

VISUAL IMPACTS PART I

Part I of the Visual Impacts deliberation document includes:

- A. The applicable review criteria; (p. 1)
- B. List of key evidence; (p. 4)
- C. Listing of the visible components of the facility; (p. 5)
- D. Inventory of scenic resources (SRSNS); rating systems and summary evaluations by LW and Palmer (p. 6)
- E. User survey information and select comments; (p. 19)
- F. Connectivity of the SRSNS's; (p. 21)
- G. Project lighting information; (p. 21)
- H. Conclusions by LW and Palmer and select comments; (p. 22)
- I. Analysis and key questions for the Commission to answer in order to guide staff in writing the decision. (p. 26)

Part II contains the detailed evaluation by both LandWorks and Palmer for each of the 8 lakes which are SRSNS¹ AND have views of the project according to LandWorks. There are 7 other SRSNS which do not have views of the project.

A. REVIEW CRITERIA

Selected sections of statute follow. Portions of the statute that are not relevant have been deleted; therefore some numbering will not be continuous. The entire Wind Energy Act (WEA) is available in the appendix of this deliberation notebook.

12 MRSA §685-B

*"4. **Criteria for approval** In approving applications submitted to it pursuant to this section, the commission may impose such reasonable terms and conditions as the commission may consider appropriate. In making a decision under this subsection regarding an application for a community-based offshore wind energy project, the commission may not consider whether the project meets the specific criteria designated in section 1862, subsection 2, paragraph A, subparagraph (6), divisions (a) to (d). This limitation is not intended to restrict the commission's review of related potential impacts of the project as determined by the commission.*

The commission may not approve an application, unless:

C. Adequate provision has been made for fitting the proposal harmoniously into the existing natural environment in order to ensure there will be no undue adverse effect on existing uses, scenic character, and natural and historic resources in the area likely to be affected by the proposal....

In making a determination under this paragraph regarding an expedited wind energy development, as defined in Title 35-A, section 3451, subsection 4, or a community-based offshore wind energy project, the commission shall consider the development's or project's effects on scenic character and existing uses related to scenic character in accordance with Title 35-A, section 3452;" (emphasis added)

¹ Sometimes referred to as "scenic lakes" herein.

35-A MRSA §3451. DEFINITIONS

"As used in this chapter, unless the context otherwise indicates, the following terms have the following meanings....."

5. Generating facilities. *"Generating facilities" means wind turbines and towers and transmission lines, not including generator lead lines, that are immediately associated with the wind turbines.*

9. 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; (emphasis added; Springfield Congregational Church for this project)

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; (emphasis added; 14 great ponds noted herein for this project)

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."

35-A MRSA § 3452. Determination of effect on scenic character and related existing uses

“1. Application of standard. In making findings regarding the effect of an expedited wind energy development on scenic character and existing uses related to scenic character pursuant to Title 12, section 685-B, subsection 4 or Title 38, section 484, subsection 3 or section 480-D, the primary siting authority shall determine, in the manner provided in subsection 3, whether the development significantly compromises views from a scenic resource of state or national significance such that the development has an **unreasonable adverse effect on the scenic character or existing uses related to scenic character of the scenic resource of state or national significance.** Except as otherwise provided in subsection 2, determination that a wind energy development fits harmoniously into the existing natural environment in terms of potential effects on scenic character and existing uses related to scenic character is not required for approval under either Title 12, section 685-B, subsection 4, paragraph C or Title 38, section 484, subsection 3.... (emphasis added)

3. Evaluation criteria. In making its determination pursuant to subsection 1, and in determining whether an applicant for an expedited wind energy development must provide a visual impact assessment in accordance with subsection 4, the primary siting authority shall consider:

- 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 expedited wind energy development's 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.

A finding by the primary siting authority that the development's generating facilities are a highly visible feature in the landscape is not a solely sufficient basis for determination that an expedited wind energy 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. In making its determination under subsection 1, the primary siting authority shall consider insignificant the effects of portions of the development's generating facilities located more than 8 miles, measured horizontally, from a scenic resource of state or national significance.”

B. LIST OF KEY EVIDENCE

- Development Application DP4889: [F2, 1_Nar..., p. 27 and Exh. 17]²
- LURC consultant Jim Palmer *Review of Bowers Wind Project Visual Impact Assessment* [F4, PalmerRevised...]
- Applicant Champlain Wind (CW) & consultants LandWorks (LW) and Portland Research Group (PRG) responses to Palmer [F5, LandWorksResp... and PRG_Resp...] and pre-filed testimony [F6, 7_CW_Raphael...]
- CW consultant Raphael's (LandWorks) PowerPoint [F18, Applicant, Landw...]
- Intervenor expert witnesses' pre-filed testimony:
 - Kevin Gurall, President, PPDW [F7, PPDW_1...]
 - Gary Campbell [F7, PPDW_GaryCampbell1...]
 - Michael Lawrence VIA [F7, PPDW_MichaelLawrence1....]
 - Andrew Buckman [F7, PPDW_Andrew....]
 - Charles Driza [F7, PPDW_Charles...]
 - Jerold Hamza [F7, PPDW_JeroldHamza...]
 - Lindsay Wheaton [F7, PPDW_LindsayWheaton...]
 - Louis Cataldo [F7, PPDW_LouisCataldo...]
 - Steve Norris [F7, PPDW_SteveNorris...]
 - David Tobey [F7, DC4_...]
 - Grand Lake Stream Guides Association [F7, DC5_...]
 - Dale Tobey, Maine Professional Guides Association [F7, DC6_...]
- CW consultants and witnesses pre-filed rebuttal: Raphael (LandWorks) [F8, 5_CW_...], Lockwood (PRG) [F8, 6_CW_...] and Selser [F8, 7_CW_...]
- Intervenor PPDW pre-filed rebuttal [F8, 8_PPDW_...]
- Public testimony of NRCM [F11, p. 10-30],
- Examination of witnesses at hearing [F15 and F17]
- CW post-hearing rebuttal regarding night time lighting [F19, Applicant, 14_CW...]
- CW consultant Raphael (LandWorks) post-hearing rebuttal regarding connectivity of scenic resources [F19, Applicant, 18_CW_...]; user surveys June and July 2011 [F19, Applicant, CW_Exhibit D-4.. and CW_Exhibit D-5..]; sporting camp use of lakes [F19, Applicant, CW_Exhibit D-6..]
- LURC scenic consultant Palmer peer review of Lawrence VIA [F7, PPDW_MichaelLawrence2Palmer....] and responses to post-hearing filings [F18, Agen., Palmer..]
- Intervenor PPDW post-hearing rebuttal [F19, Intervenor, PPDW_Rebut....]
- CW response to staff questions (P.O. #9) [F20, 2_CW_...] and response regarding connectivity impacts [F20, CW_response 9th PO_...]
- Applicant CW Post-hearing Brief [F25, CW_Post_Hearing...]
- Intervenor PPDW Post-hearing Brief [F25, pddlw_post hearing
- Procedural Order #12 re list of lakes [F9, 12_Bowers....] and response to PO #12 [F26]

² Reference in bold refers to document in particular folder on FTP site or enclosed CD.

C. VISIBLE FACILITY COMPONENTS

According to Exhibit 17 of the application, the Project will include (mostly verbatim):

- **Turbines:** The project facility will have up to 27 wind turbines. For purposes of the Visual Impact Assessment, the tallest turbine model was incorporated using the Siemens 2.3 MW turbine model, which is 262'-6" (80 m) to the center of the hub, and a total of 428 feet (130.5 m) to the tip of a fully extended blade. Up to nineteen of the turbines will be located in Carroll Plantation, while the remaining eight will be in Kossuth Township. The turbines will span from Bowers Mountain across to Dill Hill. Following construction, all but a typical 0.43 acre at each turbine pad will be revegetated by both seeding and natural revegetation.
- **Meteorological Towers:** The project facility will have up to four 80-meters (312 feet) steel lattice design permanent meteorological (met) towers with There will be up to 4 permanent meteorological towers. The permanent towers will be 80-meters high (263 feet) by approximately 18" wide. Due to their narrow profile and light color, their visibility is relatively minimal.
- **Electrical Collection System / Substation:** Power from the turbines will be collected in an overhead 34.5-kV 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 approximately 80 feet of clearing in areas between turbine locations. The poles for the "express" collector will be north of the ridgeline and primarily north of Route 6 and will not be visible from scenic resources of state or national significance.
- **Operations and Maintenance (O&M) Facility:** An O&M building of approximately 7,000 square feet is planned for a location north of Route 6. This single-story building will provide combined warehouse and office space and will be painted a neutral color to blend with its surroundings. The O&M building will be north of Route 6 and will not be visible from scenic resources of state or national significance.
- **Roads:** The access road for the Project, beginning at Route 6, is 20 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.
- **Project Lighting:** The wind turbines 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 8), approximately 50% of the turbines will be lit at night. According to the governing FAA standard⁶, the lights typically used 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. Due to the limited vertical beam spread, the visual impact from these lights is reduced - typically viewers do not see these lights directly and they do not produce glare as they are designed to be visible primarily to aircraft and not to viewers on the ground. In addition, the visibility of these lights will be mitigated by the distance of the lights from potential viewing related to any historic or scenic resources that are identified elsewhere in this assessment. The applicant has also made a commitment to evaluate the feasibility of using a warning system that permits the turbine

lights to remain off unless an aircraft is operating in the vicinity, should such technology be approved by the FAA. (Exhibit 17 of application and applicant's post-hearing brief)

D. INVENTORY OF SCENIC RESOURCES OF STATE OR NATIONAL SIGNIFICANCE:

According to the application materials, and corrections based on public comment and staff research, there are 15 Scenic Resources of State or National Significance (SRSNS) within 8 miles of the proposed generating facilities:

- 14 Great Ponds listed in the Maine Wildlands Lakes Assessment
- 1 National Historic Register Site

Of those 15 SRSNS, 8 would have views of the turbines:

- Pleasant Lake in T6 R1 NBPP
- Shaw Lake in T6 R1 NBPP
- Scraggley Lake in T6 R1 NBPP
- Junior Lake in T5 R1 NBPP
- Keg Lake in Lakeville
- Duck Lake in Lakeville
- Bottle Lake in Lakeville
- Sysladobsis Lake in Lakeville

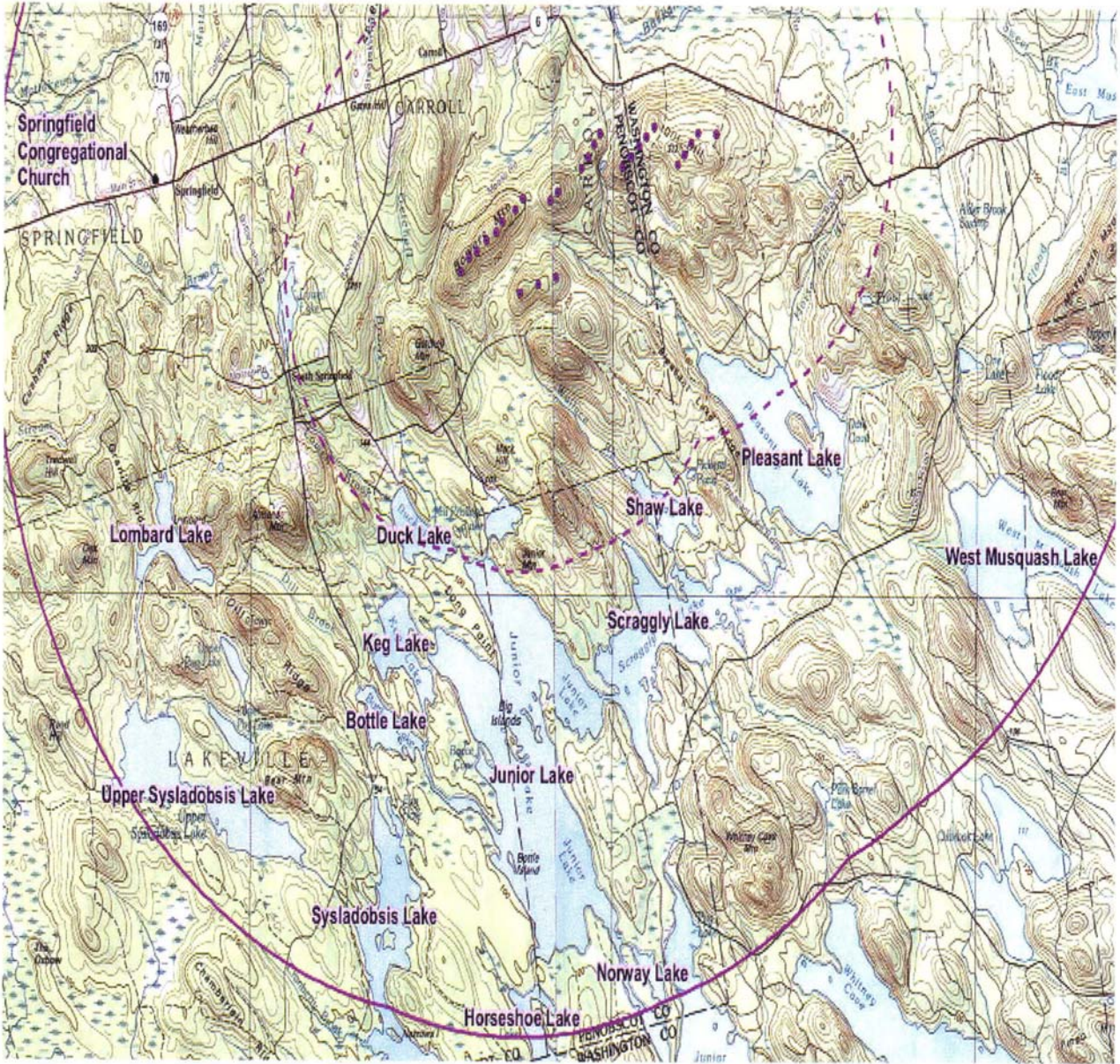
According to the application, the remaining 7 SRSNS would not have any views of the turbines once the modeled vegetation is taken into account.

- Horseshoe Lake in Lakeville
- Lombard Lake in Lakeville
- West Musquash Lake in T6 R1 NBPP
- Norway Lake in T5 R1 NBPP
- Upper Sysladobsis Lake in Lakeville
- Pug Lake (part of West Grand Lake) in Pukakon Township
- Springfield Congregational Church in Springfield (National Register of Historic Places).

1. Resources that are not considered (e.g. tribal lands)

There has been public correspondence about the significance of visual impacts on resources that are not considered under current law, most notably certain tribal lands, however no evidence was submitted that might indicate they are included under any of the resource categories listed for such consideration under the Wind Energy Act. The absence of any discussion of these areas in this deliberation document is not intended to disregard the importance of these areas, but rather is because under the law, any impacts to these viewpoints can not be considered as a factor in the Commission's decision.

Resources of Significance Within 8-Miles



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2. CW's scenic consultant's, LandWorks, rating system (from Application, Exhibit 17):

“These criteria are outlined below and inform our findings and conclusions regarding the significance of Project visibility on these resources.

1. Significance of the Resource

The Wind Energy Act requires the review agency to consider the significance of the potentially affected resource, the existing character of the surrounding area, and the expectations of the typical viewer. 35-A M.R.S.A. § 3452(3)(A-C). The following considerations provide information that assists the review agency in doing so.

Significance/uniqueness. This category assesses the overall significance of the resource based on its unique, distinctive or exceptional character. If a resource is a one of kind scenic environment, with a corresponding opportunity for the user/viewer to experience a unique experience that cannot be readily experienced elsewhere, then it will rank higher for significance and uniqueness. Lakes with highly scenic attributes and unique scenic traits are more sensitive to change and development.

Character. This category includes information on the overall landscape character of the resource and its environs. Character includes the physical geography, the visual qualities of the area as well as the land uses present in the landscape. It is a description and understanding of the existing conditions and landscape type, including the development that is present or likely to continue. The character of the surrounding area helps to inform our understanding of the scenic qualities and sensitivity of the landscape to change. The physical geography also affects the ability of the landscape to “visually absorb” or accommodate the development without significantly altering the quality or character of the resource.

Level of Use. This category includes information on the number and types of users of the resource. As discussed in Section C, quantitative data is limited, but there are a number of studies that coupled with our more informal mean of collecting information have informed our conclusions on the level and types of use of the resources in question. A cautionary note is necessary, however, in evaluating the significance of the level of use of a resource. For example, it might be assumed that high use is an indication of high scenic value (people are more attracted to it than other similar resources) and that an adverse visual impact on such a resource is more significant because affects a higher number of individuals. That is not always the case. For example, resources that afford easy access may be located in more developed areas and the users may not expect an undeveloped landscape. Similarly, although a scenic resource that receives low public use might suggest that an adverse impact is less significant because few people will be affected, that is also not necessarily the case. [emphasis added] For example, there are some resources that receive low public use because they are in remote locations that are difficult to access. Some of those resources have high scenic value in part due to their remote location and therefore it cannot be assumed that low use necessarily means that an adverse impact is less significant. Instead, the significance of the resource and the basis for the relative use levels must be considered in drawing any conclusions about the significance of the use levels. It should be noted that LURC defines "remote ponds" as Management Class 6 lakes that are "inaccessible, undeveloped lakes with coldwater fisheries," but none of the lakes in the Study Area have this

designation. [staff note: there is a remote pond, Trout Lake in Kossuth Township, within the study area, but it does not have a scenic rating, therefore is not a SRSNS]

Viewer expectations. This is a more difficult category to assess insofar as every individual has a different perspective, purpose and expectation that he or she may bring to the experience of the resource. One key consideration in this regard is the predominant types of recreational use of the resources considered, which are primarily lakes and ponds. Each user group has different expectations although some of those expectations may be shared among user groups. Additionally, it is difficult to obtain quantitative data on user expectations and, as a result, it requires qualitative judgment informed by objective information and survey results, professional experience, observations and field work, as well as more anecdotal and informal information from users. The sources relied on to evaluate user expectations are discussed more fully in Section C.

2. Project Visibility

The Wind Energy Act also requires the agency to consider the extent and scope of Project visibility on scenic resources of state or national significance. 35-A M.R.S.A. § 3452(3)(F). The following factors assist in understanding and evaluating Project visibility.

Proximity/Distance Zones. The closer the project is to the resource, the greater the potential exists for visual impacts. Aesthetic experts agree that the visual impact of wind turbines diminishes over distance, and the Act has established that turbines visible beyond 8-miles are deemed insignificant. LandWorks' use of proximity and distance is directly related to perceived impact and therefore we consider it to be a valuable tool for evaluating scope, scale and effect. The presence of the wind turbines, for example, in a "background zone" when seen from a particular vantage point, diminishes its perceived impact. The distance zones used for the Bowers Wind Project are discussed in more detail in Section 2.4 of the VIA.

Extent and Nature of Visibility. This category accounts for the number of turbines visible and the extent of that visibility - factoring in how much of the individual structures and rotors are visible. The greater the number of turbines visible, and the greater extent of the each turbine that is visible, results in a higher impact and correlating ranking.

Duration of View. This evaluation is based on whether a user of the resource or viewer will have an extended and involuntary view of a project (high impact) or if the duration of view is limited either by the extent of visibility from the resource or if there are other views and locations which the viewer can experience the resource from with minimal or no visibility of the project.

Visual Absorption. Visual absorption is an established criterion among experts for evaluating visual impact and addresses the ability of the landscape to accommodate development. It is part of our holistic approach to understanding the potential for a landscape to accommodate change and the degree to which the qualities of that landscape or perception of that landscape are affected by the presence of turbines. Our experience in the field indicates that this concept is particularly compelling when actually viewing landscapes that will have wind turbines in view. For example, the turbine arrays may be close, but they still may not dominate the 360- degree view and instead may occupy only a small portion of the view. Other elements within that view, which attract the eye and views in other directions, may diminish the

overall effect of turbine visibility. The concept of visual absorption helps us understand the significance of visibility and goes beyond simply the number of turbines visible from a particular location.

3. *Impact to Use and Enjoyment*

The Wind Energy Act also requires the review agency to ascertain the extent to which visibility of the Project has an impact on the user's ability to enjoy and fully experience the resource. 35-A M.R.S.A. § 3452(3)(E). This analysis is informed by both the significance of the resource as well as visibility of the turbines from the resource. Additionally, a number of factors can affect use and enjoyment, including the viewer's attitude towards wind, the type of activity the viewer is engaged in, and whether there are options for experiencing the resource without viewing the Project if the user considers visibility of the Project undesirable. As with user expectations, this is a more difficult category on which to obtain objective data and requires the exercise of qualitative judgments informed by user surveys, experience with existing projects, and other sources of anecdotal information. The sources relied on for this determination are discussed more fully in" Section E below.

VISIBILITY OF SCENIC RESOURCES OF STATE OR NATIONAL SIGNIFICANCE

Table 1. Summary of Resources of State or National Significance Within 8 Miles of Any Project Element -- LandWorks

	Town	Status [Significant (S), Outstanding (O)]	Distance to Nearest Visible Turbine ¹	# of Turbines Visible within 8 Miles ¹ (27 total)
GREAT PONDS				
Within 3 miles of the Project				
Pleasant Lake ³ (2.42 sq. mi.)	T6 R1 NBPP	State (O)	2.16 mi.	0-27
Shaw Lake ⁴ (0.39 sq. mi.)	T6 R1 NBPP	State (S)	2.6 mi.	0-25
Duck Lake (0.41 sq. mi.)	Lakeville	State (S)	2.7 mi.	0-18
Junior Lake ² (6.25 sq. mi.)	T5 R1 NBPP	State (S)	2.99 mi.	0-23
Within 3-8 miles of the Project				
Scraggly Lake (2.56 sq. mi.)	T6 R1 NBPP	State (S)	3.3 mi.	0-26
Keg Lake (0.58 sq. mi.)	Lakeville	State (S)	3.78 mi.	0-18
Bottle Lake (0.40 sq. mi.)	Lakeville	State (S)	5.1 mi.	0-13
Sysladobsis Lake (1.08 sq. mi.)	Lakeville	State (S)	6.34 mi.	0-22
West Musquash Lake (2.05 sq. mi.)	T6 R1 NBPP	State (O)	NA ⁵	NA ⁵
Lombard Lake (0.43 sq. mi.)	Lakeville	State (O)	None Visible	0
Norway Lake (0.19 sq. mi.)	T5 R1 NBPP	State (S)	NA ⁵	NA ⁵
Upper Sysladobsis Lake (1.62 sq. mi.)	Lakeville	State (S)	None Visible	0
Horseshoe Lake (0.206 sq. mi.)	Lakeville	State (S)	NA ⁵	NA ⁵
Pug Lake (West Grand Lake) (0.47 sq. mi.)	T5 R1 NBPP	State (O)	NA ⁵	NA ⁵
NATIONAL REGISTER OF HISTORIC PLACES				
	Town	Project Visibility		
Springfield Congregational Church	Springfield	None		

¹Based on Exhibit 4: Viewshed Map (topography and vegetation/from the hub); assumes 45 foot vegetation height

²An insignificant portion of the lake is within the 3-mile radius - only about 350 feet from the northern shoreline.

³About 1/3 of the lake is within the 3-mile radius.

⁴A little over 1/3 of the lake is within the 3-mile radius. ⁵NA=Not Applicable since nearest visible turbine is beyond 8 miles

CW's scenic consultant, LandWorks, summary evaluation:

Table 2. Evaluation Matrix

Resource	Significance	Project Visibility	Impact to Enjoyment	Overall Scenic Impact
Pleasant Lake	Medium	Medium-High	Low	Medium
Shaw Lake	Medium	Medium-High	Low	Medium
Duck Lake	Low	Low-Medium	Low	Low
Junior Lake	Medium	Medium	Low	Medium
Scraggly Lake	Medium	Medium-High	Low	Medium
Keg Lake	Low	Medium	Low	Low
Bottle Lake	Low	Low	Low	Low
Sysladobsis Lake	Low-Medium	Low	Low	Low
Horseshoe Lake	NA*	NA*	NA*	NA*
Lombard Lake	NA*	NA*	NA*	NA*
Norway Lake	NA*	NA*	NA*	NA*
Pug Lake (West Grand Lake)	NA*	NA*	NA*	NA*
Springfield Congregational Church	NA*	NA*	NA*	NA*
Upper Sysladobsis Lake	NA*	NA*	NA*	NA*
West Musquash Lake	NA*	NA*	NA*	NA*

*NA= Not applicable due to no visibility within 8 miles

3. LURC's scenic consultant's, Jim Palmer, rating system:

4.1 Evaluation Criteria

“Fourteen [now fifteen] places were identified as potential state or nationally significant scenic resources under the Wind Energy Act criteria. This section evaluates the scenic impact to these resources based on my understanding of the Wind Energy Act’s scenic impact Evaluation Criteria.”²⁶

- A** ***Significance of resource:** Consider the role of scenic quality in the designation, and the level of significance relative to similar designations. Indicators may be obtained from the designation reports or forms, supplemented by descriptions from widely used guide books.*
- B** ***Character of surrounding area:** Describe the landscape visible from the scenic resource and how it may be experienced by the viewer. Consider contrasts within the existing landscape and the presence of other contrasting elements. User surveys may provide a direct measure of the existing scenic quality. This may also be based on a descriptive landscape characterization, typically prepared by a landscape professional. Apparent ROS class may also be an appropriate indicator.*
- C** ***Typical viewer expectation:** Consider the resource’s scenic reputation for the most common activities, and the centrality of scenic quality to the typical user’s experience. User surveys may provide an indicator of expectations. In the absence of direct empirical data, distance traveled or descriptions from widely used guide books may provide alternative indicators.*
- D** ***Development’s purpose and context:** This criterion incorporates the Wind Energy Act’s goal of achieving significant wind energy development into the Evaluation Criteria for scenic impacts. Consider site quality—wind suitability, proximity to transmission line, and potential power generation if all potential turbine sites in the area are used. Low evaluation means that if all sites in the area are developed, it makes a major contribution to Wind Energy Act’s goals or contributes to reducing wind energy sprawl (i.e., a lower contribution to overall scenic impact). High evaluation means the area makes a minor contribution when all potential sites are developed or significantly increases wind turbine sprawl (i.e., a higher contribution to overall scenic impact).*
- E.1** ***Extent, nature and duration of uses:** Consider the number of users, role of scenic quality in use of the resource, and typical length of stay. User surveys provide the most direct indicators, but trail logs or traffic counters may also be useful. Potential accessibility may be an indicator in the absence of empirical data. Apparent ROS may be used to determine the appropriate intensity of use (Hass et al. 2004, USDA 1982).*
- E.2** ***Effect on continued use and enjoyment:** If the project were built, what is the likelihood of users returning, and the impact on their enjoyment of the scenic*

²⁶ 35-A MRSA, § 3452, sub-§3

resource? User surveys incorporation accurate photographic visual simulations may provide indicators.

- F* **Scope and scale of project views:** *Consider the number of visible project elements, their relative magnitude, and the proportion of total angle of view occupied by the project. Accurate photographic simulations and visibility analyses may provide indicators.*

The levels of severity for the Evaluation Criteria are as follows:

- **None.** *The Evaluation Criterion makes no contribution to scenic impact. For some criteria a rating of None means that there is No Adverse Impact (e.g., there are no people present at possible viewpoints—Criterion E, or the project is not visible— Criterion F).*
- **Low.** *The severity of the contribution is low. While the scenic impact may be Adverse, it appears to be within the acceptable range for any type of development (e.g., only one or two turbines will be partially visible at a distance of nearly 8 miles—Criterion F).*
- **Medium.** *The severity of the contribution is medium, which is Adverse but typical of wind energy development, and within the range of impacts that the Wind Energy Act anticipates (e.g., other towers or large scale structures are present that contrast highly with the surrounding landscape).*
- **High.** *The severity of the contribution is high from this criterion, which in association with other criteria may make the overall scenic impact Unreasonably Adverse (e.g., a possible scenario suggesting an Unreasonable Adverse impact might be that the scenic resource is a national icon—Criterion A is High, though there are only modest numbers of viewers—Criteria E.1 is Low, and to a person their enjoyment will seriously decline—Criteria E.2 is High).*

The Evaluation Criteria for each of the state or nationally significant scenic resources are discussed below, and summarizes in Table 8 the Evaluation Criteria ratings for the Bowers Wind Project. The VIA has employed a very similar approach using slightly different criteria to summarizing the impacts to the state and nationally significant scenic resources (LandWorks 2011, pages 34-40).”

LURC’s scenic consultant’s, Palmer, visibility summary table:

Table 3. Maximum Number of Bowers Wind Turbines Visible within 8 Miles of Significant Scenic Resources -- Palmer

Significant Scenic Resource	Nearest Turbine (miles)	Blade Tip Visible			Turbine Hub Visible		
		Topographic	Forested	VIA	Topographic	Forested	VIA
Historic Sites							
Springfield Congregational Church †	5.2	0	0	0	0	0	0
Great Ponds							
Bottle Lake	4.7	25	20	20	23	16	16
Duck Lake	2.5	25	24	24	19	18	18
Horseshoe Lake	7.4	5	2	1	5	1**	1
Junior Lake	2.9	25	23	23	22	19	19
Keg Lake	3.6	26	26	25	21	21	17
Lombard Lake †	5.3	0	0	0	0	0	0
Norway Lake	7.1	5	2	2	4	1**	1
Pleasant Lake	2.1	27	27	27	27	27	27
Pug Lake*	6.5	24	9	8	23	7	6
Scraggly Lake	3.1	27	27	27	27	26	26
Shaw Lake	2.5	27	27	27	25	25	25
Sysladobsis Lake	5.8	13	13	13	13	13	13
Upper Sysladobsis Lake †	6.6	0	0	0	0	0	0
West Musquash Lake	7.2	3	1	1	0	0	0

† Topography screens all visibility of the project from these sites.

* Pug Lake is part of West Grand Lake.

** Later analysis indicated no visibility.

LURC’s scenic consultant’s, Palmer’s, summary evaluation:

Table 4. Summary of Evaluation Criteria Ratings for the Bowers Wind Project

Scenic Resources of State or National Significance	Scenic Impact Evaluation Criteria							Overall Scenic Impact
	A	B	C	D	E.1	E.2	F	
Historic Sites								
Springfield Congregational Church	*	*	*	*	*	*	*	None
Great Ponds								
Bottle Lake	Low	Low	Low-Med	Low	High	Low	Low	Low
Duck Lake	Low	Low	Medium	Low	Low	Low	Medium	Low-Med
Horseshoe Lake	*	*	*	*	*	*	*	None
Junior Lake	Medium	Low-Med	Medium	Low	Low	Low	Medium	Medium
Keg Lake	Low-Med	Low-Med	Medium	Low	Medium	Low	Medium	Medium
Lombard Lake	*	*	*	*	*	*	*	None
Norway Lake	*	*	*	*	*	*	*	None
Pleasant Lake	Medium	Medium	Medium	Low	Low	Low	Med-High	Med-High
Pug Lake †	Medium	Medium	Medium	Low	Low	Low	Low-Med	Low-Med
Scraggly Lake	Medium	Medium	Medium	Low	Low	Low	Med-High	Med-High
Shaw Lake	Low-Med	Medium	Medium	Low	Medium	Low	Med-High	Med-High
Sysladobsis Lake	Medium	Low-Med	Medium	Low	Low	Low	Low-Med	Low-Med
Upper Sysladobsis Lake	*	*	*	*	*	*	*	None
West Musquash Lake	*	*	*	*	*	*	*	None

Notes: The Evaluation Criteria are: (A) Significance of resource, (B) Character of surrounding area, (C) Typical viewer expectation, (D) Development’s purpose and context, (E.1) Extent, nature and duration of uses, (E.2) Effect on continued use and enjoyment, and (F) Scope and scale of project views.

* Since there is no project visibility, there is no scenic impact.

† Pug Lake is part of West Grand Lake.

4. Intervenor Partnership for the Preservation of the Downeast Lakes Watershed’s (PPDLW) scenic consultant Michael Lawrence rating system:

Michael Lawrence (see F7, PPDLW_MichaelLawrence1...) focused his review of LandWork’s VIA on the three largest lakes that were SRSNS within 8 miles of the project: Junior, Scraggly and Pleasant Lakes. Lawrence’s comments on LandWork’s VIA are interspersed with those of Palmers and the public below.

DESCRIPTION OF SCENIC RESOURCES OF STATE OR NATIONAL SIGNIFICANCE (SRSNS) WITH VIEWS OF THE PROJECT AS DETERMINED BY LANDWORKS

The descriptions are compiled in Part II to this section of the deliberation notebook as summaries by LURC staff from the LandWorks VIA and Jim Palmer’s review of the LandWorks VIA.

*****See Part II for photo simulations for each of the SRSNS*****

E. USER SURVEY INFORMATION AND SELECT COMMENTS

Applicant's user survey information from Exhibit 17 of application:

“Public Use, User Expectations and Impact on Continued Use and Enjoyment

As Dr. Palmer acknowledges in his review of this and other wind power projects in Maine, it is difficult to obtain data on the public's use of scenic resources of state or national significance. Likewise, assessing user expectations and evaluating the effect of project visibility on the public's continued use and enjoyment of such resources can be challenging and requires qualitative as well as quantitative judgments. As discussed below, we have relied on a number of different sources that collectively inform our analysis of these issues. Importantly, several consistent themes have emerged that indicate visibility of the Bowers Project will not have an unreasonable adverse effect on the scenic character or the existing uses related to scenic character.

1. Public Use

Our assessment of public use of the scenic resources of state or national significance located within the Project area is based on the following: field observations, which provide important indicators of public use; evidence or lack thereof of tourism related facilities and infrastructure (i.e. no signs to indicate where or how to get to these lakes); informal interviews of individuals who live, work or recreate in the area; the results of a telephone survey and a snowmobile survey conducted by the Portland Research Group (discussed below); the results of surveys conducted on recreational use and resource analysis in the Baskahegan watershed (discussed below); guide books and on-line sources describing recreational opportunities and uses in the region; State publications including the Maine State Comprehensive Outdoor Recreation Plan 2009-2014 (SCORP) and the MDIFW Fishing Guide; and other area recreational reports. These sources collectively demonstrate the following;

- Overall these lakes experience relatively low use by the public, particularly in comparison to other higher use lakes in the region such as Baskahegan or West Grand Lakes.*
- The principal use of the lakes in the study area is for fishing, primarily on motorized boats.*
- The majority of users are local to (i.e. have second homes or camps) or live in the area. This is especially true for lakes that have some camp development but are otherwise difficult to access, such as Keg Lake.*

2. User Expectations and Impact of Turbine Visibility on Continued Use and Enjoyment

As with evaluation of public use, we have relied on a diversity of data sources that collectively allow us to make informed conclusions on user expectations and the impact of

Project visibility on the continued use and enjoyment of scenic resources within the study area. These sources include informal interviews with individuals who live, work or recreate in the Project area; research based on guide books, web sites, state publications and other sources of data on recreational opportunities in the area; evaluation of background polling on wind power; surveys relating to wind power projects in Maine and New England; as well as more general recreational studies. A list of the sources relied on is included as Exhibit B (see application, exhibit 17).

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

Palmer's review of LW's user surveys:

As for LW's two user surveys (snowmobile survey and telephone survey) Palmer states he is "not quite sure how to use these surveys". The snowmobile survey was not an unbiased probability sample and the telephone survey was a nonprobability sampling procedure where the data cannot be generalized beyond the specific 191 respondents in the survey (see F4, PalmerRevised...)

Testimony by guides (witnesses for PPDW):

Testimony by Mr. Tobey and Mr. Driza indicated the average guide guides 75 days per year, 50 per cent of which come into the project area resulting in thousands of guided trips annually into the project area.

Further testimony provided by the applicant:

Because the level of use of lakes in the study area described by the guides was not consistent with the applicant's understanding, the applicant submitted boat traffic survey information collected during 11 days in July 2011 through Junior Stream – the only water access point connecting West Grand Lake to Junior Lake (the results are summarized in F19, Applicant, CW_Exhibit D-4...). The survey suggested that the

level of use that originates in West Grand Lake and stays in West Grand Lake, is significantly higher than use that travels from West Grand Lake to Junior Lake or Scraggly Lake. The applicant also submitted a 1996 survey of 10 sporting camp owners in the vicinity of GLS indicating that most of the lakes used by their customers are located outside the project area (see **F19, Applicant, CW_Exhibit D-6_..**)

Rebuttal by PPDW

Intervenor PPDW countered that the July survey was not representative of summer traffic because it was the slow time of year for fishing and the first half of July is very popular for family vacations when families stay closer to camp with their kids.

NRCM criticism of Palmer review of Lawrence's VIA:

Palmer criticized Lawrence's submissions from the web site marketing literature of area sporting and lodging facilities including testimonials from visitors, sporting camp owner and professional sportsmen writers as not being representative of "typical viewers." "If those who have personally visited the area and those who have run businesses for decades that market to potential users and provide hospitality and guiding services to those who come do not understand the expectations of "typical users," it is hard to imagine who could". (testimony of Cathy Johnson, NRCM **F11, p. 10-30**)

F. CONNECTIVITY OF SRSNS LAKES

At the September 7, 2011, Commission meeting, the staff sought guidance from the Commission on several issues. One of those issues was how to evaluate the scenic impact to several SRSNS which are connected as land or water trails. At that meeting the Commission affirmed that when evaluating scenic impacts from water or land trails (considered as or made up of SRSNS), the overall impact may be greater than the sum of the parts. (See staff discussion paper titled "Evaluating Scenic Impacts Under the Wind Energy Act" for September 7, 2011, Commission meeting")

There is testimony in the record about the value of these SRSNS lakes in terms of their connectivity as water trails. NRCM noted two such trails in the AMC Quiet Waters Canoe Guide through the project area lakes -- see the testimony of NRCM (**F11, p. 10-30**) including map showing water trails through the project area at the end of Part II herein. In its closing brief, the PPDW noted several such water trails through the project lakes: two trails noted on the REI.com online site, 5 trails advertised by Maine Wilderness Camps, and testimony of Darrow Wilderness Trip Camps' use of the lakes within the project area. (**F25, ppdw....**)

There is also extensive testimony from guides who utilize the lakes within the project area with their clients. See the testimony of witnesses for intervenors Partnership for the Preservation of the Downeast Lakes Watershed (PPDLW) and David Corrigan (DC) (**F7, PPDW.... and F7, DC....**). There were also several guides who testified during the evening public sessions on 6/27 (**F14**) and 6/28 (**F16**) regarding the importance of these lakes to their guiding service.

G. PROJECT LIGHTING INFORMATION

Project lighting is described under visible facility components on page 5 herein. In response to Procedural Order #9, the applicant described the extent to which night lighting will be visible from each of the lakes

which have views of turbines with photo sims showing which turbines will be lighted. While not required under the WEA, the applicant also described the extent to which there will be views of night lighting from Grand Lake Stream and other areas beyond 8 miles of the project.

Palmer noted that the reflective streaks Commission members observed from Lincoln of a portion of the Rollins site may have a similar impact from the Pleasant, Scraggly and Junior Lake viewpoints on a still water surface which may occur right after sun set on some days. (see **F18, Agencies...Palmer_7_29 memo...**)

The applicant has agreed, however, to evaluate the feasibility of using a warning system that permits the turbine lights to remain off unless an aircraft is operating in the vicinity, should such technology be approved by the FAA. (see post-hearing brief, **F25, CW_Post...**)

H. CONCLUSIONS AND SELECT COMMENTS

1. Conclusions by LandWorks:

“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 the remote core of the jurisdiction where recreational users may have a heightened expectation of a pristine landscape. Instead, it is located on the edge of the jurisdiction 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.”

Connectivity of the lakes and overall scenic impact (LW)

“The applicant maintains that not only is there no unreasonable adverse impact on any single lake but that the project will not have an unreasonable adverse impact on scenic character or uses related to scenic character taking into account the number of lakes and the connectivity of at least some of the lakes.”

The applicant maintains (1) that a particular user group may chose to fish or recreate in other lakes, (2) the assumptions about connectivity may be overstated due to low water conditions, and (3) the interconnected experience is not supported by the literature. (see post-hearing brief **F25, CW...**)

2. CONCLUSIONS BY PALMER

“This review evaluates the adequacy of the *Visual Impact Assessment for the Proposed Bowers Wind Project* (LandWorks 2011a), also considering some of the material presented in the supplement for associated facilities (LandWorks 2011b). Overall this VIA is accurate and clearly presented. Additional analyses were conducted for this review; including of the fieldwork and LandWorks’ informal interviews concerning the use of the scenic lakes.

LandWorks proposed an evaluation framework using most of the Wind Energy Act’s Evaluation Criteria, but also introducing some new criteria; this review applies a framework taken directly from the Wind Energy Act’s Evaluation Criteria. Both frameworks are systematically applied to all of the state and nationally significant scenic resources. A comparison of the Summary of Evaluation Criteria presented in

Table 5 above and Evaluation Matrix presented in the VIA (LandWorks 2011, page 40) reveal differences. This review anticipates more severe scenic impacts than does the VIA.

The apparent scenic impact to the state and nationally significant scenic resources is Adverse at some locations and Very Adverse others. It is my judgment that it will be very difficult to decide whether the scenic impact to some of the state or nationally significant scenic resources is Unreasonably Adverse without better information about the “extent, nature and duration” of their use, the “expectations of the typical viewer” and “potential effect...on the public’s continued use and enjoyment” of these resources. In addition, a suitable procedure has yet to be developed to synthesize the criteria into an overall scenic impact rating for each state or nationally significant scenic resource, and then the overall scenic impact from the project. LandWorks’ proposal to simply average all the criteria is logically inadequate, as described by this review in section 2.7.8 Overall Impact Evaluation.

On the other hand, it is equally fair to criticize the lack of an explicit alternative synthesize procedure for this review. I believe that significant progress has been made to identify indicators for the specific Evaluation Criterion identified by the Wind Energy Act, though there is certainly room for additional improvements and testing of these indicators. However, this review is using essentially professional judgment for its synthesis, which is inadequate. More effort needs to be directed at identifying a common procedure acceptable to all the primary parties for determining the overall scenic impact, as well as the thresholds for Not Adverse, Adverse and Unreasonably Adverse levels of scenic impact.”

At the 7/6/11 session of the Bowers public hearing, when asked if in his judgment the visual impact was “unreasonable” , Palmer stated that “I don't feel that the scenic impact to any individual lake is unreasonable. The only difficulty that I have is, there's a bunch of lakes here.... We've got a bunch of lakes that are going to get impacted. That's a different kind of cumulative impact -- or it is a cumulative impact. I don't know how to – how to weigh that.”

Connectivity of the lakes and overall scenic impact (Palmer)

“In summary, it appears to me that the affected scenic lakes are part of a connected network. However, there also appears to be another connected network to the south, though with fewer lakes that are a SNSSR. It appears that there are relatively few users of these lakes. We do not have useful information from people using these lakes about how the project will affect their experience at specific viewpoints, either during the day or at night. We have even less information about the extent, nature and duration of other types of users, and how the presence of the project might affect their experience. What I am left with is that most views of the project will be fairly far from the turbines and that there are few users of the SNSSRs.”

3. CONCLUSIONS CHALLENGED

Conclusions challenged by PPDW

A Visual Impact Assessment (VIA) was also prepared by Michael Lawrence & Associates for intervenor Partnership for the Preservation of the Downeast Lakes Watershed. This VIA was prepared primarily to address “user expectations”. Lawrence’s VIA disagreed with the assessment of LandWorks prepared for the applicant including the statement that “this region of Maine is not a recognized tourism center” citing

the long history of recreational use of the Downeast lakes. Lawrence also took exception with LandWorks conclusion that “throughout most of the study area ... topography, forest cover and roadside vegetation block views of the project, limiting views of the overall visual impact” noting that its not the view through the forest that must be considered, but rather the view from the “chain of scenic lakes that lie within 8 miles of the proposed project that have been designated as having statewide significance.” See complete Lawrence VIA [F7, PPDW_MichaelLawrence1...]

Conclusions challenged by NRCM

Both Palmer and LandWorks are taken to task by NRCM for having an inappropriately narrow view of the significance of these scenic resources in the context of the LURC jurisdiction. They largely ignore non-motorized and non-fishing uses and do not consider how the resources may fit together as a whole.

NRCM encourages “the Commission to keep in mind both the potential benefits provided by, and overall need for, a source of clean, renewable energy and the specific adverse impact that would be caused to nine significant or outstanding scenic resources of state significance and existing uses of those resources.” (F11, p. 10-30)

I. ANALYSIS AND QUESTIONS FOR COMMISSION TO ADDRESS

1. General Issues

a. Relevance of certain assertions

Non-pristine, working landscape:

Objections were raised in the testimony to assertions being made by the applicant about the general suitability of the project area for a wind project. The applicant's pre-filed testimony stated: *"In our overall analysis, LandWorks concluded that these resources and characteristics do not offer unique and highly sensitive qualities that preclude the addition of an array of wind turbines within the view of users... This is not a pristine landscape, and has long been a working landscape that has been used and developed for its recreation, timber and water resources."* (emphasis added) Since this observation could be made on practically the entirety of the Commission's jurisdiction, does the Commission find these to be distinguishing features for this project or any other project? In fact, it could be argued that if an area being under active forest management and not pristine somehow makes it acceptable to place wind turbines in the vicinity then practically the entirety of the Commission's jurisdiction could be judged to be acceptable for wind turbines at least on consideration of that one factor.

Question 1a: How much weight should be given to these factors in determining whether the wind project creates an "unreasonable adverse effect" to scenic values given the context of active forest management throughout the jurisdiction?

b. Adequacy of User Information:

Palmer stated the telephone survey performed by Portland Research Group (PRG) cannot be used for judging typical viewer expectations under the WEA because a nonprobability sampling procedure was used, therefore the data cannot be generalized beyond the specific 191 respondents in the survey. Palmer also found that the snowmobile survey was not an unbiased probability sample. (see **F4, PalmerRevised...**)

In conducting his review of LandWorks VIA for each of the SRSNS lakes, Palmer was unable to find adequate information in the application to make a finding on "typical viewer expectation", "extent, nature and duration of uses," and "effect on continued use and enjoyment". In these instances he was left with stating "this is unknown for the Bowers Wind Project. However, we can apply indirect evidence and deductive reasoning to respond to this criterion. Because it is not empirically grounded, it may not be valid or reliable."

The applicant subsequently submitted user surveys of boat traffic through Junior Bay (major water access route connecting West Grand Lake to Junior Lake) conducted during June and July 2011, an informal assessment of the level and types of activity on several project lakes over Memorial Day weekend, and a survey of 10 sporting camp owners conducted in 1996 regarding their clients use of the project lakes. (see **F19, Applicant, 18_CW..**). Other references are noted in the applicant's post-hearing brief. (**F25, CW...p. 6**)

There was also considerable public testimony by guides and/or sporting camp owners during the party session on 6/28 (F15) and evening public sessions on 6/27 (F14) and 6/28 (F16) regarding their use of the project area.

Question 1b: Is there adequate user information in the record to assess the “expectations of the typical viewer” and the “extent, nature, and duration of potentially affected public users of the scenic resource of state or national significance”? If no, the Commission should consider whether it can proceed. If yes, the Commission can proceed to the next question.

2. Meeting of WEA criterion of no “unreasonable adverse effect”:

DAY TIME USE

Background: Before posing the next series of questions on this central issue, some background is in order. At the September 7, 2011, Commission meeting, the Commission reaffirmed its long standing policy of valuing remoteness and the often accompanying low level of use of particular resources. Limited use of scenic resources is often judged by Visual Impact Assessments (VIAs) as reducing the perceived impact to scenic resources. The Commission agreed that in certain circumstances this effect of VIAs was contrary to long-held Commission policy and would not discount limited use of scenic resources zoned as P-RR, Recreation Protection Subdistricts. The Commission also agreed it might view other areas not zoned as P-RR in the same fashion “where there is substantial evidence in the record that remoteness and associated low levels of use is integral to the experience of the typical user.” In those other instances, low use may also be judged to contribute to the value of the resource. (see staff discussion paper titled “Evaluating Scenic Impacts Under the Wind Energy Act” for September 7, 2011, Commission meeting)

With this background, staff suggests that the Commission provide direction to the staff on the central issue of “no unreasonable adverse effect” in the following fashion:

- a. First, are there any scenic lakes amongst the eight with views of the turbines which meet the criteria of the “other areas” identified in the background discussion above and where the Commission feels it’s appropriate to elevate the scenic impact rating? [see 2a below for further detail]
- b. Second, after making any adjustment in rating as noted above, are there any individual scenic lakes where the Commission finds there is an “unreasonable adverse effect” on the resource or its users? If the answer is yes, the application must be rejected. [see 2b below for further detail]
- c. Third, if the Commission finds the answer to the previous question is no, are there any lakes where the Commission finds there is an “unreasonable adverse effect” on the resource or its users because of their connectivity with other scenic lakes (the “water trail” issue)? [see 2c below for further detail]

Each of the above questions is addressed in greater detail below:

2a. Adjustment of scenic impact assessment:

Are there any scenic lakes within 8 miles of the project for which the scenic impact assessment needs to be elevated?

There are no scenic lakes designated as P-RR subdistricts within the project area. However, one of the scenic lakes (Shaw Lake) potentially meets the intent of the “others areas not zoned as P-RR” noted above in the background discussion.

Shaw Lake (211 acres) is inaccessible and undeveloped and, in addition to having a significant scenic value, it also has significant fishery values according to the WLA. According to LW, *“use of this lake is unknown and is most likely limited to adventurous, inveterate paddlers and anglers. According to a 1974 MDIFW survey, the lake provides good habitat for warm water gamefish, and is noted for its smallmouth bass fishery. It is a favorite of a number of smallmouth anglers. Access to the lake is very difficult. There are no identified boat launches or public camping areas. 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”* While not stated specifically in regards to Shaw Lake, LandWorks did note in its overall methodology (see page 10 herein) that *“Some ... resources have high scenic value in part due to their remote location and therefore it cannot be assumed that low use necessarily means that an adverse impact is less significant. Instead, the significance of the resource and the basis for the relative use levels must be considered in drawing any conclusions about the significance of the use levels.”* Shaw Lake is also mentioned as a side trip off the Sysladobsis, Bottle and Pug/Junior Bay canoe trip by NRCM as a place “for paddlers wanting to explore quieter places”. Palmer’s evaluation stated that he found the overall scenic impact to Shaw Lake was medium to high while noting it had low use. According to the project area map, it also is distant from permanently settled areas.

Question 2a: Does the Commission feel that Shaw Lake should have its scenic impact rating elevated because of the remoteness factor? Shaw has similar characteristics to remote ponds with its relative lack of development and road access and its desirability to anglers and adventurous, inveterate paddlers.

2b. Meeting of WEA criterion of no “unreasonable adverse effect” on individual lakes:

Staff suggests that the question of whether the WEA decision criterion is met on individual lakes is best addressed by focusing this question on those lakes where there is consensus by LW and Palmer that the greatest visual impact will likely occur in each of their rating systems. **However, focusing this analysis on these few (four) lakes shouldn’t diminish the fact that there are 14 lakes with scenic values within 8 miles of the Bowers project area and at least 8 out of the 14 would have views of the project -- an unusual concentration of scenic lakes.** It simplifies the analysis to focus on those lakes with the greatest likelihood of failing to meet this criterion. The lakes where there is agreement on the

greatest potential scenic impact between LW and Palmer and thus those lakes where the WEA criterion is most likely to not be met are:

(1) Pleasant:	LW rating: medium	Palmer rating: medium – high	Scenic rating: Outstanding
(2) Shaw:	LW rating: medium	Palmer rating: medium – high	Scenic rating: Significant
(3) Scraggly:	LW rating: medium	Palmer rating: medium – high	Scenic rating: Significant
(4) Junior:	LW rating: medium	Palmer rating: medium	Scenic rating: Significant

Overall assessments for each lake by LW and Palmer are noted above. See LW and Palmer detailed assessments in Part II of the visual impacts section. The scenic impact assessment for Shaw Lake may have been adjusted upwards depending on the Commission's answer to question 2a above.

Question 2b: Are there any individual scenic lakes within 8 miles of the project for which the WEA criterion has not been met – in particular, Pleasant, Shaw, Scraggly, or Junior? If yes, then the project must be rejected. If no, then we should proceed with the next question of connectivity.

2c. Meeting of WEA criterion of no “unreasonable adverse effect” on individual lakes because of elevated assessed scenic impact due to their connectivity:

At the September 7, 2011, Commission meeting, the staff sought guidance from the Commission on several issues. One of those issues was how to evaluate the scenic impact to several SRSNS which are connected as land or water trails. At that meeting the Commission affirmed that when evaluating scenic impacts from water or land trails (considered as or made up of SRSNS), the overall impact may be greater than the sum of the parts. (See staff discussion paper titled “Evaluating Scenic Impacts Under the Wind Energy Act” for the September 7, 2011, Commission meeting)

There is testimony in the record of the significance of water trails³ through the lakes within 8 miles of the project area. See, in particular, summary of NRCM's testimony, and Intervenor PPDLW's testimony (page 21 herein).

Question 2c: For this project, is there the potential for individual impacts to be greater because of individual scenic lakes connectivity to other scenic lakes? If yes, on which lakes should the assessment be adjusted upwards because of its connectivity to other scenic lakes and what impact does that have on whether the criterion has been met on those scenic lakes?

Other questions that may have a bearing on the answer to question 2c:

- Is there sufficient evidence in the record that there will be an “unreasonable adverse effect” to the economic viability of guiding services that utilize the scenic lakes on these water trails?
- Are there other water or land trails nearby that displaced users can go to? If not, does that heighten the significance of the water or land trail?

³ Reference to “water trail” herein is to the scenic lakes which make up the trail since it is the lakes listed herein which are the SRSNS, not the water trails per se.

- Does the fact that a water trail has one or multiple portages over land decrease its significance?

If this assessment results in the impact to any scenic lake within 8 miles of the project failing to meet the WEA scenic impact criterion, then the project must be rejected. If there are no lakes failing to meet this criterion due to connectivity considerations with other scenic lakes, then the project would be found to meet this particular criterion under the WEA as to daytime use.

NIGHT TIME USE

The applicant has described in writing the potential visibility of lights from the specific SRSNS. However, it is unclear to what degree these resources will be used during low-light or dark conditions. There does appear to be boating activities either late evening or early morning when fishermen, in particular, are either returning late or leaving early when they may observe the tower lighting.

The applicant has committed to investigating the feasibility of a future retrofit for alternative lighting schemes such as radar-activated lighting (which is currently not FAA-approved in the US).

Question 3: Is the “extent nature and duration” of night use of the scenic lakes that have views of the turbines such that users are likely to experience an unreasonable adverse effect as described in the statute? If yes, then the Commission should deny the application. If no, then the Commission can determine that the visual criterion is met as to nighttime use and proceed to the next question.

OVERALL QUESTION (IF NECESSARY)

Assuming the project has not failed on any of the specific questions, the Commission may wish to address whether the project, as a whole, meets the “no unreasonable adverse effect” criterion of the WEA.

Question 4: Based on the user information and the visual impact information in the record, as a whole do the impacts to the scenic lakes create an unreasonable adverse effect on scenic character and use related to scenic character? If yes, then the Commission should deny the application. If no, then the Commission can proceed to the other criteria.

VISUAL IMPACTS PART II

DESCRIPTION OF SCENIC RESOURCES OF STATE OR NATIONAL SIGNIFICANCE WITH VIEWS OF THE PROJECT AS DETERMINED BY LANDWORKS

The following descriptions and evaluations of the 8 lakes with visibility within 8 miles are compiled by LURC staff from the LandWorks VIA and Jim Palmer's, the Commission's scenic consultant, review of the LandWorks VIA using the Wind Energy Act criteria.

LandWorks summarized the criteria as:

***“Significance** - The significance of the potentially affected scenic resource of state or national significance;*

***Character** - The existing character and context of the surrounding area;*

***Use** - The expectations of the typical viewer and 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 (Note that a general description of use is provided under each lake and then a detailed evaluation of expectations is provided in 4.2); and,*

***Visibility** - 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.”*

PLEASANT LAKE: Applicant's description and evaluation**Significance**

Pleasant Lake is identified as Outstanding with a Management Class of 2. Relief and shoreline configuration are characterized as low, and physical features, vegetation diversity, and special features are medium.

Character

Pleasant Lake, located in Kossuth Twp and T6 R1 NBPP, is approximately 1,550 acres and situated between 2-5 miles from the nearest proposed 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 shoreline 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.

Use

Primary uses of the lake include fishing, boating, paddling, and camping. According to phone interviews¹³ conducted by LandWorks, Pleasant Lake gets a moderate amount of use for the area and is used mostly by fishermen. 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 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. At the southern shore off of Amazon Road, there is a public boat launch with an adjacent maintained forest campsite with picnic tables accessible to the public. The access road is approximately 6 miles from Route 6. On the northern shore is a private boat launch at Maine Wilderness Camps.

Visibility

Based on the viewshed analysis, up to 27 turbines, or portions of turbines, may be visible at the southeastern end of the lake as middleground views. Due to orientation and intervening vegetation, no views of the Project are expected from Maine Wilderness Camps, a private campground and lodge. From the public boat launch, the closest turbine visible will be on Dill Hill 4.5 miles away, and the farthest on Bowers Mountain 6.6 miles away (see Exhibit 10: Visual Simulation from Pleasant Lake Boat Launch). From this view, an intervening ridge blocks a portion 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 many turbines since only small sections of their towers 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 (see Exhibit 11: Visual Simulation from Pleasant Lake, Near Northern Shore), with no visibility along the northern shoreline. 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.

PLEASANT LAKE: Palmer's description and evaluation

Criterion A: Significance of resource. This lake was rated as an outstanding scenic resource in the *Maine Wildlands Lake Study*. In the *Scenic Lakes Character Evaluation in Maine's Unorganized Towns*, it received a score of 50, the lowest possible for the outstanding rating. Its rating is Medium.

Criterion B: Character of surrounding area. This is a medium sized lake surrounded by low-lying hills covered with a mixed forest. A large long island on the eastern side divides the lake into two separate spaces, one a small lake and the other a medium sized lake. Views from on the lake are in all directions; there is a feeling of spaciousness on this lake. There does not appear to be any clearly dominant feature visible from the lake, such as a near-by mountain with a distinctive form. There is active forest management within this general area. There are only a few private camps along the lakeshore, but Pleasant Lake hosts a resort, Maine Wilderness Camps. There are campsites scattered around the lake; a public boat launch that can accommodate trailers, and a private boat launch at Maine Wilderness Camps, which apparently rents boats. LURC has characterized Pleasant Lake as a high value, accessible lake that is largely undeveloped and assigned it to Lake Management Class 2. The rating is Medium.

Criterion C: Typical viewer expectation. There are no existing data to directly address this criterion. An alternative approach is to apply deductive reasoning to respond to this criterion using common knowledge and assumptions. Because it is not empirically grounded, it may not be valid or reliable.

This lake and the surrounding area are not a well-known scenic or recreation destination in Maine. While it is not heavily developed, neither is it remote. This would suggest that the scenic expectations of users would not be high. The most common activity appears to be fishing perhaps accompanied by boating, followed by paddling, hiking, and camping. There is some evidence that scenic quality may be less important to people engaged in fishing or motor boating as compared to those hiking or paddling (Palmer 1999). Its rating is Medium.

Criterion D: Development's purpose and context. At 69.1 MW, the Bowers Wind Project will make a substantial contribution to Maine's wind energy goal. Bowers is within 8 miles of the southern end of the Stetson Wind I, which includes 38 turbines for a name plate capacity of 167 MW. This project was then extended to the north—Stetson II is 11 turbines with a name plate capacity of 25.5 MW. This criterion is interpreted as placing a premium on extending an existing wind project, therefore the rating for this criterion is Low (meaning that it provides a significant counter balance to scenic impacts and that as an expansion project, it reduces the

cumulative impact of wind development sprawl that would significantly affect the state's overall scenic quality).

Criterion E.1: Extent, nature and duration of uses. This is unknown. However, indirect evidence and deductive reasoning can be used to respond to this criterion.

There is a public boat launch that can be used by trailers. Maine Wilderness Camps is a commercial resort that has a private launch and rents canoes and kayaks. In addition, there is a hand full of camps and homes on the eastern shore. Fishing, boating, hiking, swimming, and paddling are common activities. In addition to any general use by the public, with people staying at Maine Wilderness Camps the lake should receive moderate use for its size.

LandWorks conducted interviews with three citizen leaders in Lakeville to determine the use of the state or nationally significant lakes within 8 miles of the proposed Bowers wind turbines (LandWorks 2011c). Section 3.6 of this review shows how these estimates can be used to estimate the number of acres per boat at periods of high use. The WROS uses these boat capacity values to determine whether the level of use is high or low for a given WROS class (Hass et al. 2004, page 94). The 147.6 acres per boat during high use season indicates a low level of use. The rating is Low.

Criterion E.2: Effect on continued use and enjoyment. This is unknown for the Bowers Wind Project. However, we can apply indirect evidence and deductive reasoning to respond to this criterion.

To date surveys of hikers have found that proposed grid-scale wind projects in Maine will have a slightly negative effect on their recreation enjoyment, though it will not significantly affect the likelihood they will return. One survey investigated the effect on water-based activities. It found that the Bull Hill wind turbines would have no effect on respondents' likelihood of returning to Donnell Pond⁵¹ for water activities such as boating, paddling, swimming or fishing, and it is likely to be similar here (Robertson and MacBride 2010). Respondents were not asked about its effect on enjoyment. 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. It is assumed that the effect on continued use and enjoyment is Low.

Criterion F: Scope and scale of project views. Views toward the Bowers Wind Project are to the northwest. Photosimulations for Pleasant Lake were created from two viewpoints: boat launch and near the north shore. The nearest visible turbine from the Pleasant Lake Boat Launch photosimulation viewpoint is 4.6 miles and from the Near the Northern Shore viewpoint it is 2.8 miles. Elsewhere on the lake there may be turbines visible as close as 2.1 miles. The forested viewshed analysis indicates that as many as 25 to 27 turbine hubs will potentially be visible from over half of the lake. Because the lake's major axis is oriented toward the project, there are very few areas that fall within the visual shadow of the shoreline vegetation. The boat launch viewpoint is clearly a "worst case" view, since people boating from the launch must face toward the project. However, the viewpoint near the northern shore is not

a “worst case” situation because vegetation is screening turbines that would be visible further toward the center of the lake.

The boat launch photosimulation and visualization show 16 turbines, half a dozen hubs and a couple blade tips on the horizon that occupy a horizontal arc of about 44°. To put this in perspective, the “visual angle of the width of the thumb held at arm’s length is about 2 degrees” (O’Shea 1991). This is a bit greater than the area that would be blocked if the fingers and thumbs of both hands were held side-by-side at arm’s length with the palms facing outward along with both hands of a friend. The turbines will be a visual focal point as people leave the boat launch for other parts of the lake. However, at this distance users of the lake will not feel the turbines are “looming” over them.

The second viewpoint, near the northern shore, has less potential for visibility and is in a location that is partially within the visual shadow of shoreline vegetation. Nine turbines that will be visible on the horizon will occupy a horizontal visual arc of about 30°. The visualization outlines the shoreline vegetation that will be screening additional turbines. If one were to move south from this viewpoint as little as a quarter of a mile, it appears that 24 or more turbine hubs would become visible and they could occupy a horizontal visual angle of 55° to 60°. Viewers at this location may just begin to sense that the turbines are “looming” over them.

The rating is Medium to High.

Overall scenic impact. The turbines will have a significant visual presence above the horizon line from nearly all of Pleasant Lake, including as close as 2.1 miles. Pleasant Lake is recognized as an Outstanding scenic resource in the *Maine Wildlands Lake Study*. It is anticipated that there is a moderate level of recreation use on Pleasant Lake. However scenic quality is not generally thought to be central to the types of activities that are expected to be most common—fishing, boating and swimming. Therefore the Overall Scenic Impact is set at Medium to High.

SHAW LAKE: Applicant's description and evaluation**Significance**

Shaw Lake is identified as Significant with a Management Class of 7. Relief and shoreline configuration are characterized as low, physical features and vegetation diversity are medium, and there are no special features.

Character

Shaw Lake, located in the townships of T5 R1 within Penobscot County and T6 R1 within Washington County, is approximately 251 acres, all within 8-miles of the Project. This isolated lake is located 2.5-3.7 miles from the nearest proposed turbine. 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 jut 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.

Use

Use of this lake is unknown and is most likely limited to adventurous, inveterate paddlers and anglers. According to a 1974 MDIFW survey, the lake provides good habitat for warm water gamefish, and is noted for its smallmouth bass fishery. It is a favorite of a number of smallmouth anglers. Access to the lake is very difficult. There are no identified boat launches or public camping areas. 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.

Visibility

According to the viewshed map, up to 25 turbines may be visible from the southern shore of Shaw Lake. For as many as 8 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 13: Visual Simulation from Shaw Lake). 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. Visual impacts are also mitigated by the fact that this lake gets very little use due to access challenges.

SHAW LAKE: Palmer's description and evaluation

Criterion A: Significance of resource. This is a scenic resource of statewide significance. In the *Scenic Lakes Character Evaluation in Maine's Unorganized Towns*, it received a score of 40. Its rating is Low to Medium.

Criterion B: Character of surrounding area. This is a small lake surrounded by low-lying hills covered with a mixed forest. Views from on the lake are in all directions. In general, the dimensions of the lake are over 2,500 feet, which is too big to provide a sense of enclosure. However this narrows down to 600 to 800 feet at the coves at the eastern and western ends of the lake, and this may be sufficient to create a sense of intimate enclosure. There does not appear to be any clearly dominant feature visible from the lake, such as a near-by mountain with a distinctive form. There is active forest management within this general area. There may be one camp along the lakeshore. LURC has assigned Shaw Lake to Lake Management Class 7, meaning that it will be managed for multiple uses. The rating is Medium.

Criterion C: Typical viewer expectation. There are no existing data to directly address this criterion. An alternative approach is to apply deductive reasoning to respond to this criterion using common knowledge and assumptions. Because it is not empirically grounded, it may not be valid or reliable.

This lake and the surrounding area are not a well-known scenic or recreation destination in Maine. While it is not heavily developed, neither is it remote. This would suggest that the scenic expectations of users would not be high. The most common activity appears to be fishing perhaps accompanied by boating, followed by paddling, hiking, and camping. There is some evidence that scenic quality may be less important to people engaged in fishing or motor boating as compared to those hiking or paddling (Palmer 1999). Its rating is Medium.

Criterion D: Development's purpose and context. At 69.1 MW, the Bowers Wind Project will make a substantial contribution to Maine's wind energy goal. Bowers is within 8 miles of the southern end of the Stetson Wind I, which includes 38 turbines for a name plate capacity of 167 MW. This project was then extended to the north—Stetson II is 11 turbines with a name plate capacity of 25.5 MW. This criterion is interpreted as placing a premium on extending an existing wind project, therefore the rating for this criterion is Low (meaning that it provides a significant counter balance to scenic impacts and that as an expansion project, it reduces the cumulative impact of wind development sprawl that would significantly affect the state's overall scenic quality).

Criterion E.1: Extent, nature and duration of uses. This is unknown. However, indirect evidence and deductive reasoning can be used to respond to this criterion.

There is no boat launch; it appears that a kayak or canoe could be carried in or and ATV used to drag a boat to the lake. There may be one camp on the lake. Fishing and paddling are assumed to be the common activities.

LandWorks conducted interviews with three citizen leaders in Lakeville to determine the use of the state or nationally significant lakes within 8 miles of the proposed Bowers wind turbines (LandWorks 2011c). The rating is Medium.

Criterion E.2: Effect on continued use and enjoyment. This is unknown for the Bowers Wind Project. However, we can apply indirect evidence and deductive reasoning to respond to this criterion.

To date surveys of hikers have found that proposed grid-scale wind projects in Maine will have a slightly negative effect on their recreation enjoyment, though it will not significantly affect the likelihood they will return. One survey investigated the effect on water-based activities. It found that the Bull Hill wind turbines would have no effect on respondents' likelihood of returning to Donnell Pond⁶¹ for water activities such as boating, paddling, swimming or fishing, and it is likely to be similar here (Robertson and MacBride 2010). Respondents were not asked about its effect on enjoyment. 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. It is assumed that the effect on continued use and enjoyment is Low.

Criterion F: Scope and scale of project views. Views toward the Bowers Wind Project are to the north and northwest. The nearest visible turbine from the Shaw Lake photosimulation viewpoint is 3.7 miles and elsewhere on the lake there may be turbines visible as close as 2.6 miles. In general, this is past the distance where users on the lake might experience the turbines as “looming” over them. The forested viewshed analysis indicates that as many as 24 turbine hubs plus 3 blade tips potentially will be visible from the photosimulation viewpoint and throughout the southern half of the lake. There will be a relatively small area along the northern shore that falls within the shoreline vegetation's visual shadow that will not have views of any turbines. The photosimulation viewpoint is well chosen as a “worst case” view.

The photosimulation and visualization show 7 turbines, 5 hubs and 7 blade tips above the horizon-line of an intervening ridge; Bowers Mountain and Dill hill are not visible. The view of visible turbines extends beyond the photosimulation to the right. Two Shaw Lake visualizations were required show the full extent of these turbines in the visual field where they occupy a horizontal arc of about 60°. To put this in perspective, the “visual angle of the width of the thumb held at arm's length is about 2 degrees” (O'Shea 1991). This is a bit greater than the area that would be blocked if the fingers and thumbs of both hands were held side-by-side at arm's length with the palms facing outward, as well as both the hands of two friends. The turbines will have a major visual presence, and a large number of hubs and blade tips will be visible from most areas of the lake. The turbines will have a major visual presence, and many turbines or hubs will be visible from most areas of the lake. The rating is Medium to High.

Overall scenic impact. The turbines will have a major visual presence above the horizon line from nearly all of Shaw Lake, including as close as 2.7 miles. It is anticipated that there is a very modest level of recreation use on Shaw Lake. However scenic quality is not generally thought to be central to the types of activities that are expected to be most common—fishing, boating and swimming. Therefore the Overall Scenic Impact is set at Medium to High.

SCRAGGLEY LAKE: Applicant's description and evaluation

Significance

Scraggly Lake is identified as Significant with Management Class of 7. Relief and physical features are characterized as low, shoreline configuration is medium, vegetation diversity is high, and there are no special features.

Character

Scraggly Lake is approximately 1,641 acres and between 3-6 miles from the nearest proposed turbine. 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. 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 and thus most suitable for small watercraft such as kayaks and canoes. The lake is also accessible from a half mile or less portage from Pleasant Lake. The difficulty in accessing the lake and limited development along the shoreline creates a feeling of remoteness. 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. 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.

Use

Scraggly Lake sees a moderate amount of fishing, boating, paddling, and camping. There is one hand-carry boat launch on the eastern shore, and motorboat access is only possible by connecting through Junior Lake. Although bass fishing is particularly good at this lake, paddlers are more common due to access issues. 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."¹⁴ Scraggly Lake is connected to the Grand Lake Chain of Lakes, and camping is available at three primitive sites accessible to the public.

Visibility

The viewshed map indicates that northwest views may have visibility of up to 26 turbines, primarily as middle to background views. There are direct views of Bowers Mountain from the boat launch, but Dill Hill is not visible, where approximately 8 turbines are proposed. As such, none of these turbines would be visible 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 12: Visual Simulation from Scraggly Lake).

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.

SCRAGGLEY LAKE: Palmer's description and evaluation

Criterion A: Significance of resource. This is a scenic resource of statewide significance. In the *Scenic Lakes Character Evaluation in Maine's Unorganized Towns*, it received a score of 45. Its rating is Medium.

Criterion B: Character of surrounding area. This is a medium sized lake surrounded by low-lying hills covered with a mixed forest. It is a long lake and its north and south shores pinch together in two places to create visually separate rooms that are each medium sized lakes. There is a substantial amount of wetlands in the eastern room. Views from on the lake are in all directions. In general the lake has a spacious feeling, though there may be a moderate sense of enclosure at the end of the long coves. There does not appear to be any clearly dominant feature visible from the lake, such as a near-by mountain with a distinctive form. There is active forest management within this general area. There are only a few private camps scattered along the lakeshore. There are campsites scattered around the lake and a public hand carry boat launch accessed by a rough road. LURC has assigned Scraggly Lake to Lake Management Class 7, meaning that it will be managed for multiple uses. The rating is Medium.

Criterion C: Typical viewer expectation. There are no existing data to directly address this criterion.⁵⁵ An alternative approach is to apply deductive reasoning to respond to this criterion using common knowledge and assumptions. Because it is not empirically grounded, it may not be valid or reliable.

This lake and the surrounding area are not a well-known scenic or recreation destination in Maine. While it is not heavily developed, neither is it remote. This would suggest that the scenic expectations of users would not be high. The most common activity appears to be fishing perhaps accompanied by boating, followed by paddling, hiking, and camping. There is some evidence that scenic quality may be less important to people engaged in fishing or motor boating as compared to those hiking or paddling (Palmer 1999). Its rating is Medium.

Criterion D: Development's purpose and context. At 69.1 MW, the Bowers Wind Project will make a substantial contribution to Maine's wind energy goal. Bowers is within 8 miles of the southern end of the Stetson Wind I, which includes 38 turbines for a name plate capacity of 167 MW. This project was then extended to the north—Stetson II is 11 turbines with a name plate capacity of 25.5 MW. This criterion is interpreted as placing a premium on extending an existing wind project, therefore the rating for this criterion is Low (meaning that it provides a

significant counter balance to scenic impacts and that as an expansion project, it reduces the cumulative impact of wind development sprawl that would significantly affect the state's overall scenic quality).

Criterion E.1: Extent, nature and duration of uses. This is unknown. However, indirect evidence and deductive reasoning can be used to respond to this criterion.

There is a hand carry boat launch and scattered primitive campsites. Boat access is from the trailer boat launch on Bottle Lake via Junior Lake. There is a hand full of camps and homes scattered around the lake. Fishing, hiking, swimming, and paddling are common activities.

LandWorks conducted interviews with three citizen leaders in Lakeville to determine the use of the state or nationally significant lakes within 8 miles of the proposed Bowers wind turbines (LandWorks 2011c). Section 3.6 of this review shows how these estimates can be used to estimate the number of acres per boat at periods of high use. The WROS uses these boat capacity values to determine whether the level of use is high or low for a given WROS class (Hass et al. 2004, page 94). The WROS class for Scraggly Lake is Rural Natural. The 266.1 acres per boat during high use season indicates a low level of use. The rating is Low.

Criterion E.2: Effect on continued use and enjoyment. This is unknown for the Bowers Wind Project. However, we can apply indirect evidence and deductive reasoning to respond to this criterion.

To date surveys of hikers have found that proposed grid-scale wind projects in Maine will have a slightly negative effect on their recreation enjoyment, though it will not significantly affect the likelihood they will return. One survey investigated the effect on water-based activities. It found that the Bull Hill wind turbines would have no effect on respondents' likelihood of returning to Donnell Pond⁵⁶ for water activities such as boating, paddling, swimming or fishing, and it is likely to be similar here (Robertson and MacBride 2010). Respondents were not asked about its effect on enjoyment. 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. It is assumed that the effect on continued use and enjoyment is Low.

Criterion F: Scope and scale of project views. Views toward the Bowers Wind Project are to the north and northwest. The nearest visible turbine from the Scraggly Lake photosimulation viewpoint is 4.7 miles and elsewhere on the lake there may be turbines visible as close as 3.5 miles. This is too distant for users of the lake to feel that the turbines are "looming" over them. The forested viewshed analysis indicates that as many as 26 turbine hubs plus a blade tip potentially will be visible from the photosimulation viewpoint and elsewhere along the southern shore of the lake. Turbines will be visible from most of the lake, except close to the northern shore. The photosimulation viewpoint is well chosen as a "worst case" view.

The photosimulation and visualization show 19 turbines, 4 hubs and a blade tip on the horizon that occupy a horizontal arc of about 49°. To put this in perspective, the "visual angle of the

width of the thumb held at arm's length is about 2 degrees" (O'Shea 1991). This is a bit greater than the area that would be blocked if the fingers and thumbs of both hands were held side-by-side at arm's length with the palms facing outward, as well as the both hands of a friend. The turbines will have a significant visual presence, and several turbines or hubs will be visible from most areas of the lake. The turbines will have a major visual presence, and many turbines or hubs will be visible from most areas of the lake. The rating is High.

Overall scenic impact. The turbines will have a significant visual presence above the horizon line from nearly all of Scraggly Lake, including as close as 3.7 miles. It is anticipated that there is a very modest level of recreation use on Scraggly Lake. However scenic quality is not generally thought to be central to the types of activities that are expected to be most common—fishing, boating and swimming. Therefore the Overall Scenic Impact is set at Medium to High.

JUNIOR LAKE: Applicant's description and evaluation

Significance

Junior Lake is identified as Significant with a Management Class of 7. Relief is characterized as low, physical features, shoreline configuration, and vegetation diversity are characterized as medium, and there are no special features.

Character

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. 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. A number of rocky islands in the vicinity of McKinney Point add visual interest to the landscape.

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. Wild Fox Resort and 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.

Use

Fishing, boating, paddling, swimming and camping are the primary recreational uses of the lake. 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. According to one website source, "it is almost impossible to fish this lake without a boat."¹² Paddlers can also take advantage of the approximately seven primitive campsites accessible to the public on Junior Lake or connect to other nearby lakes. 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 or impossible 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 kayaks and canoes via a narrow stream connection at the northern tip of the lake.

Visibility

According to the viewshed map, up to 23 turbines could potentially be visible from the southern portion of the lake, while the number of visible turbines decreases when traveling north on the lake. At over 5 miles long, and stretching away from the Project site, the character of the Project's visibility differs noticeably depending of the position of the viewer. Although more turbines are visible from the

southern half of the lake, these represent background views. From the northern half of the lake, fewer turbines are 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 Penobscott 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 such, 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/scale of visible turbines and the topography (see Exhibit 8: Visual Simulation from Junior Lake). The presence of some large shoreline homes within the viewshed are a visual reminder that it is not a pristine landscape.

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 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 it is likely that they will not have visibility as well due to intervening vegetation.

JUNIOR LAKE: Palmer's description and evaluation

Criterion A: Significance of resource. This is a scenic resource of statewide significance. In the *Scenic Lakes Character Evaluation in Maine's Unorganized Towns*, it received a score of 45. No points were taken off for Inharmonious Development. While there are a great number of residences along its western shore, they are generally screened by vegetation. Its rating is Medium.

Criterion B: Character of surrounding area. This is a large lake³⁷ surrounded by low-lying hills covered with a mixed forest. Views from on the lake are in all directions. A string of islands across the middle of the lake contribute to the sense that there are two or three spatially separate rooms. Even so, there is a feeling of spaciousness on this lake, and even the coves are too large to provide more than a weak sense of enclosure. There does not appear to be any clearly dominant feature visible from the lake, such as a near-by mountain with a distinctive form. There is active forest management within this general area. There are approximately 87 camps or full size homes, primarily along the western shore; generally they are partially screened by trees.³⁸ LURC has assigned Junior Lake to Lake Management Class 7, meaning that it will be managed for multiple uses. Because of its Lake Management Class, the lower density higher screening of second homes, docks and the lack of a public boat launch, the probable WROS class for the lake is Rural Natural Setting.³⁹ The rating is Low to Medium.

Criterion C: Typical viewer expectation. There are no existing data to directly address this criterion.⁴⁰ An alternative approach is to apply deductive reasoning to respond to this

criterion using common knowledge and assumptions. Because it is not empirically grounded, it may not be valid or reliable.

This lake and the surrounding area are not a well-known scenic or recreation destination in Maine. While it is somewhat developed, one suspects that people come to their camps to get away and be closer to nature. However, nothing in this assumption suggests that the scenic expectations would be high. The most common activity appears to be fishing perhaps accompanied by boating, followed by paddling, hiking, and camping. There is some evidence that scenic quality may be less important to people engaged in fishing or motor boating as compared to those hiking or paddling (Palmer 1999). Its rating is Medium.

Criterion D: Development's purpose and context. At 69.1 MW, the Bowers Wind Project will make a substantial contribution to Maine's wind energy goal. Bowers is within 8 miles of the southern end of the Stetson Wind I, which includes 38 turbines for a name plate capacity of 167 MW. This project was then extended to the north—Stetson II is 11 turbines with a name plate capacity of 25.5 MW. This criterion is interpreted as placing a premium on extending an existing wind project, therefore the rating for this criterion is Low (meaning that it provides a significant counter balance to scenic impacts and that as an expansion project, it reduces the cumulative impact of wind development sprawl that would significantly affect the state's overall scenic quality).

Criterion E.1: Extent, nature and duration of uses. This is unknown. However, indirect evidence and deductive reasoning can be used to respond to this criterion.

There is no boat launch for public use on Junior Lake; the public can access Junior Lake with motor boats from Bottle Lake or with light water craft from Duck Lake. However, there are 87 camps and homes, many with docks on the shoreline of this large lake. Fishing, boating, hiking, camping, swimming and paddling are anticipated to be common activities. In addition to any general use by the public, if the 87 camps are all active then the lake should receive very modest use for its size.

LandWorks conducted interviews with three citizen leaders in Lakeville to determine the use of the state or nationally significant lakes within 8 miles of the proposed Bowers wind turbines (LandWorks 2011c). Section 3.6 of this review shows how these estimates can be used to estimate the number of acres per boat at periods of high use. The WROS uses these boat capacity values to determine whether the level of use is high or low for a given WROS class (Hass et al. 2004, page 94). The WROS class for Junior Lake is Rural Natural. The 272.7 acres per boat during high use season indicates a low level of use. The rating is Low.

Criterion E.2: Effect on continued use and enjoyment. This is unknown for the Bowers Wind Project. However, we can apply indirect evidence and deductive reasoning to respond to this criterion.

To date surveys of hikers have found that proposed grid-scale wind projects in Maine will have a slightly negative effect on their recreation enjoyment, though it will not significantly affect the likelihood they will return. One survey investigated the effect on water-based

activities. It found that the Bull Hill wind turbines would have no effect on respondents' likelihood of returning to Donnell Pond⁴¹ for water activities such as boating, paddling, swimming or fishing, and it is likely to be similar here (Robertson and MacBride 2010). Respondents were not asked about its effect on enjoyment. 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. It is assumed that the effect on continued use and enjoyment is Low.

Criterion F: Scope and scale of project views. Views toward the Bowers Wind Project are to the north. The nearest visible turbine from the Junior Lake photosimulation viewpoint is 4.5 miles and elsewhere on the lake there may be turbines visible as close as 3.2 miles. The forested viewshed analysis indicates that as many as 19 turbine hubs plus 4 blade tips potentially will be visible from the lake's northwest cove and the center of the southern half of the lake; the only areas without turbine visibility are close to the northeastern shore, in the visual shadow of the shoreline vegetation. The photosimulation viewpoint is a bit to the south of where the visibility map suggests the "worst case" view would be.

The photosimulation and visualization show 13 turbines on the horizon that occupy a horizontal arc of about 20°. To put this in perspective, the "visual angle of the width of the thumb held at arm's length is about 2 degrees" (O'Shea 1991). This is a bit greater than the area that would be blocked if the fingers and thumbs of both hands were held side-by-side at arm's length with the palms facing outward. The turbines will be too far away to give a sense of "looming" over users of the lake. However they will have a significant visual presence, and several turbines or hubs will be visible from most areas of the lake. The rating is Medium.

Overall scenic impact. The turbines will have a significant visual presence above the horizon line from almost all of Junior Lake, including as close as 3.2 miles. It is anticipated that there is a substantial level of recreation use on Junior Lake. However scenic quality is not generally thought to be central to the types of activities that are expected to be most common—fishing, boating and swimming. Therefore the Overall Scenic Impact is set at Medium.

KEG LAKE: Applicant's description and evaluation**Significance**

Keg Lake is identified as Significant with a Management Class of 7. Relief and shoreline configuration are characterized as low, physical features are medium, and there is no vegetation diversity or special features.

Character

Keg Lake, located in the town of Lakeville within Penobscot County, is approximately 371 acres, all of which are located within 8-miles of the Project. This lake is located 3.6-5.1 miles from the nearest proposed 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.

Use

Boating, fishing, and paddling are the primary activities on this lake. 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. Due to limited public access, including no public boat access or designated public parking or camping areas, 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.

Visibility

Based on the viewshed analysis, up to 18 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 overall view. As seen in Exhibit 9: Visual Simulation from Keg Lake, the 10 southernmost turbines on Bowers Mountain are clearly visible, as are the three turbines on 'South Peak.' Only the blades of several turbines on Dill Hill appear to have potential visibility. Depending on the viewer's position, Getchell Mountain and/or Penobscot Bald Mountain would remain visually dominant due to their height and mass. There are a number of areas within the lake without project visibility, notably along the northern shore and on the eastern side of the lake. Due to challenging public access to Keg Lake, the visual impact would be primarily to owners and visitors of camps and homes along the southern shore.

KEG LAKE: Palmer's description and evaluation

Criterion A: Significance of resource. This is a scenic resource of statewide significance. In the *Scenic Lakes Character Evaluation in Maine's Unorganized Towns*, it received a score of 35. Its rating is Low to Medium.

Criterion B: Character of surrounding area. This is a small lake surrounded by low-lying hills covered with a mixed forest. Views from on the lake are in all directions. The width between the forested shorelines will be 1,200 to over 2,500 feet from most locations with potential views of the turbine hubs, which places them on the outer edge of feeling enclosed. There does not appear to be any clearly dominant feature visible from the lake, such as a near-by mountain with a distinctive form. There is active forest management within this general area. There are approximately 15 camps, primarily clustered along the most western shore. LURC has assigned Keg Lake to Lake Management Class 7, meaning that it will be managed for multiple uses. The rating is Low-Medium.

Criterion C: Typical viewer expectation. There are no existing data to directly address this criterion. An alternative approach is to apply deductive reasoning to respond to this criterion using common knowledge and assumptions. Because it is not empirically grounded, it may not be valid or reliable.

This lake and the surrounding area are not a well-known scenic or recreation destination in Maine. While it is somewhat developed, one suspects that people come to their camps to get away and be closer to nature. However, nothing in this assumption suggests that the scenic expectations would be high. The most common activity appears to be fishing perhaps accompanied by boating, followed by paddling, hiking, and camping. There is some evidence that scenic quality may be less important to people engaged in fishing or motor boating as compared to those hiking or paddling (Palmer 1999). Its rating is Medium.

Criterion D: Development's purpose and context. At 69.1 MW, the Bowers Wind Project will make a substantial contribution to Maine's wind energy goal. Bowers is within 8 miles of the southern end of the Stetson Wind I, which includes 38 turbines for a name plate capacity of 167 MW. This project was then extended to the north—Stetson II is 11 turbines with a name plate capacity of 25.5 MW. This criterion is interpreted as placing a premium on extending an existing wind project, therefore the rating for this criterion is Low (meaning that it provides a significant counter balance to scenic impacts and that as an expansion project, it reduces the cumulative impact of wind development sprawl that would significantly affect the state's overall scenic quality).

Criterion E.1: Extent, nature and duration of uses. This is unknown. However, indirect evidence and deductive reasoning can be used to respond to this criterion.

There is no boat launch on Keg Lake; public access is by water from Bottle Lake. However, there are 15 camps and homes on the shoreline of this small lake. Fishing, boating, hiking, camping, swimming and paddling are common activities. In addition to any general use by the public, if the 15 camps are all active then the lake should receive moderate use for its size.

LandWorks conducted interviews with three citizen leaders in Lakeville to determine the use of the state or nationally significant lakes within 8 miles of the proposed Bowers wind turbines (LandWorks 2011c). Section 3.6 of this review shows how these estimates can be used to estimate the number of acres per boat at periods of high use. The rating is Medium.

Criterion E.2: Effect on continued use and enjoyment. This is unknown for the Bowers Wind Project. However, we can apply indirect evidence and deductive reasoning to respond to this criterion.

To date surveys of hikers have found that proposed grid-scale wind projects in Maine will have a slightly negative effect on their recreation enjoyment, though it will not significantly affect the likelihood they will return. One survey investigated the effect on water-based activities. It found that the Bull Hill wind turbines would have no effect on respondents' likelihood of returning to Donnell Pond for water activities such as boating, paddling, swimming or fishing, and it is likely to be similar here (Robertson and MacBride 2010). Respondents were not asked about its effect on enjoyment. 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. It is assumed that the effect on continued use and enjoyment is Low.

Criterion F: Scope and scale of project views. Views toward the Bowers Wind Project are to the northeast. The nearest visible turbine from the Keg Lake photosimulation viewpoint is 4.3 miles and elsewhere on the lake there may be turbines visible as close as 3.6 miles. The forested viewshed analysis indicates that as many as 21 turbine hubs plus 5 additional blade tips potentially will be visible from the lake's northwest corner. Turbines will be visible from the western half of the lake, though they will be too distant to create the feeling that they are "looming" over users of the lake. There is no visibility from the eastern and southern portions of the lake. The photosimulation viewpoint is half a mile to the south of where the visibility map suggests the "worst case" view would be.

The photosimulation and visualization show 13 turbines on the horizon that occupy a horizontal arc of about 18°; the presence of several blade tips to the right extends the horizontal visual arc to 21°. To put this in perspective, the "visual angle of the width of the thumb held at arm's length is about 2 degrees" (O'Shea 1991). This is a bit greater than the area that would be blocked if the fingers and thumbs of both hands were held side-by-side at arm's length with the palms facing outward. The turbines will have a significant visual presence, and several turbines or hubs will be visible from most areas of the lake. The rating is Medium.

Overall scenic impact. The turbines will have a significant visual presence above the horizon line from approximately half of Keg Lake, including as close as 3.6 miles. It is anticipated that there is a moderate level of recreation use on Keg Lake. However scenic quality is not generally thought to be central to the types of activities that are expected to be most common—fishing, boating and swimming. Therefore the Overall Scenic Impact is set at Medium.

DUCK LAKE: Applicant's description and evaluation**Significance**

Duck Lake is identified as Significant with a Management Class approaching 5. Relief and shoreline configuration are characterized as low, physical features are medium, and there is no vegetation diversity or special features.

Character

Duck Lake, located in the town of Lakeville within Penobscot County, is approximately 262 acres, all of which are within 8-miles of the Project. This lake is one of the closet lakes to the Project site, second to Pleasant Lake, and is located 2.5-3.2 miles from the nearest proposed 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, and the highest density 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.

Use

Boating, paddling, and fishing appear to be the predominant activities on this lake. A motorboat launch located at the northwest end of the lake, at the end of Duck Road, provides public access. Kayaks and canoes can also 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. 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.

Visibility

According to the viewshed map, up to 18 turbines may be visible from the southern cove of Duck Lake. From portions of the southern cove, the six southern turbines on Bowers Mountain would be clearly visible in the middleground at a distance of approximately 3-4 miles (see Exhibit 7: Visual Simulation from Duck Lake). From this vantage 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. The six most visible turbines would take up a very narrow portion of the overall viewshed. 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 7). Fewer turbines would be visible as you travel toward the Project site due to intervening shoreline vegetation. From the public boat launch, the viewshed map indicates that there could be potential visibility of 1-6 turbines, although it is likely that only the blades would be visible, if at all. The presence of camp and home development along the northern shore serves to lessen any potential visual impacts when viewed from the boat launch or other locations throughout the lake.

DUCK LAKE: Palmer's description and evaluation

Criterion A: Significance of resource. This is a scenic resource of statewide significance. In the *Scenic Lakes Character Evaluation in Maine's Unorganized Towns*, it received a score of 25. It is somewhat surprising that there are no points taken off for Inharmonious Development, since there are a great number of residences along the shore and many of the older ones are not screened by vegetation. Its rating is Low.

Criterion B: Character of surrounding area. This is a small lake³² surrounded by low-lying hills covered with a mixed forest. Views from on the lake are in all directions. The width between the forested shorelines will be 1,000 to over 2,000 feet from most locations with potential views of the turbine hubs, which places them on the outer edge of feeling enclosed. However, there are potential views from the inlet toward the turbines where the wooded shoreline is seen 750 feet away—at this distance there will be a feeling of enclosure, possibly even a sense of intimate enclosure. There does not appear to be any clearly dominant feature visible from the lake, such as a near-by mountain with a distinctive form. There is active forest management within this general area. There are approximately 37 camps or full size homes, many with docks along the lakeshore; a few are visually open to the lake, but most appear to be at least partially screened by trees.³³ LURC has characterized Duck Lake as approaching heavily developed status and assigned it to Lake Management Class 5. Because of its Lake Management Class, the density of second homes, docks and a public boat launch that can accommodate trailers, the probable WROS class for the lake is Rural Developed Setting.³⁴ The rating is Low.

Criterion C: Typical viewer expectation. There are no existing data to directly address this criterion.³⁵ An alternative approach is to apply deductive reasoning to respond to this criterion using common knowledge and assumptions. Because it is not empirically grounded, it may not be valid or reliable.

This lake and the surrounding area are not a well-known scenic or recreation destination in Maine. While it is heavily developed, one suspects that people come to their camps to get away and be closer to nature. However, nothing in this assumption suggests that the scenic expectations would be high. The most common activity appears to be fishing perhaps accompanied by boating, followed by paddling, hiking, and camping. There is some evidence

that scenic quality may be less important to people engaged in fishing or motor boating as compared to those hiking or paddling (Palmer 1999). Its rating is Medium.

Criterion D: Development's purpose and context. At 69.1 MW, the Bowers Wind Project will make a substantial contribution to Maine's wind energy goal. Bowers is within 8 miles of the southern end of the Stetson Wind I, which includes 38 turbines for a name plate capacity of 167 MW. This project was then extended to the north—Stetson II is 11 turbines with a name plate capacity of 25.5 MW. This criterion is interpreted as placing a premium on extending an existing wind project, therefore the rating for this criterion is Low (meaning that it provides a significant counter balance to scenic impacts and that as an expansion project, it reduces the cumulative impact of wind development sprawl that would significantly affect the state's overall scenic quality).

Criterion E.1: Extent, nature and duration of uses. This is unknown. However, indirect evidence and deductive reasoning can be used to respond to this criterion.

There is a private unpaved boat launch with a gentle slope that can be used by trailers; boats can access Junior Lake from here. In addition, there are 37 camps with docks on the shoreline of this small lake. Fishing, boating, hiking, and paddling are common activities, but it is also likely that there is swimming, water play equipment, and perhaps water skiing and jet skiing. General use by the public appears to be light because of poor accessibility.

LandWorks conducted interviews with three citizen leaders in Lakeville to determine the use of the state or nationally significant lakes within 8 miles of the proposed Bowers wind turbines (LandWorks 2011c). Section 3.6 of this review shows how these estimates can be used to estimate the number of acres per boat at periods of high use. The WROS uses these boat capacity values to determine whether the level of use is high or low for a given WROS class (Hass et al. 2004, page 94). The WROS class for Duck Lake is Rural Developed. The 52.4 acres per boat during high use season indicates a low level of use. The rating is Low.

Criterion E.2: Effect on continued use and enjoyment. This is unknown for the Bowers Wind Project. However, we can apply indirect evidence and deductive reasoning to respond to this criterion.

To date surveys of hikers have found that proposed grid-scale wind projects in Maine will have a slightly negative effect on their recreation enjoyment, though it will not significantly affect the likelihood they will return. One survey investigated the effect on water-based activities. It found that the Bull Hill wind turbines would have no effect on respondents' likelihood of returning to Donnell Pond³⁶ for water activities such as boating, paddling, swimming or fishing, and it is likely to be similar here (Robertson and MacBride 2010). Respondents were not asked about its effect on enjoyment. 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. It is assumed that the effect on continued use and enjoyment is Low.

Criterion F: Scope and scale of project views. Views toward the Bowers Wind Project are to the northeast. The nearest visible turbine from the Duck Lake photosimulation viewpoint is 3.1 miles and elsewhere on the lake there may be turbines visible as close as 2.6 miles. The forested viewshed analysis indicates that as many as 18 turbine hubs plus an additional 6 blade tips potentially will be visible from the lake's southern cove; there will be no turbines visible from perhaps a third of the lake. During the fieldwork, it was thought that the nearer viewpoints on Duck Lake may be just on the edge of where someone could have the sense that the turbines were "looming" over them. The photosimulation viewpoint is a bit to the north of where the visibility map suggests the "worst case" view would be.

The photosimulation and visualization show 6 turbines, plus a couple of hubs and a couple of blade tips. Just the full turbines occupy a horizontal arc of about 8°; with the addition of the hubs and tips it will be 26°. To put this in perspective, the "visual angle of the width of the thumb held at arm's length is about 2 degrees" (O'Shea 1991). This is a bit greater than the area that would be blocked if the fingers and thumbs of both hands were held side-by-side at arm's length with the palms facing outward. As one moves from the northern to the southern shore the shoreline vegetation will screen turbines, as represented in Visualization 2. The turbines will have a significant visual presence, but from most portions of the lake it will be limited to turbine blades and a few hubs. The rating is Medium.

Overall scenic impact. There will be no visibility of turbines from less than half of the lake. There are locations where a number of turbine hubs will be visible above the horizon line from a distance as close as 2.5 miles, and while they will have a significant visual presence, they will not be visually dominant. There is a modest level of recreation use on Duck Lake, and scenic quality is not generally thought to be central to the types of activities that are expected to be most common—fishing, boating and swimming. Therefore the Overall Scenic Impact is set at Low to Medium.

BOTTLE LAKE: Applicant's description and evaluation**Significance**

Bottle Lake is identified as Significant with a Management Class⁸ of 5⁹. Relief, shoreline configuration, and vegetation diversity are characterized as low, physical features are medium, and there are no special features¹⁰.

Character

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 4.7-5.3 miles from the nearest proposed turbine. Mixed forest cover and low-lying hills and mountains surround the lake. Views to the northwest are most prominent, 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 100¹¹ camps or homes concentrated around most of the shoreline. Much 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.

Use

Boating, water skiing, paddling, fishing and swimming are the predominant recreational uses. 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 public motorboat launch, located at the northwest end of the lake, at the end of Bottle Lake Road. In addition, paddlers can also use Bottle Lake as a means of accessing a half-mile portage to Sysladobsis Lake (Lower). No public camping areas have been identified. 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.

Visibility

According to the viewshed map, up to 13 turbines may be visible from the southern shore of Bottle Lake. At over 5 miles away, these turbines would be considered background views. The majority of the lake would have no visibility of the Project. From portions of the southern shore, the six southern turbines on Bowers Mountain would be clearly visible, although the ridge itself is barely visible above the shoreline trees (see Exhibit 6: Visual Simulation from Bottle Lake). These six turbines would take up a very narrow

portion of the overall viewshed. For the remaining potentially visible turbines, only small portions of them, such as a blade, might be visible just above the tree line. Fewer turbines would be visible as you travel toward the Project site due to intervening shoreline vegetation. From the center of the lake and north, no turbines would be visible. There would be no visibility from the public boat launch.

The viewer's eye would be drawn more to distinct hills to the northwest, including Almanac Mountain with a communications tower clearly visible. 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 with highly visible homes and power lines along the northern shore. These factors, combined with the limited visibility, serve to minimize the visual impacts of the Project from this lake.

Palmer discussion (Bottle Lake)

Criterion A: Significance of resource. This is a scenic resource of statewide significance. In the *Scenic Lakes Character Evaluation in Maine's Unorganized Towns*, it received a score of 35. It is somewhat surprising that there are no points taken off for Inharmonious Development, since there are a great number of residences along the shore and many of the older ones are not screened by vegetation. Its rating is Low.

Criterion B: Character of surrounding area. This is a small lake²⁷ surrounded by low-lying hills covered with a mixed forest. Views from on the lake are in all directions. Someone on the lake where there is a potential view of the turbine hubs would generally see the wooded shoreline at least 1,500 feet away—at this distance there may be a feeling of enclosure, but not intimate enclosure. There does not appear to be any clearly dominant feature visible from the lake, such as a near-by mountain with a distinctive form. There is active forest management within this general area. There are approximately 100 camps or full size homes along the lakeshore, many of which are visually open to the lake.²⁸ LURC has characterized Bottle Lake as being a heavily developed and assigned it to Lake Management Class 5. Because of its Lake Management Class, the density of second homes, docks, and a boat launch that can accommodate trailers, the probable WROS class for the lake is Rural Developed Setting.²⁹ The rating is Low.

Criterion C: Typical viewer expectation. There are no existing data to directly address this criterion.³⁰ An alternative approach is to apply deductive reasoning to respond to this criterion using common knowledge and assumptions. Because it is not empirically grounded, it may not be valid or reliable.

This lake and the surrounding area are not a well-known scenic or recreation destination in Maine. This is one of the most developed lakes in LURC's jurisdiction. While one suspects that people come to their camps to get away and be closer to nature, they must expect to see a shoreline with a large number of residences, many of which have little or no vegetative screening. The most common activity appears to be fishing, perhaps accompanied by boating, followed by paddling, hiking, and camping. There is some evidence that scenic quality may be

less important to people engaged in fishing or motor boating as compared to those hiking or paddling (Palmer 1999). The rating is Low to Medium.

Criterion D: Development's purpose and context. At 69.1 MW, the Bowers Wind Project will make a substantial contribution to Maine's wind energy goal. Bowers is within 8 miles of the southern end of the Stetson Wind I, which includes 38 turbines for a name plate capacity of 167 MW. This project was then extended to the north—Stetson II is 11 turbines with a name plate capacity of 25.5 MW. This criterion is interpreted as placing a premium on extending an existing wind project, therefore the rating for this criterion is Low (meaning that it provides a significant counter balance to scenic impacts and that as an expansion project, it reduces the cumulative impact of wind development sprawl that would significantly affect the state's overall scenic quality).

Criterion E.1: Extent, nature and duration of uses. This is unknown. However, indirect evidence and deductive reasoning can be used to respond to this criterion.

There is a private unpaved boat launch with a gentle slope that can be used by trailers. This is one of the access points for Junior and Keg Lakes. In addition, there are 100 camps and homes, many with docks on the shoreline of this small lake. Fishing, boating, paddling and hiking are common activities, but it appears that on Bottle Lake there is also swimming, water play equipment, water skiing, and perhaps jet skiing. In addition to any general use by the public, if the 100 camps are all active then the lake should receive substantial use for its size.

LandWorks conducted interviews with three citizen leaders in Lakeville to determine the use of the state or nationally significant lakes within 8 miles of the proposed Bowers wind turbines (LandWorks 2011c). Section 3.6 of this review shows how these estimates can be used to estimate the number of acres per boat at periods of high use. The WROS uses these boat capacity values to determine whether the level of use is high or low for a given WROS class (Hass et al. 2004, page 94). The WROS class for Bottle Lake is Rural Developed. The 17.6 acres per boat during high use season indicates a high level of use. The rating is High.

Criterion E.2: Effect on continued use and enjoyment. This is unknown for the Bowers Wind Project. However, we can apply indirect evidence and deductive reasoning to respond to this criterion.

To date surveys of hikers have found that proposed grid-scale wind projects in Maine will have a slightly negative effect on their recreation enjoyment, though it will not significantly affect the likelihood they will return. One survey investigated the effect on water-based activities. It found that the Bull Hill wind turbines would have no effect on respondents' likelihood of returning to Donnell Pond³¹ for water activities such as boating, paddling, swimming or fishing, and it is likely to be similar here (Robertson and MacBride 2010). Respondents were not asked about its effect on enjoyment. 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. It is assumed that the effect on continued use and enjoyment is Low.

Criterion F: Scope and scale of project views. Views toward the Bowers Wind Project are to the northeast. The nearest visible turbine from the Bottle Lake photosimulation viewpoint is 5.3 miles and elsewhere on the lake there may be turbines visible as close as 5.0 miles. The forested viewshed analysis indicates that as many as 16 turbine hubs plus 4 blade tips will potentially be visible from a small patch of the lake; there will be no turbines visible from over half of the lake. The photosimulation and visualization from a viewpoint expected to provide a “worst case” view shows 6 turbine hubs and a blade tip. These turbines occupy a horizontal arc of about 7°. To put this in perspective, the “visual angle of the width of the thumb held at arm’s length is about 2 degrees” (O’Shea 1991). While the turbines will have a significant visual presence, neither their scale nor their scope will dominate the view. The rating is Low.

Overall scenic impact. There will be no visibility of turbines from over half of Bottle Lake. While there are locations where a number of turbine hubs will be visible above the horizon line from a distance of at least 5 miles, they will not be visually dominant. It is anticipated that there is a substantial level of recreation use on Bottle Lake. However scenic quality is not generally thought to be central to the types of activities that are expected to be most common—fishing, boating and swimming. Therefore the Overall Scenic Impact is set at Low to Medium.

SYSLADOBSIS LAKE: Applicant's description and evaluation**Significance**

Sysladobsis Lake is identified as Significant with a Management Class of 4. Relief and vegetation diversity are characterized as low, physical features are medium, shoreline configuration is high, and there are no special features.

Character

Sysladobsis Lake, located in the town of Lakeville and stretching across Washington and Penobscot Counties, is approximately 5,401 acres with the upper 691 acres located within 8-miles of the Project. This lake is 5.8-13.6 miles from the nearest proposed 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.

Use

Fishing, boating, paddling, swimming and camping are common recreational uses of this lake. The presence of four motorboat launches, one hand carry boat launch and, six campgrounds suggests fishing, boating, and camping are common activities. Annually stocked salmon, and the presence of bass, perch and pickerel draw fishing enthusiasts to this lake. A local fishing and hunting guide confirmed that this lake receives medium to high frequency of use by anglers, notably in the spring during salmon fishing season.

A public boat launch is located adjacent to the private campground, and Pug Hole hand carry boat launch is located at the northeastern shore. Outside of the 8-mile area, three additional boat launches are located along the central and southern end of the lake, including boat launches at Horseshoe Cove, The Pines Lodge and Campground and the Sysladobsis launch adjacent to the dam. Four public lakeside tent campsites and The Pines are also located south of the 8-mile area.

Visibility

The viewshed analysis indicates that up to 22 turbines may be visible as background views, with the closest turbine being over 6 miles away. The turbines visible on Dill Hill would appear very 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. Home and camp development along the eastern shore would be visible when viewing the Project from portions of the lake. Due to the distance and angle of view, the most visible turbines would appear relatively clustered and small, and they would take up a narrow portion of the overall viewshed.

SYSLADOBSIS LAKE: Palmer's description and evaluation

Criterion A: Significance of resource. This is a scenic resource of statewide significance. In the *Scenic Lakes Character Evaluation in Maine's Unorganized Towns*, it received a score of 45. Its rating is Medium.

Criterion B: Character of surrounding area. This is a large lake surrounded by low-lying hills covered with a mixed forest. The portion of the lake within 8 miles of the project is visually isolated from the rest of the lake by a large island and narrows, creating the spatial equivalent of a small lake. Views from on the lake are in all directions, and there is a feeling of spaciousness throughout the lake. There does not appear to be any clearly dominant feature visible from the lake, such as a near-by mountain with a distinctive form. There is active forest management within this general area. There are approximately 52 camps or full size homes, located along both shores. It appeared from the fieldwork that a number of these were in poor repair. LURC has characterized Sysladobsis Lake as a high value, developed lake and assigned it to Lake Management Class 4. Because of its Lake Management Class, the density of second homes, a private campground and public hand carry boat launch, the probable WROS class for the lake is a Rural Developed Setting. The rating is Low to Medium.

Criterion C: Typical viewer expectation. There are no existing data to directly address this criterion.⁶⁵ An alternative approach is to apply deductive reasoning to respond to this criterion using common knowledge and assumptions. Because it is not empirically grounded, it may not be valid or reliable.

This lake and the surrounding area are not a well-known scenic or recreation destination in Maine. While it is somewhat developed, one suspects that people come to their camps to get away and be closer to nature. However, nothing in this assumption suggests that the scenic expectations would be high. The most common activity appears to be fishing perhaps accompanied by boating, followed by paddling, hiking, and camping. There is some evidence that scenic quality may be less important to people engaged in fishing or motor boating as compared to those hiking or paddling (Palmer 1999). Its rating is Medium.

Criterion D: Development's purpose and context. At 69.1 MW, the Bowers Wind Project will make a substantial contribution to Maine's wind energy goal. Bowers is within 8 miles of the southern end of the Stetson Wind I, which includes 38 turbines for a name plate capacity of 167 MW. This project was then extended to the north—Stetson II is 11 turbines with a name plate capacity of 25.5 MW. This criterion is interpreted as placing a premium on extending an existing wind project, therefore the rating for this criterion is Low (meaning that it provides a significant counter balance to scenic impacts and that as an expansion project, it reduces the

cumulative impact of wind development sprawl that would significantly affect the state's overall scenic quality).

Criterion E.1: Extent, nature and duration of uses. This is unknown. However, indirect evidence and deductive reasoning can be used to respond to this criterion.

There a boat launch that can be used by trailers. In addition, there are a number of camps and homes, many with docks on the shoreline within 8-miles of the Bowers wind turbines. Fishing, boating, hiking, camping, and paddling are common activities, but it is also likely that there is swimming, water play equipment, and perhaps water skiing and jet skiing. In addition to any general use by the public, if the camps are all active then the lake should receive substantial use at this end.

LandWorks conducted interviews with three citizen leaders in Lakeville to determine the use of the state or nationally significant lakes within 8 miles of the proposed Bowers wind turbines (LandWorks 2011c). Section 3.6 of this review shows how these estimates can be used to estimate the number of acres per boat at periods of high use. The WROS uses these boat capacity values to determine whether the level of use is high or low for a given WROS class (Hass et al. 2004, page 94). The WROS class for Sysladobsis Lake is Rural Developed. The 330.7 acres per boat during high use season indicates a low level of use. The rating is Low.

Criterion E.2: Effect on continued use and enjoyment. This is unknown for the Bowers Wind Project. However, we can apply indirect evidence and deductive reasoning to respond to this criterion.

To date surveys of hikers have found that proposed grid-scale wind projects in Maine will have a slightly negative effect on their recreation enjoyment, though it will not significantly affect the likelihood they will return. One survey investigated the effect on water-based activities. It found that the Bull Hill wind turbines would have no effect on respondents' likelihood of returning to Donnell Pond⁶⁶ for water activities such as boating, paddling, swimming or fishing, and it is likely to be similar here (Robertson and MacBride 2010). Respondents were not asked about its effect on enjoyment. 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. It is assumed that the effect on continued use and enjoyment is Low.

Criterion F: Scope and scale of project views. Views toward the Bowers Wind Project are to the north-northeast. There is no photosimulation for Sysladobsis Lake, but a visualization was made for a viewpoint less than a quarter of a mile north of the lake's large island. The nearest visible turbine from the Sysladobsis Lake visualization viewpoint is 7.0 miles and elsewhere on the lake there may be turbines visible as close as 6.4 miles. O'Shea The forested viewshed analysis indicates that as many as 13 turbine hubs will potentially be visible from the center of the lake; there will be no turbines visible from a little over half of the lake that is within 8 miles of a project turbine. The visualization viewpoint is a bit to the north of where the visibility map suggests the "worst case" view would be.

The visualization shows all 11 turbines within 8 miles of the viewpoint, plus 2 turbines and 11 tips that are beyond 8 miles. Just the turbines within 8 miles of the viewpoint occupy a horizontal arc of about 13° ; with the addition turbines and tips that are beyond 8 miles distant it will be 23° . To put this in perspective, the “visual angle of the width of the thumb held at arm’s length is about 2 degrees” (O’Shea 1991). For the turbines within 8 miles, this is a bit less than the area that would be blocked if the fingers of both hands were held side-by-side at arm’s length with the palms facing outward. Less than 15% of Sysladobsis Lake is within 8 miles of the project, but the turbines will have a significant visual presence from this portion of the lake. However, this factor is moderated by the distance of the views. On the other hand, one of the two hand boat launches that DeLorme Maine Atlas and Gazetteer show are present is at the northern end of the lake. Therefore all returning boats will be focusing on the view toward the turbines. The rating is Low to Medium.

Overall scenic impact. There will be no visibility of turbines from approximately half of Sysladobsis Lake that is within 8 miles of the turbines. While there are locations where a number of turbine hubs will be visible, they are at a distance of at least 6.4 miles and they will not be visually dominant. It is anticipated that there could be a substantial level of recreation use on Sysladobsis Lake. However scenic quality is not generally thought to be central to the types of activities that are expected to be most common—fishing, boating and swimming. Therefore the Overall Scenic Impact is set at Low to Medium.