Conclusion

These lakes are indeed part of the landscape character of the region but are not unique resources that stand out as one-of-a-kind scenic environments.

The lakes and the experience they provide will not be substantially 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, the fishery will

not be affected, and it will still attract the avid and recreational fishing enthusiast. This is not to discount the fact that there will be visual impacts, and that in some instances there will be significant visibility that changes the view. However, there is a growing body of evidence that for many people who recreate in Maine, the presence of wind turbines in the viewshed has no impact on their use and enjoyment of the resource and, in some instances, positively impacts their experience. Thus, the assumption that visibility of turbines negatively impacts recreational users is not always true. While some people would prefer not to look at turbines, many people are indifferent and others find them beautiful. This concept is reflected in the Wind Energy Act, which specifically states that visibility alone is not a basis for determining there is an unreasonable adverse impact; rather, the agency must evaluate the extent to which visibility results in an unreasonable adverse impact on scenic character or existing uses related to scenic character. That is a much more nuanced inquiry, and for the reasons set forth in the VIA and here, we do not believe that visibility of the Project will sufficiently impact the scenic character or use and enjoyment of the resource to warrant a conclusion of unreasonable adverse impact.

In summary, the Project area is not in a remote area where recreational users may have a heightened expectation of a pristine landscape. Instead, it is located proximate to existing infrastructure, including Line 56 that can accommodate the power from the Project, and in an area that the Legislature specifically identified as appropriate for wind power. The Project area is generally able to accommodate the presence of turbines without fundamentally changing the scenery or adversely impacting recreational uses of the lake resources. This is due in part to the following considerations:

- The lake resources and surrounding landscapes do not present unique and highly sensitive qualities that preclude the addition of an array of wind turbines within the viewshed.
- While scenic and valued for its recreational qualities, the region is a similar landscape to other nearby areas and lake-region landscapes elsewhere in Maine.
- The landscape does not have the prominent distinctions between landforms, such as a flat open field in combination with a steeply rising mountain, or have unique focal points and distinct, memorable profiles that are characteristic of iconic landscapes that are more sensitive to changes in the viewshed.

Additionally, the data cited, the surveys generated, the intercept surveys reviewed, interviews conducted, and field observations noted all indicate that wind power 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.”

5. Associated Facilities

The Project's associated facilities include access and crane-path roads, the express collector line, the substation, the operations and maintenance building ("O&M building"), and the permanent met tower. Although not specifically included in the definition, to be conservative we have assumed that the cleared areas around individual turbine foundations, including those cleared during construction and subsequently allowed to revegetate, are also associated facilities.[36]

5.1 Regulatory Purview

Visual impacts of associated facilities are reviewed under the standard that applies to the generating facilities (the Wind Energy Act visual standard), unless the primary siting authority concludes that application of the Wind Energy Act visual standard "may result in unreasonable adverse effects due to the scope, scale, location or other characteristics of the associated facilities." 35-A MRSA § 3452.2. For the reasons discussed below, the Project's associated facilities are consistent with similar facilities located throughout the rural landscape in Maine, and none of the facilities are located within or are highly visible from scenic resources of state or national significance. Additionally, the associated facilities do not adversely impact local scenic resources that would not be reviewed under the Wind Energy Act visual standard. Therefore this VIA evaluates their visibility pursuant to 35-A MRSA § 3452.1. In the event the review agency determines that the associated facilities should be reviewed pursuant to standards for developments other than wind energy developments, we will supplement this VIA as necessary.

5.2 Methodology

The same methodology used for the generating facilities was used for the associated facilities, which includes visual and cartographic analyses, document and statutory research, and site inventory and photographic review. In particular, we prepared viewshed analysis maps for the express collector, substation and O&M facilities, and MET towers (see Exhibits 6, 7, and 8), analyzed potential visibility of access and crane-path roads and clearing using 3D Analyst, developed a photographic inventory (see Exhibit 5), and reviewed field inventory notes.

5.3 Effect of Distance on Visibility

In our analysis of associated facilities, we have employed an eight-mile viewshed from all associated facility components in order to remain consistent with consideration of visibility of the

[36] "Associated facilities" are defined in the Wind Energy Act as "elements of a wind energy development other than its generating facilities that are necessary to the proper operation and maintenance of the wind energy development, including but not limited to buildings, access roads, generator lead lines and substations. 35-A M.R.S.A. § 3451(1). "Generating facilities" are defined to include "wind turbines and towers and transmission lines, not including generator lead lines, that are immediately associated with the wind turbines." 35-A M.R.S.A. § 3451(5).

generating facilities. However, it should be noted that a 3-mile viewshed is usually more appropriate for associated facilities. Many VIA's of transmission lines and associated facilities do not, for example, even employ viewshed mapping and instead focus on impacts adjacent to or near to such facilities. In our analysis of associated facilities, we have gone beyond what is typically done and extended our assessment to include impacts beyond the immediate environs.

5.4 Visibility Analysis

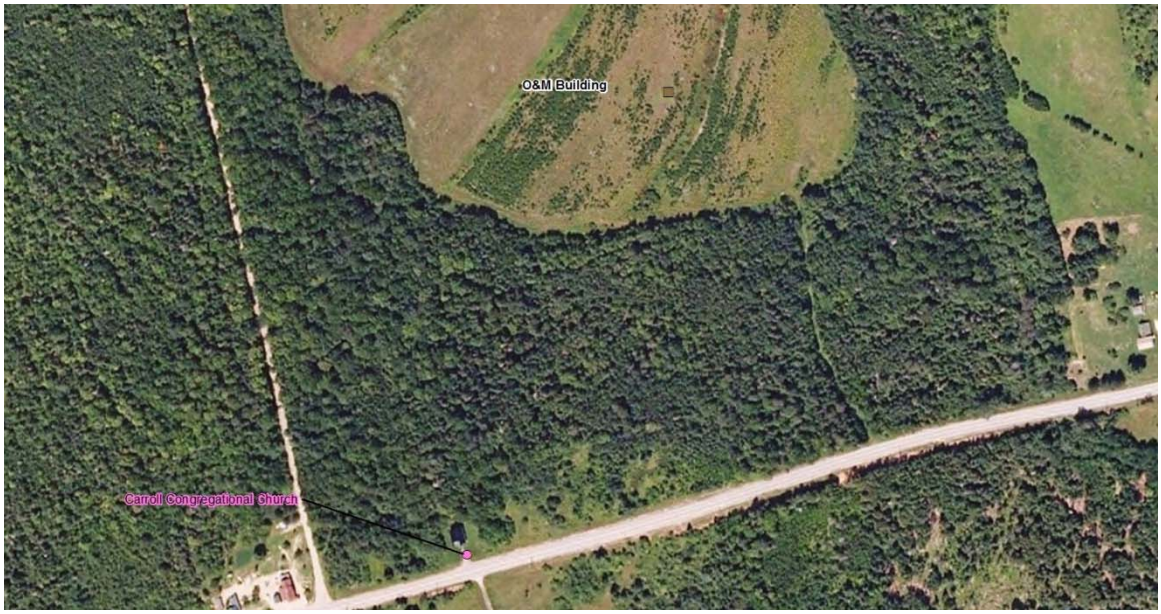
Although this VIA evaluates the visual impacts of the associated facilities under the Wind Energy Act visual standard, for background and context, we have included a table of local viewpoints (including road crossings and resources that do not constitute resources of "state or national significance"), and identified whether the associated facilities are visible from such viewpoints. These local viewpoints were chosen due to their popularity as a recreational or cultural resource, and evaluating visibility (or the lack thereof) of the associated facilities on such resources demonstrates in part the appropriateness of utilizing the Wind Energy Act standard in this case. We have not, however, provided a more detailed analysis of visibility on local viewpoints, but will do so if the agency determines that the visual impact standard for developments other than wind energy developments applies to associated facilities.

5.4.1 Access Roads, Turbine Pad Clearing, Crane Paths

The primary access road for the Project, beginning at Route 6, is 24 feet in width. Between turbines, portions of the path will be 35 feet in width to accommodate the crane during construction. Many of the proposed turbine sites and portions of the Project area have been or are being used for commercial forestry operations, and the Project area contains logging roads that will be upgraded and used, where appropriate, to minimize new construction, clearing and wetland impacts. Roads are sited to work with the existing topography and therefore minimize cut and fill. In most instances, existing mature trees will screen views of the access roads. All of the visual simulations presented in this report account for access roads and resultant clearing. Access roads and resultant clearing will have limited visibility from some scenic resources of state or national significance. See Table 3.

5.4.2 O&M Building

The O&M building is a single story building constructed of metal or other suitable material and will be painted a neutral color to blend with its surroundings. It will be located just north of Route 6 in an area near a former automotive building and used vehicle storage area. The building is a typical one-story commercial structure and is similar in size to many other buildings present in the landscape. It is not located in an area of unique scenic value and it has an extensive wooded buffer on all sides that minimize any off-site visibility. As shown in the image below, there is at least 700 feet of vegetation between Route 6 and the proposed O&M building, which would block views from Route 6.



Attached as Exhibit 7 is a map depicting areas within eight miles of the O&M building. There are nine scenic resources of state or national significance located within eight miles of the building. The O&M building, however, will not be visible from any resource of state or national significance. See Table 3.

Additionally, as reflected in Table 4, the O&M building will not be visible from any other locally identified scenic resources.

5.4.3 Express Collector and Substation

The express collector is an approximately 5.2 mile 34.5 kV electrical line that will deliver electricity from the turbines to the proposed substation located adjacent to the existing Line 56, which is a 115 kV generator lead that was constructed as part of the Stetson Wind Project. Generating facilities include "transmission lines" that are "immediately associated with the wind turbines." To be conservative, we have assumed that the express collector is an associated facility and not a generating facility. Note that because the mountaintop collector system is part of the generating facilities, it has already been addressed with the turbine visibility and is reflected in the visual simulations (Exhibits 11-20).

The express collector is a 34.5 kV line that is typical of distribution lines that are present throughout the rural landscape in Maine (see photograph below). This line is only slightly over 5 miles in length, and has limited visibility as well, due in part to 1) the overall height of the structures at 80 feet, 2) its placement in a wooded landscape, and 3) the topography of the area. Exhibit 6 identifies areas within eight miles of the express collector. There are twelve resources of state or national significance located within eight miles of the express collector. The express collector has been located on the north side of the ridgeline to minimize potential visibility on the

lakes, which are all located to the south of the Project. As a result, the collector and resultant clearing will not be visible from any resources of state or national significance. See Table 3. Although Exhibit 6 indicates that there may be visibility of the express collector from some portions of Pleasant Lake, additional 3D analysis has confirmed that due to topography, distance, and vegetation, it will not be seen.

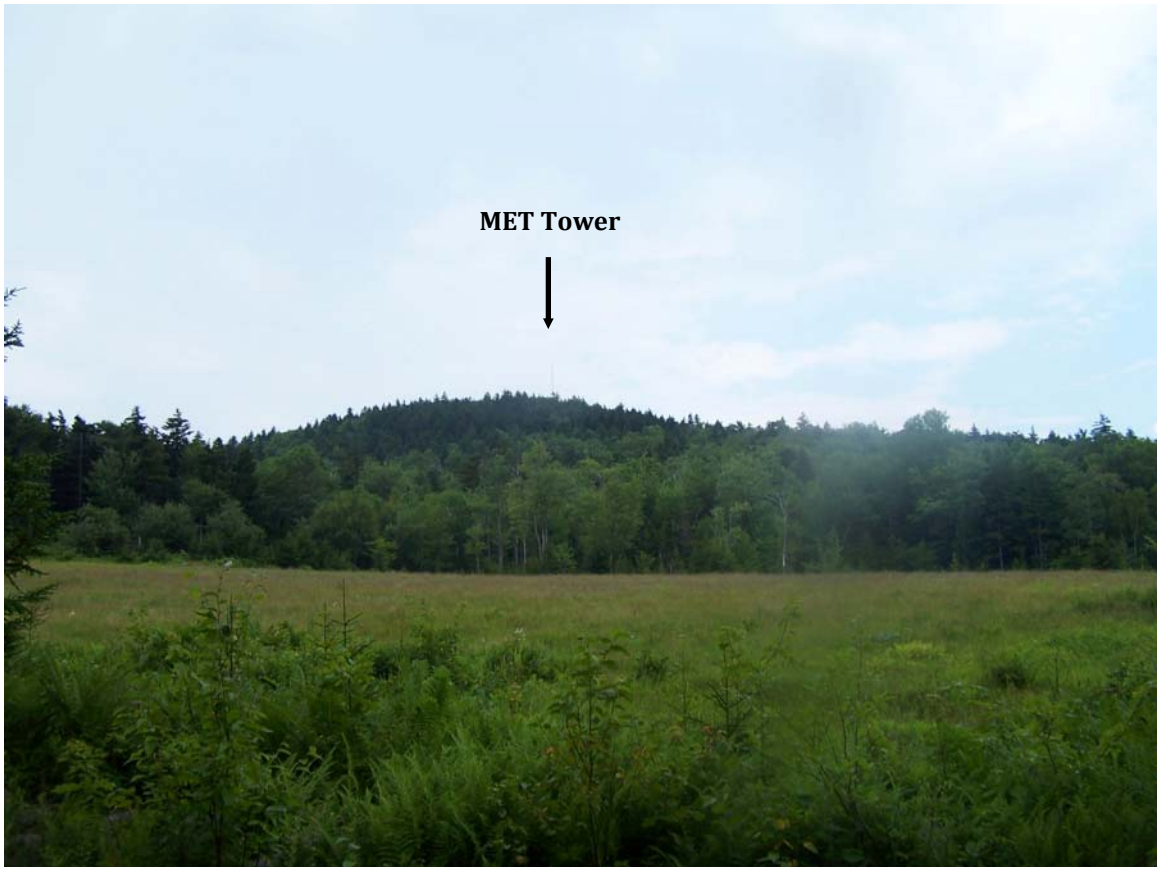
The view of this electrical line will be similar to visibility of other distribution and transmission lines present throughout the rural Maine landscape, including the existing electrical line along Route 6. The photo below illustrates a typical 34.5 kV line

The photograph that follows shows that, at 3.4 miles, an existing corridor clearing of 190 feet for a transmission line ROW is hardly perceptible, and the existing structure in the ROW is barely, if it all, visible to the naked eye. This compares to the proposed corridor clearing for this project, which is generally 100 feet wide (150 feet at corners), nearly half of the corridor shown in the picture. Additionally, as reflected in Table 4 below, there will be minimal visibility of the express collector from any local scenic resources.

The substation associated with the express collector is located adjacent to the existing 115 kV transmission line and due to its location will have limited off-site visibility (see Exhibit 7). The substation is typical in size to many located throughout Maine, and it is not located in an area of high scenic value. It will not be visible from any resources of state or national significance. See Table 3. Only the highest of the substation's structural elements would be visible from off site, and there will not be any visibility of even these elements from local public viewpoints. See Table 4.

5.4.4 Permanent Met Tower

The Project will include only a single permanent meteorological (met) tower. It will be up to 90-meters (295 feet) high and approximately 18" wide. The photograph that follows shows visibility of a meteorological tower from a viewpoint one-half mile away. The structure is extremely difficult to discern.



The Project meteorological tower will be located just opposite of T16 and therefore is within the 8-mile figure used for the turbines. Compared to the turbines themselves, the visual impact from the met tower will be negligible and not add substantive additional impacts related to the overall visibility of the Project. This is further reinforced by the fact that the tower, based on our own extensive field analyses, is typically very difficult to pick out beyond a mile or so in distance from its location - it has a very narrow profile and generally is much less visible than even cell towers. These types of towers tend to be visible only when reflecting light or visible against a contrasting backdrop of light colored sky. Although some of the lakes in the region will have potential visibility (see Exhibit 8), the distance from the tower to the closest scenic resource of state or national significance is over 3 miles (Pleasant Lake), and most resources are well beyond that distance, the tower will be almost inconsequential, if even visible with the naked eye. See Table 3. The effect of night lighting of the meteorological tower is discussed in Section 4.4 of this report.

Additionally, as reflected in Table 4 below, there will be limited visibility from local public viewpoints that are not scenic resources of state or national significance.

Table 3. 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 Tower Visible	Express Collector Visible
Duck Lake	Approx. 2.5 miles (turbine pad/ clearing)	No	No	Yes (limited)	Yes	No
Junior Lake	Approx. 3.03 miles (turbine pad/ clearing)	N/A	No	Yes (limited)	Yes	No
Pleasant Lake	Approx. 2.38 miles (turbine pad/clearing)	No	No	Yes (limited)	Yes	No
Shaw Lake	Approx. 3.2 miles (access road)	N/A	No	No	Yes	No
Bottle Lake	Approx. 4.7 miles (turbine pad/clearing)	N/A	No	Yes (limited)	No	No
Keg Lake	Approx. 3.56 miles (turbine pad/clearing)	N/A	No	Yes (limited)	Yes	No
Scraggly Lake	Approx. 3.92 miles (turbine pad/clearing)	N/A	No	Yes (limited)	Yes	No
Sysladobsis Lake	Approx. 5.83 miles (turbine pad/clearing)	N/A	N/A	Yes (limited)	N/A	No
Horseshoe Lake	Approx. 7.77 miles (turbine pad/clearing)	N/A	N/A	N/A	N/A	N/A
West Musquash Lake	Approx. 6.52 miles (turbine pad/clearing)	N/A	N/A	N/A	No	N/A
Norway Lake	Approx. 7.87 miles (turbine	N/A	N/A	N/A	N/A	N/A

Great Ponds	Nearest Associated Facility	Substation Visible	O&M Visible	Access Roads/Crane Path Visible	MET Tower Visible	Express Collector Visible
	pad/clearing)					
Upper Sysladobsis Lake	Approx. 6.62 miles (turbine pad/clearing)	N/A	N/A	No	N/A	No
Lombard Lake	Approx. 5.29 miles (turbine pad/clearing)	N/A	No	No	N/A	No
Pug Lake (West Grand Lake)	Approx. 7.38 miles (turbine pad/clearing)	N/A	N/A	No	N/A	No

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	Approx. 5.25 miles (turbine pad/clearing)	No	No	N/A	N/A	No

N/A= Not Applicable because the associated facility is located more than 8 miles away from the resource.

Table 4. Visibility of Associated Facilities from Local Public Viewpoints

Locations of Local Public Viewpoints	Nearest Associated Facility	Substation Visible	O&M Visible	Access Roads/Crane Path Visible	MET Tower Visible	Express Collector Visible
Carroll Church	0.25 miles (O&M)	No	No	Yes (limited)	Yes	No
Route 6	0.0 miles (Access Road)	No	No	Yes (limited)	Yes	Yes (limited)
Baskahegan Stream Put-In	0.85 miles (Access Road)	No	No	Yes (limited)	Yes	Yes
Lowell Lake	2.8 miles (turbine-pad clearing)	No	No	No	No	No

Locations of Local Public Viewpoints	Nearest Associated Facility	Substation Visible	O&M Visible	Access Roads/Crane Path Visible	MET Tower Visible	Express Collector Visible
Mill Privilege Lake	2.48 miles (turbine-pad/clearing)	No	No	No	No	No
Trout Lake	3.93 miles (turbine pad/clearing	N/A	No	No	No	No
Maine Public Reserved Land (between Duck and Keg)	2.72 miles (turbine pad/ clearing)	No	No	Yes (limited)	Yes (limited)	No
Baskahegan Lake	7.23 miles (turbine pad/clearing)	N/A	N/A	Yes (limited)	Yes (limited)	N/A
East Musquash Lake	6.83 miles (turbine pad/clearing)	N/A	N/A	Yes (limited)	Yes	N/A
Springfield Fairgrounds	5.1 miles (turbine pad/clearing)	No	No	No	N/A	No
Almanac Mountain	3.95 miles (turbine pad/clearing)	N/A	No	Yes (limited)	No	No

N/A= Not Applicable because the associated facility is located more than 8 miles away from the resource.

5.5 Overall Conclusion

LandWorks undertook a complete evaluation of the associated facilities of the Bowers Wind Project and evaluated the visual impacts of these facilities pursuant to the visual standard set forth in Maine's Wind Energy Act. As noted above, this region of Maine represents a working landscape that is accustomed to modern land use and landscapes, evidenced in the network of logging roads, transmission corridors, transportation infrastructure, and other general development. There is active logging in the study area with new roads being created to support this activity on a routine basis. Throughout most of the study area, topography, forest cover, and roadside vegetation constrain or block views of the Project's associated facilities, limiting any visual impact. There is no visibility of the substation, O&M building or express collector, only limited visibility of the access roads and crane paths, and insignificant visibility of the met tower from any resources of state or national significance. Further, as shown on Table 4, these facilities are not significantly visible from any local resources.