Appeal by Passadumkeag Windpark, LLC

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December 10, 2012

Board of Environmental Protection
ATTN: Robert A. Foley, Chair
c/o Maine Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017

re: Appeal of the Department of Environmental Protection's Order denying Site Law and NRPA Permits for Passadumkeag Windpark: #L-25597-24-A-N/#L-25597-TH-B-N

Dear Chairman Foley:

Enclosed herewith is Passadumkeag Windpark, LLC's appeal of the Department of Environmental Protection's Order denying Site Law and NRPA Permits.

Please let me know if you have any questions.

Sincerely,

Mary E. Costigan

MEC/dlhf
enclosures

cc (w/encls.): Commissioner Patricia Aho, Department of Environmental Protection
Mike Beckner, Passadumkeag Windpark, LLC

STATE OF MAINE
BOARD OF ENVIRONMENTAL PROTECTION

IN RE:

PASSADUMKEAG WINDPARK, LLC	)	APPLICANT'S APPEAL
#L-25597-24-A-N/	)	OF DEPARTMENT ORDER
#L-25597-TH-B-N	)	DENYING SITE LAW
	)	AND NRPA PERMITS

Passadumkeag Windpark, LLC (the "Applicant") appeals the Order of the Department of Environmental Protection (the "Department") filed with the Board of Environmental Protection (the "Board") on November 9, 2012, denying the Applicant's consolidated Site Location of Development Act ("Site Law") and Natural Resources Protection Act ("NRPA") permit application for an expedited wind energy development (the "Project"). The Department determined that the Project met all permitting requirements except the scenic impact standard under NRPA and Site Law due to the Project's scenic impact on Saponac Pond ("Saponac Pond" or the "Pond"). The Applicant respectfully requests that the Board evaluate the full Department record regarding scenic impact on Saponac Pond, reverse the Department's decision, and approve the application.

SPECIFIC OBJECTIONS TO FINDINGS AND CONCLUSIONS

The Applicant objects to and appeals from the Department's findings and conclusions regarding the Project's scenic impact on Saponac Pond set forth in the Order at Section 6.F.1, Finding A under NRPA, and Finding B under Site Law. Specifically, the Applicant objects to the Department's conclusion that the Project does not satisfy the scenic impact standard under NRPA and Site Law because 1) the Department's findings are arbitrary and inconsistent with applicable law, and 2) the full weight of the record supports approval of the application.

STANDING

The Applicant has suffered a particularized injury as a result of the Department's denial of its permit application. As a party to the permitting process, the denial negatively impacts the Applicant's specific and particular legal rights, duties, and privileges, including the Applicant's right to make its intended use of real estate on which it holds significant real estate rights. For each of these reasons, the Applicant qualifies as an "aggrieved person" and, therefore, has standing to appeal the Department's Order. 38 M.R.S.A. §341-D(4); 06-096 C.M.R. Chapter 2.1.B.

STANDARD OF REVIEW

Upon appeal, the Board reviews the final permitting decision of the Department for accuracy and compliance with Maine law. 38 M.R.S.A. §341-D(4). In so doing, the Board is not bound by the Department's findings of fact or conclusions of law on the scenic impact to Saponac Pond, and the Board may adopt, modify, or reverse the Department's findings or conclusions, or remand the matter to the Department for further proceedings consistent with Maine law. *Id.*

The Board's review amounts to a *de novo* review of both the record and the findings. Here, the Applicant respectfully requests that the Board engage in an independent analysis of the scenic impact to Saponac Pond based on the record that was before the Department, under Maine law, and determine that the Project satisfies the applicable scenic impact standard.

BACKGROUND FACTS

I. Project Description

The Project would be a 42 megawatt (MW) wind energy facility with elements located in Grand Falls Township, Summit Plantation, and the Town of Greenbush. Grand Falls Township, where the generating facilities would be located, is entirely within the expedited permitting area for wind energy facilities. 35-A M.R.S.A. §§3451 to 3458 (Chapter 34-A).

The generating facilities would consist of 14 turbines. The turbines would be located on privately-owned Passadumkeag Mountain, which is currently used for commercial forestry operations and communications towers. Associated facilities would include roads and road improvements and a 17-mile long generator lead line (co-located with an existing distribution line) running from Passadumkeag Mountain along Greenfield Road to a substation and Operations and Maintenance building in Greenbush. *Please see Appendix, hereinafter "App." at p. 16.*

The proposed NRPA activities are limited to 9800 square feet of upland clearing along Greenfield Road in two Inland Waterfowl and Wading Bird Habitats, and 1.22 acres of forested wetland conversion. *App. at p. 357.* The proposed Site Law activities include both the generating facilities and the associated facilities.

II. Department Record Relating to the Scenic Character and Uses of Saponac Pond

The Department record (the "Record") relating to the scenic character and uses of Saponac Pond includes three categories of information: 1) the Applicant's Visual Impact Assessment ("VIA") and supplemental materials; 2) the data and analysis LandWorks provided as an expert consultant to the Department, including a peer review and visual impact analysis,

clarification memo, and preliminary comments on the Applicant's supplemental information; and 3) public comments received either in writing or at the public meetings. With limited exceptions, these documents describe a shallow pond with a developed shoreline and poor water quality, located immediately adjacent to Route 188 within a working landscape of logging roads, radio towers and cleared openings.

Both the VIA and LandWorks' analyses reflect that the visitor experience on Saponac Pond begins upon arrival at the Pond via Route 188, a paved, two-lane highway runing parallel to the eastern shore before it turns left to directly abut the northern shoreline of the Pond for approximately 850 feet. An unimproved boat launch is located adjacent to Route 188 at the eastern side of the sand and cobble beach on the northern end of the Pond. The western side of the beach contains a large sawdust pile from an early sawmill operation. Several hundred feet of the beach surface is covered with a thick layer of reddish decomposing sawdust. *App. at pp. 168-169; App. at pp. 194-196.* A Maine Department of Inland Fisheries and Wildlife 2004 survey of Saponac Pond referenced in the VIA described the Pond as a large shallow flowage in the path of the Passadumkeag River that provides an attractive fishery, and as a sterile settling basin for the "gross sawdust pollution" that has been scattered along the west shore, noting that no remedy is available to restore the Pond to its original condition. *App. at pp. 32-33.*

Looking from the boat launch on the northern shore toward the south, Passadumkeag Mountain rises over 1,250 feet above the Pond. A 574′ radio tower, lit with 4 pulsing red lights, is located near the top of the Mountain, and a second tower is currently under construction. In recent years, the forestland between the Pond and the Mountain has been extensively harvested, such that clear-cut areas and a series of haul roads providing access to the commercial forestland

are all visible from the Pond. From the boat launch, the closest turbines on the Mountain would be between 4 and 4.8 miles away. *App. at pp. 32-33.*

After a visitor enters the water at the boat launch on the northern shore and heads south, the numerous camps and year-round homes along the shore become visible. Approximately a dozen houses are located along the northwestern shore and approximately thirty houses are located along the northeastern shore. The remainder of the shoreline to the south is in the same private ownership as the Project site, and is private timberland. From the southern shore a visitor is situated approximately 2.3 miles from the turbines. However, a view of the turbines at the southern shore would be obscured by the tree canopy. *App. at p. 33.*

The number of turbines visible and to what degree they are part of the view will, of course, change depending on the viewer's location on the Pond. From the northern shore, 10-14 turbines would be seen over a horizontal arc of between 30° and 52° (between 17% and 30%) of a 180° view (i.e. from a single vantage point on the shore, facing the Project) at a distance of 4 to 4.8 miles. From near the northeastern shore of Black Island, a viewpoint which gives a sense of a 360° open water view, the 14 turbines would be seen at a distance of 3.2 to 4.4 miles over a horizontal arc of approximately 62° (approximately 17%) within the 360° view. Within that same 360° view from near Black Island, one would also see approximately half of the camps along the shoreline, extensive areas of commercial forest harvest operations on the north face of Passadumkeag Mountain, and would be able to both see and hear traffic on Route 188. *App. at pp. 213-214.*

The Record also contains an intercept survey conducted during the summer of 2011 at Saponac Pond and Nicatous Lake. Fifty nine percent of survey respondents indicated that the

Project would not change their enjoyment of Saponac Pond. In addition, 73% of boaters and 71% of fishermen said they would return to the Pond after the Project was developed. *App. at pp. 36-37.*

In the summer of 2011, the Applicant conducted a use survey at Saponac Pond over 60 hours on portions of eight days (Friday through Monday on two consecutive weekends in August and September), and observed 13 boats (or .2 boats/hour) and not more than 2 boats on the water at the same time. *App. at p. 35.* The Applicant also conducted a 2012 use survey over 86.25 hours on portions of 13 days in August and September, and observed 24 boats and 42 individuals on the water (or .3 boats/hour), and not more than 2 boats on the water at the same time. *App. at p. 217.* The overwhelming conclusion of these use surveys is that Saponac Pond sees relatively few recreational users; those few users are primarily boaters or fishermen.

In addition to the technical data and analysis, the Record also includes public comments. Many of the written comments and the verbal comments made at the public meetings address scenic concerns outside of the purview of the applicable scenic impact standard, as these comments relate to either the view of Passadumkeag Mountain from private property or other resources not protected by statute, or address impacts to the "area" rather than the view from Saponac Pond.

PROCEDURAL HISTORY

On February 3, 2012, the Applicant filed with the Department its consolidated Site Law and NRPA application to construct a 14-turbine wind energy development in Grand Falls Township. The Department hired LandWorks, an experienced and highly qualified peer reviewer, to review the adequacy of the Applicant's scenic impact submissions, evaluate the

Project under the appropriate statutory scenic impact standard, and provide an independent opinion as to the scenic impact of the Project.[1]

On April 25, 2012, the Department held the first of two public meetings, attended by 20 interested persons who submitted comments and asked questions of the Department staff and the Department's scenic impact expert, LandWorks. App. at p. 354. On June 19, LandWorks issued its full peer review of the VIA (the "LandWorks Report"). This LandWorks peer review was based on:

- a review of the Applicant's VIA;
- a review of public comments;
- three days of site visits; and
- more than three weeks of independent visual impact analysis.

LandWorks concluded that the Project, including its scenic impact on Saponac Pond, satisfied the scenic impact standard under the Expedited Permitting Statute, 35-A M.R.S.A. §§3451 et seq. (hereinafter referred to as the "Wind Energy Act" or "WEA" for consistency with the Department's references), and that "**this project will not have an unreasonable adverse impact on the identified scenic resources of the project area ...** and the public's use and enjoyment of those resources." *App. at pp. 187-188* (emphasis in original). The record is bereft of any contradictory technical analysis or conclusion.

On July 5, after almost six months of substantive review, the Department staff issued a full analysis of the Project (the "Staff Analysis"). The Staff Analysis concurred with both the Applicant's VIA and the LandWorks Report, and concluded that the Project satisfies the WEA scenic impact standard, and would not have an unreasonable adverse scenic impact on Saponac Pond. *App. at p. 381.*

[1]The Department's technical staff is qualified to provide expert analysis on many elements of the application; however, there is no scenic impact expert on staff.

On July 12, the Commissioner of the Department chaired the second of two public meetings. This meeting was attended by Department staff, LandWorks, and approximately 100 members of the public. Shortly thereafter, the Department requested the Applicant respond to two legal arguments presented in public comments: 1) that the Robbins Lumber Company Easement near Nicatous Lake is a Scenic Resource of State or National Significance[2]; and 2) that the Project does not qualify as an expedited wind energy development.[3] The Department did not request a response to any public comments related to the scenic impact on Saponac Pond.

On July 27, the Applicant received a phone call from the Department that abruptly changed the course of the permitting process – the Department indicated that it was now intending to deny the Project based on scenic impact. On August 1st, the Applicant met with the Department to discuss the Department's comments and concerns. Following that meeting, the Applicant requested that the processing timeline be put on hold so it could respond to the Department's new comments.

During this holding period, on September 7, LandWorks issued a memorandum to the Department that confirmed and clarified its initial analysis, and again concluded that the overall scenic impact on Saponac Pond was "Medium." *App. at pp. 203-207.*

On September 26, the Applicant submitted materials responding to the Department's concerns from the August 1st meeting, including supplemental materials regarding the Project's scenic impact on Saponac Pond. The Applicant provided a photo simulation from near Black

[2]In response to the Department's request, the Applicant submitted a supplemental VIA regarding impacts of the Project on the Robbins Lumber Company Easement. The following day, the Department –without notice or explanation - reversed its position on the Easement, finding that the Easement is not a Scenic Resource of State or National Significance, and that no supplemental VIA is required. *App. at pp. 250-253.*

[3]The Applicant submitted a response, and the Department concluded that the Project is an expedited wind energy development.

Island to represent the "worst case" viewpoint from the Pond in the form of a QuickTime "movie," which is 360° of photographs and the photo simulation merged together. This movie has been printed as a set of 11x17 sheets for ease of reference in this appeal, and provided in *App. at pp. 231-240.* The Applicant also submitted additional data and analysis confirming that the Pond is developed and developable (and the Land Use Planning Commission has zoned it as such), is not pristine, and experiences very limited recreational use. *App. at p. 214.*

On October 9, the Department provided the Applicant with LandWorks' preliminary comments on the Applicant's September 26th submissions. These preliminary comments stated that LandWorks' "conclusions are qualified by the fact that we haven't completed our review of the Supplemental Application Information dated 9-26-12; we have just downloaded that information from the website today as you have made us aware of it." However, the preliminary comments did state that while the impact to *Passadumkeag Mountain* may be perceived as unreasonable, the Mountain is not a scenic resource of state or national significance and that, under the law; it would be difficult to conclude an unreasonable adverse impact to *Saponac Pond. App. at p. 249.* LandWorks never provided a complete review of the Applicant's September submission, and LandWorks' preliminary comments were the only formal analysis the Department provided to the Applicant regarding those submissions.

At an October 23rd meeting requested by the Applicant, the Department revealed to the Applicant that, despite the technical data and analysis provided by both the Applicant and the Department's expert consultant, LandWorks, the Department felt the Project would have an unreasonable adverse scenic impact on Saponac Pond. Specifically, the Department explained, while their decision contradicted the written report of the Department's retained consultant, the

Department felt that the view was undeveloped, and the Project would be too visible. *App. at p. 256-258.* At that meeting, the Department confirmed that it had not evaluated the scenic impact of this Project compared to other approved projects. The Applicant identified at the meeting that additional information had recently become available that might impact the Department's findings and urged a comparative evaluation of other projects.

Later the same day, the Applicant requested an extension of the processing period in order to submit a recent study directly relevant to the Department's stated concerns, to compare the visibility of the Project with that of permitted projects, and to evaluate the feasibility of removing one turbine. This request was denied.[4] *App. at p. 255.* And so, on October 29th, the Applicant submitted two memoranda and supporting information for consideration prior to the issuance of an order. The first memorandum compared the visibility of the Project with the visibility of two other Department-approved wind projects, and provided a new study and peer review directly relevant to the statutory criteria regarding viewer expectations and impact on use. *App. at pp. 259-345.* The second memorandum proposed to reduce scenic impact to Saponac Pond by removing one turbine from the 14 turbine project. *App. at pp. 346-351.* The Department responded on October 30th, stating "[a]fter consultation with the AG's office, the Department has determined that we will not be reviewing the additional visual information you submitted today." *App. at p. 352.* On October 31st, the Department issued a draft order ("Draft Order"). *App. at pp. 391-432.* The Applicant was permitted to submit comments on the Draft Order by 5:00 PM on November 8th. On November 8th at 3:32 PM, the Applicant submitted 13 single-spaced pages of detailed technical comments, *App. at pp. 433-446*, and resubmitted its October 29th submission

[4] The Applicant requested a reconsideration of this denial, and that request received no response until November 2nd, *after* the Department issued the Draft Order denying the Project. *App. at pp. 256-258.*

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urging full consideration of this evidence. The final Order ("Final Order" or "Order") denying the Project was signed by the Commissioner that same day. *App. at pp. 447-492.*

Despite the wealth of technical and expert data and analysis to the contrary, and the absence of any technical data to support its position, the Department based its denial on a finding that the Project failed to meet the scenic impact standard at Saponac Pond under Site Law and NRPA. All other criteria for both Site Law and NRPA were deemed satisfied.

ARGUMENT

The Department improperly denied the permit application. The Department's stated grounds for denial have no basis in either the Record or applicable Maine law, and the denial should therefore be reversed. The Department applied the incorrect legal standard in its evaluation of the Project's scenic impacts, and the Department's conclusions directly conflict with the data and unanimous technical analysis, including analysis by the Department's expert consultant, and are not otherwise supported by the Record.

I. The Department Failed to the Apply the Wind Energy Act Scenic Impact Standard That Governs This Evaluation.

The Department did not apply the proper scenic impact standard to this Project, as required by WEA. Rather, the Department applied a standard that merged the WEA scenic impact standard with the Site Law scenic impact standard applicable to non-wind projects. The Department's application of this new standard is in direct conflict with the Legislative intent.

In 2008, the Legislature set goals related to the installation of wind energy developments in the State of Maine. To facilitate these goals and accommodate the reality of turbines as a highly visible feature of any landscape, the Legislature enacted the WEA. Among other things,

the WEA set forth a new standard by which to evaluation scenic impacts of expedited wind energy developments proposed under NRPA or Site Law.

The WEA scenic impact standard applies, in lieu of the general Site Law and NRPA scenic impact standards,[5] in evaluating proposed expedited wind energy developments. The WEA standard requires the Department to evaluate six statutory criteria to determine whether

> [t]he development significantly compromises views from a scenic resource of state or national significance such that the development has an unreasonable adverse effect on the scenic character or existing uses related to scenic character of the scenic resource of state or national significance.

35-A M.R.S.A. § 3452(3).

The six statutory criteria enumerated in the law are as follows:

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 facility;

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 resources 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 and the effect of prominent features of the development on the landscape.

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[5] Prior to the WEA, the Department's Site Law review of a project would include a determination of whether the project would fit harmoniously into the natural environment and whether the project had an unreasonable adverse effect on scenic character and existing uses related to scenic character; its NRPA review would include a determination whether a NRPA activity would interfere with existing scenic, aesthetic or recreational uses of a protected natural resource.

35-A M.R.S.A. § 3452(3).

The statute further narrows the scope of the Department's inquiry in two relevant ways:

> 1) a 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 [Site Law]. (Emphasis added.); and
>
> 2) a finding that turbines are "a highly visible feature in the landscape" is not sufficient to support a finding of unreasonable adverse effect.

35-A M.R.S.A. § 3452(1) and (3).

Rather than apply this clearly articulated standard, the Department evaluated whether the Project fit harmoniously into the natural environment and had an unreasonable adverse effect on scenic character and existing uses related to scenic character. The Draft Order Site Law finding states:

> The applicant has not made adequate provision for fitting the generating facility portion of the development harmoniously into the existing natural environment and the development will have an unreasonable adverse effect on existing uses and the scenic character of Saponac Pond, a SRSNS.

App. at p. 431. Just nine days later, the same finding in the Final Order reads:

> In that the proposed activity would significantly compromise views from a SRSNS and would have an unreasonable adverse effect on the scenic character and exiting uses related to scenic character of the resource, the *applicant has not made adequate provision for fitting the generating facility portion of the development harmoniously into the existing natural environment*. The development would have an unreasonable adverse effect on the existing uses and scenic character of Saponac Pond, a SRSNS.[6]

App. at p. 490 (emphasis added). While the Department added some language to incorporate the "significantly compromise" standard into its finding during the week between the Draft and Final Orders, the mere addition of that language at the last moment does not remedy a flawed analysis.

[6] SRSNS is an abbreviation for "Scenic Resource of State or National Significance," a term defined in the WEA.

Further, neither the standard in the Draft Order nor the standard in the Final Order accurately recites the WEA scenic impact standard.

The Department's deviation from the WEA is not simply semantics or immaterial; it is contrary to applicable law. The Department Order applies a standard that was not known to or applied by the Applicant or LandWorks. This different standard is also a substantial departure from the correct legal standard applied in the Department's July 5 Staff Analysis, in which the Department found that the Project would *not* have an unreasonable adverse impact on any scenic resource of state or national significance. *App. at 381.* In the WEA, the Legislature specifically directed that the "fit harmoniously" standard does not apply and further directed that a finding that generating facilities are a highly visible feature in the landscape is not solely sufficient basis for a denial. The Department's conclusions, therefore, are contrary to law. Instead, they are based on the Department's *subjective* and *ad hoc* evaluation that the Project does not fit harmoniously into the natural mountain landscape because it will be highly visible to users of Saponac Pond. *App. at pp. 471-473; 256.* Where the Department deviated from the WEA standard, the standard originally applied in the Staff Analysis, without notice or explanation, the application of a new standard to this application deprived the Applicant of due process.

The WEA, and related amendments to the Site Law itself,[7] make abundantly clear that the WEA scenic impact standard, and not the fit harmoniously standard, applies to expedited wind energy development proposals. The Department's evaluation was conducted by conflating these two standards into a standard that is substantially different from the WEA standard, which is a

[7] Section 484, subsection 3 of Site Law states that "[i]n making a determination under this subsection regarding an expedited wind energy development, as defined in 35-A M.R.S.A. §3451, subsection 4 . . . the department 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."

significant legal error. The Department's denial was improperly based on an evaluation of whether the Project will fit harmoniously into the natural environment, and should therefore be reversed.

II. The Scenic Impact to Saponac Pond is Not Unreasonably Adverse.

In addition to conducting its scenic impact evaluation pursuant to the improper legal standard, the Department's scenic impact conclusions were contrary to the Record evidence. The Record compels an approval of the Project.

Generally, the Department's evaluation of scenic impacts of a proposed wind project is performed through a review of the relevant record evidence, guided by analysis of its expert consultant. In this instance, however, the Department's review of the Record was colored by a series of threshold errors, which resulted in an arbitrary conclusion that was contrary to the data and technical analysis contained in the Record. The Department erred when it:

- Focused its evaluation on the view looking south at Passadumkeag Mountain and not on the view from the entire resource. *App. at pp. 472-473.*
- Concluded that the view from its selected vantage point is of an undeveloped mountain, despite substantial competent record evidence to the contrary. *App. at p. 473.*
- Confined its interpretation of the "context" of this Project to its location on Passadumkeag Mountain alone, rather than within the context of the scenic experience at Saponac Pond generally. *App. at p. 473.*
- Treated the limited number of users on the Pond as heightening the enjoyment of the resource, as if Saponac Pond were remote and undeveloped pond, rather than attributable to the local nature of its users. *App. at p. 473.*
- Failed to seek full expert analysis on any of the Applicant's scenic impact submissions beyond its original VIA.
- Refused to consider a visibility comparative analysis with other approved projects, as well as the post-construction user survey at Baskahegan Lake. *App. at p. 352.*

The decisions and conclusions summarized above significantly deviate from precedent, significantly deviate from the objective methodology employed by both experts, are contrary to the Record evidence, and illustrate the Department's failure to employ reasonable diligence in both considering the Record evidence and ensuring that the Department has the benefit of expert consultation on technical submissions.

This pattern of arbitrary decision-making is evident in the Department's NRPA evaluation. While the proposed NRPA activities are located along Greenfield Road, the Department evaluates the scenic impact under NRPA by addressing the view of the turbines on the Mountain. Not only are no NRPA activities proposed on Passadumkeag Mountain, but the proposed NRPA activities along Greenfield Road are not visible from Saponac Pond. Those activities, therefore, satisfy the scenic impact standard. Because the Department's NRPA Finding A[8] is in clear error based on the statutory standard the Applicant respectfully requests that the Board reverse the Department's Finding and grant a NRPA Permit.

Focusing, then, on the Site Law evaluation, the technical evidence in the Record is unanimous: under the WEA, the Project does not significantly compromise views from Saponac Pond such that the development has an unreasonable adverse effect on the scenic character or existing uses related to the scenic character of the Pond. *App. at p. 53; 187; 206.* The Applicant's VIA and the Department's peer review were each performed by technical experts in the field of scenic impacts, with the Department's expert conducting more than three weeks of analysis before reaching its conclusion. Despite these unanimous expert evaluations, the Department

[8] The proposed activity would not interfere with existing recreational or navigation uses. In that the proposed activity would significant compromise views from a SRSNS and would have an unreasonable adverse effect on the scenic character and existing uses related to scenic character of the resource, the proposed activity would unreasonably interfere with existing scenic and aesthetic uses. *App. at p. 489.*

bases its denial on the following unsupported conclusions: the significance of Saponac Pond is high; the scenic character of the surrounding area is undeveloped and pristine; the context of the Project is on an undeveloped mountain; the viewer expectations are high; the impact on use will be high; and the visibility of the Project will be significant. *App. at pp. 471-473.* With the exception of the final criterion related to visibility, the Department findings are contrary to the data and technical analysis in the Record.

Set forth below is an evaluation of the Project, based upon the evidence in the Department's Record, and in accordance with the six statutory criteria that are to be considered in determining whether the Project will significantly compromise the view from Saponac Pond such that it will have an unreasonable adverse effect on scenic character or uses related to scenic character of the Pond.

A. The Significance of Saponac Pond.

The Record demonstrates that while Saponac Pond is classified as a "Scenic Resource of State or National Significance," when compared to other resources in that same category, it is not unique or distinctive and therefore its relative significance is not high. Passadumkeag Mountain is privately-owned, has significant development potential, and is currently developed with clear-cuts, logging roads, and two radio towers. These facts, along with the developed shoreline of the Pond, remnants of an old sawmill operation, and proximity to Route 188, all diminish the significance of Saponac Pond, such that LandWorks assigned the Pond a rating of "Low" for significance. *App. at p. 32; 188.*

None of the Pond's resources were rated as outstanding in the Maine Wildlands Lakes Assessment, including its scenic resources. *App. at p. 34.* The Land Use Planning Commission's

"Comprehensive Land Use Plan" assigned Saponac Pond to Management Class 3,[9] Potentially Suitable for Development, based upon available information on water quality, access, conflicting uses, shoreland availability, water level fluctuation, location, regional considerations and special planning needs. While the feature that contributes to the Pond's "significant" scenic rating appears to be Passadumkeag Mountain, the Mountain itself is private property and not a public resource.

Saponac Pond is described in the Record as typical for an accessible lake in Maine, with its summer camps and year round homes, docks and a boat launch. Although public comments make it clear that Saponac Pond is important and personally special to those who own property on the Pond or visit the area regularly, it is not remote, outstanding or otherwise unique based on the scenery. It is developed, it has been identified as suitable for development, and its relative scenic significance to the state and to the nation is therefore low.

B. The existing character of the surrounding area.

The existing character of the area surrounding Saponac Pond can best be described as a developed and working landscape. There is visible evidence of clear-cuts, logging roads, and other resource extraction activity; over 40 camps and year-round homes; a wooded shoreline with clearings for the structures; and a section of Route 188 abutting the shoreline. The LandWorks Report notes the visual prominence of Passadumkeag Mountain, then states:

> [d]espite this consideration, Saponac Pond is by no means a pristine waterbody, and ironically it is the logging activity and mountaintop development (with the roads and radio tower) that contributes to the sense that the Pond is in a developed area that has been used historically as a working landscape.

App. at p. 169.

[9] Class 1 is "High Value, least accessible, undeveloped lakes" and Class 2 is "especially high value, accessible, undeveloped lakes."

The Record demonstrates conclusively that the character of the area surrounding Saponac Pond and Passadumkeag Mountain is not primarily a natural mountain landscape. Rather, it is defined by a developed shoreline for summer camps and year-round homes and docks with views of a privately-owned mountain that is used for commercial logging activities and cars passing on Route 188, where both the Mountain and the land surrounding the Pond show significant evidence of development activities. While public comments indicate that the area is generally scenic, the Record also makes clear, as described above, that it does not rise to the level of being exceptional, sensitive, highly valuable or varied, resulting in a rating of "Medium" by LandWorks for existing character. *App. at p. 206*. The addition of wind turbines to this developed and working environment would not result in an unreasonably significant change to the character of the area.

C. The expectations of the typical viewer.

The typical viewer on Saponac Pond is synonymous with the typical user, which the Record demonstrates is a boater or fisherman. While on the Pond, the viewer has a 360° view that includes the many house lots on the shoreline, as well as logging roads, clear-cuts and a radio tower, and evidence of other human activity. Such users of the resource are not necessarily focused on scenic quality for a satisfactory recreational experience. *App. at p. 182.*

The data in the Record regarding user expectations includes the results of the Market Decisions survey of users of Saponac Pond and Nicatous Lake, which found that users had moderate expectations of a low level of development along the Pond/Lake. The average rating on the seven point scale (with 1 being undeveloped and 7 being developed) was 2.4 with a median

of 2.0. Seventy-eight percent of respondents expressed the view that the Pond/Lake would be undeveloped to some degree while 11% expected the Pond/Lake to be developed to some degree.

Users of Saponac Pond and Nicatous Lake also had moderate expectations of a small number of people using the resource. The average rating on the seven point scale (with 1 being un-crowded and 7 being crowded) was 2.8 with a median of 2.0. Sixty-eight percent of respondents expressed the view that the Pond/Lake would be un-crowded to some degree while 21% expected the Pond/Lake to be crowded to some degree. *App. at p. 86.*

While viewers had an expectation of low amounts of development on Saponac Pond, that expectation is at odds with the amount of development that has been documented, as discussed above. Such expectations did not appear to influence the users who indicated they would return to the Pond after the Project is constructed. After evaluating the results of the intercept survey and considering the developed character of the area, LandWorks assigned viewer expectations a rating of "Low." *App. at p. 206.* Further support for this rating can be found in the Baskahegan Lake User Survey, which surveyed users on a lake *after* the 55 turbine Stetson Wind Farm had been installed nearby, and found that all respondents said they were likely to return, and 93% of respondents stated that the wind farm had either no or a positive effect on the quality of their recreational experience. *App. at p. 267.* A peer review of this survey notes that, nationally, a wind development's actual impact on users after construction is less than anticipated by pre-construction surveys. *App. at pp. 325-345.*

D. <u>The Project's purpose and the context of the proposed facility</u>.

The Project's fundamental purpose is to generate wind power, while ensuring that its impacts on the surrounding area remain reasonable. This qualified purpose has resulted in careful

site selection, with a particular focus on finding a location that has sufficient wind to support a project, and is also located in an area that is not a pristine, remote wilderness area with outstanding scenic resources. There are other ancillary purposes, such as contributing to the Legislative goal to install 2000 MW of capacity by 2015. These purposes are inherently reasonable.

Multiple ways exist to view the "context" of a project: both the Applicant's VIA and LandWorks discuss the "context" of the proposed facility and the character of the area as largely equivalent; the VIA also identifies that this criterion is intended to reflect how a project contributes towards the Legislative goals for wind energy. *App. at pp. 32 and 181; App. at p. 51.* On the one hand, evaluating "context" includes identifying whether an area has outstanding scenic value, or whether it is scenic in a general sense, without rising to the level of exceptional. Here, the scenic context has been largely discussed in the section above regarding character of the surrounding area, and it has been noted that the Project site on Passadumkeag Mountain, which, while visible to many, is privately owned. LandWorks also notes that Passadumkeag Mountain, while a significant feature in the landscape, is not a destination for tourism or recreation, but rather a regional landmark.

In addition, in the context of Maine's energy policy, the Project would be located within the physical context of an expedited permitting area, which the Legislature zoned to allow wind development as a permitted use. It would also contribute 42 installed megawatts of wind energy capacity towards the goal of 2000 MW of installed capacity by 2015 (of which less than 600MW have been installed, to date). Further, unlike other wind development sites that have inspired statewide and national challenges based on the significance of the impacted resources from such

parties as Maine Audubon, Natural Resources Council of Maine, the Appalachian Trail Club and the National Park Service, this is a reasonably low-impact area in which to propose a wind project.

E. The extent, nature and duration of potentially affected public uses on Saponac Pond and the potential effect of the generating facilities' presence on the public's continued use and enjoyment Saponac Pond.

The extent, nature, and duration of public uses at Saponac Pond are clearly established in the Record. The use surveys performed for this Project demonstrate that the extent of use at the Pond is very limited. Specifically, over two seasons and a total of almost 150 hours of observation, there were between .2 and .3 users on the water each hour, and there were never more than two boats on the Pond at one time. Based on the observations of the use surveys, the nature of the use is almost exclusively fishing and boating, with average visits of 1.8 hours. While fishing and boating activities may be enhanced by the views of Passadumkeag Mountain, LandWorks specifically notes that these are not necessarily uses related to scenic character, as the user is not focused on scenic character for a satisfactory recreational experience. While the turbines may be viewed from 97% of the Pond, the majority of fishing and boating users are not looking exclusively at the turbines, but also the water and shoreline. *App. at pp. 259-260.*

The potential effect on public use can be best estimated in two separate ways. First, you can try to ask the users what they think impact might be; second, you can ask the users of a similar resource what the impact has actually been *after* a wind project has been installed. While the Department has typically only required the first type of survey as sufficient evidence of the reasonableness of the impacts, both such surveys were submitted to the Department by the Applicant, and both unqualifiedly support a conclusion that the impact will be reasonable.

In response to the user survey performed for this Project, 73% of boaters and 71% of fishermen indicated that they will return to the Pond after the Project is constructed. *App. at p. 98.* In addition, the Baskahegan Lake User Survey found that at Stetson Wind Project, 74 percent of those surveyed rated the views around Baskahegan Lake as having the "Highest Scenic Quality," and 81 percent of those surveyed said that the wind farm has had "No Effect" or a "Positive Effect" on the scenic value of Baskahegan Lake. Stetson Wind Project, unlike Passadumkeag, has a total of 55 turbines visible from over 90 percent of the surface of the lake at distances ranging from 5.0 to 9.3 miles and seen over a 58-degree horizontal field of view. Most importantly, 93 percent of those surveyed stated that the presence of 55 highly visible operating wind turbines would not affect their likelihood to return to the lake. *App. at p. 267.*

The results of the Passadumkeag survey and the Baskahegan survey are consistent with an observation in the peer review of the Baskahegan survey: public acceptance declines when a project is announced, reaches a low during development, but increases after construction. The Record evidence demonstrates that the Project's impact on the limited recreational uses of Saponac Pond is reasonably anticipated to be low.

F. <u>The scope and scale of the potential effect of views of the generating facilities on Saponac Pond, including but not limited to issues related to the number and extent of turbines visible from Saponac Pond and the effect of prominent features of the development on the landscape.</u>

Both LandWorks and the VIA refer to this criterion as "visual impact" or "visibility." LandWorks describes it as the criterion that addresses the number of turbines visible and the extent of that visibility. Both experts also note the statutory directive that:

> a finding by the [Department] that the development's generating facilities are a highly visible feature in the landscape is not solely sufficient basis for a determination that an expedited wind energy project has an unreasonable adverse

> effect on the scenic character and existing uses related to scenic character of [Saponac Pond].

35-A M.R.S.A. § 3452(1).

This prohibition on finding unreasonableness based on visibility was a significant part of the Oakfield Wind Project decision ("Oakfield"), and cited by the both the Department in its original order approving the project and by the Board on appeal of that decision. In Oakfield, the nacelle and blades from at least 13 turbines would be visible above the horizon at distances ranging from 2.3 to 6.0 miles, at the undeveloped end of Pleasant Lake, a lake with a "significant" rating for scenic value. From this viewpoint, turbines would be seen throughout a horizontal viewing arc of 80 degrees. As the Department found in its Oakfield approval, "[t]here is a potential for turbines to be visible from nearly 90 percent of the lake; the closest turbine tips visible from the lake will be 1.5 miles away, and the hubs of up to 22 turbines will be visible from most of the lake." *App. at pp. 260-261.*

The Project will be highly visible from Saponac Pond. The Record states that, from the northern shore of the Pond, adjacent to Route 188, 10-14 turbines would be visible over a horizontal viewing arc of between 30 and 52° of a 180° panoramic view (or 17%-30% of the view) at a distance of 4 to 4.8 miles. In addition, from a 360° open water view on the southern end of the Pond, the 14 turbines would be seen at a distance of 3.2 to 4.4 miles over a horizontal arc of approximately 62° (or 17% of the view). At least some turbines would be visible from 97% of the Pond. Both experts conclude that the visibility of the Project is significant. *App. at p. 188; App. at p. 36.* The statute, however, requires that a finding of significance in this criterion cannot form the sole basis for a determination of an unreasonable adverse effect. 35-A M.R.S.A. §3452(3).

An analysis of the six statutory criteria against the Record demonstrates that, while the Project will be visible, it will be visible from a developed scenic resource of relatively low state or national significance that is minimally used by the public. It further demonstrates that those existing recreational uses are unlikely to be significantly impacted, and based on use and user surveys, will not be unreasonably impacted. The Record compels an approval of the Applicant's requested permit.

While the Project may be highly visible to those who use the Pond, it does not significantly compromise views from Saponac Pond such that the development has an unreasonable adverse effect on the scenic character or existing uses related to the scenic character of Saponac Pond. The Applicant respectfully requests that, pursuant to an analysis of the six statutory criteria pursuant to the WEA scenic standard, based upon the wealth of the evidence in the Record, the Board find that the Applicant satisfies the WEA scenic standard and is therefore entitled to a Site Law permit.

CONCLUSION

The Department's Findings that the Project does not satisfy the applicable scenic impact standard based on the view from Saponac Pond are arbitrary, capricious, and contrary to the facts in the record. The Applicant respectfully requests that the Board reverse the Department's findings and conclusions regarding the scenic impact to Saponac Pond, find that the Project satisfies the Wind Energy Act scenic impact standard, and approve the NRPA and Site Law applications that are the subject of this appeal.

Submitted this 10th day of December, 2012.

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STATE OF MAINE
BOARD OF ENVIRONMENTAL PROTECTION

IN RE:

PASSADUMKEAG WINDPARK, LLC	)	APPLICANT'S APPEAL
#L-25597-24-A-N/	)	OF DEPARTMENT ORDER
#L-25597-TH-B-N	)	DENYING SITE LAW
	)	AND NRPA PERMITS

APPENDIX: RECORD RELATING TO SCENIC IMPACT ON SAPANAC POND*

*Portions of documents that are unrelated to Saponac Pond have been removed.

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35-A §3404. DETERMINATION OF PUBLIC POLICY; STATE WIND ENERGY GENERATION GOALS

35-A §3404. DETERMINATION OF PUBLIC POLICY; STATE WIND ENERGY GENERATION GOALS

1. Encouragement of wind energy-related development. It is the policy of the State in furtherance of the goals established in subsection 2, to encourage the attraction of appropriately sited development related to wind energy, including any additional transmission and other energy infrastructure needed to transport additional offshore wind energy to market, consistent with all state environmental standards; the permitting and financing of wind energy projects; and the siting, permitting, financing and construction of wind energy research and manufacturing facilities.

[2009, c. 615, Pt. A, §3 (AMD) .]

2. State wind energy generation goals. The goals for wind energy development in the State are that there be:

A. At least 2,000 megawatts of installed capacity by 2015; [2009, c. 615, Pt. A, §4 (AMD) .]

B. At least 3,000 megawatts of installed capacity by 2020, including 300 megawatts or more from generation facilities located in coastal waters, as defined by Title 12, section 6001, subsection 6, or in proximate federal waters; and [2009, c. 615, Pt. A, §4 (AMD) .]

C. At least 8,000 megawatts of installed capacity by 2030, including 5,000 megawatts from generation facilities located in coastal waters, as defined by Title 12, section 6001, subsection 6, or in proximate federal waters. [2009, c. 615, Pt. A, §4 (NEW) .]

[2009, c. 615, Pt. A, §4 (AMD) .]

SECTION HISTORY
2005, c. 646, §4 (NEW). 2007, c. 661, Pt. A, §6 (RPR). 2009, c. 615, Pt. A, §§3, 4 (AMD).

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Maine Revised Statute Title 35-A, Chapter 34-A: EXPEDITED PERMITTING OF GRID-SCALE WIND ENERGY DEVELOPMENT

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35-A §3451. DEFINITIONS

As used in this chapter, unless the context otherwise indicates, the following terms have the following meanings. [2007, c. 661, Pt. A, §7 (NEW).]

1. Associated facilities. "Associated facilities" means elements of a wind energy development other than its generating facilities that are necessary to the proper operation and maintenance of the wind energy development, including but not limited to buildings, access roads, generator lead lines and substations.

[2007, c. 661, Pt. A, §7 (NEW) .]

1-B. Community benefit agreement. "Community benefit agreement" means an agreement between the developer of an expedited wind energy development and a host community that involves payments by the developer to the host community to be utilized for public purposes, including, but not limited to, for property tax reductions, economic development projects, land and natural resource conservation, tourism promotion or reduction of energy costs, and that specifies in writing:

A. The value of any lump sum payments made by the developer to the host community; and [2009, c. 642, Pt. A, §2 (NEW).]

B. Any payment schedule and associated terms and conditions for payments to be made over time by the developer to the host community. [2009, c. 642, Pt. A, §2 (NEW).]

[2009, c. 642, Pt. A, §2 (NEW) .]

1-C. Community benefits package. "Community benefits package" means the aggregate collection of tangible benefits resulting from any of the following:

A. Payments, not including property tax payments, to the host community or communities, including, but not limited to, payments under community benefit agreements; [2009, c. 642, Pt. A, §3 (NEW).]

B. Payments that reduce energy costs in the host community or communities; and [2009, c. 642, Pt. A, §3 (NEW).]

C. Any donations for land or natural resource conservation. [2009, c. 642, Pt. A, §3 (NEW).]

[2009, c. 642, Pt. A, §3 (NEW) .]

2. Department. "Department" means the Department of Environmental Protection.

[2007, c. 661, Pt. A, §7 (NEW) .]

3. Expedited permitting area. "Expedited permitting area" means:

A. The organized areas of the State in their entirety, but not including waters subject to tidal influence, so that the edge of the area that is subject to tidal action during the highest tide level for the year in which an activity is proposed as identified in tide tables published by the United States Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service defines the boundary of the expedited permitting area on lands abutting waters subject to tidal influence; and [2007, c. 661, Pt. A, §7 (NEW).]

B. Specific places within the State's unorganized and deorganized areas, as defined by Title 12, section 682, subsection 1, that are identified by rule by the Maine Land Use Planning Commission in accordance with this chapter. [2007, c. 661, Pt. A, §7 (NEW); 2011, c. 682, §38 (REV).]

[2007, c. 661, Pt. A, §7 (NEW); 2011, c. 682, §38 (REV) .]

4. Expedited wind energy development. "Expedited wind energy development" means a grid-scale wind energy development that is proposed for location within an expedited permitting area.

[2007, c. 661, Pt. A, §7 (NEW) .]

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.

[2007, c. 661, Pt. A, §7 (NEW) .]

6. Grid-scale wind energy development. "Grid-scale wind energy development" means a wind energy development that is of a size that would qualify as a development of state or regional significance that may substantially affect the environment as defined under Title 38, section 482, subsection 2, paragraph A or paragraph C.

[2007, c. 661, Pt. A, §7 (NEW) .]

7. Host community. "Host community" means:

A. The following entities:

(1) A municipality or plantation in which the generating facilities of an expedited wind energy development are located;

(2) If the generating facilities of an expedited wind energy development are located in a township, the county in which those facilities are located;

(3) If the generating facilities of an expedited wind energy development are located on Passamaquoddy Indian territory, as defined in Title 30, section 6203, subsection 6, the Passamaquoddy Tribe, if the Passamaquoddy Tribe notifies the primary siting authority that it chooses to be considered a host community for purposes of this chapter with respect to the expedited wind energy development;

(4) If the generating facilities of an expedited wind energy development are located on Penobscot Indian territory, as defined in Title 30, section 6203, subsection 9, the Penobscot Nation if the Penobscot Nation notifies the primary siting authority that it chooses to be considered a host community for purposes of this chapter with respect to the expedited wind energy development; or

(5) If the generating facilities of an expedited wind energy development are located on Qualifying Band Trust Land, the Aroostook Band of Micmacs, if the Aroostook Band of Micmacs notifies the primary siting authority that it chooses to be considered a host community for purposes of this chapter with respect to the expedited wind energy development; and [2009, c. 642, Pt. A, §4 (NEW).]

B. When the generating facilities of an expedited wind energy development are located within the State's unorganized or deorganized areas and the developer selects a municipality; plantation; township; Passamaquoddy Indian territory, as defined in Title 30, section 6203, subsection 6; Penobscot Indian territory, as defined in Title 30, section 6203, subsection 9; or Qualifying Band Trust Land proximate to the location of the generating facilities for the purpose of providing specific tangible benefits:

(1) In the case of a municipality or plantation that is selected, the municipality or plantation;

(2) In the case of a township that is selected, the county in which that township is located;

(3) In the case of Passamaquoddy Indian territory that is selected, the Passamaquoddy Tribe if the Passamaquoddy Tribe notifies the primary siting authority that it chooses to be considered a host community for purposes of this chapter with respect to the expedited wind energy development;

(4) In the case of Penobscot Indian territory that is selected, the Penobscot Nation if the Penobscot Nation notifies the primary siting authority that it chooses to be considered a host community for purposes of this chapter with respect to the expedited wind energy development; and

(5) In the case of Qualifying Band Trust Land that is selected, the Aroostook Band of Micmacs, if the Aroostook Band of Micmacs notifies the primary siting authority that it chooses to be considered a host community for purposes of this chapter with respect to the expedited wind energy development. [2009, c. 642, Pt. A, §4 (NEW).]

An expedited wind energy development may have multiple host communities.

[2009, c. 642, Pt. A, §4 (AMD) .]

8. Primary siting authority. "Primary siting authority" means:

A. The department, in the case of an expedited wind energy development subject to the department's jurisdiction pursuant to Title 38, chapter 3, subchapter 1, article 6, including, but not limited to, a development subject to the department's jurisdiction pursuant to Title 38, section 488, subsection 9-A; or [2011, c. 682, §26 (AMD).]

B. The Maine Land Use Planning Commission, in the case of a community-based offshore wind energy project as defined in Title 12, section 682, subsection 19 and a wind energy development in the unorganized and deorganized areas as defined in Title 12, section 682, subsection 1 that is not grid-scale wind energy development. [2011, c. 682, §26 (AMD).]

[2011, c. 682, §26 (AMD) .]

8-A. Qualifying Band Trust Land. "Qualifying Band Trust Land" means Band Trust Land, as defined in the federal Aroostook Band of Micmacs Settlement Act, Public Law 102-171, 105 Stat. 1143 (1991), over which the Aroostook Band of Micmacs possesses municipal authority with respect to expedited wind energy development. For purposes of this subsection, "municipal authority" means the rights, privileges, powers and immunities of a municipality that are specified in legislation specifically authorizing the exercise of those government powers and that are equivalent to the rights, privileges, powers and immunities possessed by the Penobscot Nation and the Passamaquoddy Tribe with respect to expedited wind energy development within their respective Indian territories pursuant to Title 30, section 6206.

[2009, c. 642, Pt. A, §5 (NEW) .]

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; [2007, c. 661, Pt. A, §7 (NEW).]

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; [2007, c. 661, Pt. A, §7 (NEW).]

C. A national or state park; [2007, c. 661, Pt. A, §7 (NEW).]

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; [2007, c. 661, Pt. A, §7 (NEW).]

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; [2007, c. 661, Pt. A, §7 (NEW).]

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 Agriculture, Conservation and Forestry designates by rule adopted in accordance with section 3457; [2007, c. 661, Pt. A, §7 (NEW); 2011, c. 657, Pt. W, §5 (REV).]

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 [2007, c. 661, Pt. A, §7 (NEW).]

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, former State Planning Office or the Department of Agriculture, Conservation and Forestry in accordance with section 3457. [2011, c. 655, Pt. KK, §22 (AMD); 2011, c. 655, Pt. KK, §34 (AFF); 2011, c. 657, Pt. W, §5 (REV).]

[2011, c. 655, Pt. KK, §22 (AMD); 2011, c. 655, Pt. KK, §34 (AFF); 2011, c. 657, Pt. W, §5 (REV) .]

10. Tangible benefits. "Tangible benefits" means environmental or economic improvements or benefits to residents of this State attributable to the construction, operation and maintenance of an expedited wind energy development, including but not limited to: property tax payments resulting from the development; other payments to a host community, including, but not limited to, payments under a community benefit agreement; construction-related employment; local purchase of materials; employment in operations and maintenance; reduced property taxes; reduced electrical rates; land or natural resource conservation; performance of construction, operations and maintenance activities by trained, qualified and licensed workers in accordance with Title 32, chapter 17 and other applicable laws; or other comparable benefits, with particular attention to assurance of such benefits to the host community or communities to the extent practicable and affected neighboring communities.

[2009, c. 642, Pt. A, §6 (AMD) .]

11. Wind energy development. "Wind energy development" means a development that uses a windmill or wind turbine to convert wind energy to electrical energy for sale or use by a person other than the generator. A wind energy development includes generating facilities and associated facilities.

[2007, c. 661, Pt. A, §7 (NEW) .]

SECTION HISTORY
2007, c. 661, Pt. A, §7 (NEW). 2009, c. 642, Pt. A, §§2-6 (AMD). 2011, c. 655, Pt. KK, §22 (AMD). 2011, c. 655, Pt. KK, §34 (AFF). 2011, c. 657, Pt. W, §5 (REV). 2011, c. 682, §26 (AMD). 2011, c. 682, §38 (REV).

35-A §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.

[2007, c. 661, Pt. A, §7 (NEW) .]

2. Exception; certain associated facilities. The primary siting authority shall evaluate the effect of associated facilities of a wind energy development in terms of potential effects on scenic character and existing uses related to scenic character in accordance with Title 12, section 685-B, subsection 4, paragraph C or Title 38, section 484, subsection 3, in the manner provided for development other than wind energy development, if the primary siting authority determines that application of the standard in subsection 1 to the development may result in unreasonable adverse effects due to the scope, scale, location or other characteristics of the associated facilities. An interested party may submit information regarding this determination to the primary siting authority for its consideration. The primary siting authority shall make a determination pursuant to this subsection within 30 days of its acceptance of the application as complete for processing.

[2007, c. 661, Pt. A, §7 (NEW) .]

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; [2007, c. 661, Pt. A, §7 (NEW).]

B. The existing character of the surrounding area; [2007, c. 661, Pt. A, §7 (NEW).]

C. The expectations of the typical viewer; [2007, c. 661, Pt. A, §7 (NEW).]

D. The expedited wind energy development's purpose and the context of the proposed activity; [2007, c. 661, Pt. A, §7 (NEW).]

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 [2007, c. 661, Pt. A, §7 (NEW).]

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. [2007, c. 661, Pt. A, §7 (NEW).]

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.

[2007, c. 661, Pt. A, §7 (NEW) .]

4. Visual impact assessment; rebuttable presumption. An applicant for an expedited wind energy development shall provide the primary siting authority with a visual impact assessment of the development that addresses the evaluation criteria in subsection 3 if the primary siting authority determines such an assessment is necessary in accordance with subsection 3. There is a rebuttable presumption that a visual impact assessment is not required for those portions of the development's generating facilities that are located more than 3 miles, measured horizontally, from a scenic resource of state or national significance. The primary siting authority may require a visual impact assessment for portions of the development's generating facilities located more than 3 miles and up to 8 miles from a scenic resource of state or national significance if it finds there is substantial evidence that a visual impact assessment is needed to determine if there is the potential for significant adverse effects on the scenic resource of state or national significance. Information intended to rebut the presumption must be submitted to the primary siting authority by any interested person within 30 days of acceptance of the application as complete for processing. The primary siting authority shall determine if the presumption is rebutted based on a preponderance of evidence in the record.

[2007, c. 661, Pt. A, §7 (NEW) .]

SECTION HISTORY
2007, c. 661, Pt. A, §7 (NEW).

35-A §3453. ADDITIONS TO THE EXPEDITED PERMITTING AREA

The Maine Land Use Planning Commission may, by rule adopted in accordance with Title 5, chapter 375, add a specified place in the State's unorganized or deorganized areas to the expedited permitting area. In order to add a specified place to the expedited permitting area, the Maine Land Use Planning Commission must determine that the proposed addition to the expedited permitting area: [2007, c. 661, Pt. A, §7 (NEW); 2011, c. 682, §38 (REV).]

1. Geographic extension. Involves a logical geographic extension of the currently designated expedited permitting area;

[2007, c. 661, Pt. A, §7 (NEW) .]

2. Meets state goals. Is important to meeting the state goals for wind energy development established in section 3404; and

[2007, c. 661, Pt. A, §7 (NEW) .]

3. Principal values and goals. Would not compromise the principal values and the goals identified in the comprehensive land use plan adopted by the Maine Land Use Planning Commission pursuant to Title 12, section 685-C.

[2007, c. 661, Pt. A, §7 (NEW); 2011, c. 682, §38 (REV) .]

Rules adopted by the Maine Land Use Planning Commission pursuant to this section are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A. [2007, c. 661, Pt. A, §7 (NEW); 2011, c. 682, §38 (REV).]

SECTION HISTORY
2007, c. 661, Pt. A, §7 (NEW). 2011, c. 682, §38 (REV).

35-A §3454. DETERMINATION OF TANGIBLE BENEFITS; REQUIREMENTS

(CONFLICT)

In making findings pursuant to Title 12, section 685-B, subsection 4 or Title 38, section 484, subsection 3, the primary siting authority shall presume that an expedited wind energy development provides energy and emissions-related benefits described in section 3402 and shall make additional findings regarding other tangible benefits provided by the development. The Department of Labor, the Governor's Office of Policy and Management, the Governor's Energy Office and the Public Utilities Commission shall provide review comments if requested by the primary siting authority. [2011, c. 655, Pt. DD, §14 (AMD); 2011, c. 655, Pt. DD, §24 (AFF).]

In making findings pursuant to Title 38, section 484, subsection 3, the primary siting authority shall presume that an expedited wind energy development provides energy and emissions-related benefits described in section 3402 and shall make additional findings regarding other tangible benefits provided by the development. The Department of Labor, the Executive Department, State Planning Office and the Public Utilities Commission shall provide review comments if requested by the primary siting authority. [2011, c. 682, §27 (AMD).]

1. Documentation. As part of any permit application for an expedited wind energy development, the applicant shall include the following information regarding tangible benefits, except that the applicant may submit the information required under paragraph D as an addendum to the permit application during the period in which the application is pending:

A. Estimated jobs to be created statewide and in the host community or communities, as a result of construction, maintenance and operations of the project; [2009, c. 642, Pt. A, §7 (NEW).]

B. Estimated annual generation of wind energy; [2009, c. 642, Pt. A, §7 (NEW).]

C. Projected property tax payments; [2009, c. 642, Pt. A, §7 (NEW).]

D. A description of the community benefits package, including but not limited to community benefit agreement payments, to be provided in accordance with the requirements of subsection 2; and [2009, c. 642, Pt. A, §7 (NEW).]

E. Any other tangible benefits to be provided by the project. [2009, c. 642, Pt. A, §7 (NEW).]

[2009, c. 642, Pt. A, §7 (NEW) .]

2. Community benefits package requirement. Except as provided in subsection 3, to demonstrate that an expedited wind energy development provides significant tangible benefits as required in Title 38, section 484, subsection 10, the applicant for an expedited wind energy development is required to establish a community benefits package valued at no less than $4,000 per year per wind turbine included in the expedited wind energy development, averaged over a 20-year period. This subsection does not affect the property tax obligations of an expedited wind energy development.

[2011, c. 682, §28 (AMD) .]

3. Community benefits package requirement; exceptions. The community benefits package requirement under subsection 2:

A. Is waived for any expedited wind energy development that:

(1) Has an installed capacity of less than 20 megawatts; or

(2) Is owned by a nonprofit entity, a public entity or a quasi-public entity; and [2009, c. 642, Pt. A, §7 (NEW).]

B. Does not apply to those turbines included in the development that are located:

(1) In a host community in which the legislative body has voted to waive or reduce the community benefits package requirement;

(2) On Passamaquoddy Indian territory, as defined in Title 30, section 6203, subsection 6, unless the Passamaquoddy Tribe notifies the primary siting authority that it chooses to be considered a host community for the purposes of this chapter with respect to the expedited wind energy development;

(3) On Penobscot Indian territory, as defined in Title 30, section 6203, subsection 9, unless the Penobscot Nation notifies the primary siting authority that it chooses to be considered a host community for the purposes of this chapter with respect to the expedited wind energy development; or

(4) On Qualifying Band Trust Land unless the Aroostook Band of Micmacs notifies the primary siting authority that it chooses to be considered a host community for the purposes of this chapter with respect to the expedited wind energy development.

The community benefits package requirement applies to any turbines of the development that are not exempted under subparagraph (1), (2), (3) or (4). [2009, c. 642, Pt. A, §7 (NEW).]

Nothing in this subsection limits a host community's authority to require an expedited wind energy development to enter into a community benefit agreement and to fulfill its property tax obligations.

[2009, c. 642, Pt. A, §7 (NEW) .]

4. Community benefit agreement payments to counties. When generating facilities of an expedited wind energy development are located within an unorganized or deorganized area other than within a plantation, community benefit agreement payments provided to the county as the host community in accordance with this section may be used for projects and programs of public benefit located anywhere within that county.

[2009, c. 642, Pt. A, §7 (NEW) .]

5. Promoting economic development and resource conservation; assistance to host communities. To the extent practicable within existing resources, the Department of Economic and Community Development, the Governor's Energy Office and the Governor's Office of Policy and Management shall provide, upon the request of a host community, assistance for the purpose of helping the host community maximize the economic development and resource conservation benefits from tax payments and payments made pursuant to a community benefit agreement or a community benefits package in connection with expedited wind energy developments. As part of this assistance, the department and the Department of Economic and Community Development shall support host communities in identifying additional funding and developing regional economic and natural resource conservation strategies.

[2011, c. 655, Pt. DD, §15 (AMD); 2011, c. 655, Pt. DD, §24 (AFF) .]

SECTION HISTORY
2007, c. 661, Pt. A, §7 (NEW). 2009, c. 642, Pt. A, §7 (AMD). 2011, c. 655, Pt. DD, §§14, 15 (AMD). 2011, c. 655, Pt. DD, §24 (AFF). 2011, c. 682, §§27, 28 (AMD).

35-A §3455. DETERMINATION OF PUBLIC SAFETY-RELATED SETBACKS

In making findings pursuant to Title 12, section 685-B, subsection 4 or Title 38, section 484, subsection 3 on whether a wind energy development must be constructed with setbacks adequate to protect public safety, the primary siting authority must consider the recommendation of a professional, licensed civil engineer as

well as any applicable setback recommended by a manufacturer of the generating facilities. The primary siting authority may require submission of this information as part of the application. [2007, c. 661, Pt. A, §7 (NEW).]

SECTION HISTORY
2007, c. 661, Pt. A, §7 (NEW).

35-A §3456. SITING CONSIDERATIONS FOR SMALLER-SCALE WIND ENERGY DEVELOPMENT IN ORGANIZED AREAS

1. **Construction and operation requirements.** A person may not construct or operate a wind energy development, other than a grid-scale wind energy development, without first obtaining a certification from the department that the generating facilities:

A. Will meet the requirements of the noise control rules adopted by the Board of Environmental Protection pursuant to Title 38, chapter 3, subchapter 1, article 6; [2007, c. 661, Pt. A, §7 (NEW).]

B. Will be designed and sited to avoid unreasonable adverse shadow flicker effects; and [2007, c. 661, Pt. A, §7 (NEW).]

C. Will be constructed with setbacks adequate to protect public safety. In making a finding pursuant to this paragraph, the department shall consider the recommendation of a professional, licensed civil engineer as well as any applicable setback recommended by a manufacturer of the generating facilities. [2007, c. 661, Pt. A, §7 (NEW).]

A person proposing a wind energy development subject to certification under this section shall apply to the department for certification using an application provided by the department and may not begin construction until the certification is received.

[2011, c. 682, §29 (AMD) .]

2. **Fees; outside review; approval process.** The department may charge a developer an appropriate fee for its review and certification pursuant to this section. Certification may be conditioned on specific requirements, including but not limited to setbacks from residential structures to address noise or safety concerns. The department may use an outside reviewer as provided in Title 38, section 344-A. If no other approval by the department is required for the development, the department shall issue its certification within 185 days of its acceptance of a request for certification as complete pursuant to Title 38, section 344. At the request of an applicant, the department may put the certification review period on hold. If another approval by the department is required for the development, the department shall consolidate its process for certification under this section with that regarding other approvals by the department as provided in the department's rules and may extend the review period as provided in those rules. Notwithstanding any other provision of law, the department's certification pursuant to this section regarding a development that does not otherwise require the department's approval pursuant to this Title is not itself subject to judicial review as final agency action or otherwise, except as an aspect of an appeal of a pertinent municipal land use decision.

[2007, c. 661, Pt. A, §7 (NEW) .]

3. **Enforcement of standards.** Following certification under this section and during construction and operation, the standards in subsection 1 for a wind energy development subject to certification under this section may be enforced by the municipality in which the generating facilities are located at the municipality's discretion pursuant to Title 30-A, section 4452. The department is not responsible for enforcement of this section.

[2007, c. 661, Pt. A, §7 (NEW) .]

4. Exemption. Certification under this section is not required for a wind energy development with a generating capacity of less than 100 kilowatts.

[2007, c. 661, Pt. A, §7 (NEW) .]

SECTION HISTORY
2007, c. 661, Pt. A, §7 (NEW). 2011, c. 682, §29 (AMD).

35-A §3457. RULEMAKING; SCENIC VIEWPOINT; SCENIC INVENTORY

1. Scenic viewpoint. The Department of Conservation shall adopt rules to designate scenic viewpoints located on state public reserved land or on a trail that is used exclusively for pedestrian use, such as the Appalachian Trail, that have state or national significance from a scenic perspective based on criteria modeled after those used in the "Maine Rivers Study" published by the Department of Conservation in 1982 and "Maine Wildlands Lakes Assessment" published by the Maine Land Use Regulation Commission in June 1987 and consideration of the criteria in section 3452, subsection 3.

[2007, c. 661, Pt. A, §7 (NEW) .]

2. Scenic inventory. The Department of Conservation, Bureau of Geology, Natural Areas and Coastal Resources shall adopt rules regarding the methodology for conducting a scenic inventory of scenic resources of state or national significance that are located in the coastal area, as defined by Title 38, section 1802, subsection 1, in a manner comparable to that used for an inventory listed in section 3451, subsection 9, paragraph H, subparagraph (1). The Department of Conservation, Bureau of Geology, Natural Areas and Coastal Resources may contract with an outside entity for the preparation of a scenic inventory conducted pursuant to the methodology developed pursuant to this subsection.

[2011, c. 655, Pt. KK, §23 (AMD); 2011, c. 655, Pt. KK, §34 (AFF) .]

Rules adopted pursuant to this section are routine technical rules as defined in Title 5, chapter 375, subchapter 2-A. [2007, c. 661, Pt. A, §7 (NEW).]

SECTION HISTORY
2007, c. 661, Pt. A, §7 (NEW). 2011, c. 655, Pt. KK, §23 (AMD). 2011, c. 655, Pt. KK, §34 (AFF).

35-A §3458. JUDICIAL APPEAL; MUNICIPAL PERMITTING DECISION

Any judicial appeal of a municipal decision regarding permitting of an expedited wind energy development that is taken in the manner provided in the Maine Rules of Civil Procedure, Rule 80B must be heard and determined by the Superior Court as expeditiously as possible. [2009, c. 642, Pt. B, §2 (NEW).]

SECTION HISTORY
2009, c. 642, Pt. B, §2 (NEW).

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Section 30
Visual Impact Assessment

1.0 EXECUTIVE SUMMARY

1.1 Overview of Project and Location

Passadumkeag Windpark, LLC (Applicant) is proposing the Passadumkeag Wind Project (the Project), a 42-megawatt (MW) wind project located in Grand Falls Township, Penobscot County, Maine. In addition to the turbines, the Project also includes electrical collection infrastructure, an electrical substation, a transmission line, and an Operations and Maintenance (O&M) Building. One permanent 80-meter meteorological tower will be located on the Project site to monitor wind turbine performance.

The turbine portion of the Project consists of 14 Vestas V112 3.0-MW turbines. Each turbine is 84 meters (276± feet) to the center of the hub, and a total of 140 meters (459± feet) to the tip of a fully extended blade.

Turbines are proposed to be located on Passadumkeag Mountain, a distinct arcing landform running east-west through the midsection of Grand Falls Township. Ridge elevations are between 1,310 and 1,471 feet above sea level. Power from the turbines will be collected in a 34.5kV collector line that will run approximately 17 miles from the ridge along Greenfield Road through Summit Township, Greenfield Township, and into Greenbush. Nearly all of this line will be located within an existing electrical distribution line right-of-way. The substation and O&M building will be located in Greenbush, at the intersection of Greenfield Road and an existing 115 kV transmission line, Line 64.

The Project site is located within an expedited permitting area as defined by 35-A M.R.S.A. §3451 (Figure 1). The turbine sites are located on property that is currently used for commercial forestry operations and will continue to be in the future. The site contains developed logging roads that will be upgraded and used, where appropriate, to minimize clearing, wetland impacts, and new road construction.

1.2 Overview of Scenic Resources of State or National Significance Within Eight Miles of the Turbines

There are six scenic resources of state or national significance within the eight-mile study area (Study Area) of the Passadumkeag Wind Project:

a. Passadumkeag Marsh and Boglands, a National Natural Landmark in Passadumkeag, Lowell, and Summit Township.
b. Old Tavern in Burlington, on the National Register of Historic Places.
c. Saponac Pond in Burlington and Grand Falls Township.
d. Nicatous Lake in T 3 ND and T 40 MD.
e. Lower Pistol Lake in T 3 ND.
f. Spring Lake in T 3 ND.

Within the Study Area, the Project will not be visible from any national or state parks, scenic river segments, scenic viewpoints located on public reserved land or trails, MDOT scenic turnouts, or scenic viewpoints in the coastal area. Throughout the majority of the Study Area, views of the Project are blocked by topography and roadside vegetation.

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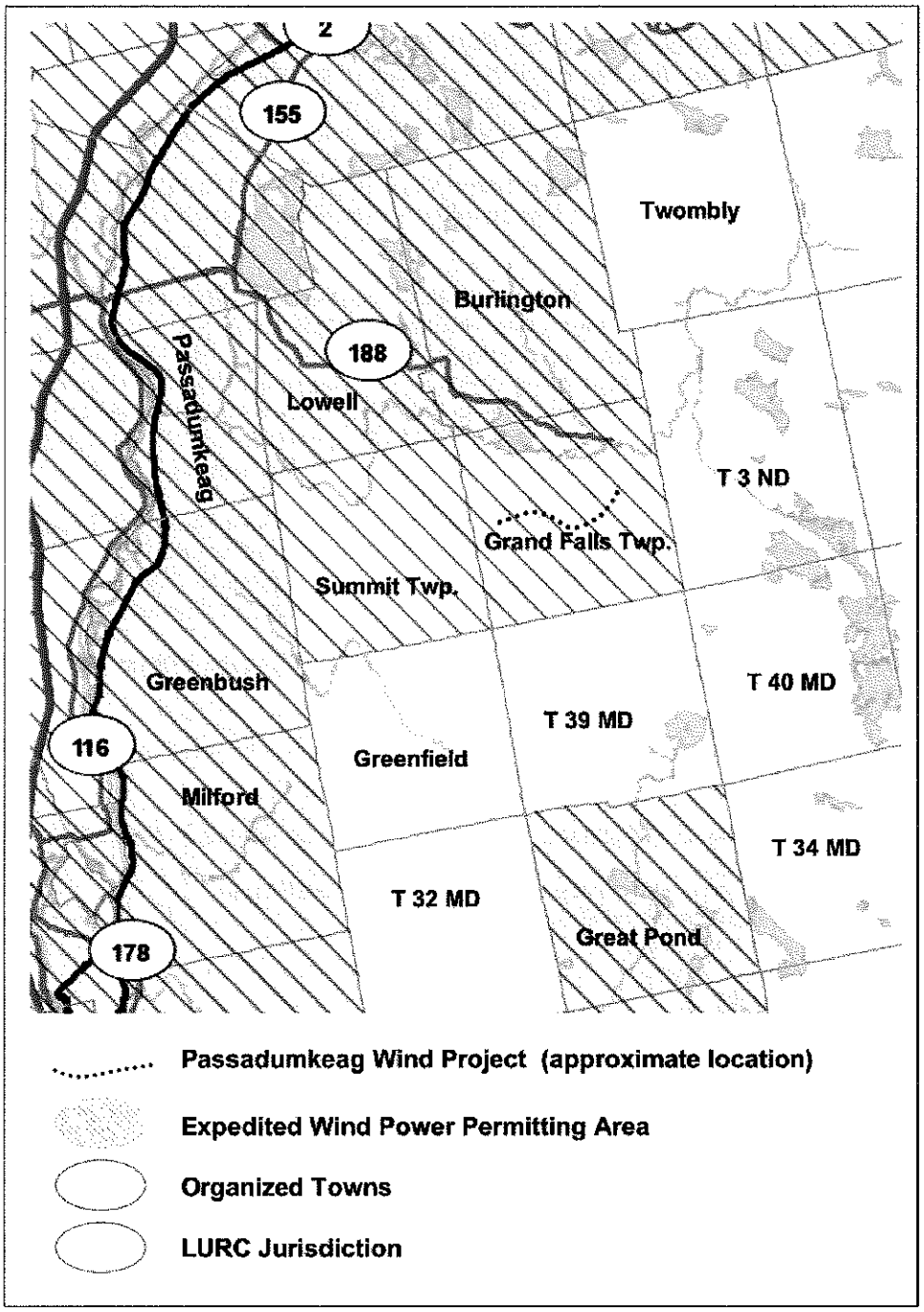
Figure 1: Expedited Wind Power Permitting Areas in Vicinity of the Passadumkeag Wind Project



1.3 Overview of Conclusion

This visual impact assessment (VIA) applied the criteria in the Maine Expedited Permitting Act to examine each of the scenic resources of state or national significance, in terms of their context, significance, existing public use, viewer expectations, project impact, and the potential effect on public use. This information was used to make a determination of whether the Project would significantly compromise views from these resources such that it would have an unreasonable adverse effect on their scenic character or the existing uses related to their scenic character.

As explained in the summary below, seven of the eight categories of scenic resources established by the Maine Expedited Permitting Act will not be impacted by the Project. Of the six scenic resources of state or national significance within eight miles of the Project (identified in 1.2 above), only one (Saponac Pond) will be significantly impacted. The Passadumkeag Wind Project will not have an unreasonable adverse impact on scenic values and existing uses of scenic resources of state or national significance and will not significantly compromise views from these resources.

- The Project will not be visible from Passadumkeag Marsh and Boglands, a National Natural Landmark that is 8 miles from the Project at its closest point.
- The Project will not be visible from the Old Tavern in Burlington, the one structure within eight miles on the National Register of Historic Places.
- The Project will be visible from the majority of Saponac Pond, a significant scenic resource. The overall scenic impact on the pond is judged to be medium/high.
- The Project will be visible from only a few locations among the numerous islands on the northern third of Nicatous Lake, an outstanding scenic resource. The scenic impact to this part of the lake is judged to be low to medium.
- The Project will be visible from the northern half of Lower Pistol Lake, a significant scenic resource. The scenic impact to this part of the lake is judged to be low to medium.
- The Project may be slightly visible from the northeastern corner of Spring Lake, a significant scenic resource. The scenic impact to this part of the lake is judged to be low to none.
- There are no federally designated wilderness areas, National Parks, developed State Parks, scenic river segments, MDOT scenic turnouts on scenic highways, or scenic viewpoints in coastal areas within the eight-mile Study Area.
- The associated facilities will not be of a location, character, or size to cause an unreasonable adverse visual effect on the scenic character of the Study Area.

2.0 INTRODUCTION

2.1 Background

Terrence J. DeWan and Associates (TJD&A), landscape architects in Yarmouth, Maine, prepared this VIA of the Passadumkeag Wind Project. The methodology for assessing the visual impacts of the Project is designed to address the specific criteria in the Maine Expedited Permitting Act. The technical aspects of the report are intended to primarily address the criteria of context and significant, while the user survey component of this report is intended to address the criteria of existing public use; viewer expectations, project impact, and potential effect on public use.

The technical aspects of this report are based upon topographic mapping and design plans provided by Stantec Consulting. TJD&A prepared the viewshed analysis maps (see Appendix B, Study Area and

Viewshed Maps), based upon WindPRO[1] software, to determine the limits of potential Project visibility and the effect of the Project on scenic resources of state or national significance. In addition to WindPRO, TJD&A used the three-dimensional resources of Google Earth Pro to look at the Study Area from the air and from the ground. These digital tools give reviewers the capability to experience the overall physical characteristics of the landscape and thereby better understand the setting of the Project relative to the surrounding topographic features and land use patterns.

The Study Area is centered on Grand Falls Township and includes the abutting towns and unorganized townships within eight miles of the Project (see Figure 1: Expedited Wind Power Permitting Areas in Vicinity of the Passadumkeag Wind Project). The limits of the eight-mile study are based upon the Maine Expedited Permitting Act, which instructs the reviewing agency to '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.' (§ 3452.3.)

In addition to the technical study, which includes viewshed mapping, photosimulations, and Project evaluation, the Maine Expedited Permitting Act requires that applicants address issues of public use, viewer expectations, project impact, and potential effect on public use. In order to gain a better understanding of how the public uses the waterbodies within the Study Area and public reaction to the proposed Project, Market Decisions, a market research and survey firm in Portland, Maine, was engaged to develop and conduct a survey of recreational users and to evaluate the results. Market Decisions interviewed 29 people – representing 64% of those observed at the resources – at the end of the summer between August 26 and August 29, 2011 and between September 2 and September 5, 2011.

During the survey period people were intercepted in two locations with potential for notable impacts: at the northwestern end of Nicatous Lake and at the northern end of Saponac Pond. The survey results were used to assist in an analysis of viewer expectations, project impacts, and potential effect on public use. The survey and resulting report – Passadumkeag Mountain Wind Power Project Intercepts – are appended to this report as Appendix D.

The survey included a total of 62 questions to assess the following topics:

- Activities in which respondents were engaged or planning
- Prior visits to the lakes in the area
- Importance of key attributes to their visit
- Expectations for the area
- General assessment of scenic value and quality
- An assessment of the scenic value/quality of the lakes (with and without wind turbines)
- Impact of the Project on use and enjoyment of the lakes
- General views of wind power development
- Demographics

2.2 Field Investigations

Field data was collected during site visits on July 27 and 28, 2011. TJD&A fieldwork concentrated on examining and photographing scenic areas of state or national significance within eight miles of the Project, and looked specifically at Saponac Pond, Lower Pistol Lake, Spring Lake, Nicatous Lake, and the Old Tavern in Burlington. TJD&A personnel visited the Study Area by automobile, kayak, and on foot. Fieldwork was limited to lands that were open to the public; no attempt was made to investigate potential impacts on individual private properties. Observations by survey personnel from Market Decisions, Inc. in late August and early September provided insight into summertime use levels on the lakes and ponds.

[1] WindPRO software was developed for the wind energy industry and is used internationally for planning, design, and visual representation.

Study area photographs were taken with a Nikon D300 digital camera, recording at the highest resolution. The camera was mounted with a 35mm lens, which is equivalent to a 50mm ('normal') lens used for a film camera. GPS coordinates were recorded with a JOBO PhotoGPS 4 mounted on the camera's hot-shoe to capture the location of each photograph. These images were used in the preparation of the photosimulations included in this VIA. Additional photographs were taken to illustrate the characteristic landscape within the Study Area. A selection of annotated representative views within the Study Area is included in Appendix A: Study Area Photographs.

2.3 Viewshed Maps and Photosimulations

A series of viewshed maps and photosimulations (computer-altered photographs) have been prepared to illustrate the anticipated change to views from scenic resources of state or national significance resulting from the construction of the Passadumkeag Wind Project. The viewshed maps are presented in Appendix B; the photosimulations are found in Appendix C. The following section describes the methodology used to develop these images:

- TJD&A prepared viewshed maps of the eight-mile Study Area with WindPRO software to determine from which of the regulated scenic resources the turbines may be visible. Topographic information was from the National Elevation Dataset (NED) digital elevation model (DEM), obtained from GIS Data Depot. The topography-only viewshed map is very conservative in that it does *not* account for the screening effects of existing vegetation, buildings, or other structures that will block views of the Project from most roads and population centers. (See Figure 2: Viewshed Map: Topography in Appendix B.)

  TJD&A prepared viewshed maps using landcover data supplied by the Maine OGIS.
  Figures 3: Viewshed Map: Topography and Vegetation in Appendix B shows the greatest area from which any part of the turbine could be visible within the Study Area. In this instance, this corresponds to the tip of a turbine blade in the upright position. The land cover data assumes that the typical tree height is 40', which is the height recommended for such modeling by Jim Palmer. To be conservative, wetlands, regenerating forests, and harvested areas were assigned a tree height value of 0'. Figure 4: Viewshed Map: Detail is an enlargement of those parts of the Study Area that contains scenic resources of State or National Significance.

- Figures 5: Viewshed Map: Topography and Vegetation HUB ONLY recognizes that blades rising above the treeline may not always be visible (and certainly would not be visually dominant beyond the foreground). This map illustrates the area within which any portion of the nacelle (including the warning light when present), located 84 meters (275 feet) above the ground, would be visible.

- Fieldwork by TJD&A verified the relative accuracy of the viewshed maps and determined the location of characteristic viewpoints to use for photosimulations. The locations were selected to illustrate visual impacts to the four waterbodies that have been identified as scenic resources of state or national significance and from which the Project can be seen. The photographs used in Appendix A: Study Area Photographs and Appendix C: Photosimulations were taken from publicly accessible locations, both on land and on the water, to illustrate the wide variety of landscape types within the Study Area.

- Photosimulations were prepared by TJD&A using the Visual Photomontage WindPRO module. A digital elevation model (DEM) of the Project area was created in WindPRO from on-line data sources. The specifications of the wind turbines (location, manufacturer, model number, base height, rotor diameter, and color) were entered into WindPRO, which created three-dimensional images of the turbines and placed them in the proper location on the model. Digital photographs of the selected views, taken by TJD&A, were imported into the computer and merged with the DEM, matching the lens focal length, date and time of photograph, digital resolution, and lighting. The DEM was matched with the photograph using the known elevation, latitude, and longitude data from the JOBO PhotoGPS 4 log.

- Post-production editing involved eliminating context data and other adjustments (e.g., removing parts of towers that are blocked by terrain or trees). Final adjustments were made to account for time of day, weather conditions, haze, and other environmental factors that can change the appearance and visibility of the turbine components.

- The Project model was also inserted into Google Earth to check the registration of the photographs with the computer model, to determine the effectiveness of existing vegetation to block views of the turbines, and to verify the accuracy of the viewshed maps and photosimulations.

- Google Earth was used to determine the relative visibility of the "associated facilities", i.e., the proposed access roads, crane pads, and transmission lines. Shapefiles for the associated facilities were imported into Google Earth and then surrounded by 'tree walls' modeled along the edge of the clearing limits. (The height of the 'tree walls' were taken from the viewshed maps; in most instances they were modeled at a height of 40'.) Views from various scenic resources and other public viewpoints were reviewed in Google Earth. Where associated facilities were determined to be visible, Photoshop was used to reflect the changes on the photosimulations.

- The resultant photosimulations (provided in Appendix C: Photosimulations) were merged into a panorama using Photoshop to provide a more contextual view of the landscape. Each panoramic view is also accompanied by a 'normal' view to illustrate what the human eye would see.

The legend in the panoramic views provides the following information:

- **Turbines**: the manufacturer and model number. All turbines will be Vestas V112 3.0-MW turbines, with 112 meter rotor diameters, mounted on 84 meter towers.
- **View Coordinates**: Latitude and longitude of the photograph and computer model.
- **Viewer Elevation**: Approximate distance above mean sea level in feet.
- **Direction of View**: The compass direction of the photosimulation (indicated by a red dot and arrows on the Viewpoint Location Map).
- **Closest/Farthest Visible Turbine**: The horizontal distance in miles between the viewpoint and the closest and farthest turbines that may be visible from that viewing location.
- **Turbines Visible**: The approximate number of turbines that would likely be seen from the specific viewpoint, considering the effects of vegetation and structures.
- **Date/Time**: When the photograph was taken.

The normal view also provides the distance (in inches) that the reviewer should hold the photosimulation from the eye to accurately replicate real-world conditions.

3.0 REGULATORY REQUIREMENTS

State law (Title 35-A M.R.S.A., Ch. 34-A) has designated an expedited permitting area as part of a process to expedite wind power projects in places where they are most compatible with existing patterns of development and resource values. Figure 1, the Expedited Wind Power Permitting Area in the Vicinity of the Passadumkeag Wind Project, shows that all of Grand Falls Township (where all the turbines are located), as well as Burlington, Lowell, and Summit Township, are within the expedited permitting area. The townships to the east and south (i.e., Twombly, T3 ND, T 40 MD, T 39 MD, and Greenfield) are outside the expedited permitting area.

In "making findings regarding the effect of an expedited wind energy development on scenic character and existing uses related to scenic character," DEP must determine 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." 35-A M.R.S.A. §3452.1. In

making its determination, DEP is required to 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 project purpose and the context of the proposed activity;
E. The extent, nature and duration of potentially affected public uses of the scenic resource of state or national significance and the potential effect of the generating facilities' presence on the public's continued use and enjoyment of the scenic resource of state or national significance; and
F. The scope and scale of the potential effect of views of the generating facilities on the scenic resource of state or national significance, including but not limited to issues related to the number and extent of turbines visible from the scenic resource of state or national significance, the distance from the scenic resource of state or national significance and the effect of prominent features of the development on the landscape. *See* 35-A M.R.S.A. §3452.3.

In addition, a finding by DEP 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 values and existing uses related to scenic character of a scenic resource of state or national significance." 35-A M.R.S.A. §3452.3. Further, in making its determination, DEP "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." 35-A M.R.S.A. §3452.3.

If DEP determines that the associated facilities (i.e., access roads, O&M building, substation, turbine pads, meteorological towers, and generator lead line) may have an unreasonable adverse effect on scenic character and existing uses, they are to be evaluated under traditional standards found in 06-096 CMR 375(14) and 06-096 CMR 315. Otherwise, the associated facilities are reviewed under the modified scenic impact standard applicable to the wind generating facilities. As discussed in Section 6.3 below, the associated facilities will not have an unreasonable adverse effect on scenic character and existing uses and therefore are reviewed in this VIA under the modified scenic impact standard applicable to wind generating facilities.

This VIA addresses all impacts required to be analyzed pursuant to the factors set forth in the Maine Wind Energy Law.

4.0 PROJECT STUDY AREA

4.1 Existing Character of the Surrounding Area

The Passadumkeag Wind Project will be located on Passadumkeag Mountain in Grand Falls Township. The Project Study Area is defined as area within eight miles of the Project, as illustrated in Figure 2 in Appendix B. The regional character is described by the existing landforms, water resources, vegetative patterns, and cultural character. The Study Area is a largely natural landscape with several areas of significant human alteration.

- **Landform.** The Study Area is located in the Maine-New Brunswick Lowlands Subsection biophysical region, an extensive area of lowlands west of the St. Croix River. Elevations typically range from 400' to 600' except for a series of hills in the West Grand Lake area.[2]

  The landscape to the south and west of the Project area is generally flat to rolling, with relatively few hydrologic features. The landscape to the north and east is much more varied, with rolling to

[2] Bailey, R.G. *Description of the Ecoregions of the United States*. Miscellaneous Publication No. 1391, U.S. Department of Agriculture, Forest Service, Washington, DC. 1995.

hilly terrain, extensive wetland systems, and numerous lakes and ponds with highly configured shorelines.

Two distinctive eskers are found at the edges of the Study Area. The Passadumkeag Esker, also known as the Enfield Horseback, parallels the east side of the Penobscot River. The second esker, known as The Horseback, is on the east side of Passadumkeag Mountain, extending north to the 1000-Acre Heath. Both eskers are heavily wooded with gravel roads running their length.

Passadumkeag Mountain is the most prominent landform in the Study Area, rising 1,200 feet above Saponac Pond. The main ridge is approximately 1.5 miles in length, which then extends easterly in a series of lower hills for another 2.7 miles. At its peak, Passadumkeag Mountain is 1,471 feet in elevation.

- **Water Resources**. The Study Area contains 19 lakes and ponds, ranging in size from 5,165 acres (Nicatous Lake) to small unnamed ponds less than ten acres. Two ponds (Saponac Pond and Trout Pond) are located within three miles of the Project. Nicatous Lake, 5.5 miles east of the Project), is rated "Outstanding" for scenic character by the Maine Wildlands Lake Assessment (Assessment). Three of the lakes within the Study Area (Saponac Pond, Spring Lake, and Lower Pistol Lake) are rated as 'Significant' for scenic character by the Assessment.

  The Passadumkeag River drains the northern half of the Study Area, flowing for 41 miles west to its confluence with the Penobscot River. While most of its length is a relatively smooth meandering stream, the section above Grand Falls drops 25 feet in a significant waterfall. Saponac Pond, with a maximum depth of 14 feet, is a large shallow flowage in the Passadumkeag River[3]. The Passadumkeag River has been rated as a 'C' river by the Maine Rivers Study.[4] While the river is noted for its geologic-hydrologic, undeveloped, anadromous fishery, and canoe touring resources, it is not recognized for its scenic value in the Maine Rivers Study.

  An extensive series of wetlands are found on the north side of Saponac Pond, extending from the town of Passadumkeag on the Penobscot River on the west to Upper Sysladobsis Lake on the east. This area, known as the Passadumkeag River – 1,000 Acre Heath, has been designated by the Maine Natural Areas Program as a "Focus Area", which are landscape areas that contain 'exceptionally rich concentrations of at-risk species and natural communities, significant wildlife habitats, and their intersection with large blocks of undeveloped habitat. These non-regulatory areas are intended as a planning tool for landowners, conservation entities, and local municipalities.[5] Focus Areas per se are not designated as scenic areas of state or national significance.

  The Passadumkeag River – 1,000 Acre Heath Focus Area contains the 1000-Acre Heath in Twombly (T3 R1) and the 6,100-acre Passadumkeag Marsh and Boglands, a National Natural Landmark east of the town of Passadumkeag. At its closest point, the 1000-Acre Heath is over 8 miles northeast of the closest turbine. As noted in Section 6.2.A below, at its closest point the Passadumkeag Marsh and Boglands is just 8 miles from the nearest turbine.

- **Vegetative Patterns**. The predominant vegetative cover in the Study Area is a mixture of second growth forestland, freshwater wetlands, and old field growth. The vegetative patterns within the immediate area of the Project are typical of forestland that has been commercially harvested over the past several generations.

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[3] Maine Department of Inland Fisheries and Game, Saponac Pond. Surveyed August, 1955.
[4] "C" rivers and river-related corridors or specific areas on the "C" list possess a composite natural and recreation resource value with statewide significance. Maine Rivers Study. Maine Department of Conservation. May 1982.
[5] Maine Natural Areas Program Website. Maine Department of Conservation.
www.maine.gov/doc/nrimc/mnap/focusarea/index.htm

- **Cultural Character.** Cultural features within eight miles of the Project are concentrated in and around the town of Burlington, 5.8 miles northwest of the Project, and on the shores of the lakes to the east and southeast. Burlington, which had a population of 351 in the 2000 census, features a small village center with several historic buildings, including the Old Tavern, which is on the National Register of Historic Places. While there are no other population centers within the Study Area, there are a number of small named villages with a few related buildings scattered throughout: e.g., Lowell, East Lowell, Saponac, and Greenfield. Concentrations of lakeside cottages within the Study Area are found on Saponac Pond, West Lake, the northern end of Nicatous Lake, Middle Oxhead Pond, and Brandy Pond. Scattered rural residential development is found along many of the local roads. The northwest end of Nicatous Lake has several year-round resorts, with facilities for boating, fishing, ATV's, and seasonal lodging. Additional recreational development in the Study Area consists of boat landings on Nicatous Lake, Saponac Pond, and West Lake; several informal campsites on Nicatous Lake and Lower Pistol Lake; and a Boy Scout shelter on Nicatous Lake.

  Passadumkeag Mountain was once considered for a ski area with an 800-foot vertical drop in the late 1990's, but the plans never materialized.[6] A temporary meteorological tower erected by Passadumkeag Windpark and a 574' lit communications tower used to broadcast WHCF-88.5 FM are the only structures on the mountain.

4.2 Distance Zones

The concept of distance zones is used as a frame of reference to discuss the characteristics of the visible landscape and the scenic effects of human activities in the surrounding landscape. The concept is based upon the USDA Forest Service visual analysis criteria for forested landscapes and addresses the amount of detail that an observer can differentiate at varying distances.[7] The evaluation of foreground, midground, and background, as defined below, provides a useful framework for evaluating the significance of wind turbines and their related facilities within the larger landscape. While the size of contemporary wind turbines may require a different understanding of how wind power components relate to the surrounding landscape, the distance zone concept remains a helpful reference tool in such evaluations.

- Foreground: 0 to 1/2 mile in distance. Within the foreground, observers are able to detect surface textures, details, and a full spectrum of color in the landscape.

  While the details of the turbines (blades, nacelles, support towers) are readily apparent in the foreground, the materials used in their construction are relatively smooth, without any real texture or details. There are no scenic resources of state or national significance within the foreground of the Project.

- Midground: 1/2 mile to 3-5 miles in distance. The midground is a critical part of the natural landscape. The Maine Expedited Permitting Act presumes that a visual impact assessment will be required to evaluate potential scenic impacts to scenic resources within three miles. Within this zone the details found in the landscape become subordinate to the whole: individual trees lose their identities and become forests; buildings are seen as simple geometric forms; roads and rivers become lines. Edges define patterns on the ground and hillsides. Development patterns are readily apparent, especially where there is noticeable contrast in scale, form, texture, or line. In panoramic views, the midground landscape is the most important element in determining visual impact.

[6] www.newenglandskihistory.com/cancelledskiareas/Maine/passadumkeagmtn.php
[7] Landscape Aesthetics: A Handbook for Scenery Management. USDA Forest Service. Agricultural Handbook Number 701. December 1995.

Since wind turbines are very large and relatively simple forms, they remain readily distinguishable within the midground and well beyond into the background (up to eight miles from the observer. At distances beyond 3± miles, the distinct white of turbines becomes somewhat muted. This effect is intensified in hazy weather conditions, which tend to mute colors and de-sharpen outlines even further. The Expedited Permitting Act recognizes that wind power components are highly visible features in the landscape, and that this visibility is not a solely sufficient basis for determination that they would have an unreasonable adverse effect on the scenic character and existing uses related to scenic character of a scenic resource of state or national significance.[8]

All of the turbines will be seen in the midground from Saponac Lake, where the turbines will be seen at distances of 2.3 to 4 miles to the south.

- Background: greater than 3 to 5 miles.[9] Background distances provide the setting for panoramic views that give the observer the greatest sense of the larger landscape. However, distance and haze will often obliterate the surface textures, detailing, and form of project components.

  At these distances wind turbines tend to be perceived as relatively small objects in the landscape, especially if they are sited in context with landforms that are much larger in scale. They are most noticeable when seen on ridgelines silhouetted against the sky. Due to the thinness of the design, turbine blades will only be visible beyond 8 miles if they present a noticeable contrast in form or line and weather conditions are extremely clear. The Maine Expedited Permitting Act has determined that the visual effect of turbines on scenic resources of state or national significance beyond 8 miles is insignificant.

  Turbines will be visible from the northern end of Lower Pistol Lake at distances of 5.2 miles. Turbine blades may be visible from portions of Spring Lake at distances of 6.7 miles. Upper portions of the turbines will be visible from small portions of the north end of Nicatous Lake at distances of 7.0 miles.

5.0 PROJECT DESCRIPTION

The following section describes the visible components of the Passadumkeag Wind Project.

5.1 Wind Turbines

Passadumkeag Windpark is seeking permits for 14 Vestas V112 turbines with an output capacity of 3.0 MW per turbine. The model selected is a 3-blade system mounted on an 84-meter tower affixed to a 24±-foot diameter foundation. The turbines will have a blade diameter of 112 meters (367 feet) and a total height of approximately 459 feet to the tip of a fully extended blade. The turbines are controlled electronically so they always face into the wind.

All components of the turbine will be painted white to provide contrast for pilots. White turbines will allow the Project to only have red nighttime lighting. If an alternate color were used, the FAA would likely recommend white strobes for daytime lighting, which would make the Project considerably more visually noticeable.

Turbine contrast and visibility is a highly variable phenomenon; even when painted white, turbines can appear to change from dark gray to a shade that almost matches the background sky, depending upon the time of day, orientation of the viewer, atmospheric conditions, and weather. In the midground and

[8] Maine Expedited Permitting Act § 3452.3.
[9] For purposes of this visual impact assessment, the background viewing distance is limited to eight miles, since the Legislature has determined that "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." (§ 3452.3.)

background viewing distances (greater than five miles) where the Project will typically be seen, the turbines will appear as light gray due to the effects of atmospheric perspective, which is even more pronounced on hazy or overcast days.

The blades will spin very slowly in low wind and will begin producing power when the wind velocity reaches 3 m/s (approximately 6.7 mph). If the wind reaches a certain maximum velocity (generally 25 m/s or approximately 56 mph), which will vary with the intensity of turbulence, the machines will cut out. The turbines may not be operational at other times, such as when the winds are in-line (wind direction is parallel to the string, which limits the number of turbines that can operate) or when they are taken out of service for repair.

Depending upon the wind velocity, the blades will rotate at 6.2 to 17.7 revolutions per minute (RPM), which is equivalent to approximately one revolution every 3.4 to 9.7 seconds. Under typical viewing conditions (within eight miles) individual blades will be visible with virtually no detectable blurring as they rotate.

Turbine spacing is determined based on meteorological considerations related to wind speed and direction, interference from adjacent turbines, and other technical factors. The siting of individual turbines has taken into account the wind resource, site-specific topography, access road locations, proximity to wetlands, and other site conditions.

5.2 Project Lighting

Lighting for the Project will follow the Federal Aviation Administration (FAA) recommendations for aviation safety. Red lights will be mounted on the top of some of the nacelles in accordance with an FAA approved lighting design. Lights are typically required on the ends of turbine strings, and at one-half mile intervals. The nighttime lights will be red, synchronized, and flash with a slow-on, slow-off profile. The permanent meteorological towers will also have FAA approved lighting. By using white turbines, which offer sufficient visual contrast for pilots, the FAA will not require daytime lighting.[10]

The L-864 lamp that is specified by the FAA is designed to be most visible to oncoming pilots. Because nighttime lighting is required by FAA regulation to concentrate emitted light to a beam that is 3± degrees of horizontal, the intensity of the light diminishes below the horizon, which minimizes impacts on surrounding land uses.

5.3 Access Roads

The access roads into the Project will be 24 feet in width and will use existing forest management roads wherever possible to reduce site disturbance. Figure 2 shows the existing road network on Passadumkeag Mountain, currently being used for commercial timber harvesting operations. Some of these roads will be modified to accommodate the delivery and construction vehicles needed for the Project, including limited pull-outs for passing of large vehicles[11]. Each wind turbine site will be linked by a 36-foot± wide gravel road designed to provide safe travel by the construction crane to the structures throughout construction. In some instances the topography will dictate a circuitous route to accommodate the engineering requirements of the installation equipment and minimize site disturbance.

5.4 Electrical Collection System

Underground conductors will run among the turbines and connect to an above ground 34.5 kV collection line that will deliver the generated electricity to a new substation adjacent to an existing 115 kV

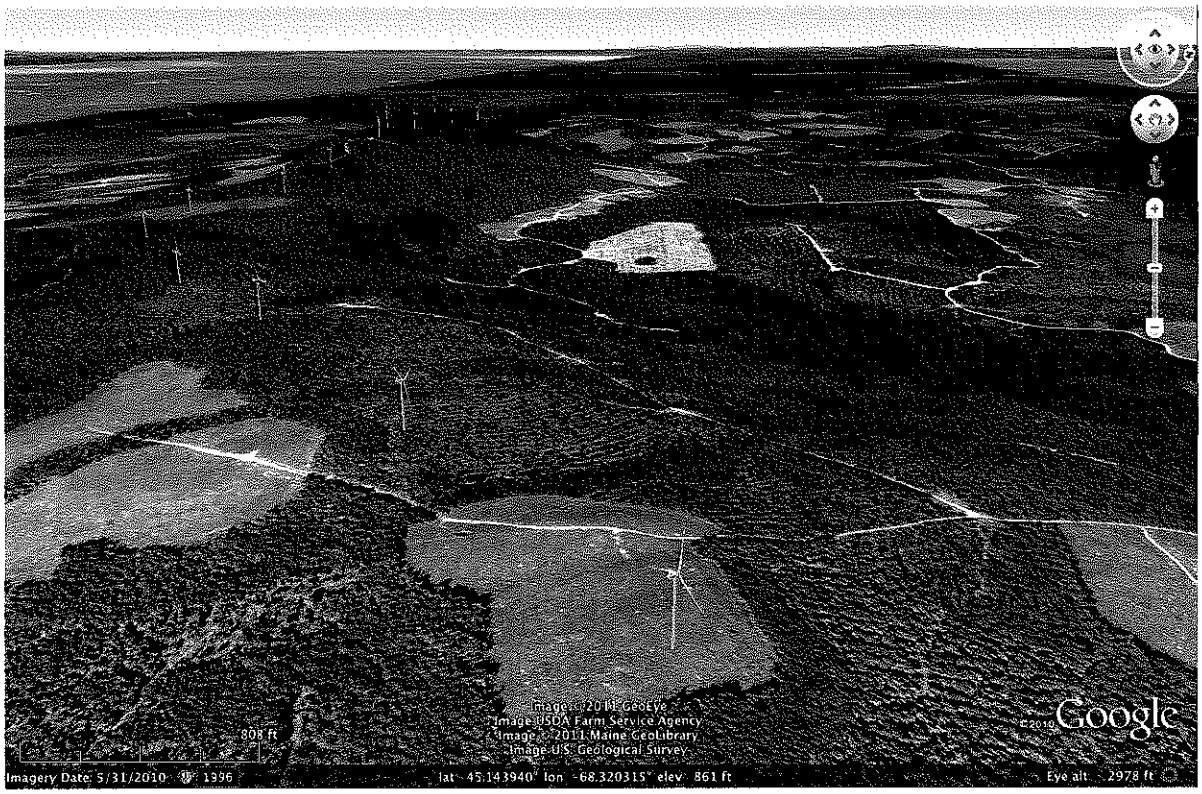
[10] Advisory Circular AC 70/7460-1K. Obstruction Marking and Lighting. Chapter 13: Marking and Lighting Wind Turbines. Federal Aviation Administration, U. S. Department of Transportation. February 1, 2007.
[11] The illustration includes computer-generated models of the proposed wind turbines to provide a sense of the scale and relative position of the Project. It is not meant to show proposed roads or turbine pads.

transmission line approximately 17 miles away in Greenbush. Nearly all of this line will be located in an existing electrical distribution line Right of Way.

5.5 Operations and Maintenance Facility and Substation

An operations and maintenance (O&M) building, with a footprint of approximately 7,200 SF, will be constructed in Greenbush at a location approximately 500 feet off Greenfield Road and adjacent to an existing 115 kV transmission line (Line 64). The facility will consist of a one-story building that will serve as an office and warehouse, a parking area for up to ten vehicles, and an area for outside storage. The building will be painted a neutral color to minimize color contrast with the surrounding landscape. Some additional area at the facility will be provided for construction vehicles, and for an electrical substation.

Figure 2: View Looking West over Passadumkeag Mountain, Google Earth



5.6 Meteorological Towers

The existing temporary meteorological tower on Passadumkeag Mountain will be removed during construction. The Project will include one permanent 80-meter meteorological tower on the Project site to monitor wind turbine performance. The tower will be lit according to FAA requirements, and be of a guyed lattice construction, with a triangular cross section approximately 18 inches across.

5.7 Turbine Pads

A cleared and level pad averaging two acres in size will be required at the base of each turbine for staging, crane movement, and turbine installation. Additional clearing and grading may be needed in some areas to account for cut/fill slopes. Following construction the majority of the crane assembly and turbine pad areas will be allowed to naturally revegetate.

5.8 Laydown Areas

The design calls for laydown areas to be used in various locations for temporary storage of turbine and/or electrical components to accommodate the need to potentially store equipment and materials during construction. These areas are shown on the design plans, and will be reseeded after construction.

6.0 VISUAL IMPACTS ON SCENIC RESOURCES OF STATE OR NATIONAL SIGNIFICANCE

There are six scenic resources of state or national significance within eight miles of the Passadumkeag Wind Project. "Scenic resources of state or national significance" as defined under the State Expedited Permitting Act means:

A. A national natural landmark, federally designated wilderness area or other comparable outstanding natural and cultural feature, such as the Orono Bog or Meddybemps Heath;
B. A property listed on the National Register of Historic Places pursuant to the National Historic Preservation Act of 1966, as amended, including, but not limited to, the Rockland Breakwater Light and Fort Knox;
C. A national or state park;
D. A great pond that is:
   (1) One of the 66 great ponds located in the State's organized area is identified as having outstanding or significant scenic quality in the "Maine's Finest Lakes" study; 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";
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";
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 on a scenic highway constructed by the Department of Transportation; or
H. Scenic viewpoints located in the coastal area that are ranked as having statewide significance or national importance 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.

6.1 Evaluation Criteria In The Maine Expedited Permitting Act

The following section evaluates the potential visual impact on each of the six scenic resources, using the criteria in the Maine Expedited Permitting Act:

- ***Context***. *The existing character of the surrounding area and the context of the proposed activity. (35-A MRSA § 3452.3.B and 3452.3.D).*
- ***Significance***. *The significance of the potentially affected scenic resource of state or national significance (§ 3452.3.A).*
- ***Public Uses***. *The extent, nature and duration of potentially affected public uses of the scenic resource of state or national significance. (§ 3452.3.E).*
- ***Viewer Expectations***. *The expectations of the typical viewer who would be using or enjoying the scenic resource of state or national significance. (§ 3452.3.C).*
- ***Project Impact***. *The scope and scale of the potential effect of views of the Project 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. (§ 3452.3.F).

- ***Potential Effect on Public Use**. 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. (§ 3452.3.E).*
- ***Overall Scenic Impact**. A determination of 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. (§ 3452.1).*

The assessment of potential visual impact on scenic resources of state or national significance is based upon knowledge of the Project site, viewshed and cross-sectional analyses, photosimulations provided in Appendix C, and the results of the Market Decisions' intercept survey of recreational users.

6.2 Scenic Areas Of State Or National Significance

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;

PASSADUMKEAG MARSH AND BOGLANDS

National natural landmarks (NNL) are federally designated wilderness areas or other comparable outstanding natural and cultural features. According to the NNL website there is one National Natural Landmark within eight miles of the Passadumkeag Wind Project, the 6,100-acre Passadumkeag Marsh and Boglands that starts on the east side of the town of Passadumkeag. The southeast tip of the property touches the 8-mile line that describes the outer limit of the Study Area.

The following is the description of the Passadumkeag Marsh and Boglands NNL from the National Park Service (NPS) website:

> *One of the largest, unspoiled wetlands in the state of Maine, Passadumkeag Marsh and Boglands contains a unique blend of bog and marsh communities. The marsh is partially bounded by eskers, including the classic Passadumkeag Esker, or Enfield Horseback, known world-wide as an example of glacial geology.*[12]

The description of the Passadumkeag Marsh and Boglands from the Maine Department of Conservation (see following page) notes that this particular NNL was owned by 13 private owners in 1973.

According to the Maine Department of Conservation's *Conservation Lands in Maine*[13] kmz file for Google Earth, the Passadumkeag Marsh and Boglands are now part of the Cold Stream/Ayers Brook Preserve, which is a series of interconnected tracts of land held by The Nature Conservancy in fee. The area is open for public use, although access is limited due to the nature of landscape. There are no developed trails and access by road is limited to small areas of frontage on Goulds Ridge Road and Enfield Road. Public use of the area is therefore limited primarily to canoeing and hunting waterfowl. The presence of the turbines should not have any visual impact on the Passadumkeag Marsh and Boglands. At most, the top of one turbine may be visible within eight miles of the preserve and it would appear as a very small object on a relatively flat horizon

[12] www.nature.nps.gov/nnl/site.cfm?Site=PAMA-ME
[13] www.maine.gov/doc/parks/gis/index.html

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;

OLD TAVERN

The National Register of Historic Places lists one property within eight miles of the Passadumkeag Wind Project[14] generating facilties, the Old Tavern in Burlington, built in 1844. The Tavern is a 2.5 story wooden frame structure with a gable roof, clapboard siding, and a veranda (covered porch) that wraps around the front façade. The National Register nomination form, submitted in 1986, describes the tavern as a popular headquarters for hunters and fishermen in the area in its later years. It was first built to serve as a hotel for lumber crews and others who were working in the area[15].

The building sits on a corner lot in a small town setting. There is no mention made in the Registration Form about its relationship to the surrounding landscape. The setting is a classic cross-road village, with a white-steepled church across the street, private residences, open fields/greens, and additional (formerly) commercial buildings nearby. The integrity of the immediate setting is important to the tavern; however, even if the turbines were to be visible (which they are not), their relatively small size would not detract from the historic context.

The building is 5.9 to 7.2 miles northwest of the Project and separated by a dense stand of second growth vegetation. The primary function of the Tavern occurs inside the structure, and is not related to the scenic quality of the surrounding landscape. Field investigation has determined that the Project will not be visible from the Tavern. (See photographs of the Tavern in Appendix A). The presence of the turbines should not have any visual impact on the Old Tavern.

[14] National Park Service, National Register of Historic Places, kmz file. http://www.cr.nps.gov/nr
[15] Frank Beard, Historian, and Roger G. Reed, Architectural Historic, Maine Historic Preservation Commission. The Old Tavern, National Registry of Historic Places, Inventory--Nomination Form. January, 1986.

Natural Landmark Brief

1. Site: Passadumkeag Marsh and Boglands, Penobscot County, Maine

2. Description: This 6,100-acre stream-marsh-bog wetland complex, which is inundated each spring under as much as 4 feet of water, is an open expanse encompassing part of the Passadumkeag River and three smaller, meandering tributary streams named Cold Stream, Little Cold Stream and Ayers Brook. Although the southern portion of Cold Stream and the Passadumkeag River have steep banks with little aquatic vegetation except in the quiet pools, northern portions of Cold Stream and along Ayers Brook have submergents such as tape grass, floating plants such as water shield and pond lily and emergents such as horsetail and spike rush. The land on either side of the streams is a sedge meadow interspersed with willow, red-osier dogwood and sweet-gale. The tree zone along a large north-south trending esker just within the western boundary consists of northern white cedar blending into large white pine and northern hardwoods. The tree zone surrounding the sedge meadows on the north, east, and south is a bog forest characterized by larch, black spruce and other trees tolerant of acid conditions. Several smaller bogs and one large one at the southern end of the site illustrate all stages of bog development. Numerous small ponds remain in the center of the sphagnum mat along with plants such as leatherleaf, pitcher plant, Labrador-tea, rhodora and cotton grass which are then surrounded by concentric circles of tamarack and black spruce. A wide diversity of wildlife are present such as beaver, muskrat, mink, raccoon, deer, ospreys, various hawks, and numerous waterfowl and other marsh birds. The site, which is 9 miles long from north to south, can be reached by traveling 2 miles east of Passadumkeag.

3. Owner: Thirteen private owners hold land in this 6,100-acre site.

4. Proposed by: Goodwin and Niering in the Inland Wetlands theme study.

5. Significance: First, the Passadumkeag Esker or Enfield Horseback is a classic illustration of an esker often used as a textbook example. Second, the area is one of the largest and finest unspoiled wetlands in the State of Maine. Third, since a road traverses the top of the Enfield Horseback just within the western boundary, the marsh and boglands can be viewed from the road.

6. Present conditions: Trapping, hunting, fishing, canoeing, boating, and nature appreciation are the principal uses. A single hunting camp on the Passadumkeag River and a dozen homes along the esker are the only buildings on the proposed site.

7. Special conditions: There are gravel pits found along the Enfield Horseback and it is possible these uses could destroy significant portions of the esker. Also, the Diamond International Paper Company owns much of the land within and near the north part of the site and will begin logging within 5 years.

8. Studied by: Dr. Malcolm W. Coulter, Professor of Wildlife Resources, University of Maine with assistance from Dr. Ray H. Owen, Jr., and Mr. James B. Barnes.

February 1973

C. A national or state park;

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

D. A great pond that is:

(1) One of the 66 great ponds located in the State's organized area is identified as having outstanding or significant scenic quality in the "Maine's Finest Lakes" study; 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";

The scenic resources of three great ponds within eight miles of the Project have been designated as significant in the Maine Wildlands Lakes Assessment: Saponac Pond, Spring Lake, and Lower Pistol Lake. One great pond within the Study Area, Nicatous Lake, has been designated as outstanding from a scenic perspective in the Assessment.[16]

SAPONAC POND

Context and Character. Saponac Pond (922 acres, elevation 190 feet above sea level) is two miles east of Burlington on Route 188 (Main Road). The pond is the second largest waterbody in the Study Area and the closest scenic resource of state or national significance. The northern third of the pond is located in Burlington; the southern portion is located in Grand Falls Township. Most of the shoreline is either private timberland or developed for houselots. The entire pond is within eight miles of the Project.

The landscape within two miles of the pond consists of gently rolling wooded hills that are drained by boggy meandering streams and rivers. Folsom Ridge, on the northeast side of Route 188, rises approximately 300 feet above the level of the pond. The most distinctive landform in the vicinity is Passadumkeag Mountain, a broad U-shaped series of ridges to the south that rise over 1,250 feet above the pond. Characteristic photographs of the pond and the surrounding landscape are provided in Appendix A.

A 574' radio tower is located near the top of Passadumkeag Mountain. To comply with Federal Aviation Administration (FAA) regulations, the tower is lit with four pulsing red lights spaced approximately 140' apart. The access road to the tower is on the south side and visible from Route 188 or the camps on the pond.

As seen in Figure 3, the forestland between Route 188 and Passadumkeag Mountain, on the south side of the pond, has been extensively harvested in recent years. A series of haul roads has been created to provide access to this commercial forestland. A buffer of at least 250 feet has been maintained between the harvest areas and waterbodies (primarily the Passadumkeag River and Saponac Pond).

The Passadumkeag River, a major tributary of the Penobscot River, flows east-west through the pond at its southern end. The Maine Atlas and Gazetteer describes the 25-mile Passadumkeag River trip, starting at Grand Falls 4 miles east of the pond and continuing to the Penobscot River, as a "mixture of class I-III rapids and smooth water the bulk being smooth." Grand Falls, a 0.8-mile segment of the river, is rated by American Whitewater as a class V rapids.[17]

Maine Department of Inland Fisheries and Wildlife surveyed the pond in 2004 and issued the following description:

> *Saponac Pond ... is essentially a large shallow flowage in the path of the Passadumkeag River, and it provides an attractive smallmouth bass and white perch fishery. Unfortunately a large portion*

[16] Maine Wildlands Lake Assessment Findings, Land Use Regulation Commission, June 1, 1987.
[17] www.riverfacts.com/rivers/11381.html, Maine whitewater, Passadumkeag River.

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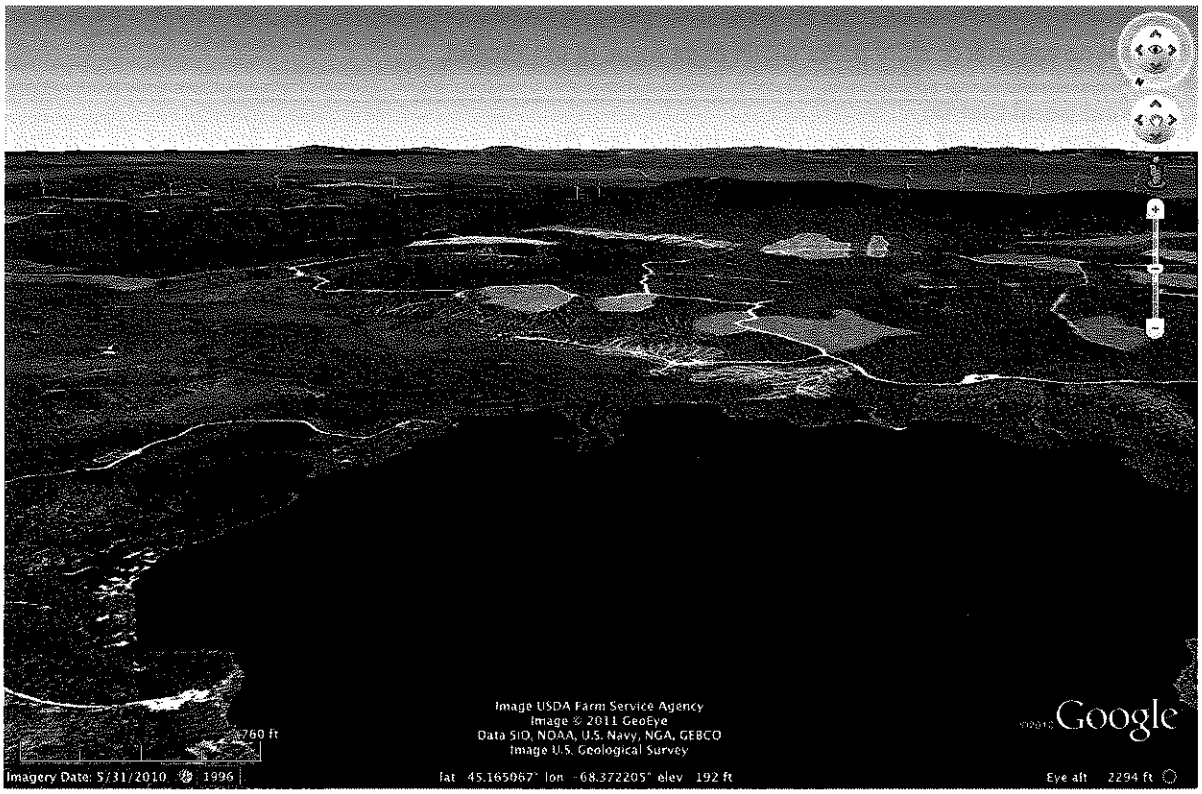
Figure 3: View Looking South Toward Passadumkeag Mountain over Saponac Pond



of the pond has become a sterile settling basin for the gross sawdust pollution that has been scattered along the west shore, and no remedy is available to restore the pond to its original condition.[18]

Route 188 (Main Road), the major access between Burlington and Nicatous and West Lakes, is a paved two-lane highway that runs east-west at the northern end of the pond. The road abuts the pond for approximately 850 feet and has an open view of the water and Passadumkeag Mountain. An informal boat put-in is located at the eastern end of the sand and cobble beach. A large sawdust pile, remnants of an early sawmill operation, is prominently visible on the shoreline at the western end of the beach near the road. Several hundred feet of the beach surface is covered with a thick layer of reddish decomposing sawdust. Informal roadside parking is available along much of the beach frontage.

At its southern end, the pond is approximately 2.3 miles south and southeast of the closest turbine. From the beach on Route 188, at the northern end of the pond, the closest turbines would be between 4.0 and 4.8 miles away.

The developed portion of Saponac Pond is typical of many of Maine's accessible lakes, i.e., small summer camps and year-round homes on relatively small lots with docks providing direct access to the water. The majority of the camps are located in Burlington. A dozen camps are located on the northwestern shore on Twin Hills Road and Merle Sibley Road. Approximately thirty camps are located along the northeastern shore, off Randall Road, Old Bark Road, Saponac Pond Road, and a series of unnamed gravel roads.

[18] Maine Department of Inland Fisheries and Wildlife. Saponac Pond, Burlington and Grand Falls Twps., Hancock Co. August, 1955.

Significance. The Maine Wildlands Lakes Assessment notes that Saponac Pond is accessible and developed.[19] It received a resource rating of 'significant' for its scenic resources. The rating system used in the Assessment assigned Saponac Pond to Resource Class 1B (a lake with a single outstanding natural value), even though none of the resources were in fact rated as 'outstanding'.[20] The four resources found to be significant were fisheries, scenic, shoreline, and cultural.

Prior to the publication of the Assessment, the State Planning Office issued the Scenic Lakes Character Evaluation in Maine's Unorganized Towns, which evaluated the scenic characteristics of all 1,509 lakes and ponds with a surface area greater than 10 acres in LURC territory. The Evaluation was based on six criteria: relief, physical features, shoreline configuration, vegetation diversity, special features, and inharmonious development. A point system was developed to assign a rating to each of the criteria, depending upon their presence in the landscape. The following table provides a short description of each of the criteria and summarizes the findings for Saponac Pond[21]:

CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Relief	Complexity of relief Dramatic relief	Medium	30	20
Physical Features	Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands, beaches.	Medium	25	15
Shoreline Configuration	Relative complexity of the shoreline.	Low	15	5
Vegetation Diversity	Four possible types were identified: mixed hardwood/softwoods; softwoods; marsh; super-story trees.	Low	15	5
Special Features	Water clarity Opportunities for wildlife viewing	None	15	0
Inharmonious Development	Residential development, visible roads, powerlines, etc.	Medium	-20[22]	-5
TOTAL			**100**	**40**

There were 162 lakes that achieved a score between 20 to 45 points and were identified as 'distinctive', which was the basis for the 'Significant' category. Saponac Pond is at the high end of the 'Significant' rating with a point score of 40. The primary feature that contributed to this rating appears to be the presence of Passadumkeag Mountain. Saponac Pond was not included in the findings of Maine's Finest Lakes, The Results of the Maine Lakes Study, which examined lakes throughout the state for the Critical Areas Program of the Maine State Planning Office.

LURC's 2010 Comprehensive Land Use Plan assigned Saponac Pond to Management Class 3, Potentially Suitable for Development, based on available information on water quality, access, conflicting

[19] The Maine Wildlands Lakes Assessment rated 'cultural resources' as an S- and 'physical resources' as a P-, indicating that the resource needed to be checked due to negative public comment. The 2010 LURC Comprehensive Land Use Plan rated 'cultural resources' as an S and 'physical resources' as a P.
[20] Four or more 'significant' resource values equaled an additional 'outstanding' value for purposes of the classification in the Maine Wildlands Lakes Assessment (p. 3).
[21] Maine State Planning Office. Scenic Lakes Character Evaluation in Maine's Unorganized Towns. December, 1986. The ratings in the chart – from None to High – are taken from the SPO document. Individual scores for most categories are assumed.
[22] Maine State Planning Office. Scenic Lakes Character Evaluation in Maine's Unorganized Towns. December, 1986. 20 Points were deducted for lakes with drastic changes in water levels; 10 points were deducted if inharmonious development was rated as 'high'; 5 points were deducted if inharmonious development was rated as 'medium'.

uses, shoreland availability, water level fluctuation, location, regional considerations, and special planning needs.[23]

Public Uses. Recreational use of the pond includes boating, fishing, ice fishing, swimming, snowmobiling, picnicking, nature study, viewing the scenery, and seasonal and year-round camps. Informal boat access is available at the eastern end of the beach off Route 188. The Maine Atlas and Gazetteer indicates that there is a hand-carry boat launch on the west side of the pond. However, TJD&A did not find evidence of such a facility at this location during site visits.[24] As noted above, year-round homes and seasonal camps are concentrated in Burlington at the northern end of the pond.

There are no public records that indicate the use levels on the pond. Current use levels appear to be light, based upon observations by TJD&A and Market Decisions. The Market Decisions' survey personnel were present for a total of 60 hours on portions of eight days (Friday through Monday on two consecutive weeks) during the summer of 2011. During that time they were able to interview a total of 4 people and counted 8 boats and 5 kayaks on Saponac Pond.

Scenic impact consultant, James Palmer, in his review of the intercept surveys that were provided for the Oakfield II Wind Project[25], suggests that the Bureau of Land Management's Recreation Opportunity Spectrum (WROS) may be a way of gaining some understanding of lake use. Saponac Pond has characteristics of both the Rural Developed and Rural Natural character types, as defined by the WROS[26]. If one could assume a total of 8 boats at any one time on the pond (or approximately 4 times the observed density at any one time during the survey period), there would be 115 acres per boat. This would indicate that the use levels are lower than the WROS's boating carrying capacity of 50 to 110 acres per boat for Rural Natural areas[27].

Viewer Expectations. Respondents to the Market Decisions survey were asked about their expectations for recreational experiences while visiting Saponac Pond. The individuals who were interviewed felt the most important reasons for visiting the pond was enjoying time with family and friends, relaxing/ unwinding, enjoying the outdoors, getting back to nature, and observing wildlife.

Respondents had high expectations of a small number of people that would also be using the pond. The average rating on the seven-point scale (with 1 being un-crowded and 7 being crowded) is 1.0 with a median of 2.3.

Respondents also had high expectations of a low level of development along the pond. The average rating on the seven point scale (with 1 being undeveloped and 7 being developed) is 1.0 with a median of 1.3. (It should be noted that one cottage is visible from the vicinity of the boat put-in on Route 188 next to the beach; as boaters head south into the center of Saponac Pond, they will be aware of many of the 40+ other cottages located along the shoreline.)

Visual Impact on Saponac Pond. A photosimulation has been prepared to illustrate the change in the visual environment on Saponac Pond resulting from the construction of the Passadumkeag Wind Project. The viewpoint is from a point on Route 188 near the boat put-in at the eastern end of the beach. From this location all 14 turbines, plus a portion of the access road, will be visible on Passadumkeag Mountain. Most of the turbines will be seen in silhouette against the sky, since they are located on the ridgeline and

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[23] Maine Land Use Regulation Commission. 2010 Comprehensive Land Use Plan. Appendix C – Lake Management Program. 2010.

[24] On the other hand, the informal boat put-in at the eastern end of the beach described above was not shown on the Gazetteer.

[25] James F. Palmer, *Review of the Pleasant Lake / Mattawamkeag Lake Wind Power Project Intercepts.* Prepared for the Maine Department of Environmental Protection. December 2, 2011.

[26] The WROS classes suggested here are preliminary in nature, since a formal WROS evaluation has not been conducted.

[27] Aukerman, Haas, and Associates, LLC. *Water and Land Recreation Opportunity Spectrum (WALROS),* Users' Handbook, Second Edition. Table 2.4 Management setting attribute guidelines. Prepared for the US Department of the Interior, Bureau of Reclamation. September 29, 2009.

the viewing location is 1,250 feet lower that the highest turbine. The turbines will be installed over 4.5 miles of the Passadumkeag Mountain ridgeline. From the selected viewpoint, they will be seen over an arc of 52° at distances of 4.0 to 4.8 miles. This represents 14% of the 360° view that a boater would see from the center of the pond. At a height of 459 feet, the turbines will appear to be approximately 1/3 the height of the top of Passadumkeag Mountain, which rises 1,250 above the level of the pond.

The viewshed map indicates the majority of the turbines will be visible from approximately 97% of the pond. The only exception is an area on the north side of a small peninsula on the west side of the pond and the area immediately off the southern shoreline. The red warning lights on the turbines will also be visible from most locations on the pond at distances 2.3 to 4.8 miles. The majority of the private camps on the pond are oriented away from the Project and should not have direct views of the lights.

During the Market Decisions' intercept survey of Saponac Pond and Nicatous Lake, respondents were asked to rate the scenic value of the pond, both with and without the turbines, using a photosimulation of the Project. The average rating of the existing view (without wind turbines) among all respondents was 6.6 out of 7. The average rating of the second view (a photosimulation of the lake and Passadumkeag Mountain with the wind turbines) was 3.8, a 2.8 point drop in the average score between the two views. There was no difference in scores for 21% of respondents. The assigned scores dropped by one point among 10% of respondents and by 2 points among 21% of respondents. The score assigned to the view with the wind turbines was 3 or more points lower than the view without the turbines among 47% of respondents.

In addition to the turbines, clearings for several of the turbine pads and a segment of the ridgeline road (approximately 800 feet in length) that connects the turbines will be visible from the lake. The ridgeline road is visible where it traverses a steep side slope on the northern face of Passadumkeag Mountain. In this location some of the cuts above the road may be exposed to view, since the side slopes below the road may be relatively long and require the removal of vegetation that would normally screen the road. The resultant rock face will initially have a noticeable contrast with the surrounding landscape in color, form, and texture. A number of measures may be used during construction to mitigate this situation: refinement of geotechnical data to reduce cuts and fills; use of gabions or other devices to minimize the extent of fill slopes to maintain existing vegetation; use of a coloring agent to accelerate the aging process on the exposed rock face to minimize color contrast.[28]
The primary impact will be on the relatively low number of people who recreate on the pond. The presence of the turbines will have an effect on the character of Saponac Pond by introducing man-made elements over a significant portion of a largely natural landscape and present a contrast in form, line, and color. At viewing distance of 2.3 to 4.8 miles, the turbines will appear to be moderate in size when compared with the height of the underlying mountain and should not present an unacceptable contrast in scale. The presence of the turbines will not have an effect on the pond's relief or its physical features, characteristics that accounted for the majority of points it received in the Scenic Lakes Character Evaluation (summarized above).

Potential Effect on Public Use. The Market Decisions' survey posed a question to all 29 persons interviewed at both locations to evaluate the impact of the proposed Project on respondents' *enjoyment* of Saponac Pond. Fifty-nine percent of respondents indicated that the proposed Project would result in no change to their enjoyment of the pond, while 41% indicated that it would have a negative effect on their visit to the pond.

Respondents were also asked to evaluate how the Project might affect their *use* of Saponac Pond for a number of activities. On average, respondents indicate that the Project would have a slightly negative effect on their likelihood of returning to Saponac Pond; in general 7 out of 10 people said that the turbines would not have an effect on their likelihood to return. The score for the activities were:

[28] A number of commercial products are available and have been used in federal and state road construction projects to reduce color contrasts in new construction. These include Permeon and Natina Desert Varnish. Technical specifications and further information is available at: www.soil-tech.com/permeon.php and www.natinaproducts.com.

- Boating: 73% indicated no change in their likelihood to return; 28% indicated they are less likely to return.
- Canoeing or Kayaking: 71% indicated no change in their likelihood to return; 30% indicated they are less likely to return.
- Fishing (from the shore or a boat): 71% indicated no change in their likelihood to return; 30% indicated they are less likely to return.
- Ice Fishing: 74% indicated no change in their likelihood to return; 26% indicated they are less likely to return.
- Swimming: 72% indicated no change in their likelihood to return; 28% indicated they are less likely to return.

Conclusion. The survey results, photosimulation, viewshed maps, and roadway plans indicate that the turbines, seen in profile on the ridgeline of Passadumkeag Mountain, and portions of the access road will have an adverse effect on the scenic value of Saponac Pond. The pond apparently sees relatively few recreational users, and those that do are primarily there for fishing and boating. The results of the survey indicate that most people will continue to return to the lake to enjoy boating, fishing, and similar recreational pursuits even with turbines in view.

NICATOUS LAKE

Context and Character. Nicatous Lake (5,165 acres, elevation 347 feet above sea level) is the largest waterbody within eight miles of the Project, although the majority of the lake is outside the 8-mile Study Area. The lake is located southeast of Passadumkeag Mountain in T4 ND, T40 MD, and T 41 MD. Most of the shoreline (with the exception of several sporting camps and private homes) is privately owned with conservation easements held by the Maine Bureau of Parks and Lands (BPL); most of the islands in the lake are owned in fee by BPL.

Nicatous Lake is a narrow waterbody approximately nine miles in length with a highly configured shoreline surrounded by low rolling hills. The northern third of the lake, which falls within eight miles of the Project, is between 0.2 and 0.9 miles in width, significantly narrower than the southern portion. The axis of the northern portion generally runs northwest/southeast, although the islands make it difficult to achieve a long view except along the western shoreline. The closest turbine in the Project is located 5.6 miles west of this portion of the lake.

The landforms surrounding the northern end of the lake rise up to 150 to 225 feet above the surface of the water. One of the most noteworthy features of Nicatous Lake is the number of wooded islands found throughout its length. The islands, in combination with the surrounding hills, are effective in limiting turbine visibility within the Study Area. There are no named mountains or other distinctive focal points within the foreground or midground in this portion of the lake.

Maine Department of Inland Fisheries and Wildlife (IF&W) surveyed the lake in 1996 and issued the following description:

> *Nicatous Lake is a very long, (over 8 miles), narrow lake at the head of Nicatous Stream, Tributary to the Passadumkeag River. The lake is surrounded by spruce and fir forest with some hardwoods and pine. Many islands are scattered throughout the lake, and many of these have a camp or a summer home located on them. For many years there was a dam on the outlet that held a water level that was 4-5 feet higher than the current level. This high level eroded most of the soil along what is the present shoreline resulting in its extremely rock appearance. There are numerous rocky points and shoals throughout the lake. There is a mostly sandy bottom below the rocks and there are several sandy beaches around the lake. Mud bottom and emergent vegetation can be found in many of the coves. The water has a very brown tint caused by the many years of high water levels eroding organic materials into the lake. The lake is generally shallow and although there is some cool water near the bottom it is very low in oxygen.*

> *There are two areas of development on the lake. There have been several camps and sporting lodges on the north end for many years and recently there has been a large area of camp development along the east shore of the south basin. There are one public and two private boat launch sites on the north end of the lake. The public site is unimproved and difficult to use. There is also an improved site located in the developed area in the south basin.* [29]

At the southern end of the part of the lake located within the Study Area, one turbine would be within eight miles. At the northwestern end, up to nine turbines would be within eight miles.

Nicatous Stream Road, a gravel two-lane road, provides access to the northern end of Nicatous Lake from Route 188 and Burlington. The road abuts the lake for approximately 850 feet and provides an open view of the water and several of the islands. A rudimentary public boat put-in with a few parking spaces is located near the road. A large parking area that can accommodate 20± boats has recently been constructed 0.5 miles to the northwest on Nicatous Stream Road. The dominant cultural features at this end of the lake are Hemlock Lodge, Nicatous Lodge and Cabins, and Porter Point Camps, private sporting camps overlooking the lake. No turbines would be visible from the Lodges or Camps at this end of the lake.

[29] Maine Department of Inland Fisheries and Wildlife. Nicatous Lake, T3 ND, T40 MD, and T41 MD, Hancock Co. August, 1952, Revised 1996.

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Figure 4: Northern End of Nicatous Lake

As seen in Figure 4, the forestland in the vicinity of the lake has been harvested with a variety of techniques in recent years. A system of haul roads, generally about 0.2 miles from the edge of the lake, provides access to this commercial forestland. With the exception of the short segment of Nicatous Stream Road near the lodge, the roads are not visible from most locations on the lake.

Significance. The Maine Wildlands Lakes Assessment found that Nicatous Lake is accessible and developed and gave it a resource rating of 'outstanding' for its scenic resources. The Assessment

assigned the lake to Resource Class 1A (a lake with multiple outstanding natural values, in this case wildlife, scenic, and shore character).

Nicatous Lake was also included in Maine's Finest Lakes, The Results of the Maine Lakes Study which provides the following description.

> ***Significance**: Nicatous Lake contains outstanding wildlife, scenic, and shore character resources as well as significant fisheries and cultural resources.*
>
> ***General Description**: This large, developed lake is located in eastern Maine near the Town of Burlington. It is characterized by numerous sand beaches, island, rock shoals, and a very convoluted and interesting shoreline. There are approximately 80 seasonal dwellings and a resort lodge on the lake as of 1988, as well as several campsites and a boat landing. It is relatively shallow, with maximum and average depths of 56 feet and 16 feet respectively.*
>
> ***Description of Significant Resources***
> ***Scenic Resources**: Numerous sand beaches, islands, boulders, rock ledges, diverse vegetation, wildlife viewing, and a very interesting shoreline configuration make this an outstanding scenic resource.*
>
> ***Shore Character**: The outstanding shore is characterized by dominant beaches and rock ledges, along with some areas of open shoreline.*
>
> ***Cultural**: Nicatous is a significant cultural resource. It is part of the Penobscot River Indian canoe route and, as a result, potentially contains significant archeological sites.*[30]

Prior to the publication of the Maine Wildlands Lakes Assessment, the State Planning Office issued the Scenic Lakes Character Evaluation in Maine's Unorganized Towns, which evaluated the scenic characteristics of all 1,509 lakes and ponds in LURC territory. The Evaluation was based on six criteria: relief, physical features, shoreline configuration, vegetation diversity, special features, and inharmonious development. A point system was developed to assign a rating to each of the criteria, depending upon their presence in the landscape. A total of 118 lakes, including Nicatous, with a total of 50 or more points were identified as 'Outstanding' in the Evaluation. The following table provides a short description of each of the criteria and summarizes the findings for Nicatous Lake:[31]

The Land for Maine's Future website provides background into the plan which led to the protection of the land through easements over the shoreline and ownership of many islands by BPL, starting in 1997:

> *By combining conservation easements on working timberland with public land acquisition, the State protected 22,370 acres of contiguous forest with 30 miles of undeveloped shoreline on two lakes and five ponds. The centerpiece of this property is 5,100-acre Nicatous Lake, widely considered to be one of Maine's most beautiful water bodies with its pristine sand beaches, intricate coves and 98 islands. It lies along an historic Penobscot River Indian canoe trail (now the Eastern Maine Canoe Trail) and is the hub for paddling routes down the Union, Narraguagus and West Machias rivers.*

[30] Maine State Planning Office. Maine's Finest Lakes, The Results of the Maine Lakes Study. Maine Critical Areas Program, Planning Report No. 90. October 1989.
[31] Maine State Planning Office. Scenic Lakes Character Evaluation in Maine's Unorganized Towns. December, 1986. The ratings in the chart – from None to High – are taken from the SPO document. Individual scores for most categories are assumed.

CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Relief	Complexity of relief Dramatic relief	Low	30	0
Physical Features	Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands, beaches.	High	25	25
Shoreline Configuration	Relative complexity of the shoreline.	High	15	15
Vegetation Diversity	Four possible types were identified: mixed hardwood/softwoods; softwoods; marsh; super-story trees.	Medium	15	10
Special Features	Water clarity Opportunities for wildlife viewing	Medium	15	10
Inharmonious Development	Residential development, visible roads, powerlines, etc.	Medium	-20	-5
TOTAL			**100**	**55**

Nicatous is one of the top five loon-nesting lakes in Maine, and has three bald eagle nesting sites. There are six deer-wintering areas in the area and ample range for species such a bobcat and black bear. Nearby West Lake supports trophy-sized land-locked salmon that grow up to 7 pounds.

The innovative plan to protect this ecological and recreational haven began when the largest landowner in the vicinity, Robbins Lumber, expressed interest in keeping its land undeveloped. By purchasing an easement on the Robbins land and additional acreage owned by International Paper, the State helped to foster sustainable forest management while extinguishing all development rights on the land, protecting shoreline buffers, and conserving wildlife habitat and opportunities for traditional recreation. In addition to the easement, the State acquired 76 of the 98 islands in Nicatous Lake and a 243-acre parcel connecting the 25,200-acre Duck Lake Public Reserve Unit to Nicatous Lake.

The success of this project depended on a strong partnership in which Maine Coast Heritage Trust, The Forest Society of Maine and The Trust for Public Land pooled their skills and resources to assist the former landowners and the Bureau of Parks and Lands in negotiations and fundraising. A generous grant from the Land for Maine's Future Program helped Maine's Congressional Delegation secure $3 million from the federal Forest Legacy Program which protects important forests.[32]

Public Uses. Recreational use of the lake includes fishing, viewing the scenery, boating, canoeing/kayaking, swimming, hunting, ice fishing, camping, snowmobiling, ATV riding, biking, and seasonal camps. There are no public records that indicate the use levels on the lake.

The Market Decisions' survey personnel were present for a total of 60 hours on portions of eight days (Friday through Monday on two consecutive weeks) during the summer of 2011. A total of 33 people were observed during the survey period at Nicatous Lake. In addition, interviewers observed 12 boats and 4 canoes or kayaks on the lake over the data collection period (many of these are also included in the 33 people observed at the survey locations) along with 7 ATV users. In all, 25 interviews were completed among adults at Nicatous Lake.

[32] Land for Maine's Future Website: Nicatous and West Lakes.
www9.informe.org/lmf/projects/project_detail.php?project=1559

The interviewers asked the owner of Nicatous Lodge about use levels during the year. He estimated the following numbers on the lake: Winter: 300-400; Spring: 300-400; Summer: 2,000; and Fall: 500.

The northerly portion of Nicatous Lake within the Study Area (estimated to be 1,721 acres, or 1/3 the total area of the lake) has characteristics of the Rural Natural recreation opportunity class, as defined by the WROS[33]. If one could assume a total of 8 boats at any one time on this portion of the lake (or approximately 4 times the observed density at any one time during the survey period), there would be 215 acres per boat. This would indicate that the use levels are lower than the WROS's boating carrying capacity of 50 to 110 acres per boat for Rural Natural areas[34].

Viewer Expectations. Respondents to the Market Decisions survey were asked about their expectations for their recreational experience while visiting Nicatous Lake. The most commonly mentioned responses included fishing, peace and quiet, and a chance to relax. When asked about the use of the pond, the most important reasons selected were enjoying time with family/friends, enjoying the outdoors, relaxing/unwinding, and the scenery and scenic views.

Respondents had moderate to high expectations of a small number of people that would also be using the
lake. The average rating on the seven-point scale (with 1 being un-crowded and 7 being crowded) is 3.0 with a median of 2.0.

Respondents also had moderate to high expectations of a low level of development along the lake. The average rating on the seven-point scale (with 1 being undeveloped and 7 being developed) is 2.5 with a median of 2.0.

Project Impact. A photosimulation was prepared to illustrate the change in the visual environment on Nicatous Lake resulting from the construction of the Passadumkeag Wind Project. The viewpoint is from a point near the shore in Porter Cove in the northern part of the lake, approximately 6 miles east of the closest turbine. From this location the tops of 8 turbines within 8 miles will be visible. From the selected viewpoint, which is typical of the northern third of the lake, turbines will be seen over an arc of 11°. This represents 3% of the 360° view that a recreational user would see while on the lake. At these distances the turbines, where visible, would be seen as relatively small objects on the far horizon.

The viewshed map for blade tips (the most conservative approach) indicates that the upper portions of the turbines would theoretically be visible from approximately 46% of the lake within 8 miles. Likewise, the viewshed map for nacelle visibility indicates that the upper portions of the turbine (from the nacelle to the tip) would be visible over approximately 40% of the lake. The viewshed maps also indicate the number of turbines that would be visible from various parts of the lake. However, WindPro includes turbines that are greater than eight miles from the resource, which results in an exaggerated look at the potential visual impact. At Duck Lake Cove, for example, the viewshed map indicates that between 10 and 14 turbines would be visible. However, mapping that eliminates turbine beyond 8 miles shows that only 2 turbines (within 8 miles) would be visible from the cove.

The red warning lights on the turbines will be seen in addition to the red pulsing lights on the existing communications tower on Passadumkeag Mountain. Where visible, they will be seen at distances of 5.8 to 8.0 miles. However, it is unlikely that people will be out on the lake during the nighttime since there are no designated campsites on the islands, and submerged rocks make nighttime boating quite dangerous.

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[33] The WROS class suggested here is preliminary in nature, since a formal WROS evaluation has not been conducted.

[34] Aukerman, Haas, and Associates, LLC. *Water and Land Recreation Opportunity Spectrum (WALROS),* Users' Handbook, Second Edition. Table 2.4 Management setting attribute guidelines. Prepared for the US Department of the Interior, Bureau of Reclamation. September 29, 2009.

There appear to be two private camps on the eastern shoreline that may be able to see the additional lights at a distance of 7.5 to 8+ miles.[35]

During the Market Decisions' intercept survey, respondents were asked to rate the scenic value of the lake, both with and without the turbines, using a photosimulation of the Project. The average rating of the existing view (without wind turbines) among all respondents was 5.9 out of 7. The average rating of the second view (a photosimulation of the lake and Passadumkeag Mountain with the wind turbines) was 4.4, a 1.5-point drop in the average score between the two views. There was no difference in scores for 41% of respondents. The assigned scores dropped by one point among 10% of respondents and by 2 points among 24% of respondents. The score assigned to the view with the wind turbines was 3 or more points lower than the view without the turbines among 20% of respondents.

The primary impact will be on the people who recreate on the lake. The presence of the turbines will have an effect on the character of Nicatous Lake by introducing man-made elements in a largely natural landscape, presenting a contrast in form, line, and color. At viewing distance of 5.0 to 8.0 miles, the turbines will appear to be relatively small in size when compared with the height of the underlying mountain and the intervening trees and islands. The turbines will not present an unacceptable contrast in scale and will not dominate the landscape. The presence of the relatively small turbines seen intermittently in the background will not have an effect on the lake's physical features or shoreline configuration, characteristics that accounted for the majority of points it received in the Scenic Lakes Character Evaluation (summarized above).

Potential Effect on Public Use. The Market Decisions' survey posed a question to evaluate the impact of the proposed Project on respondents' *enjoyment* of Nicatous Lake. Forty-eight percent of respondents indicated that the Project would result in no change to their enjoyment of the lake; 31% indicated that the Project would have a negative effect on their visit to the lake; and 20% indicated that the turbines would have a positive effect on their visit.

Respondents were also asked to evaluate how the Project might affect their *use* of Nicatous Lake for a number of activities. On average, respondents indicate that the Project would have a slightly negative effect on their likelihood of returning to the lake. The score for the activities were:

- Boating: 88% indicated no change or a positive change in their likelihood to return; 11% indicated they are less likely to return.
- Canoeing or Kayaking: 88% indicated no change in their likelihood to return; 12% indicated they are less likely to return.
- Fishing (from the shore or a boat): 88% indicated no change in their likelihood to return; 12% indicated they are less likely to return.
- Ice Fishing: 88% indicated no change in their likelihood to return; 12% indicated they are less likely to return.
- Swimming: 88% indicated no change in their likelihood to return; 12% indicated they are less likely to return.

Conclusion. The survey results, photosimulation, and the viewshed maps indicate that the Project will have an adverse effect on the scenic value of the northern third of Nicatous Lake, which is recognized for its outstanding scenic resources. However, there are several moderating factors that affect the overall scenic impact. The distance of the Project (5 to 8 miles) from the lake will make the turbines appear as relatively small to medium-sized objects on the horizon and the low hills and wooded islands between the Project and the viewer will provide intermittent screening so the entire Project will never be visible from any one point on the lake. Most people will continue to return to the lake for boating, fishing, and similar recreational pursuits even with turbines in view.

[35] The viewshed map indicates that the warning lights from the existing communications tower on Passadumkeag Mountain may be visible from some points along the eastern shoreline of Nicatous Lake.

The Passadumkeag Wind Project will not significantly compromise views from Nicatous Lake. The Project will not have an unreasonable adverse effect on its scenic character or the uses related to the scenic character of the lake.

LOWER PISTOL LAKE

Context and Character. Lower Pistol Lake (979 acres, elevation 323 feet above sea level) is in T3 ND, ten miles east of Burlington and between 4.9 and 6.2 miles from the Project. The majority of the land surrounding the lake is part of the Passamaquoddy Indian Territory.

Lower Pistol Lake is the westernmost waterbody in a chain of lakes that includes Upper, Middle, and Side Pistol Lakes and Spring Lake. The landscape surrounding the lake consists of gently rolling wooded hills that are drained by boggy meandering streams. An unnamed hill to the southwest rises 300 feet above the lake.

Logging operations have created a network of woods roads that approach the lake from Pistol Green, a break in a distinct esker two miles west of the lake. Access to the lake is over very rough woods roads. An informal boat put-in and campsite is located in an opening at the northwestern end of the lake. The lake appears to be undeveloped, with no camps evident from field evaluation or aerial photographs. The Maine Atlas and Gazetteer locates an informal campsite on one of the islands in the middle of the lake. Characteristic photographs of the pond and the surrounding landscape are provided in Appendix A.

Maine Department of Inland Fisheries and Wildlife surveyed the lake in 1996 and issued the following description:

> *Lower Pistol Lake is located in the Passadumkeag River drainage in northern Hancock County. The lake is surrounded by a predominately spruce and fir forest with some hardwoods and pine. There are very few camps on the lake at the present time. The remains of an old logging dam that held the water level from 4 to 5 feet higher than the present level are still visible on the outlet. The higher water level eroded the soil from what is the present shoreline which gives the shoreline a very rocky appearance. There are several sand beaches on the lake and a generally sandy bottom beyond the rocky shoreline. The coves have a mostly sandy bottom with little emergent vegetation.*
>
> *Access is by a gravel road from the Nicatous Road through "Pistol Green". The last 100 yards to the lake are extremely rough and marginal for 2-wheel drive vehicles.*[36]

Significance. The Maine Wildlands Lakes Assessment notes that lake is accessible and undeveloped. It received a resource rating of 'significant' for its scenic resources. The Assessment assigned Lower Pistol Lake to Resource Class 1B (a lake with a single outstanding natural value).[37] Four of the resources were found to be significant: fisheries, wildlife, scenic, and shoreline character.

Prior to the publication of the Assessment, the State Planning Office issued the Scenic Lakes Character Evaluation in Maine's Unorganized Towns, which evaluated the scenic characteristics of all 1,509 lakes and ponds with a surface area greater than 10 acres in LURC territory. The Evaluation was based on six criteria: relief, physical features, shoreline configuration, vegetation diversity, special features, and inharmonious development. A point system was developed to assign a rating to each of the criteria,

[36] Maine Department of Inland Fisheries and Wildlife. Pistol Lake, Lower, T3 ND, Hancock Co. August, 1954, Revised 1996.
[37] Four or more 'significant' resource values equaled an additional 'outstanding' value for purposes of the classification in the Maine Wildlands Lakes Assessment (p. 3).

depending upon their presence in the landscape. The following table provides a short description of each of the criteria and summarizes the findings for Lower Pistol Lake[38]:

CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Relief	Complexity of relief Dramatic relief	Low	30	10
Physical Features	Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands, beaches.	Medium	25	15
Shoreline Configuration	Relative complexity of the shoreline.	Low	15	5
Vegetation Diversity	Four possible types were identified: mixed hardwood/softwoods; softwoods; marsh; super-story trees.	Medium	15	10
Special Features	Water clarity Opportunities for wildlife viewing	None	15	0
Inharmonious Development	Residential development, visible roads, powerlines, etc.	Low/None	-20[39]	0
TOTAL			**100**	**40**

There were 162 lakes that achieved a score between 20 to 45 points and were identified as 'distinctive', which was the basis for the 'Significant' category. Lower Pistol Lake is in the upper range of the 'Significant' rating with a point score of 40.

Public Uses. Recreational use of the lake includes boating, fishing, ice fishing, swimming, snowmobiling, camping, nature study, and viewing the scenery. A hand-carry boat access is available at the northwestern end of the lake.

There are no public records on use levels on the lake. Based upon observations by TJD&A, access road conditions, and the results of the Market Decisions' survey, use appears to be very low. Of the 29 respondents who were interviewed at Saponac Pond and Nicatous Lake for the Market Decisions' survey, 10% had visited Lower Pistol Lake in the past year, all to stay at a camp.

Lower Pistol Lake has characteristics of the Semiprimitive recreation opportunity class, as defined by the WROS[40]. If one could assume a total of 4-6 boats at any one time on the lake (based upon the nature of the access road and the limited capacity of the informal parking area), there would be 163 to 244 acres per boat. This level of use would be within the WROS's boating carrying capacity of 110 to 480 acres per boat for Semiprimitive areas[41].

Viewer Expectations. The Market Decisions survey was not administered at Lower Pistol Lake due to its distance from a population center and limited accessibility, so there is no primary data on expectations for recreational experience. However, questions about the visual impact of the Project on Lower Pistol Lake

[38] Maine State Planning Office. Scenic Lakes Character Evaluation in Maine's Unorganized Towns. December, 1986. The ratings in the chart – from None to High – are taken from the SPO document. Individual scores for most categories are assumed.
[39] Maine State Planning Office. Scenic Lakes Character Evaluation in Maine's Unorganized Towns. December, 1986. 20 Points were deducted for lakes with drastic changes in water levels; 10 points were deducted if inharmonious development was rated as 'high'; 5 points were deducted if inharmonious development was rated as 'medium'.
[40] The WROS classes suggested here are preliminary in nature, since a formal WROS evaluation has not been conducted.
[41] Aukerman, Haas, and Associates, LLC. *Water and Land Recreation Opportunity Spectrum (WALROS)*, Users' Handbook, Second Edition. Prepared for the US Department of the Interior, Bureau of Reclamation. September 29, 2009.

were administered at the other two survey locations. Since Lower Pistol Lake is less accessible and less developed than either Saponac Pond or Nicatous Lake, recreational users should have high expectations of seeing a) small numbers of people on the lake and b) low level of development along the lake.

Visual Impact on Lower Pistol Lake. The viewshed maps indicate that the turbines will be visible from 41 to 50% of the lake,[42] concentrated at the northern end. The campsite on the island in the middle of the lake will not have a view of the turbines.

Photosimulation 3 illustrates the change in the visual environment on Lower Pistol Lake resulting from the construction of the Project. Turbines in the photosimulation are seen at distances of 5.0 to over 8 miles. The photograph is from the water south of the wooded islands near the informal boat put-in and campsite at the northwestern end of the lake. From this location all 14 turbines will be visible on Passadumkeag Mountain, which appears as a relatively low steep-sided hill in the background. The turbines will be seen in silhouette against the sky, since they are located on the ridgeline. The 14 turbines will be seen over an arc of 12°, which represents 3.3% of the 360° view that a boater would see from this part of the lake. While all the turbines will be visible, only 8 will be within 8 miles of the observer, and they will be seen over an arc of 5° (or less than three thumb widths, seen at arms length)[43].

If someone were on the northern portion of the lake in the evening, the red warning lights on the turbines will be seen in addition to the red pulsing lights on the existing communications tower on Passadumkeag Mountain. Where visible, they will be seen at distances of 5.0 to over 8.0 miles. Neither of the two campsites (on the shore near the boat put-in or on the island) will have views of the turbine lights.

As part of the Market Decisions' intercept survey at Saponac Pond and Nicatous Lake, users of those lakes were asked to rate the scenic value of Lower Pistol Lake, both with and without the turbines, using a photosimulation of the Project. The average rating of the existing view (without wind turbines) among all respondents was 6.3 (on a 7-point scale, where 7 is the highest scenic value). The average rating of the second view (a photosimulation of the lake and Passadumkeag Mountain with the wind turbines) was 3.8, a 2.5-point drop in the average score between the two views. There was no difference in scores for 28% of respondents. The assigned scores dropped by one point among 14% of respondents and by 2 points among 10% of respondents. The score assigned to the view with the wind turbines was 3 or more points lower than the view without the turbines among 48% of respondents.

The primary impact will be on the relatively low number of people who recreate on the lake. The presence of the turbines will have an effect on the character of Lower Pistol Lake by introducing man-made elements in a largely natural landscape and present a contrast in form, line, and color. The impact will be felt primarily at the northern end of the lake; the surrounding hills effectively block views of the Project from the southern part of the lake. At viewing distance of 5.0 to 8.0 miles, the turbines will appear to be relatively small in size when compared with the height of the underlying mountain and the intervening trees and islands. The turbines will not present an unacceptable contrast in scale and will not dominate the landscape. The presence of the turbines will not have an effect on the lake's physical features or shoreline configuration, characteristics that accounted for the majority of points it received in the Scenic Lakes Character Evaluation (summarized above).

Potential Effect on Public Use. The Market Decisions' survey posed a question to evaluate the impact of the proposed wind power project on respondents' *enjoyment* of Lower Pistol Lake. Sixty-two percent of respondents indicated that the proposed wind project would result in no change to their enjoyment of the lake, while 37% indicated that the proposed Project would have a negative effect on their visit to the lake. It should be noted that of the 29 people that were interviewed, 10% (or three individuals) had visited Lower Pistol Lake within the previous year.

Respondents were also asked to evaluate how the proposed Project might affect their *use* of Lower Pistol

[42] The blade tips will be seen over 50% of the lake; the nacelles will be seen over 41% of the lake.
[43] O'Shea, Robert P. 1991. Thumb's rule tested: visual angle of thumb's width is about 2 deg. Perception 20(3): 415-418.

Lake for a number of activities. On average, respondents indicate that the Project would have a slightly negative effect on their likelihood of returning to the lake. The score for the activities were:

- Boating: 78% indicated no change in their likelihood to return; 22% indicated they are less likely to return.
- Canoeing or Kayaking: 76% indicated no change in their likelihood to return; 24% indicated they are less likely to return.
- Fishing (from the shore or a boat): 76% indicated no change in their likelihood to return; 24% indicated they are less likely to return.
- Ice Fishing: 79% indicated no change in their likelihood to return; 21% indicated they are less likely to return.
- Swimming: 77% indicated no change in their likelihood to return; 24% indicated they are less likely to return.

Conclusion. The survey results, photosimulation, and the viewshed maps indicate that the turbines, seen in profile on the ridgeline of Passadumkeag Mountain, will have an adverse effect on the scenic value of Lower Pistol Lake. However, there are several moderating factors that affect the overall scenic impact. The Project will be visible in the background, which will make the turbines appear as relatively small to medium-sized objects on the horizon. The majority of the small number of users of the lake will continue to return to the lake to enjoy boating, fishing, and similar recreational pursuits even with turbines in view.

The Passadumkeag Wind Project will not significantly compromise views from Lower Pistol Lake. The Project will not have an unreasonable adverse effect on its scenic character or the uses related to the scenic character of the lake.

SPRING LAKE

Context and Character. Spring Lake (435 acres, elevation 336 feet above sea level) is in T3 ND, ten miles east of Burlington and between 4.9 and 6.2 miles from the Project.

Spring Lake is the westernmost waterbody in a series of lakes that includes Lower, Upper, Middle, and Side Pistol Lakes. The landscape surrounding the lake consists of gently rolling wooded hills rising 200± feet above the lake, interconnected by boggy meandering streams. A small solitary island is found at the southern end, near the put-in point.

Logging operations have created a discontinuous network of woods roads that approach the lake from Pistol Green on the west. Access is over a very rough woods road on the south side of the lake, where there is an informal hand-carry put-in. The lake appears to be largely undeveloped, with only one camp evident from field evaluation or aerial photographs. Characteristic photographs of the pond and the surrounding landscape are provided in Appendix A.

Maine Department of Inland Fisheries and Wildlife surveyed the lake in 1996 and issued the following description:

> *Spring Lake is a picturesque, clear water lake with no sand beaches and a boulder strewn Shoreline. The pond is surrounded by a predominately spruce and fir forest…At the present time, Spring Lake is fairly remote and has little development. There are a few camps around the lake, but they are not visible from the water. Access is by a gravel road from the Nicatous Road through "Pistol Green". The last part of the road to the lake is very rough and useable by 2-wheel drive trucks only during the dry season.*[44]

Significance. The Maine Wildlands Lakes Assessment notes that Spring Lake is accessible and undeveloped. It received a resource rating of 'significant' for its scenic resources. The Assessment assigned the lake to Resource Class 2 (a lake with regional significance with no outstanding values but at

[44] Maine Department of Inland Fisheries and Wildlife. Spring Lake, T3 ND, Hancock Co. August 1962, Revised 1996.

least one significant resource value).[45] Two of the resources were found to be significant: fisheries and scenic.

Prior to the publication of the Assessment, the State Planning Office issued the Scenic Lakes Character Evaluation in Maine's Unorganized Towns, which evaluated the scenic characteristics of all 1,509 lakes and ponds with a surface area greater than 10 acres in LURC territory. The Evaluation was based on six criteria: relief, physical features, shoreline configuration, vegetation diversity, special features, and inharmonious development. A point system was developed to assign a rating to each of the criteria, depending upon their presence in the landscape. The following table provides a short description of each of the criteria and summarizes the findings for Spring Lake.[46]

CRITERIA	DEFINITION	RATING	MAX. PTS	SCORE
Relief	Complexity of relief Dramatic relief	Low	30	10
Physical Features	Cliffs, vertical ledges, slab ledges, rockslides, boulders, islands, beaches.	Low	25	10
Shoreline Configuration	Relative complexity of the shoreline.	Low	15	5
Vegetation Diversity	Four possible types were identified: mixed hardwood/softwoods; softwoods; marsh; super-story trees.	None	15	0
Special Features	Water clarity Opportunities for wildlife viewing	Medium	15	10
Inharmonious Development	Residential development, visible roads, powerlines, etc.	Low/None	-20[47]	0
TOTAL			**100**	**35**

There were 162 lakes that achieved a score between 20 to 45 points and were identified as 'distinctive', which was the basis for the 'Significant' category. Spring Lake is in the middle of the 'Significant' rating with a point score of 35.

Public Uses. Recreational use of the lake includes boating, fishing, ice fishing, swimming, snowmobiling, nature study, and viewing the scenery. A hand-carry boat access is located at the southern end of the lake.

There are no public records on use levels on the lake. Based upon observations by TJD&A, access road conditions, and the results of the Market Decisions' survey, use appears to be very low. Of the 29 respondents who were interviewed at Saponac Pond and Nicatous Lake for the Market Decisions' survey, 7% (2 individuals) had visited Spring Lake in the past year.

Spring Lake has characteristics of the Rural Natural and Semiprimitive classes of recreation opportunity, as defined by the WROS[48]. If one could assume a total of 4-6 boats at any one time on the lake (based

[45] Four or more 'significant' resource values equaled an additional 'outstanding' value for purposes of the classification in the Maine Wildlands Lakes Assessment (p. 3).
[46] Maine State Planning Office. Scenic Lakes Character Evaluation in Maine's Unorganized Towns. December, 1986. The ratings in the chart – from None to High – are taken from the SPO document. Individual scores for most categories are assumed.
[47] Maine State Planning Office. Scenic Lakes Character Evaluation in Maine's Unorganized Towns. December, 1986. 20 Points were deducted for lakes with drastic changes in water levels; 10 points were deducted if inharmonious development was rated as 'high'; 5 points were deducted if inharmonious development was rated as 'medium'.

upon the nature of the access road and the lack of parking near the water), there would be 72 to 108 acres per boat. This level of use would be within the WROS's boating carrying capacity of 50 to 110 acres per boat for Rural Natural areas[49].

Viewer Expectations. The Market Decisions survey was not administered at Spring Lake, so there is no primary data on expectations for recreational experience. However, since there is only one camp on the lake, and water access is limited and rudimentary, recreational users should have high expectations of seeing a) small numbers of people on the lake (i.e., uncrowded) and b) low level of development along its shoreline.

Visual Impact on Spring Lake. The viewshed maps indicate that turbines may be visible from 33 to 45% of the lake, concentrated at the northeast end. Photosimulation 4 illustrates the change in the visual environment on Spring Lake resulting from the construction of the Project. The photograph is from the water in a cove at the northern end of the lake, which represents the most significant view from the water for seeing turbines on the horizon. From this location the blades of up to four turbines may be seen just above the treeline at distances of 7 to 8 miles. The westernmost turbines (1 through 10) are all greater than 8 miles from the lake.

The viewshed maps assume a uniform tree height of 40 feet. However, field investigation has determined that the trees along the shoreline of undeveloped ponds are typically 50 to 60' in height. In a relatively level landscape, the additional tree height can have a significant effect on reducing turbine visibility. During field investigation, TJD&A was not able to see Passadumkeag Mountain, or the existing 574'-tall transmission tower on the mountain – located on the highest point on the mountain and 115 feet taller than the proposed turbines – from any point on Spring Lake. If the turbines are visible, they will be seen over an arc of less than 1°, which represents 0.2% of the 360° view that someone on the water would see from this part of the lake. Furthermore, the eastern end of the turbine string is aligned with the northeastern end of the lake; from most locations the turbines would be seen in a very tight grouping, with some of the towers screening those further back in the line.

The primary visual impact will be on the relatively low number of people who recreate on the lake. The presence of the turbines will have a slight effect on the character of Spring Lake by introducing man-made elements in a largely natural landscape and present a contrast in form, line, and color. The impact will be felt primarily at the northeastern end of the lake; the surrounding hills effectively block views of the Project from the southern part of the lake. At viewing distance of 7.0 to 8.0 miles, the 4 turbines that may be visible will appear to be very small in size when compared with the height of the surrounding wooded hills. The turbines will not present an unacceptable contrast in scale and will not dominate the landscape. The presence of the turbines will not have an effect on the lake's physical features or shoreline configuration, characteristics that accounted for the majority of points it received in the Scenic Lakes Character Evaluation (summarized above).

Potential Effect on Public Use. Due to the limited number of turbines within 8 miles, the distance from the observer, and the limited visibility of the turbines, the Project is not expected to have a significant effect on public's enjoyment or use of Spring Lake.

Conclusion. The photosimulation, viewshed maps, and field investigation indicate that the turbines will be scarcely visible from Spring Lake, and therefore will have a very slight adverse effect on the scenic value of the lake.

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[48] The WROS classes suggested here are preliminary in nature, since a formal WROS evaluation has not been conducted.

[49] Aukerman, Haas, and Associates, LLC. *Water and Land Recreation Opportunity Spectrum (WALROS),* Users' Handbook, Second Edition. Prepared for the US Department of the Interior, Bureau of Reclamation. September 29, 2009.

The Passadumkeag Wind Project will not significantly compromise views from Spring Lake. The Project will not have an unreasonable adverse effect on the scenic character or the uses related to the scenic character of Spring Lake.

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".

There are no scenic rivers or streams identified as having unique or outstanding scenic attributes, as listed in the Maine Rivers Study, within eight miles of the Project. The Passadumkeag River is rated as a 'C' river by the Maine Rivers Study for its geologic/hydrologic, undeveloped, anadromous fisheries, and canoe touring resources. The Study did not consider the scenic resources of the Passadumkeag River to be unique or of significant value.

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.

There are no scenic viewpoints located on state public reserved land within eight miles of the wind Project. There are no trails exclusively for pedestrian use within eight miles of the proposed wind Project.

G. A scenic turnout on a scenic highway constructed by the Department of Transportation.

There are no scenic turnouts on any designated scenic highways constructed by the Department of Transportation within eight miles of the Project.

H. Scenic viewpoints located in the coastal area.

Not Applicable.

6.3 Associated Facilities

The associated facilities will not have an unreasonable adverse effect on scenic character and existing uses and therefore are reviewed under the modified scenic impact standard applicable to wind generating facilities.

A. Generator Lead Line. Power from the turbines will be collected in a 34.5kV collector line that will run approximately 17 miles from the western end of Passadumkeag Mountain ridge along Greenfield Road through Summit Township, Greenfield Township, and Greenbush. Nearly all of this line is in an existing electrical distribution line Right of Way. The proposed line will not unreasonably interfere with existing scenic and aesthetic uses of scenic resources within the viewshed and will not have an unreasonable adverse effect on the scenic character of the surrounding area.

B. Substation. The Project includes a substation in Greenbush near the intersection of Greenfield Road and an existing 115 kV transmission line, Line 64. The substation will not be visible from any of the scenic areas of state or national significance, and will be approximately 500 feet from Greenfield Road. Likewise, its location in the working forest adjacent to an existing road used mainly for hauling timber will not have an unreasonable adverse effect on the scenic character of the surrounding area.

C. Operations and Maintenance Facility. The one-story O&M facility will be located adjacent to the substation in Greenbush and will consist of an office and warehouse, a parking area for up to ten vehicles, and an area for outside storage. The building will be painted a neutral color to minimize color contrast with the surrounding landscape. The location and design have been selected to minimize adverse effects on the scenic character of the surrounding area. The facility will not be visible from any scenic areas of state or national significance.

D. Access Roads. The majority of the roads used to access the turbine sites are existing logging roads which will be modified as necessary to accommodate the delivery and construction vehicles for the Project. Each wind turbine site will be linked by a 36 foot± wide gravel road designed to provide safe travel by the construction crane to the structures throughout construction. In some instances the topography will dictate a circuitous route to accommodate the engineering requirements of the installation equipment and minimize site disturbance. Where possible, existing logging roads will be upgraded to serve as ridgeline roads to minimize cutting and earthmoving. The ridgetop road will be screened by existing vegetation in most locations. The one area where it will be visible is Saponac Pond, where approximately 800 linear feet of roadwork (cuts and/or fill slopes) will be visible.

E. Meteorological Tower. One permanent 80-meter (262 feet) meteorological tower will be constructed as part of the Project and lit according to FAA requirements. The tower will be a guyed lattice construction, with a triangular cross section approximately 18 inches across. Its slim profile and light color will greatly reduce its visibility at distances greater than one mile.

F. Crane Pads and Crane Assembly Area. Following construction the majority of crane assembly and turbine pad areas will be allowed to naturally revegetate. The majority of the crane pads and assembly areas will be screened by existing vegetation that surrounds the turbine base and will minimize visibility outside the immediate area.

7.0 SUMMARY

The Maine Expedited Permitting Act established several criteria to determine whether expedited wind energy development significantly compromises views from a scenic resource of state or national significance such that the development has an unreasonable adverse effect on the scenic character or existing uses related to scenic character of the resource. The summary presented in Table 1 Summary of Evaluation Criteria is based upon the information provided in the Visual Impact Assessment and the Market Decisions' intercept survey.

The first five criteria evaluate the 8-mile Study Area, the immediate Project area, the quality of the resource, existing use patterns and viewer expectations, and the purpose of the Project. The last two criteria evaluate the possible effect that the Project may have on the use and enjoyment of the resource and the scope and scale of the visual impacts. The final column summarizes the overall scenic impact, based upon these criteria.

A. **Resource Significance**: This criterion reflects the designation of scenic significance by the State or Federal Government. All the resources on the table have been identified as Scenic Areas of State or National Significance. The light gray are significant resources; medium gray are outstanding resources.
B. **Character of Surrounding Area**: This criterion evaluates the setting of the resource and its surrounding area. In most cases the surroundings have been noted as medium (generally of a natural condition for lakes and mountains, and of a typical Maine village condition for historic resources).
C. **Viewer Expectation**: This criterion takes into account the designation of scenic quality by state agencies, the intrinsic character of the resource, the presence of cultural modifications, and other factors. The darker shades indicate higher viewer expectations.
D. **Purpose and Context**: This criterion is a reflection of how the Project contributes toward the state's goals for energy as per the Expedited Permitting Act. A light gray color was assigned, since the Project will make a moderate contribution toward achieving the State's goals.
E.1. **Extent, nature & duration of uses**: This criterion looks at the number of users, the potential for access (in the case of lakes and ponds), the type and extent of facilities, and typical length of stay.
E.2. **Effect on continued use and enjoyment**: This criterion is largely based on the intercept surveys to determine if the Project would significantly affect the continued use and enjoyment

of the waterbodies. Light gray indicates that the Project is expected to have a slightly negative effect on people's use or enjoyment. If the Project will not be visible from the resource (as is the case for the Passadumkeag Marsh and Boglands and the Old Tavern), it should have no effect on the public's continued use and enjoyment, and the cell is left blank.

F. **Scope and scale of Project views**: This criterion looks at the number of turbines visible, their position in the landscape, the angle of view that they are seen over, and the distance from the observer. Only turbines within eight miles of the resource are considered. Dark gray indicates that all the turbines will be visible within the midground (3-5 miles). Medium gray indicates that the turbines will be seen primarily in the background or will be partially screened in the midground. Light gray indicates that the turbines will be seen over a relatively small portion of the view. If turbines will not be visible the cell is left blank.

Table 1: Summary of Evaluation Criteria

Scenic Resource of State or National Significance within the 8-mile Study Area	Scenic Impact Evaluation Criteria							Overall Scenic Impact
	A: Resource Significance	B. Character of Surrounding Area	C: Viewer Expectation	D: Purpose and Context	E.1: Extent, Nature, Duration of Use	E.2: Continued Use and Enjoyment	F: Scope and Scale of Project Views	
6A Natural National Landmarks								
Passadumkeag Marsh and Boglands								Low/None
6B Historic Sites								
Old Tavern, Burlington								None
6D. Great Ponds								
Saponac Pond								Medium/High
Nicatous Lake								Low/Medium
Lower Pistol Lake								Medium
Spring Lake								Low/None

8.0 CONCLUSION

The visual impact assessment examined the criteria established by the Maine Expedited Permitting Act: i.e., the context, character, significance, existing public use, viewer expectations, project impact, and the potential effect on public use for each of the scenic resources of state or national significance. This information was used to make a determination of whether the Project would significantly compromise views from these resources such that it would have an unreasonable adverse effect on its scenic character or the existing uses related to its scenic character.

Seven of the eight categories of scenic resources will not be impacted by the project. While a moderate to strong visual impact on portions of the lakes is anticipated, the Passadumkeag Wind Project will not significantly compromise views from the scenic resources. The Project will not have an unreasonable adverse impact on scenic values and existing uses of scenic resources of state or national significance.

- The Project will not be visible from Passadumkeag Marsh and Boglands, a National Natural Landmark that is 8 miles from the Project at its closest point. The majority of the site is greater than 8 miles from the Project.

- The Project will not be visible from the Old Tavern in Burlington, the one structure on the National Register of Historic Places that is within eight miles of the Project.

- The Project will be visible from the majority of Saponac Pond, a significant scenic resource. The overall scenic impact on the pond is judged to be medium/high.

- The Project will be visible in a very tight pattern from a few locations among the numerous islands on the northern third of Nicatous Lake, an outstanding scenic resource. The scenic impact to this part of the lake is judged to be low to medium.

- The Project will visible from the northern half of Lower Pistol Lake, a significant scenic resource. The scenic impact to this part of the lake is judged to be low to medium.

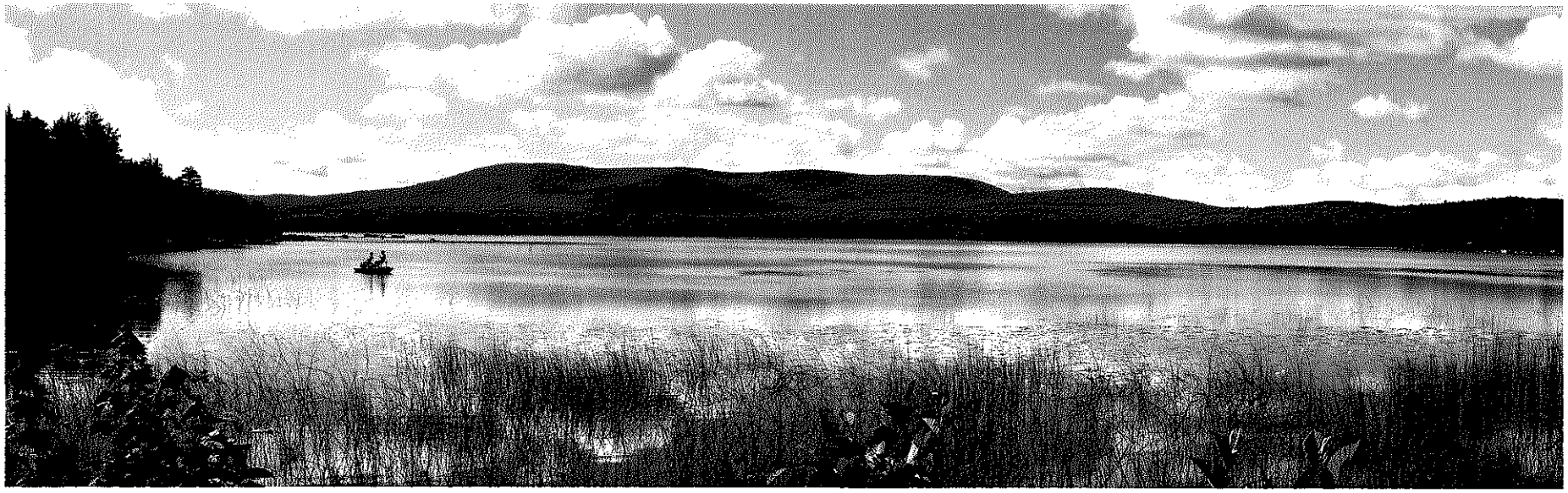
- The Project may be slightly visible from the northeastern corner of Spring Lake, a significant scenic resource. The scenic impact to this part of the lake is judged to be low to none.

- Within the eight-mile Study Area, the Project will not be visible from any federally designated wilderness areas, National Parks, developed State Parks, scenic river segments, or MDOT scenic turnouts.

- Throughout the majority of the Study Area, views of the wind turbines are blocked by topography and roadside vegetation.

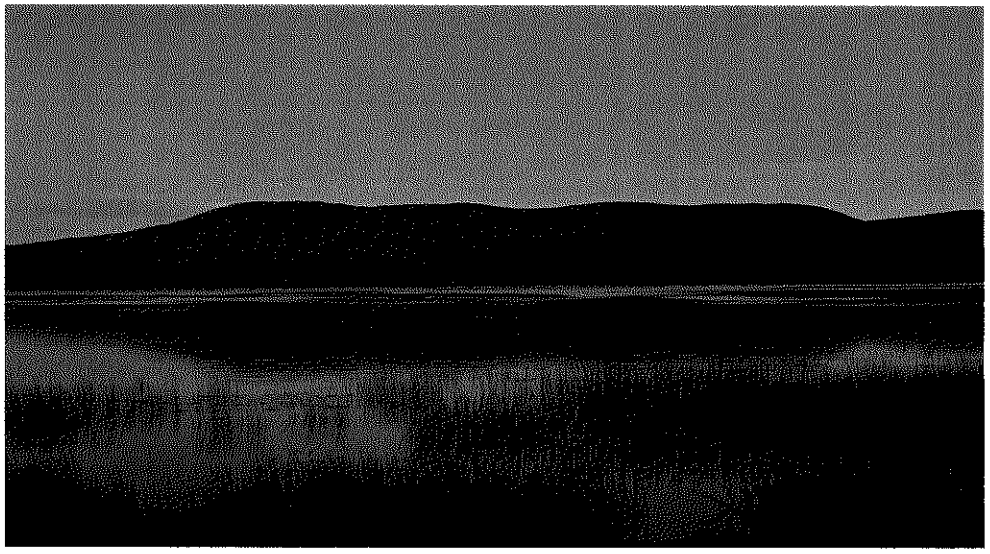
- The associated facilities for the Project will have minimal to low impact on views from scenic resources of state or national significance. The associated facilities are located in actively managed timberland that is generally out of view from the surrounding area. The most significant visual impact will result from the clearing and earthmoving required for a segment of the ridgeline road on the north face of Passadumkeag Mountain, as seen from Saponac Pond. A variety of mitigation measures will be used to minimize color contrasts on the mountain. The associated facilities will not be of a location, character, or size to cause an unreasonable adverse visual effect on the scenic character of the Study Area.

Appendix A

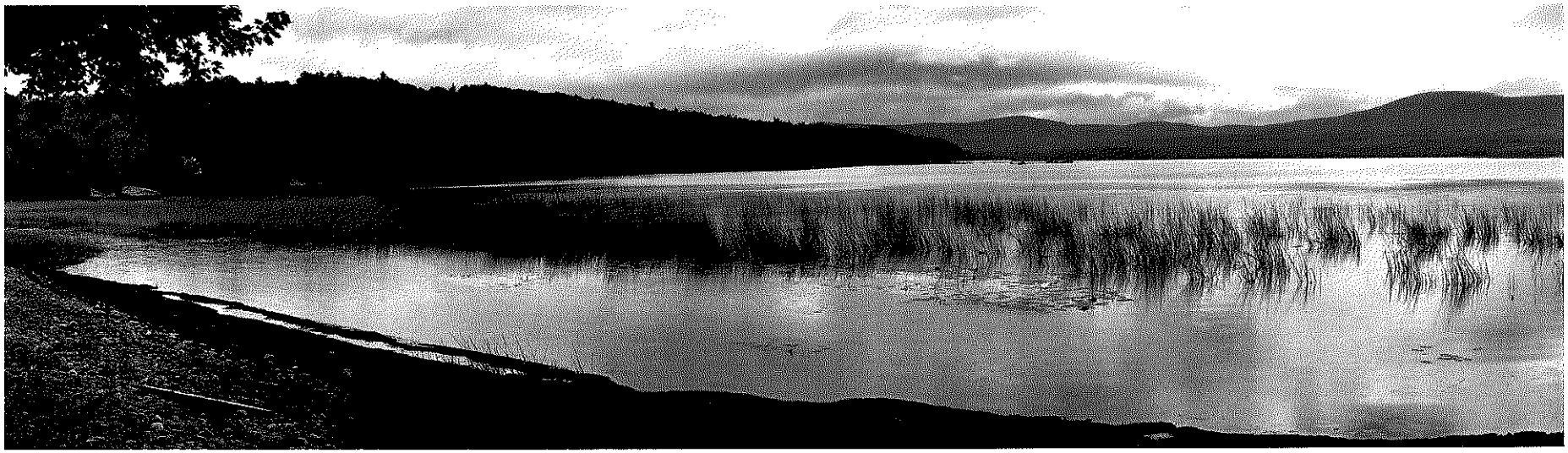


P33: Panoramic view looking south from the northern shore of Saponac Pond. The Project would be visible from this viewpoint at distances of 4.0 to 4.9 miles.

P34: View looking east from the northern shore of Saponac Pond.



P35: View looking south from the northern shore of Saponac Pond toward Passadumkeag Mountain at dusk.



P36: Panoramic view looking south to southeast from the northern shore of Saponac Pond.

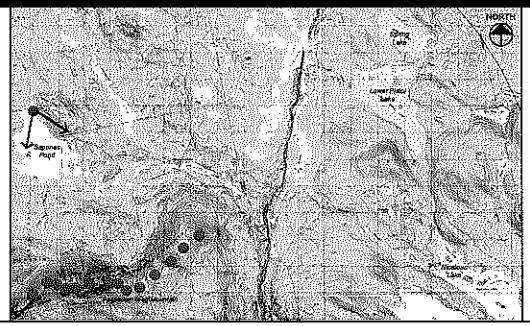
P37: Continued panoramic view looking south to southwest from the northern shore of Saponac Pond.

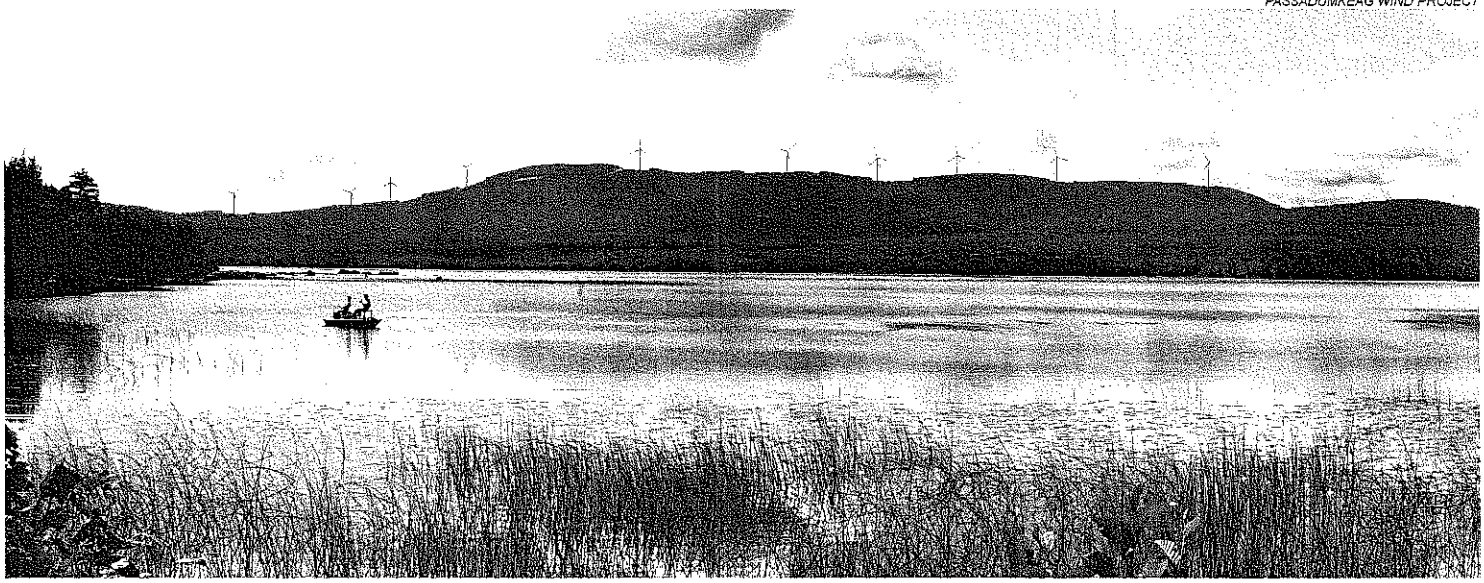
P38: Panoramic view looking southeast from Sibley Road, on the western shore of Saponac Pond toward the proposed Passadumkeag Wind project.

P39: Panoramic view looking south from Sibley Road.

Appendix C

Photosimulation 5: Panoramic view looking southeast from Saponac Pond in Burlington toward the proposed Passadumkeag Wind Project.

LEGEND	VIEWPOINT LOCATION MAP	PHOTOSIMULATION INFORMATION	
Passadumkeag Wind Project Turbines Viewpoint location and direction of view		Turbine Model: Vestas V112 Hub Height: 84m (276 ft) Rotor Diameter: 112m (367 ft) View Coordinates: Latitude: 45.188782°, Longitude: -68.387895° Viewer Elevation: 59m (195 ft) Direction of View: Southeast Focal Length: Digital equivalent to 50mm normal lens Closest Turbine: 4.0 miles Closest Visible Turbine: 4.0 miles Furthest Turbine: 4.9 miles Furthest Visible Turbines: 4.9 miles Turbines Visible: 10± Date of Photo: 07.28.11 Time of Photo: 9:49 am	**Photosimulation 5** **Saponac Pond** **Passadumkeag Wind Project** *Visual Impact Assessment* tjd&a 01.30.12 Page 9



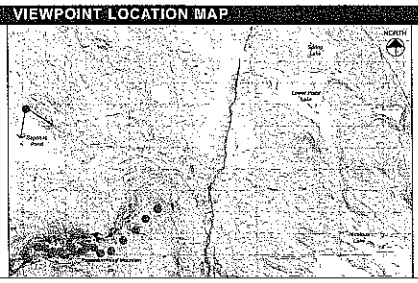
Photosimulation 5: Panoramic view looking southeast from Saponac Pond in Burlington toward the proposed Passadumkeag Wind Project.

LEGEND

Passadumkeag Wind Project Turbines

Viewpoint location and direction of view

VIEWPOINT LOCATION MAP



PHOTOSIMULATION INFORMATION

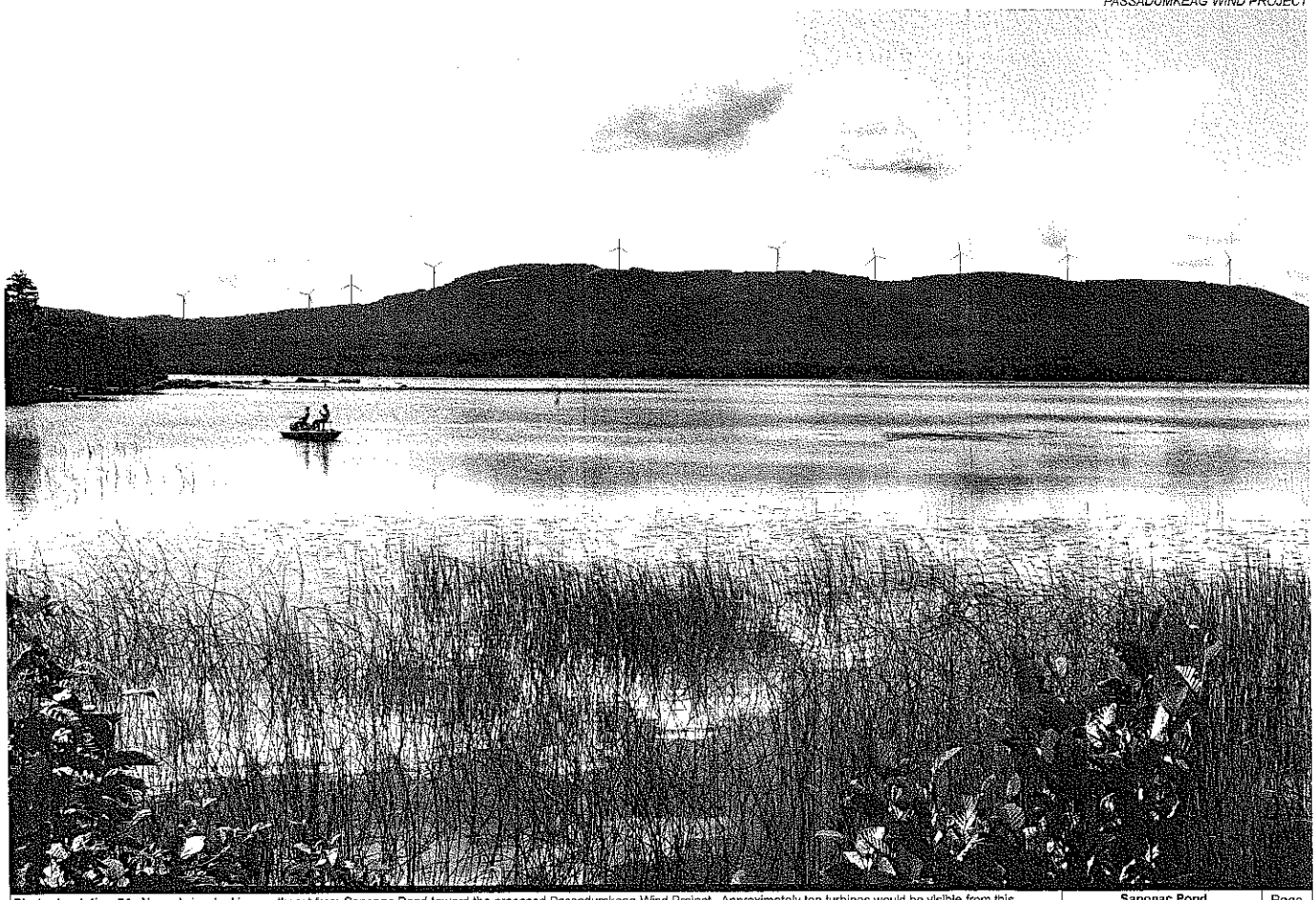
Turbine Model:	Vestas V112
Hub Height:	84m (276 ft)
Rotor Diameter:	112m (367 ft)
View Coordinates:	Latitude: 45.188782°, Longitude: -68.387895°
Viewer Elevation:	59m (195 ft)
Direction of View:	Southeast
Focal Length:	Digital equivalent to 50mm normal lens
Closest Turbine:	4.0 miles
Closest Visible Turbine:	4.0 miles
Furthest Turbine:	4.9 miles
Furthest Visible Turbines:	4.9 miles
Turbines Visible:	10±
Date of Photo:	07.28.11
Time of Photo:	9:49 am

Photosimulation 5
Saponac Pond

Passadumkeag Wind Project
Visual Impact Assessment

tjd&a

01.30.12



Photosimulation 5A: Normal view looking southeast from Saponac Pond toward the proposed Passadumkeag Wind Project. Approximately ten turbines would be visible from this location at distances of 4.0 to 4.9 miles. Viewer should hold this image, when printed at 11" x 17", approximately 21" from eye to replicate actual view.

Saponac Pond	Page
Photosimulation 5A	10

Photosimulation 5A: Normal view looking southeast from Saponac Pond toward the proposed Passadumkeag Wind Project. Approximately ten turbines would be visible from this location at distances of 4.0 to 4.9 miles. Viewer should hold this image, when printed at 11" x 17", approximately 21" from eye to replicate actual view.

Saponac Pond	Page
Photosimulation 5A	10

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Appendix D

MARKET DECISIONS
RESEARCH • INSIGHT • STRATEGY

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Research Report

Passadumkeag Mountain Wind Power Project Intercepts

October 2011

Prepared for:

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I. Summary

Terrence J. DeWan & Associates is in the process of conducting a visual impact assessment for a wind energy project on Passadumkeag Mountain. Since this project may affect the view from Saponac Pond as well as Nicatous and Lower Pistol lakes, which are designated as scenic resources of state or national significance, the client wished to better understand public opinions of the possible effects of the project on the view shed.

Terrence J. DeWan & Associates requested that the survey be conducted at locations on Saponac Pond and Nicatous Lake. Surveys were conducted between August 26 and August 29 and between September 2 and September 5, 2011.

Terrence J. DeWan & Associates engaged Market Decisions to finalize and conduct the survey, and evaluate the results. Market Decisions interviewed 29 users of the pond and lake during the survey.

II. Methodology

The survey used in this research was developed by Market Decisions. The survey was designed to be administered in person at locations along Saponac Pond and Nicatous Lake. The survey includes a total of 62 questions, including demographic information. The survey assessed:

- Activities in which respondents were engaged or planning
- Prior visits to the lakes in the area
- Importance of key attributes to their visit
- Expectations for the area
- General assessment of scenic value and quality
- An assessment of the scenic value/quality of the lakes (with and without the wind turbines)
- Impact of the project on use and enjoyment of the lakes
- General views of wind power development
- Demographics

For the most important set of questions, respondents were asked to rate the scenic value of Saponac Pond, Nicatous Lake, and Lower Pistol Lake by evaluating a series of photo-simulations of the view; two for each location. The first was based on the current view of each location while the second was a photograph of the same view with simulated images of wind turbines on Passadumkeag Mountain. Respondents were then asked a series of questions about how the presence of the wind turbines would impact their use and enjoyment of the pond and the two lakes. A copy of the survey is provided in the Appendix.

The survey was administered over two weekends from August 26 to 29 and from September 2 to September 5, 2011. The weather conditions varied over the study period and consisted of days that were mostly sunny, partly sunny, and cloudy.

On each day, trained interviewers went to locations on Saponac Pond and Nicatous Lake. Interviewers conducted interviews from Noon to 6 PM on Fridays, 8 AM to 6 PM on Saturdays, 8 AM to 6 PM on Sundays, and from 8 AM to Noon on Mondays.

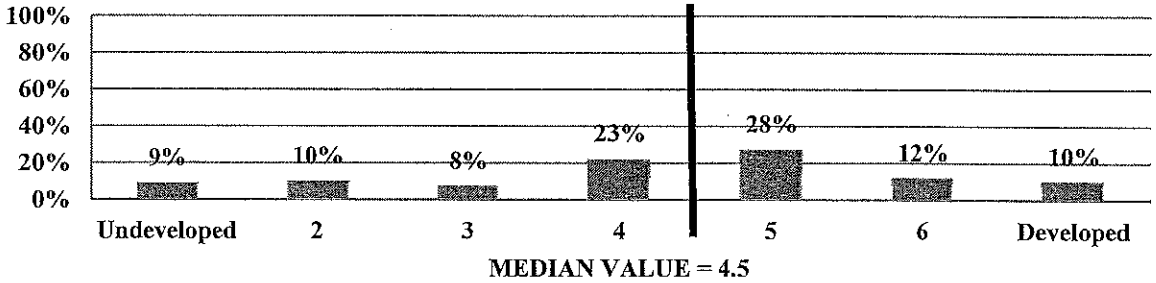
On Saponac Pond, interviewers intercepted people along Main Road while people were intercepted at a number of locations (boat launch plus lodges) along Nicatous Lake. Multiple adults from each party were invited to participate as they were willing. Children were not interviewed.

A total of 45 people were observed during the survey period at the pond and lake locations. In addition, interviewers observed 20 boats and 9 canoes or kayaks on the pond and lake over the data collection period (many of these are also included in the 45 people observed at the survey locations) along with 7 ATV users. In all, 29 interviews were completed among adults at Saponac Pond and Nicatous Lake.

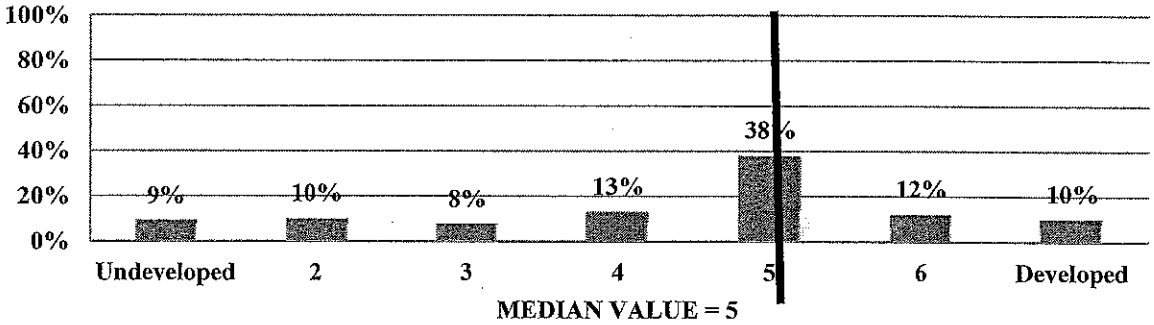
Note on Median Values

For the questions that respondents answered using a seven point scale, the results presented below include the median value. The median value is that value at which 50% of the responses are below the value and 50% of responses are above the value. In some cases the distribution of the response may not make it possible for there to be a perfect split at 50% above or below the value. This happens when the point where half of the respondents answered is included within a category (i.e. the categories below this add to less than 50% and the categories above also add to less than 50%). In these cases, the median value is set at the category for which the sum of the category and all the lower categories will sum to at least 50%. The two tables below provide examples. In the first, the median in 4.5 since at this value exactly 50% of responses are above or below the value. In the second example, the median is 5. This happens since only 40% of responses are below this value but only 22% are above the value. The 50/50 split of respondents occurs within the category (5).

Think about your expectations for level of development that you will see along the lake and rate on a scale from 1 to 7



Think about your expectations for level of development that you will see along the lake and rate on a scale from 1 to 7



III. Survey Results

Activities

The most common activities in which respondents were participating include fishing (46%), viewing the scenery (43%), the use of a motor boat (39%), canoeing or kayaking (39%), and swimming (39%). The most common primary activities were fishing (21%) and staying at a camp (18%).

Think about your activities on Saponac Pond/Nicatous Lake. What are your plans for today?

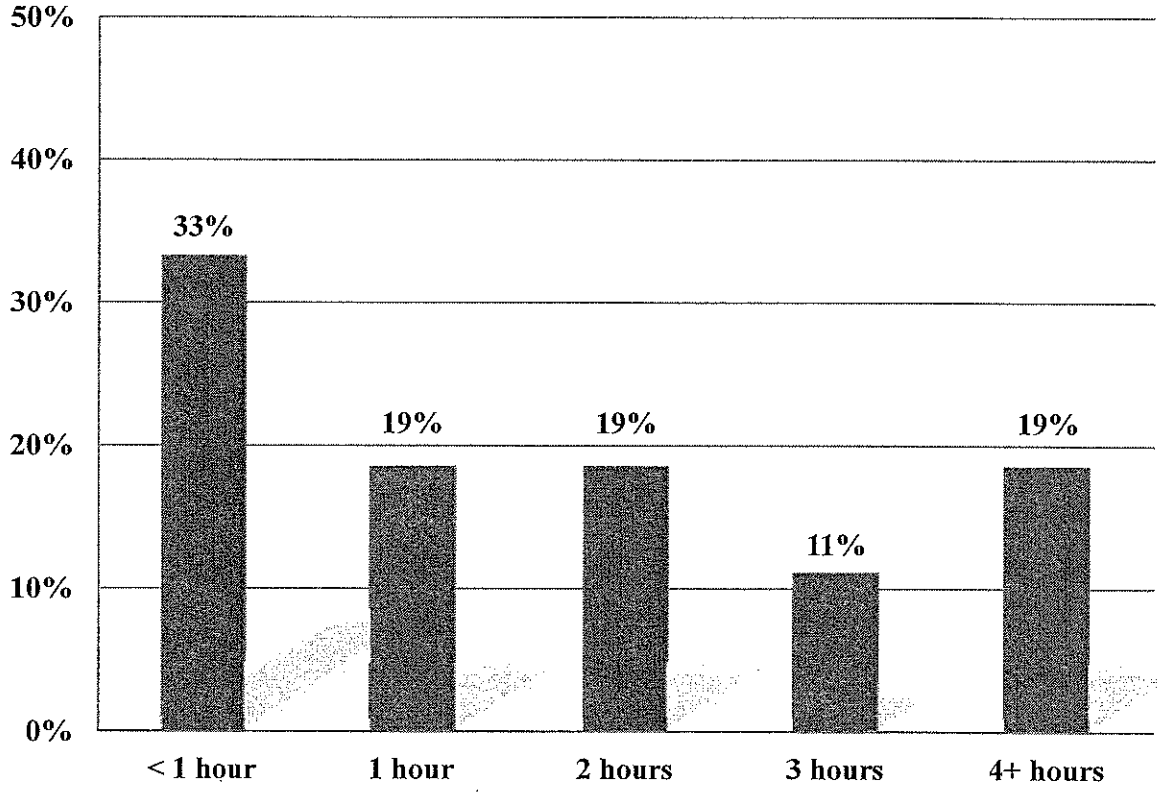
	All Activities	Primary Activity
Canoeing, Kayaking	39%	4%
Boating - Motor Boat	39%	4%
Personal watercraft	14%	
Viewing the scenery	43%	11%
Fishing from a boat or shore	46%	21%
Swimming	39%	
Beach going, use of the beach	21%	
Staying at a lodge	21%	11%
Staying at a camp	25%	18%
Picnicking	18%	
Nature study	14%	
Other	64%	32%

Other Plans:

ID#	Comment
5	4-wheeler / lunch
28	ATV ride, around Lead Mountain
18	ATV riding around [the lake]
22	ATV, food, head back to Route 9
21	Bicycles
20	Drink beer / 4 wheeler
14	Finish up weekend / head home / ATVs / kinda hangin'
10	Gas up & go back to campground
8	Lunch
19	Lunch @ lodge; camping @ another lake: Gassabias. Riding through on ATVs.
3	Place of refuge for the family
25	Relaxing
27	Riding 4 wheelers
24	Skinny dipping
2	Spend time with dad
26	Wildlife, bikes

About two in ten respondents (19%) expected to be out on the pond/lake for 4 or more hours while 11% expected to be on the pond/lake for 3 hours. Nineteen percent of respondents expected to be on the pond/lake for 2 hours, 19% for one hour, and 33% expected to be on the pond/lake for less than an hour or to be on-shore near the pond/lake.

How long do you expect to be out on the pond/lake today?



Prior Visits to Area

Among all respondents, 14% had visited Saponac Pond (before the day of data collection) during the prior 12 months, 14% had visited Saponac Pond, 62% had visited Nicatous Lake, 7% had visited Spring Lake, and 10% had visited Lower Pistol Lake during the prior 12 months. Among those with a prior visit to Saponac Pond, the average number of times visiting the pond is 5.8 with a median of 4.5 visits during the prior 12 months. Among those with a prior visit to Nicatous Lake, the average number of times visiting the lake is 7.2 with a median of 2 visits during the prior 12 months. Among those with a prior visit to Spring Lake, the average number of times visiting the lake is 6 with a median of 6 visits during the prior 12 months. Among those with a prior visit to Lower Pistol Lake, the average number of times visiting the lake is 34 with a median of 5 visits during the prior 12 months.

During the past year how many times have you visited the following…?

	% Visiting	Among All Respondents		Among those visiting during prior 12 months	
		Mean # of Visits	Median # of Visits	Mean # of Visits	Median # of Visits
Saponac Pond	**14%**	**0.8**	**0.0**	**5.8**	**4.5**
Nicatous Lake	**62%**	**4.4**	**1.0**	**7.2**	**2.0**
Spring Lake	**7%**	**0.4**	**0.0**	**6.0**	**6.0**
Lower Pistol Lake	**10%**	**3.5**	**0.0**	**34.0**	**5.0**

Among all respondents, the most common activities during prior visits to Saponac Pond included fishing (10% of respondents), boating (7%), and viewing the scenery (7%). The most common activities during prior visits to Nicatous Lake included viewing the scenery (41% of respondents), fishing (24%), and swimming (24%). At Spring Lake, the one respondent with a prior visit indicated he was visiting friends. The most common activity at Lower Pistol Lake was staying at a camp (10% of respondents).

During the past year, how many times have you visited Saponac Pond for…?

	% Participating in Activity	Among All Respondents		Among those visiting during prior 12 months	
		Mean # of Visits	Median # of Visits	Mean # of Visits	Median # of Visits
Canoeing/Kayaking	3%	0.2	0.0	5.0	5.0
Boating (Motor Boat)	7%	0.2	0.0	3.0	3.0
Viewing the scenery	7%	0.4	0.0	6.5	6.5
Personal watercraft	3%	0.0	0.0	1.0	1.0
Snowmobiling	3%	0.4	0.0	12.0	12.0
Fishing from a boat or shore	10%	0.2	0.0	2.3	1.0
Ice fishing	3%	0.0	0.0	1.0	1.0
Swimming	3%	0.0	0.0	1.0	1.0
Beach going, use of the beach	0%	0.0	0.0	0.0	0.0
Staying at a lodge	0%	0.0	0.0	0.0	0.0
Staying at a camp	3%	0.4	0.0	12.0	12.0
Picnicking	3%	0.0	0.0	1.0	1.0
Nature study	0%	0.0	0.0	0.0	0.0
Hiking	0%	0.0	0.0	0.0	0.0
Any other reasons	3%	3.3	0.0	97.0	97.0

Other Activities on Saponac Pond:

ID#	Comment
8	Hunting

During the past year, how many times have you visited Nicatous Lake for…?

	% Participating in Activity	Among All Respondents		Among those visiting during prior 12 months	
		Mean # of Visits	Median # of Visits	Mean # of Visits	Median # of Visits
Canoeing/Kayaking	21%	1.8	0.0	8.8	1.5
Boating (Motor Boat)	21%	2.1	0.0	10.0	1.5
Viewing the scenery	41%	3.0	0.0	7.2	2.5
Personal watercraft	10%	2.0	0.0	19.0	10.0
Snowmobiling	10%	0.6	0.0	5.3	3.0
Fishing from a boat or shore	24%	2.2	0.0	9.0	2.0
Ice fishing	7%	0.1	0.0	1.0	1.0
Swimming	24%	1.4	0.0	5.9	2.0
Beach going, use of the beach	10%	1.2	0.0	11.3	10.0
Staying at a lodge	14%	0.2	0.0	1.5	1.5
Staying at a camp	21%	2.0	0.0	9.8	1.0
Picnicking	10%	1.7	0.0	16.0	2.0
Nature study	14%	0.7	0.0	4.8	2.5
Hiking	10%	1.7	0.0	16.0	2.0
Any other reasons	38%	4.6	0.0	12.2	2.0

Other Activities on Nicatous Lake:

ID#	Comment
28	Atv
18	ATV riding
14	Berry Picking -- scouting in general / Moose photography; deer/game cameras
21	Bicycles
8	Hunting
16	Nature, catch a lot of frogs
20	Relax / 4 wheelers
25	Relaxing
27	Riding 4-wheelers
3	Visiting friends

During the past year, how many times have you visited Spring Lake for…?

	% Participating in Activity	Among All Respondents		Among those visiting during prior 12 months	
		Mean # of Visits	Median # of Visits	Mean # of Visits	Median # of Visits
Canoeing/Kayaking	0%	0.0	0.0	0.0	0.0
Boating (Motor Boat)	0%	0.0	0.0	0.0	0.0
Viewing the scenery	0%	0.0	0.0	0.0	0.0
Personal watercraft	0%	0.0	0.0	0.0	0.0
Snowmobiling	0%	0.0	0.0	0.0	0.0
Fishing from a boat or shore	0%	0.0	0.0	0.0	0.0
Ice fishing	0%	0.0	0.0	0.0	0.0
Swimming	0%	0.0	0.0	0.0	0.0
Beach going, use of the beach	0%	0.0	0.0	0.0	0.0
Staying at a lodge	0%	0.0	0.0	0.0	0.0
Staying at a camp	0%	0.0	0.0	0.0	0.0
Picnicking	0%	0.0	0.0	0.0	0.0
Nature study	0%	0.0	0.0	0.0	0.0
Hiking	0%	0.0	0.0	0.0	0.0
Any other reasons	7%	0.0	0.0	1.0	1.0

Other Activities on Spring Lake:

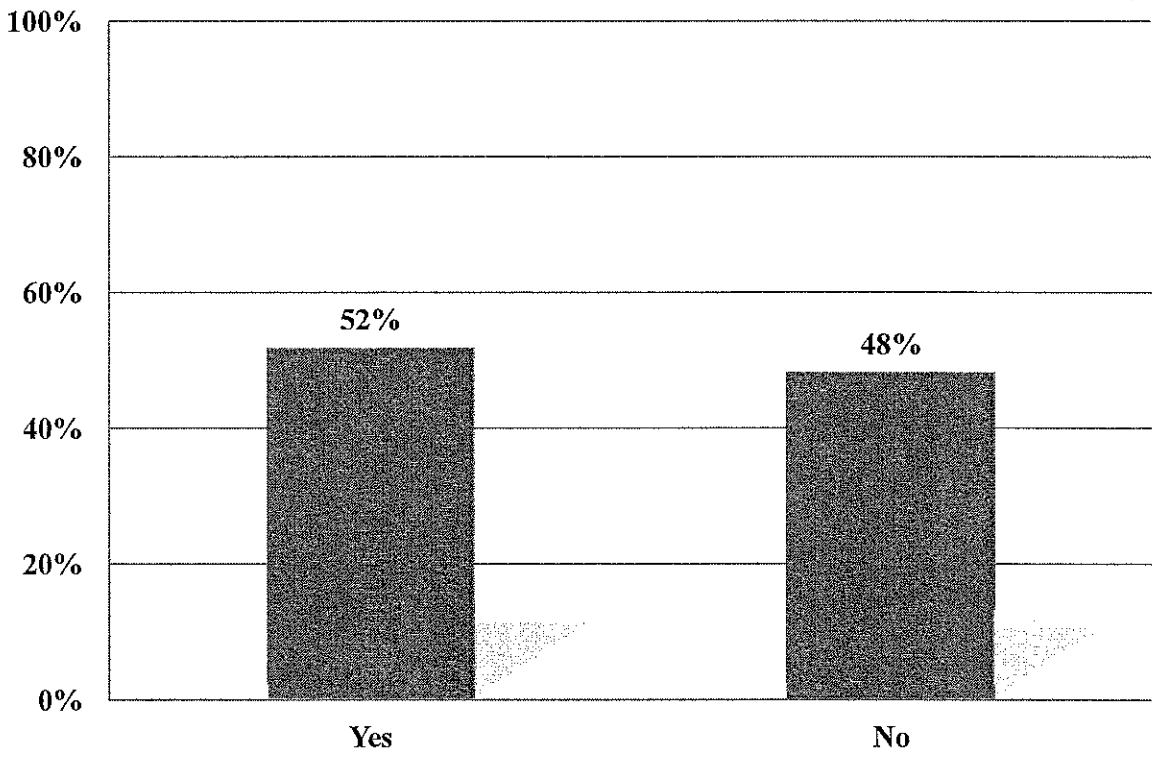
ID#	Comment
3	Visiting friends

During the past year, how many times have you visited Lower Pistol Lake for…?

	% Participating in Activity	Among All Respondents		Among those visiting during prior 12 months	
		Mean # of Visits	Median # of Visits	Mean # of Visits	Median # of Visits
Canoeing/Kayaking	0%	0.0	0.0	0.0	0.0
Boating (Motor Boat)	0%	0.0	0.0	0.0	0.0
Viewing the scenery	0%	0.0	0.0	0.0	0.0
Personal watercraft	0%	0.0	0.0	0.0	0.0
Snowmobiling	0%	0.0	0.0	0.0	0.0
Fishing from a boat or shore	0%	0.0	0.0	0.0	0.0
Ice fishing	0%	0.0	0.0	0.0	0.0
Swimming	0%	0.0	0.0	0.0	0.0
Beach going, use of the beach	0%	0.0	0.0	0.0	0.0
Staying at a lodge	0%	0.0	0.0	0.0	0.0
Staying at a camp	10%	0.0	0.0	1.0	1.0
Picnicking	0%	0.0	0.0	0.0	0.0
Nature study	0%	0.0	0.0	0.0	0.0
Hiking	0%	0.0	0.0	0.0	0.0
Any other reasons	0%	0.0	0.0	0.0	0.0

Fifty-two percent of respondents indicated they visit the pond/lake at night for activities. The most common activity was star gazing followed by fishing.

Do you use or visit the pond/lake at night for star gazing, fishing, boating, canoeing, kayaking, or any other uses?



Nighttime Activities:

ID#	Comment
29	Campfire; sometimes kayaking
1	Fishing
14	Fishing
6	Not recently, but for meteor showers
24	Skinny dipping
3	Star gazing
16	Star gazing
21	Star gazing
23	Star gazing
25	Star gazing
13	Star gazing and boating sometimes
9	Star gazing, swam
26	Stargazing

Importance of Attributes to Visit and Use of Pond/Lake

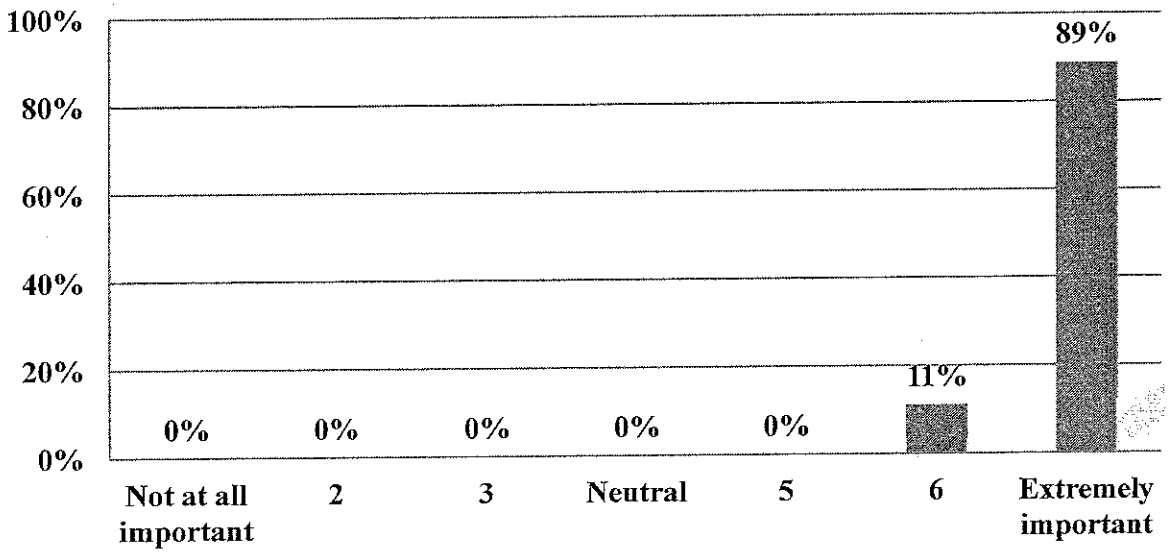
Respondents were asked to rate the importance of ten attributes to their visit to the lake. Each attribute was rated on a 7-point scale where 1 indicated that the attribute was not at all important in their use of the lake and 7 indicated that the attribute was very important. On average, all ten attributes were rated as important by respondents, with a majority rating all but one attribute as extremely important, assigning the highest point on the scale. Based on the average, the ten attributes ranked in order are:

- **Enjoying time with family/friends** (average of 7.0 with 96% rating as extremely important)
- **Enjoying the outdoors** (average of 6.9 with 89% rating as extremely important)
- **Relaxing/unwinding** (average of 6.9 with 96% rating as extremely important)
- **The scenery and scenic views** (average of 6.6 with 70% rating as extremely important)
- **The general experience of being out on the water** (average of 6.4 with 67% rating as extremely important)
- **Seeing/observing wildlife** (average of 6.4 with 73% rating as extremely important)
- **Getting back to nature** (average of 6.2 with 67% rating as extremely important)
- **The enjoyment of being on a boat** (average of 6.0 with 61% rating as extremely important)
- **An opportunity to have some time by myself** (average of 5.8 with 64% rating as extremely important)
- **The quality of the fishing** (average of 4.7 with 35% rating as extremely important)

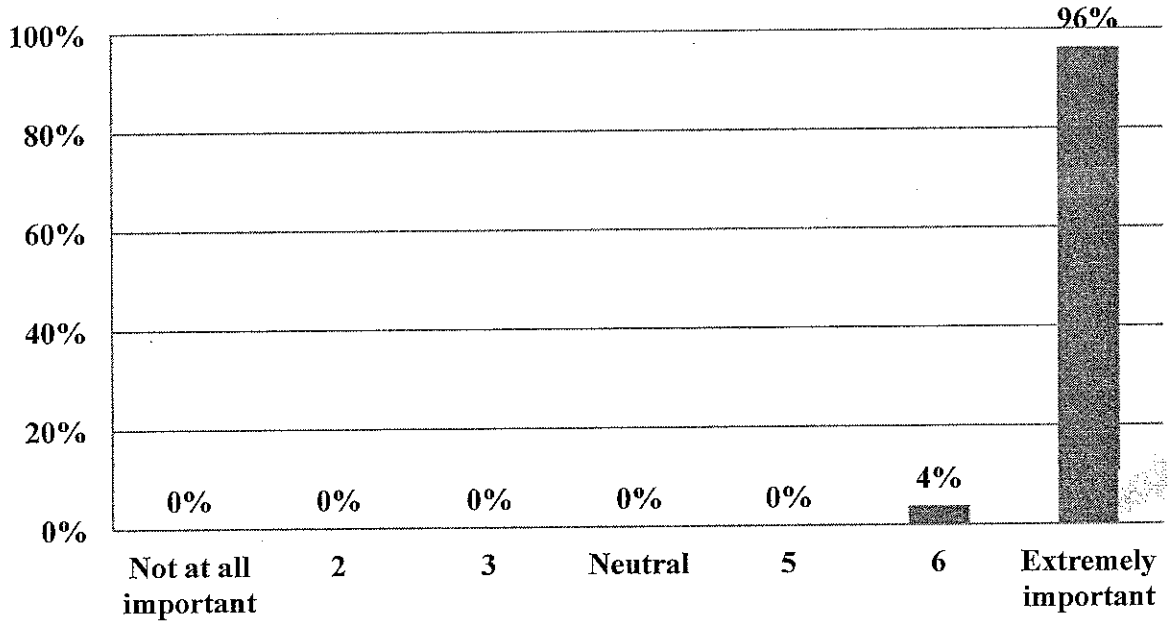
Next, I would like you to think about your use of the lake today. Please rate each of the following on a 7-point scale, where 1 is NOT AT ALL important and 7 is EXTREMELY important to you.

Attribute	Mean	Median
Enjoying the outdoors	6.9	7.0
Enjoying time with family/friends	7.0	7.0
Getting back to nature	6.2	7.0
Relaxing/unwinding	6.9	7.0
Seeing/observing wildlife	6.4	7.0
The enjoyment of being on a boat	6.0	7.0
The scenery and scenic views	6.6	7.0
The general experience of being out on the water	6.4	7.0
The quality of the fishing	4.7	5.0
An opportunity to have some time by myself	5.8	7.0

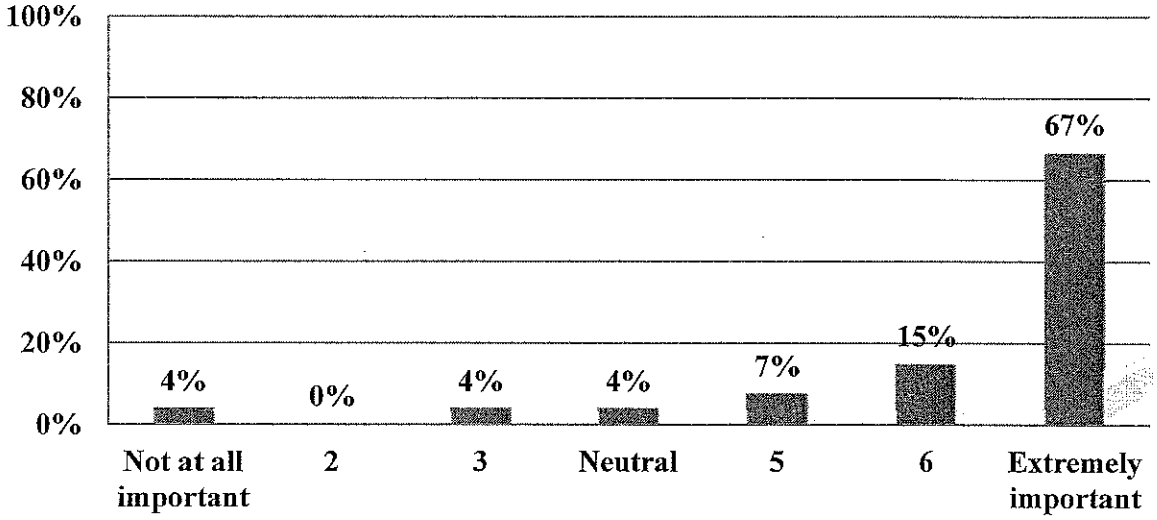
Next, I would like you to think about your use of the pond/lake today.
How important is enjoying the outdoors?



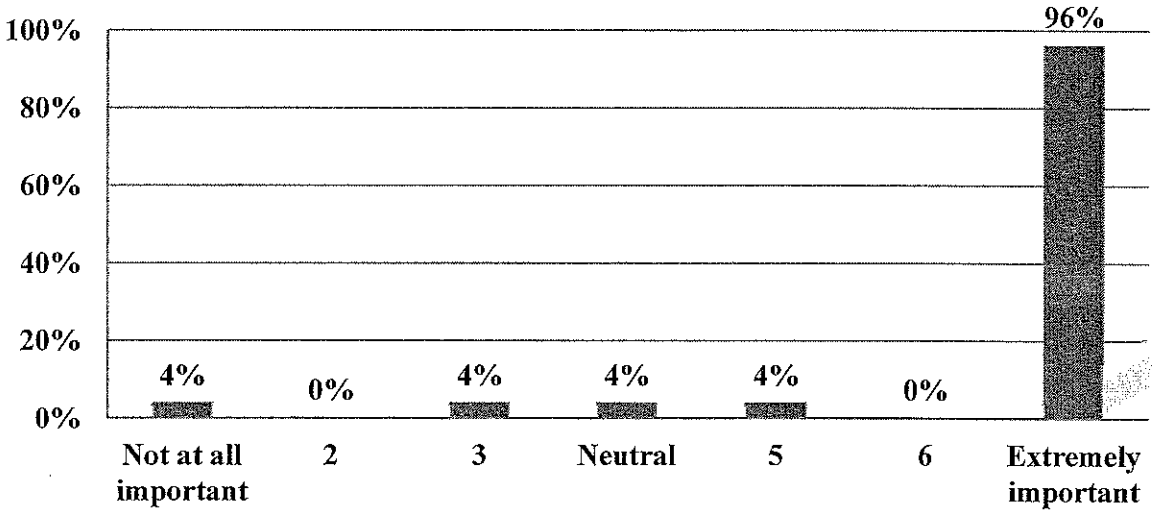
Next, I would like you to think about your use of the pond/lake today.
How important is enjoying time with family/friends ?



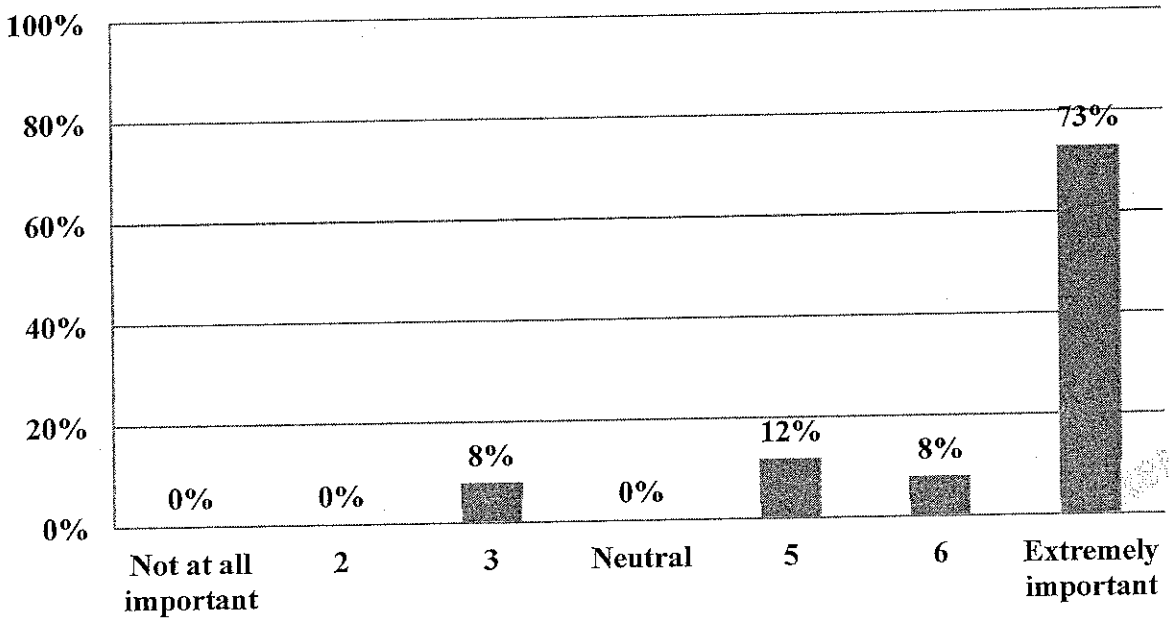
Next, I would like you to think about your use of the pond/lake today. How important is getting back to nature?



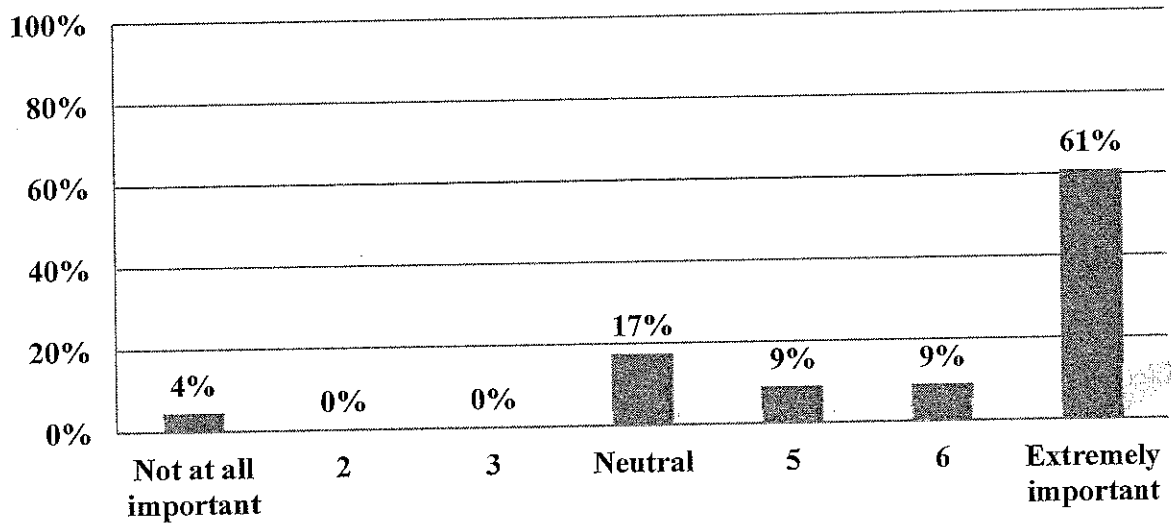
Next, I would like you to think about your use of the pond/lake today. How important is relaxing/unwinding ?



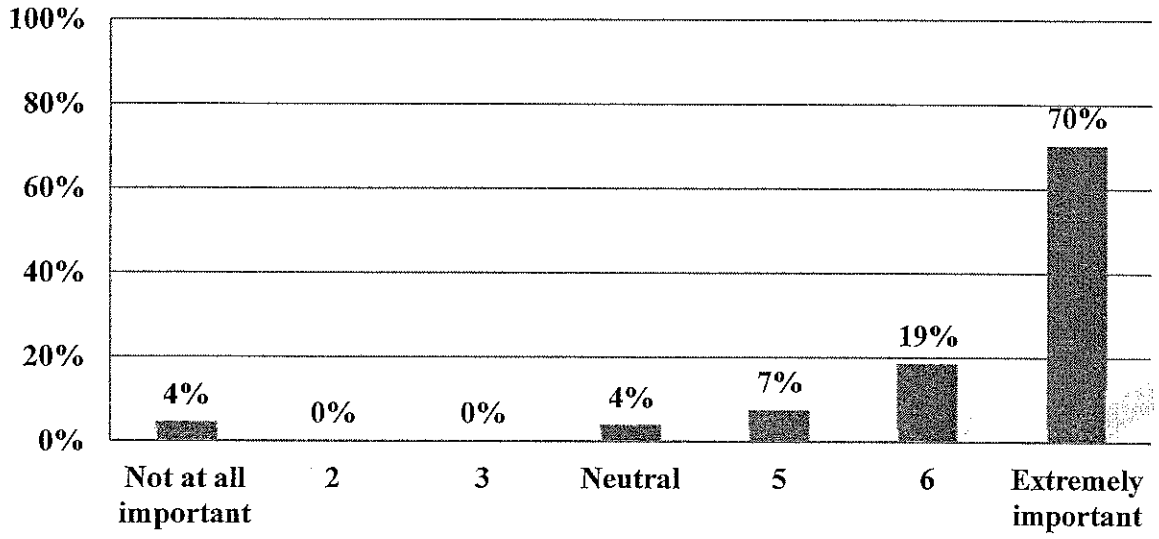
Next, I would like you to think about your use of the pond/lake today. How important is seeing/observing wildlife?



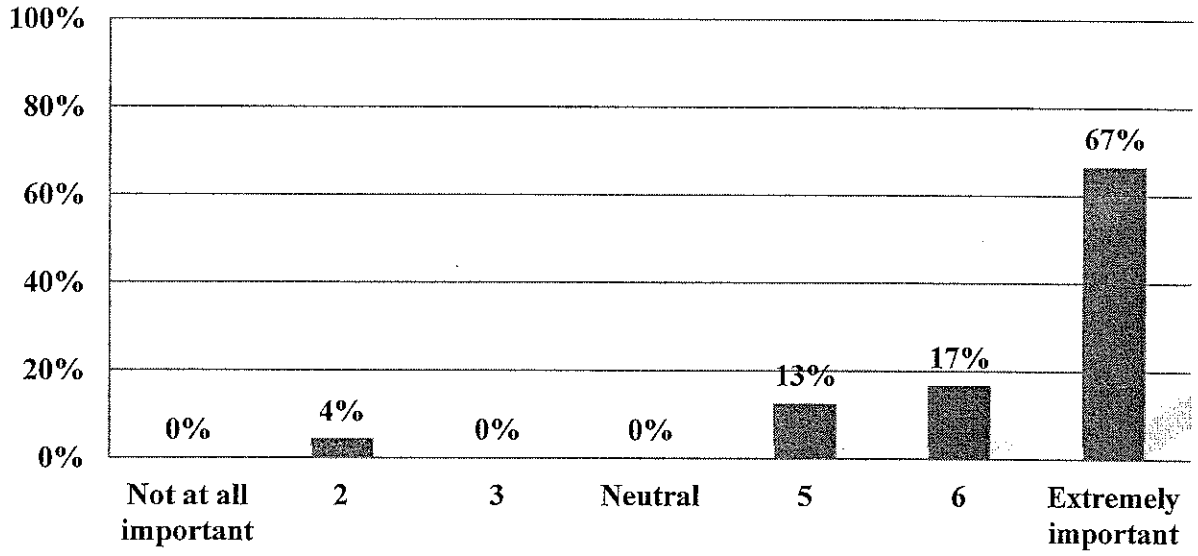
Next, I would like you to think about your use of the pond/lake today. How important is the enjoyment of being on a boat?



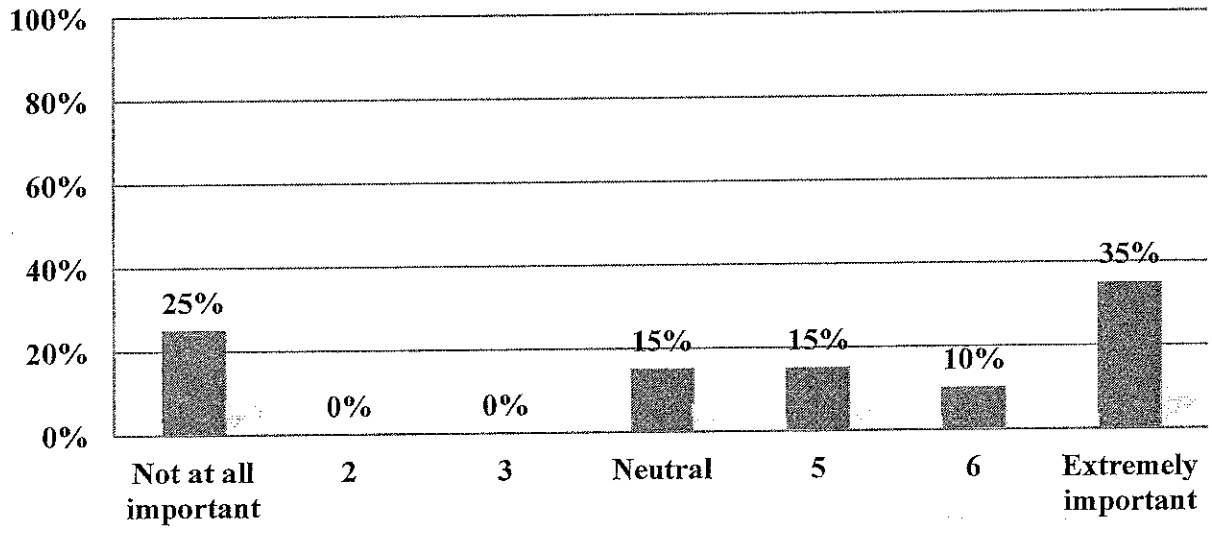
Next, I would like you to think about your use of the pond/lake today. How important is the scenery and scenic views?



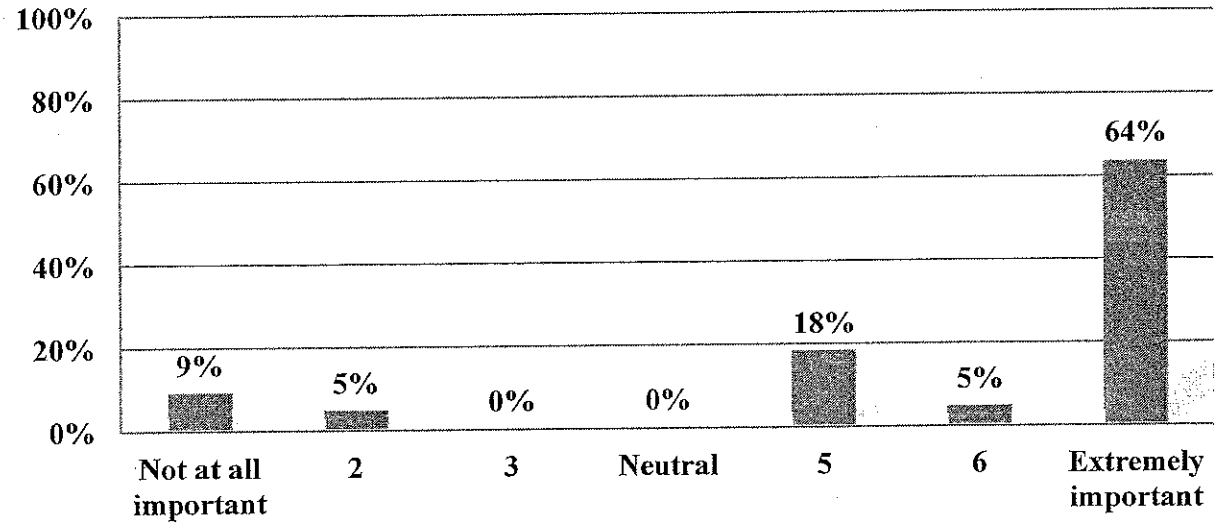
Next, I would like you to think about your use of the pond/lake today. How important is the general experience of being out on the water?



Next, I would like you to think about your use of the pond/lake today. How important is the quality of the fishing?



Next, I would like you to think about your use of the pond/lake today. How important is an opportunity to have some time by myself ?



Is there anything else about coming here today that is important to you?

ID#	Comment
3	After 40 years of coming here this is a second community for us. Around Lincoln, have a lot of friends, part of the whole experience.
9	Covered it, privilege.
28	Enjoying the friendship & rides & appreciating what the ATVers & clubs have done
29	Family tradition
2	Getting to spend time with my dad
5	Have a day off
8	Hungry
12	It's local. Just tested boat.
25	Just a nice relaxing place, informal, it's a family atmosphere. We like the owners, they treat you like family, seems the guests are always family.
6	Long time family traditions
16	No connection as far as phone or internet, it's nice to be disconnected, unplugged
13	Phones don't work, peaceful
11	Pretty hard up. Have to make more. Tough to make a living.
24	Quilting
26	The cleanliness of what's going on around; the environment & the impact people have on it
10	The rutter
7	The whole area is very enjoyable. Quiet most of the time unless you have a logging facility right in back yard. Starts at 5 a.m.
14	There's a lot less stress than where I come from, which is not the largest stressed place in the world but it can be -- that's why I come to the unorganized territories -- to escape the crap that goes on in the real world -- the trappings of modern society -- be in a place where the cell phone doesn't ring; no [computers?] To think
22	Tradition

Expectations for the Area

Respondents were asked about their expectations for their recreational experience while visiting the pond/lake. The most commonly mentioned responses included fishing, catching fish as well as peace and quiet and a chance to relax.

In general, what are your expectations for your recreational experience during your visit to Saponac Pond/Nicatous Lake?

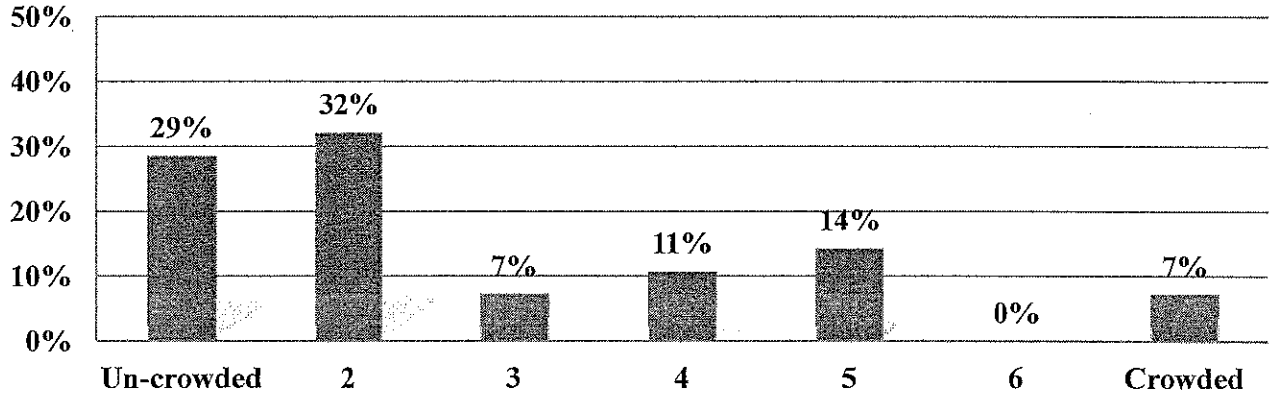
ID#	Comment
10	4 wheeling / looking around
21	Abundance of everything listed
1	Catch fish, catch bugs, put away cell phone
13	Catch lots of fish, eat good food, see the stars, drink beer
15	Clean water, clean land
11	Depends on snowmobiles, needs that to make payments on lodge. Sells gas, price affects. Has to sell gas, has to keep customer service.
17	Don't know -- it's more beautiful than what I expected -- it's gorgeous here
28	Enjoy & have a good time
8	Enjoy it. Came for lunch.
19	Enjoy myself, spend time together
26	Expect it to be the way it's always been. Expect it to be relaxing, peaceful, beautiful, quiet...
2	Fishing with my dad
7	Great four-wheeling. Only down to east side now. West side owned by Princeton and Carlisle.
20	Have a good time & relax, enjoy outdoors
16	Hope it's nice weather so we can be outside
5	Just to see it
22	Make it to here & back. Got to work tomorrow.
18	No expectations
6	Peace and quiet, being with family, always managed to get them all up here
9	Quiet, sounds of loons in the evenings, catching up with friends
25	Relaxing & enjoying the water & scenery
29	The fishing, kayaking, relaxation, the campfires
27	This seems about what I expected. Dirt roads; lots of trees
14	To be left alone. Don't want to see LURC, Census, anyone -- If I wanna see anyone I'll give `em a call; send up smoke signals! This here, the lake, the Lodges, Jacks, it's one community, one big family.
23	To be outdoors
3	To continue as it has been for 40 years. Watching grandchildren do the same things my children did.
4	To have clean clear pristine water. No visible sign of industrial operations. Wind turbines or logging.

Respondents were asked to evaluate two aspects of their expectations of their visit to the pond/lake; the number of people they might see and the level of development. Both of these aspects were evaluated on a seven point scale.

Respondents had moderate expectations of a small number of people that would also be using the pond/lake. The average rating on the seven point scale (with 1 being un-crowded and 7 being crowded) is 2.8 with a median of 2.0. Sixty-eight percent of respondents expressed the view that the pond/lake would be un-crowded to some degree (rating as 1, 2, or 3) while 21% expected the lake to be crowded to some degree (rating as 5, 6, or 7).

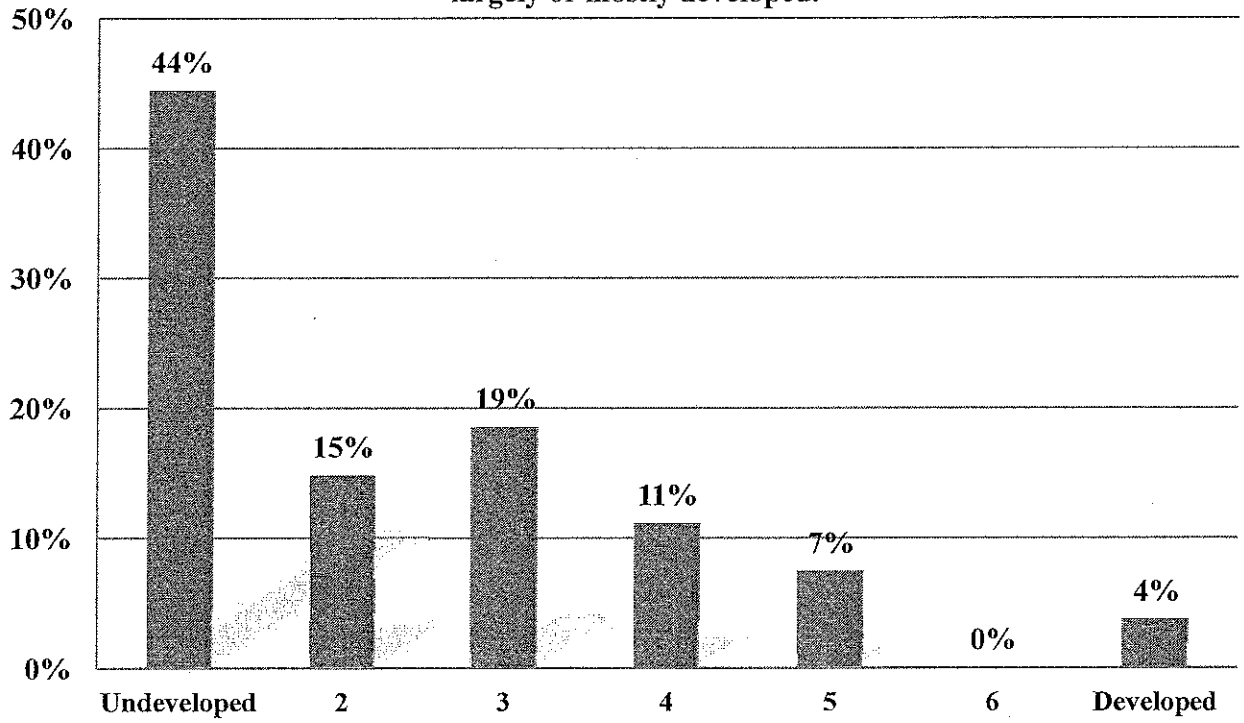
Respondents also had moderate expectations of a low level of development along the pond/lake. The average rating on the seven point scale (with 1 being undeveloped and 7 being developed) is 2.4 with a median of 2.0. Seventy-eight percent of respondents expressed the view that the pond/lake would be undeveloped to some degree (rating as 1, 2, or 3) while 11% expected the pond/lake to be developed to some degree (rating as 5, 6, or 7).

Think about your expectations for the number of people that may also be using the lake. Rate this on a scale from 1 to 7 where 1 means you expect it to be un-crowded with few/no other people and 7 means you expect it to be crowded with a large #.



Mean -- 2.8
Median – 2.0

Next think about your expectations for level of development that you will see along the pond. Please rate on a scale from 1 to 7 where one means you expect the pond to be largely UN-developed and 7 means you expect it to largely or mostly developed.



Mean – 2.4
Median – 2.0

Scenic Value and Quality

A set of questions was intended to establish reference points for the ratings of scenic value. By asking for the best and the worst places of scenic value, it was thought that the responses of the survey participants could be better understood and that survey participants would be better prepared to rate the scenic value of the area having considered their own scenic value reference points in advance.

When asked to identify a place in Maine with high scenic value, the most commonly mentioned areas were Nicatous Lake and Baxter State Park/Mount Katahdin. Respondents like these areas for the beauty and views, the wilderness, and the mountains.

When asked to identify a place in Maine with low scenic value, the most commonly mentioned areas were cities of Portland, Bangor, and Lewiston. Respondents dislike these areas because they are not city people, the crowds, and development.

Now I'd like to ask you about scenic quality. Can you think of a place in Maine that has a very high scenic quality, or outstanding views? That is, one that on a scale of 1 to 7 for scenic quality, one you would rate as a 7 for the HIGHEST scenic quality.

What is it about this place that makes it highly scenic?

ID#	Place with High Scenic Value	What is it about this place that makes it highly scenic?
22	Acadia	Nothing like it on this east coast
19	Anywhere more to the north of the state	Mountains, woods, landscape
29	Baxter park	The mountain, the trails, and the water
4	Baxter state park	Unspoiled views, no wind turbines
15	Beach Hill, Northport	The sea level
28	Chamberlain Lake, and the island where we live in Bar Harbor	Just... the woods, and then the water, the views
25	Driving down Opera House Hill in Stonington, and looking out over the bay & seeing Isle Au Haut at the end	Fishing boats in foreground -- all these little islands are like jewels in the bay. Isle Au Haut at the end in the morning, water is all blue, in the afternoon it turns all silver & sparkly -- it changes all the time -- as pretty if not prettier than anything in Mount Desert Island -- one of those views, even if it's so crummy to be there in the winter time, you look out & think how lucky you are to see it
5	Every place is pretty in Maine. Compass Lake.	

7	Here	I'm sure there's places of equal value. This is great.
10	Here [Nicatous Lake / Nicatous Lodge area]	This right here
18	Jackman	A lot of nothing -- a lot of wilderness
27	Jackman	Lot of mountains -- you can see for miles
1	Katahdin	The scenery, moose, cliff jumping, fishing
3	Katahdin	Not a native Mainer, its more than just the view
6	Katahdin	
21	Katahdin	It's 4 seasons
14	Mount Desert Island	The aesthetics of the entire place; the mountains, water
24	Mt. Katahdin	Because it's beautiful, the lakes, the mountains, all of it
12	Mt. Kineo -- Moosehead lake	Fact that you're so high. Annual fly in -- looks like they're flying right at you. Biggest lake in Maine. Nice place to camp.
9	Nicatous lake	Really about only place we have. Lake, trees, island setting. Changing weather.
11	Nicatous lake	The view here is different as you go up the lake. Can see parts of all the mountains as you go up you can pick out from other places. Wildlife.
13	Nicatous lake	It's undeveloped. Love it here. Been coming here long time.
16	Nicatous lake	Few people, and little development
2	North woods	Hills, not a lot of development
20	Passadumkeag mountain	Get up to the very top, see long distance! See changing colors of fall. Nice 4 wheeler ride up.
8	Right here	Enjoyable. Relaxing.
26	Saponac	The lake comes right to the road, so you have a direct view of the entire lake, and the mountains in the background. The perimeter of the lake, the boulders, the trees.
23	The County	Potato blossoms
17	Top of Cadillac Mountain	Just the ride up & the walkways up there; it's just beautiful

Next, can you think of an outdoor place in Maine that has a VERY LOW scenic quality? That is, one that on a scale of 1 to 7 for scenic views, one you would rate as a 1 for LOWEST SCENIC QUALITY?

What is it about this place that gives it low scenic value?

ID#	Place with Low Scenic Value	What is it about this place that gives it low scenic value?
9	A city	Concrete and bricks
26	A city (urban Portland)	Too much human -- not much nature left; it's all buildings and... industrial
23	Augusta	Slums, and slugs not working & selling drugs
24	Augusta	Nothing. It's a city, nothing appeals to the eye.
12	Bangor	Fact that it's highly populated w/ buildings & concrete
10	Biddeford Pool	I live down there. I don't go down there.
3	Brewer	Commercial, run down, wouldn't know you are in Maine, you see McDonalds, Burger King, Home Depot
27	Can't think of any unless I was right in the city	I don't care for them [cities]. Some people do; I'm not one that does -- rather be in the woods.
19	Cities	I'm not big on cities
6	Don't know	
29	Haynesville Woods	Nothing but trees -- not that they're not good to look at, there's just nothing else there
13	Herman Pond	Doesn't look Maine at all. Makes you think you're in Mass.
25	High Street, Ellsworth	It's just a bunch of stores, just like any road with strip malls on it -- they are trying to improve it, putting up new buildings & lanterns; it's not as bad as 30-40 years ago -- but it's still not beautiful. Looks like Broadway in Bangor; no, Broadway is even worse now that I think of it. I don't go often, but I do go down High St in Ellsworth. That's the first place that comes to mind.
16	Howland	Howland, as you come in off I-95, they're doing construction on a couple of bridges there. Not much zoning in Maine, run down buildings.
2	Lewiston	Crowded and busy, I like hills, woods and water
22	Lewiston	Especially during the winter: dirty & messy. Can't get through the place.
4	Mars Hill	Red flashing lights, wind turbines
8	Portland	People. Buildings. Cars/traffic. Hectic.

14	Portland	It's a dump -- I shouldn't say that; that's a crude way to put it -- too overpopulated -- too much tar... There's no tar here!
15	Portland	High rise
18	Portland	I'm not a city person
20	Portland	Too crowded
11	Route 2, 9 miles woods up to Sherman.	Just trees. Not much to see. Just a road in the woods, now it's got power lines and big pipelines going down it. Never cared for the city that's why I'm here.
5	The interstate	Boring
1	Trash plant in Brewer	All the trash
7	Wells Beach	Can't even see the ocean, so many places you can't even see.

Scenic Value of Saponac Pond and Impact of Wind Turbines

Respondents were handed a photo simulation of the view from the Main Road at the north end of Saponac Pond and were then asked to rate the scenic value of this view. Respondents first rated the current view. Respondents were then handed a photo simulation of the same view including the proposed wind turbines. They were then asked to rate the scenic value of this view that included the wind turbines. The views were rated on a seven point scale where 1 represents the lowest scenic value and 7 represents the highest scenic value.

The average rating of the initial view (without wind turbines) among all respondents was 6.6 with 72% of respondents rating the view as a 7, or highest scenic quality, with the lowest rating assigned by respondents being a 5 (with 17% rating as a 5 on the 7-point scale).

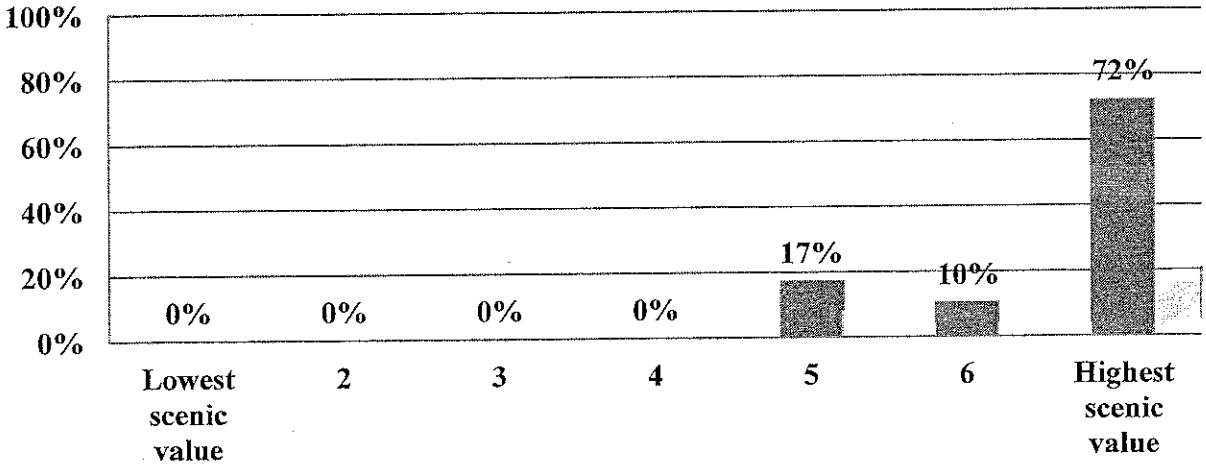
The average rating of the second view (the view containing the wind turbines) was 3.8. Fourteen percent of respondents rated the view with wind turbines as a 7, or highest scenic quality, while 3% assigned a score of 6 and 24% assigned a score of 5 on the 7-point scale. Twenty-four percent of respondents assigned the view with wind turbines a score of 1, or lowest scenic quality. Three percent assigned the view a score of 2 and 17% a score of 3 on the 7-point scale.

Overall, there was a 2.8 point drop in the average score between the two views from 6.6 to 3.8. There was no difference in assigned scores for 21% of respondents between the view with wind turbines and the view without wind turbines. The assigned scores dropped by one point among 10% of respondents and dropped by 2 points among 21% of respondents. The score assigned to the view with the wind turbines was 3 or more points lower than the view without the turbines among 47% of respondents.

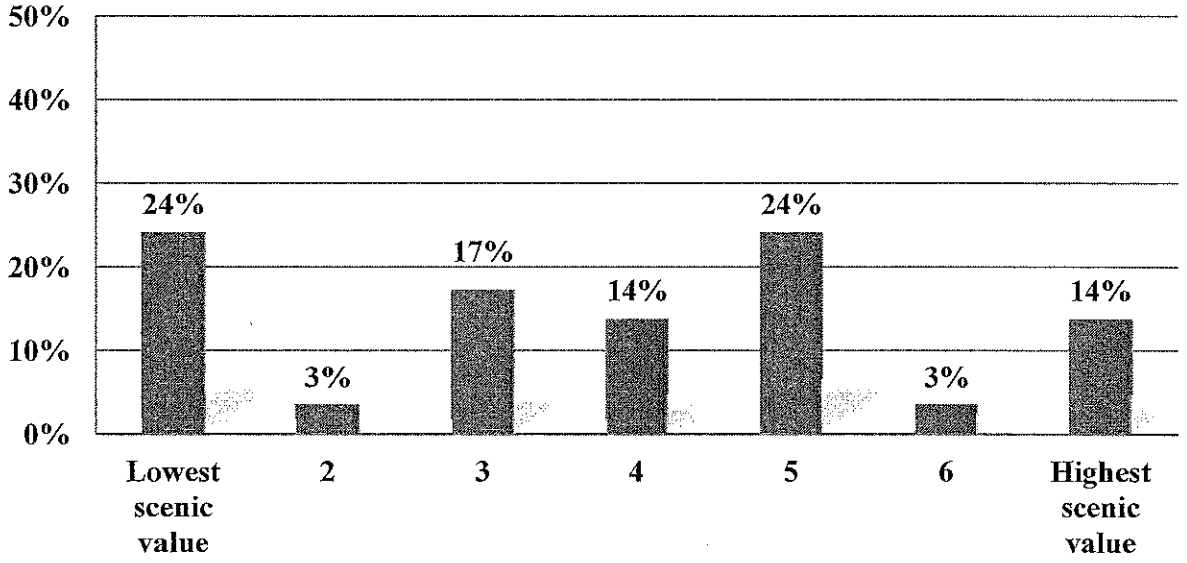
Take a look at this view from the Main Road at the north end of Saponac Pond. On the 1-to-7 scale of scenic value in Maine, where 1 is the LOWEST scenic value and 7 is the HIGHEST, how would you rate the scenic value of this view?

	Mean	Median
View from the Main Road at the north end of Saponac Pond. How would you rate the scenic value of this view?	6.6	7.0
Look at this photo simulation of a wind power project that is being considered for Passadumkeag Mountain. How would you rate the scenic value of this view?	3.8	4.0
Saponac Pond Difference in Scenic Quality Without and With Wind Turbines	*-2.8*	*-2.0*

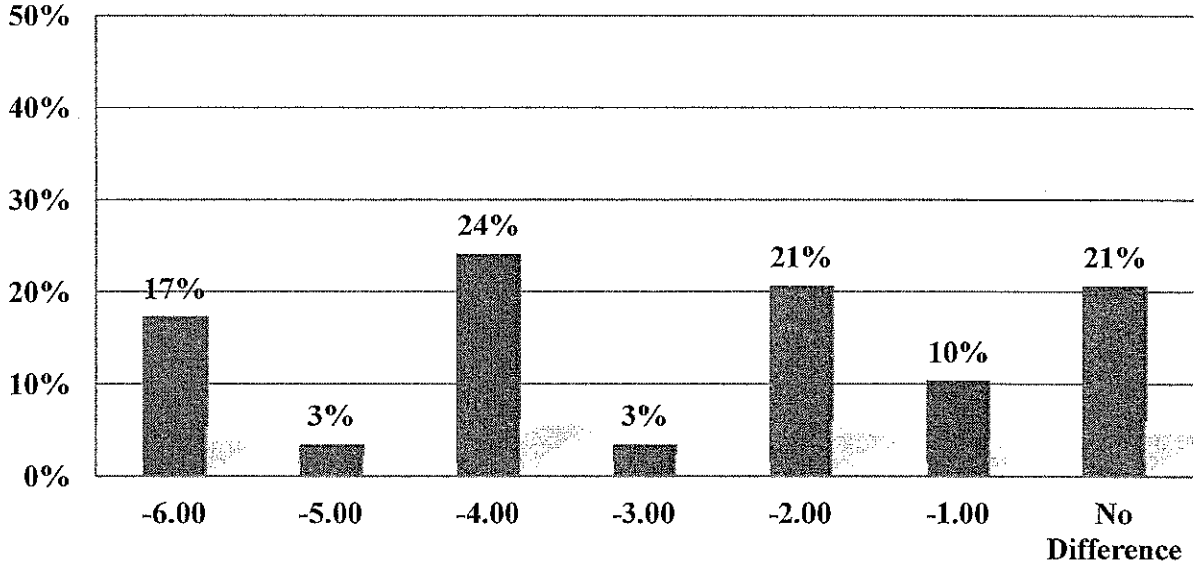
Take a look at this view from the Main Road at the north end of Saponac Pond. On the 1-to-7 scale of scenic value in Maine, where 1 is the LOWEST scenic value and 7 is the HIGHEST, how would you rate the scenic value of this view?



Look at this photo simulation of a wind power project that is being considered for Passadumkeag Mountain. How would you rate the scenic value of this view where 1 is the LOWEST scenic value and 7 is HIGHEST scenic value?



Saponac Pond Difference in Scenic Quality Without and With Wind Turbines

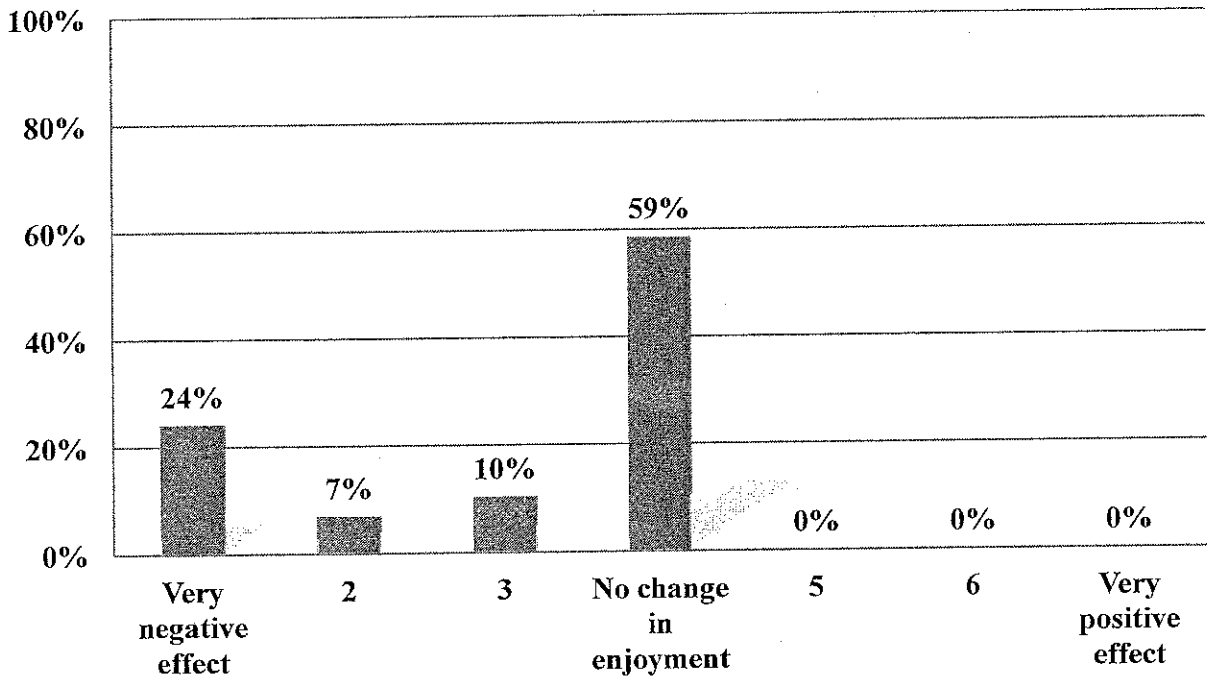


Impact on Enjoyment and Use (Saponac Pond)

A series of questions were asked to evaluate the impact of the proposed wind power project on respondents' enjoyment and use of Saponac Pond. Respondents first evaluated the impact of the proposed wind project on the enjoyment of their visit. Respondents rated the impact on a seven point scale where 1 indicates a very negative effect and 7 represents a very positive effect on the enjoyment of their visit. On the scale, a 4 represents no change in enjoyment.

On average, respondents indicate that the proposed wind project would have somewhat of a negative effect on the enjoyment of their visit; a rating of 3.0. Fifty-nine percent of respondents indicated that the proposed wind project would result in no change to their enjoyment of the pond. Forty-one percent of respondents indicated that the proposed wind project would have a negative effect on their visit to Saponac Pond (rating as 1, 2, or 3).

Now I'd like you to think about how your enjoyment of visiting this pond would be affected if you were to see the proposed wind project during your visit today. Rate on a scale of 1-7, where 1 is a very NEGATIVE effect and 7 is a very POSITIVE effect on y



Mean -- 3.0
Median -- 4.0

Why do you say that?

ID#	Comment
25	Because I like the idea of wind power but I don't like making decisions for people who live in an area -- I'm not the one who lives here -- I definitely wouldn't stop coming. It wouldn't affect me in the least as far as enjoyment goes.
28	Because... If the power was for us it'd be all right -- if it's not gonna be for us; if it goes away, then...
11	Being taught as a really good thing, I don't see it. What about the nature: eagles nests... Chemicals that kill trees I fought to get rid of. Killed of hardwood ridges, for soft wood because that's what demand wanted. Effect on wildlife with use of the chemicals on mountains.
8	Brings money to the area
3	Decisions of these should be up to the residents. I can have an opinion. I don't think mine should count, not attractive.
10	Doesn't matter `cause I don't live here.
16	I don't like to see any change up here. I don't mind the windmills I see in MA. I just don't like to see them here! They put in a lot in Berkshire County.
15	I don't like windmills, I don't like the noise.
5	I don't see anything wrong w/ it. If it benefits the U.S., not Canada.
19	I don't think it ruins the scenery; overall it's to help more than anything; I don't think it's that invasive
21	I had experience on a lake like this. 1 towering view and it never impacted me.
2	I like not seeing stuff people built
12	I look at the skyline. [As I boat] along lake, I look at shoreline. Doesn't take away for me. More dramatic.
17	I think windmills are a great thing
26	I would constantly be looking at the turbines
13	I'd find it interesting.
7	I'd still come out. Does take away from the beauty of the area.
18	It does take a hair off the scenic value, but I'd not enjoy it less
23	It won't change my enjoyment
4	It would bother me that it is there. Ever been on a lake in winter? You can hear the wind turbines turning over.
22	It's going to degrade it. More commercial development. Good for business.
24	Not going to change enjoyment
20	Not going to change my enjoyment
6	The first year they may be grating, but you get used to them, but we saw them in Scandinavia every day, you got used to them, saw them on ridge coming in from Lincoln, they're lovely.
14	The unknown: #1. Sound. #2. Proposed growth - What you show vs. Reality could be somewhat different. #3. Valuations, and valuations are a big deal; if we had to have our taxes increase due to increased valuation of wind farm I'd be at the meetings in opposition to allowing it. I'm in fishery management, and I don't like this survey; it's biased because of the unknown. [The respondent noted the focus on visual differences, at the expense of changes in the sound environment] .If I hear something from the lake, it rates below a 1. I have to travel 3+ hours to get here; I have tinnitus
1	They are up there and we are down here fishing

29	Those things don't bother me a bit -- have to look at the bigger picture / wouldn't affect my enjoyment at all
9	Very little for me. It would be a little disappointing. Rather see that than a bunch of houses on the lake.
27	Wind energy is -- nobody likes to look at it but it's got to be better than fossil fuel

Respondents were then asked to evaluate how the proposed wind project might affect their use of Saponac Pond for a number of activities. Respondents rated the impact on a seven point scale where 1 indicates they are less likely to return and 7 indicates they are more likely to return. On the scale, a 4 represents no change in their likelihood of returning to Saponac Pond.

On average, respondents indicate that the proposed wind project would have a slightly negative effect on their likelihood of returning to Saponac Pond. The score for the activities were:

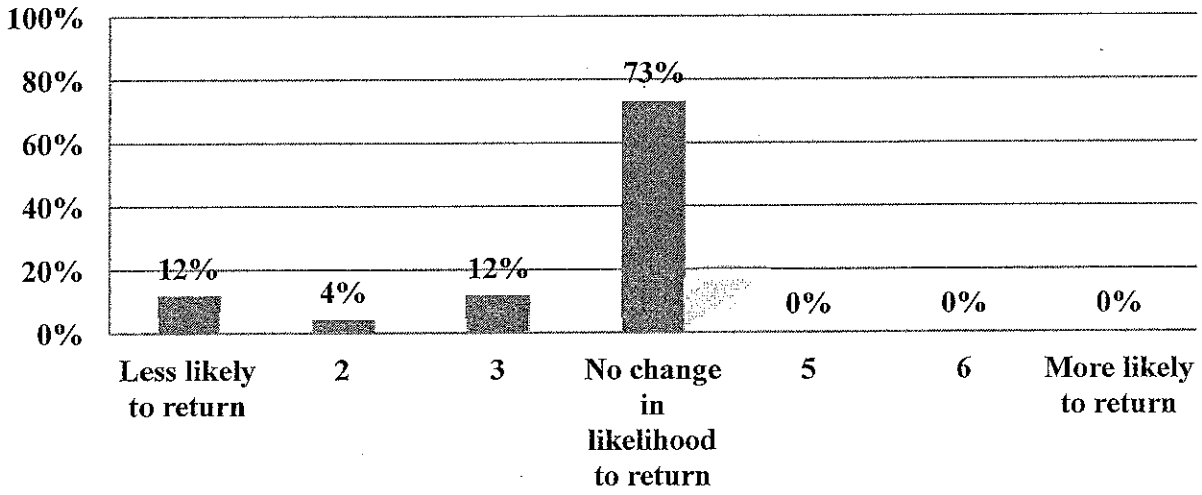
- **Boating** (an average of 3.5) with 73% indicating no change in their likelihood to return and 28% indicating they are less likely to return (rating as 1, 2, or 3)
- **Canoeing, or Kayaking** (an average of 3.4) with 71% indicating no change in their likelihood to return and 30% indicating they are less likely to return (rating as 1, 2, or 3)
- **Fishing from the shore or a boat** (an average of 3.4) with 71% indicating no change in their likelihood to return and 30% indicating they are less likely to return (rating as 1, 2, or 3)
- **Ice Fishing** (an average of 3.4) with 74% indicating no change in their likelihood to return and 26% indicating they are less likely to return (rating as 1, 2, or 3)
- **Swimming** (an average of 3.4) with 72% indicating no change in their likelihood to return and 28% indicating they are less likely to return (rating as 1, 2, or 3)

Next, think specifically about the view from Maine Road comparing the images with and without the proposed wind project. How would the proposed wind project affect your use of Saponac Pond for water activities?

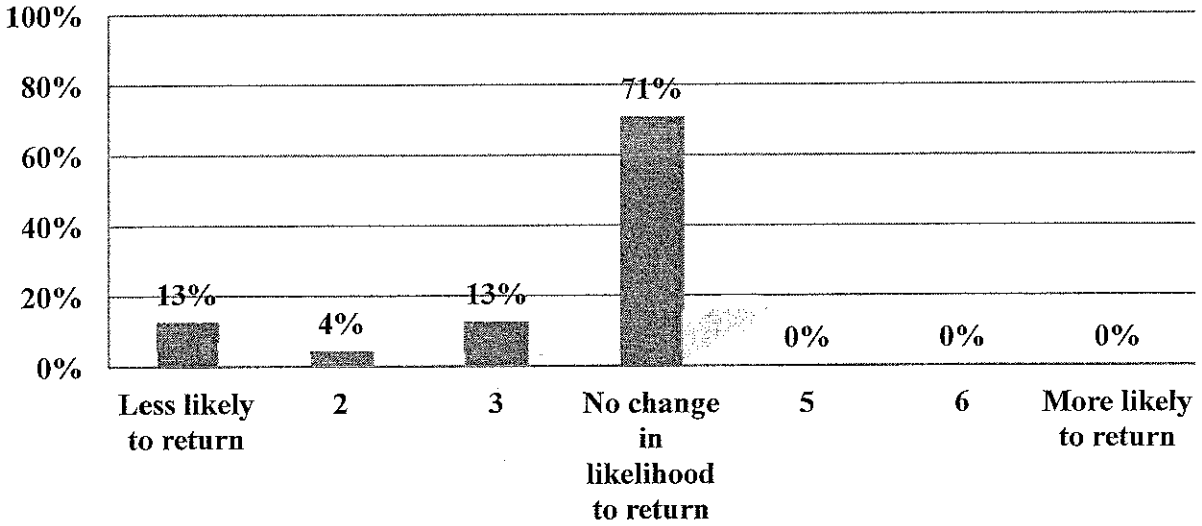
Please rate any effect on a scale of 1-7 where 1 means you are LESS likely to return and 7 means you are MORE likely to return. A "4" means the change in the view would have no effect on your return.

Activity	Mean	Median
Boating	3.5	4.0
Canoeing, or Kayaking	3.4	4.0
Fishing from the shore or a boat	3.4	4.0
Ice Fishing	3.4	4.0
Swimming	3.4	4.0

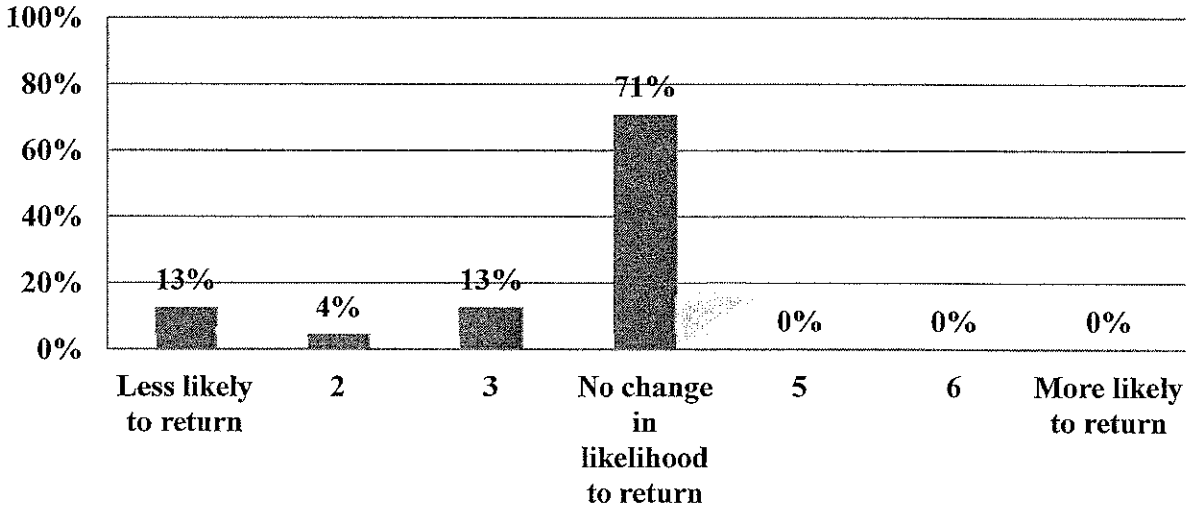
How would the proposed wind project affect your use of Saponac Pond for Boating? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



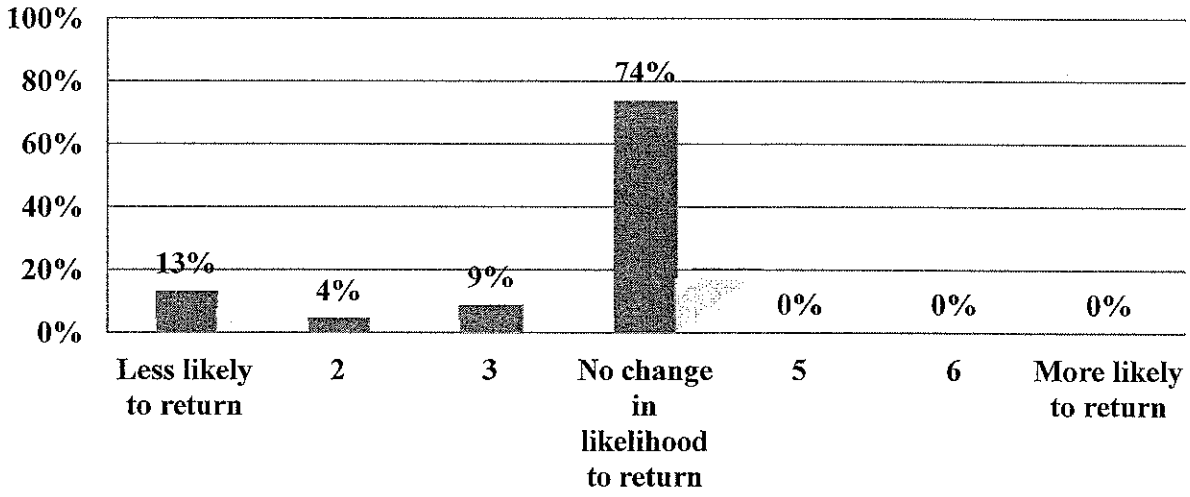
How would the proposed wind project affect your use of Saponac Pond for Canoeing, or Kayaking? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



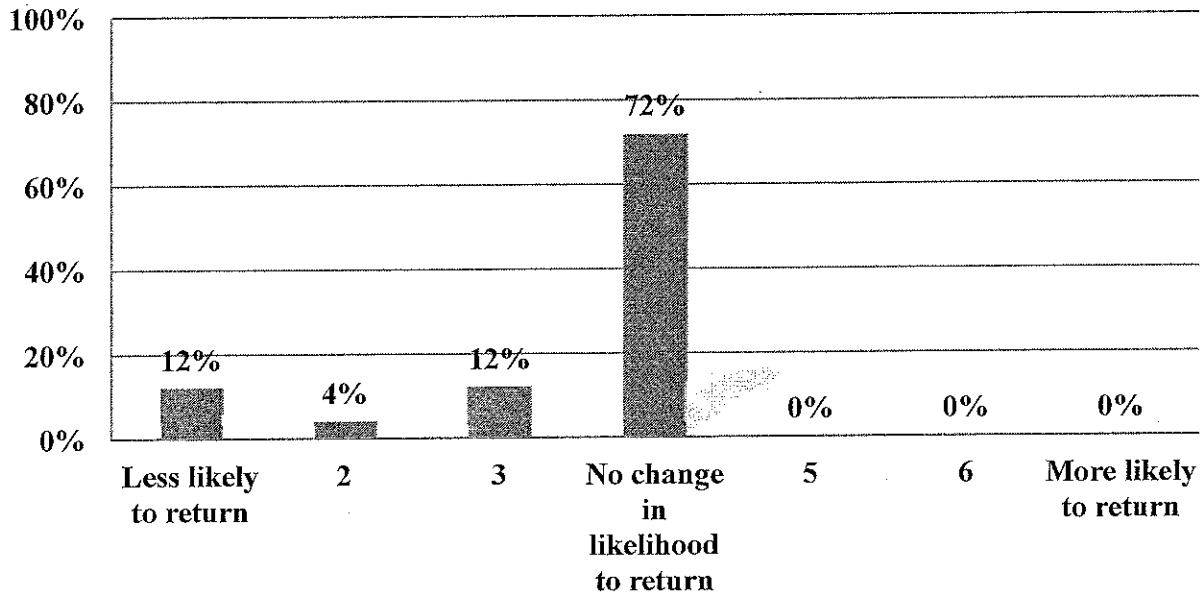
How would the proposed wind project affect your use of Saponac Pond for Fishing from the shore or a boat? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



How would the proposed wind project affect your use of Saponac Pond for Ice Fishing? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



How would the proposed wind project affect your use of Saponac Pond for Swimming? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



Scenic Value of Nicatous Lake and Impact of Wind Turbines

Respondents were handed a photo simulation of the view from northern end of Nicatous Lake and were then asked to rate the scenic value of this view. Respondents first rated the current view. Respondents were then handed a photo simulation of the same view including the proposed wind turbines. They were then asked to rate the scenic value of this view that included the wind turbines. The views were rated on a seven point scale where 1 represents the lowest scenic value and 7 represents the highest scenic value.

The average rating of the initial view (without wind turbines) among all respondents was 5.9 with 52% of respondents rating the view as a 7, or highest scenic quality, with the lowest rating assigned by respondents being a 3 (with 14% rating as a 3 on the 7-point scale).

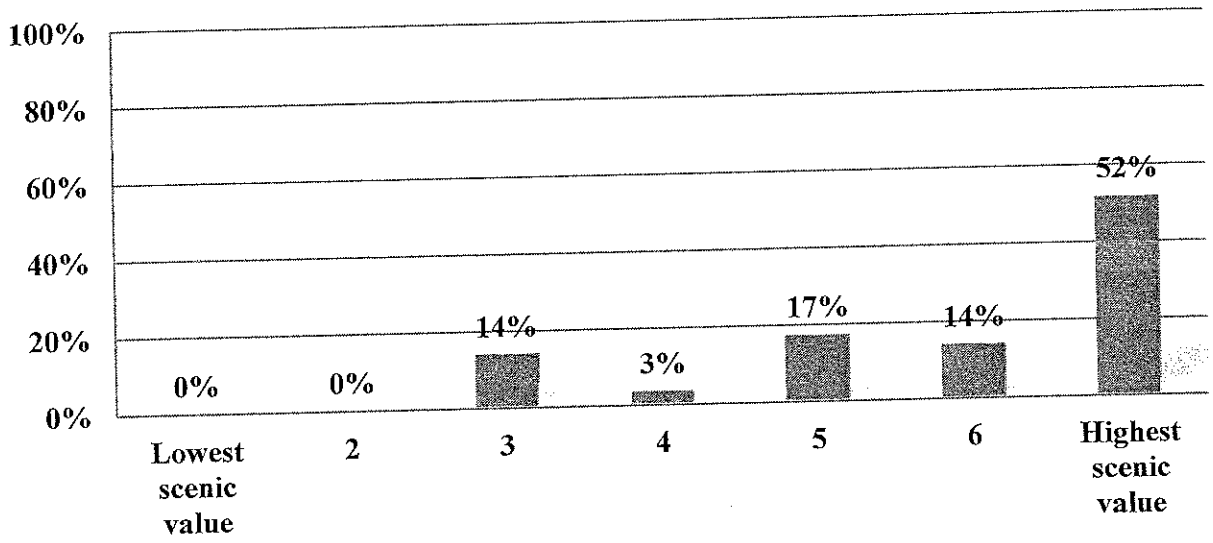
The average rating of the second view (the view containing the wind turbines) was 4.4. Twenty-one percent of respondents rated the view with wind turbines as a 7, or highest scenic quality, while 7% assigned a score of 6 and 24% assigned a score of 5 on the 7-point scale. Ten percent of respondents assigned the view with wind turbines a score of 1, or lowest scenic quality. Three percent assigned the view a score of 2 and 17% a score of 3 on the 7-point scale.

Overall, there was a 1.5 point drop in the average score between the two views from 5.9 to 4.4. There was no difference in assigned scores for 41% of respondents between the view with wind turbines and the view without wind turbines while 3% indicated an increase in scenic quality. The assigned scores dropped by one point among 10% of respondents and dropped by 2 points among 24% of respondents. The score assigned to the view with the wind turbines was 3 or more points lower than the view without the turbines among 20% of respondents.

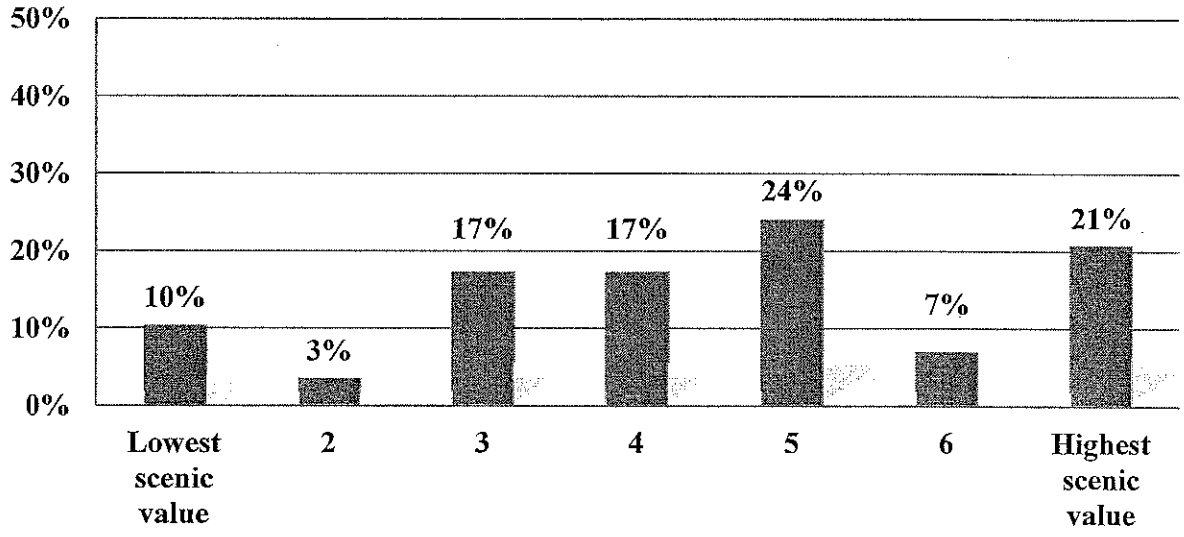
Take a look at this view from the northern end of Nicatous Lake. On the 1-to-7 scale of scenic value in Maine, where 1 is the LOWEST scenic value and 7 is the HIGHEST, how would you rate the scenic value of this view?

	Mean	Median
View from the northern end of the Nicatous Lake. How would you rate the scenic value of this view?	5.9	7.0
Look at this photo simulation of a wind power project that is being considered for Passadumkeag Mountain. How would you rate the scenic value of this view?	4.4	5.0
Nicatous Lake Difference in Scenic Quality Without and With Wind Turbines	***-1.5***	***-2.0***

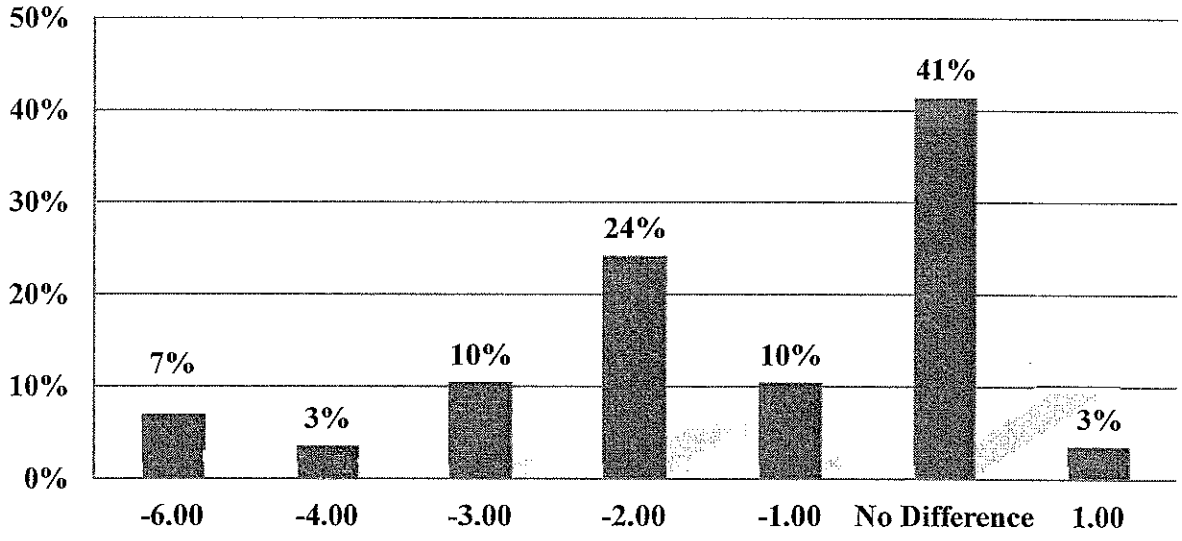
View from the northern end of the Nicatous Lake. How would you rate the scenic value of this view on a scale where 1 is the lowest scenic value and 7 is the highest scenic value?



Look at this photo simulation of a wind power project that is being considered for Passadumkeag Mountain. How would you rate the scenic value of this view on a scale where 1 is the lowest scenic value and 7 is the highest scenic value?



Nicatous Lake Difference in Scenic Quality Without and With Wind Turbines

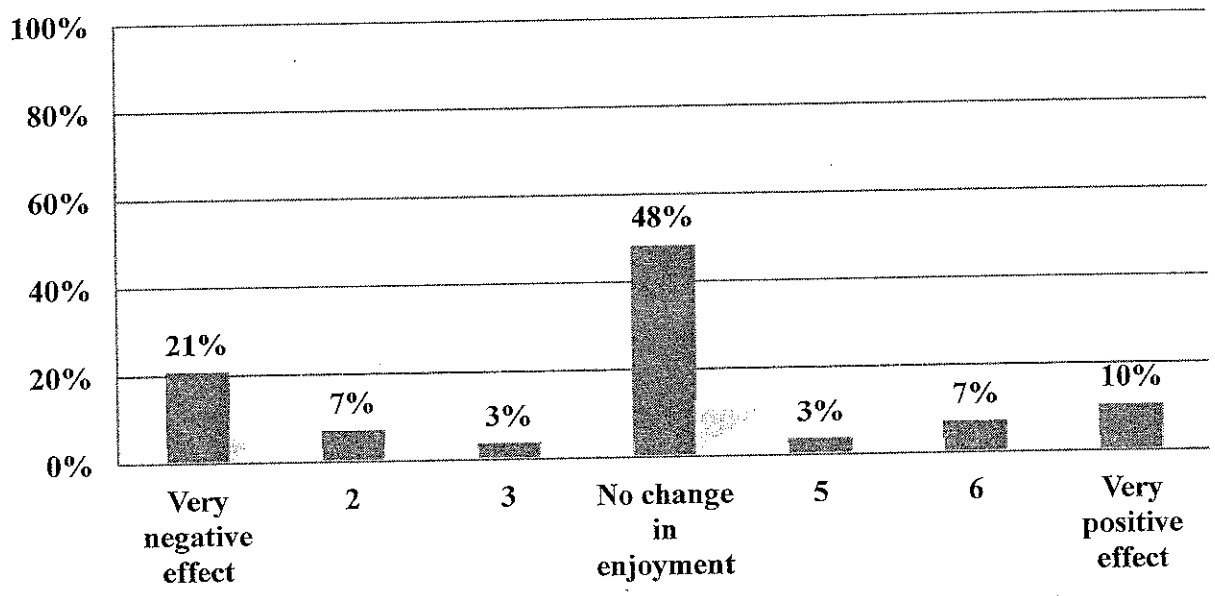


Impact on Enjoyment and Use (Nicatous Lake)

A series of questions were asked to evaluate the impact of the proposed wind power project on respondents' enjoyment and use of Nicatous Lake. Respondents first evaluated the impact of the proposed wind project on the enjoyment of their visit. Respondents rated the impact on a seven point scale where 1 indicates a very negative effect and 7 represents a very positive effect on the enjoyment of their visit. On the scale, a 4 represents no change in enjoyment.

On average, respondents indicate that the proposed wind project would have a slightly negative effect on the enjoyment of their visit; a rating of 3.7, a slightly negative impact on enjoyment. Forty-eight percent of respondents indicated that the proposed wind project would result in no change to their enjoyment of the lake and 20% indicated the wind project would have a positive effect on their enjoyment. Thirty-one percent of respondents indicated that the proposed wind project would have a negative effect on their visit to Nicatous Lake (rating as 1, 2, or 3).

I'd like you to think about how your enjoyment of visiting this lake would be affected if you were to see the proposed wind project. Rate on a scale of 1-7, where 1 is a very NEGATIVE effect and 7 is a very POSITIVE effect on your enjoyment.



Mean -- 3.7
Median -- 4.0

Why do you say that?

ID#	Comment
17	Because I just think windmills are great -- I don't see any effect at all on fishing or viewing
24	Because it's not going to change it. Still going to do what I'm going to do.
19	Because they're so spread out; they really draw your eye to them
27	Being that close...
8	Brings money to area
26	Because it's a constant visual distraction & it doesn't make me think about nature, it makes me think about humans
9	Even though we never go there. Makes you feel you're not in nature.
5	I can't see what the big deal is.
10	I don't care if they have it or not. Doesn't bother me any.
16	I don't ever get to Saponac, I just drive by it.
6	I don't find windmills destructive to my enjoyment at the lake, scenery or anything else.
29	I totally wouldn't be affected by whether wind turbines were there or not -- that wouldn't bother my enjoyment of the general area -- we need to get realistic about the future; we can't have it all.
25	I would still kayak -- I always come here -- I would still kayak there; I've thought about taking the kayak over... But then when you're here [Nicatous Lake] it's like... (!!) We drive far enough that we have places to stay when we come up here.
14	I wouldn't want to see that mess that close -- it's too close; it's too bold; highlights the hill it's on -- changes the surface area of it too much
18	It wouldn't affect me -- as much as you like to not see it, I'm a realist. I'm sure using the wind power is better than using coal or another kind of power.
2	It wouldn't change my affect
15	It's disturbing to look at
21	Just impacts the view
22	Looks silly. Got to live with it.
3	My enjoyment of Nicatous is sitting down and having a good dinner in the lodge.
12	Never been up there on the water. Know what I'm saying. Good ride if roads are open to see that -- May enhance tourism.
23	Not going to affect me at all
13	Still fish. I can see both views. Not screwing up wildlife.
28	That's a little overwhelming there. I'd still use it if I fished it & liked the pond, but I think that'd take a lot away from it.
11	To see windmills out on there would break my heart. Traded hundreds of acres to have this place. Means everything to me, my parents lived there, grew up there.
1	We don't go there
4	White deer habitat, moose horn hunting
20	Wouldn't really change my enjoyment
7	You'd see them all the way through that. Not just the pond itself, other way around it. It's going to take away.

Respondents were then asked to evaluate how the proposed wind project might affect their use of Nicatous Lake for a number of activities. Respondents rated the impact on a seven point scale where 1 indicates they are less likely to return and 7 indicates they are more likely to return. On the scale, a 4 represents no change in their likelihood of returning to Nicatous Lake.

On average, respondents indicate that the proposed wind project would have a slightly negative effect on their likelihood of returning to Nicatous Lake. The score for the activities were:

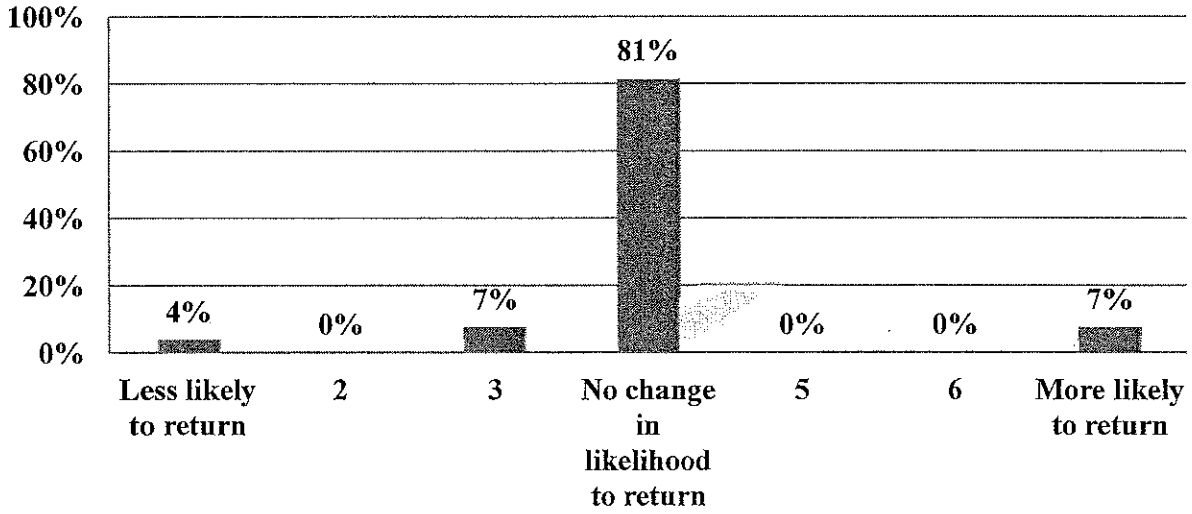
- **Boating** (an average of 4.0) with 88% indicating no change or a positive change in their likelihood to return and 11% indicating they are less likely to return (rating as 1, 2, or 3)
- **Canoeing, or Kayaking** (an average of 3.8) with 88% indicating no change in their likelihood to return and 12% indicating they are less likely to return (rating as 1, 2, or 3)
- **Fishing from the shore or a boat** (an average of 3.8) with 88% indicating no change in their likelihood to return and 12% indicating they are less likely to return (rating as 1, 2, or 3)
- **Ice Fishing** (an average of 3.9) with 88% indicating no change or a positive change in their likelihood to return and 12% indicating they are less likely to return (rating as 1, 2, or 3)
- **Swimming** (an average of 3.8) with 88% indicating no change in their likelihood to return and 12% indicating they are less likely to return (rating as 1, 2, or 3)

Next, think specifically about the view from Nicatous Lake comparing the images with and without the proposed wind project. How would the proposed wind project affect your use of Nicatous Lake for water activities?

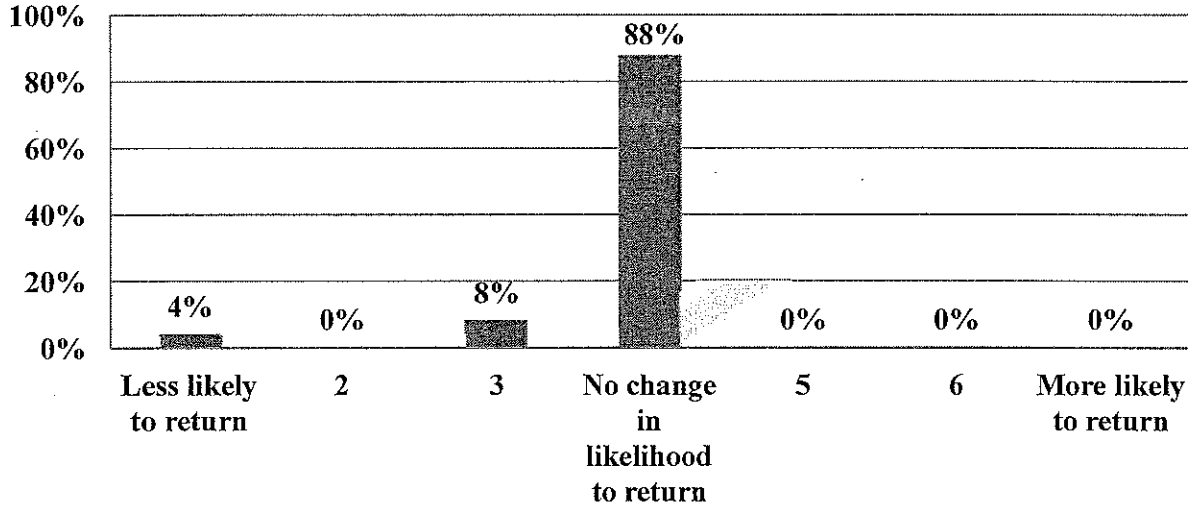
Please rate any effect on a scale of 1-7 where 1 means you are LESS likely to return and 7 means you are MORE likely to return.

Activity	Mean	Median
Boating	4.0	4.0
Canoeing, or Kayaking	3.8	4.0
Fishing from the shore or a boat	3.8	4.0
Ice Fishing	3.9	4.0
Swimming	3.8	4.0

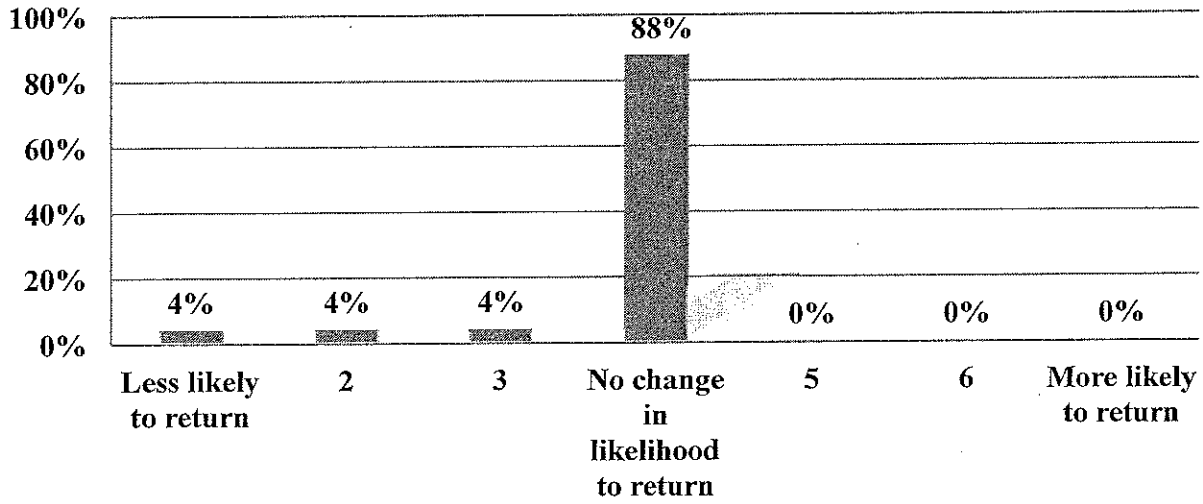
How would the proposed wind project affect your use of Nicatous Lake for Boating? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



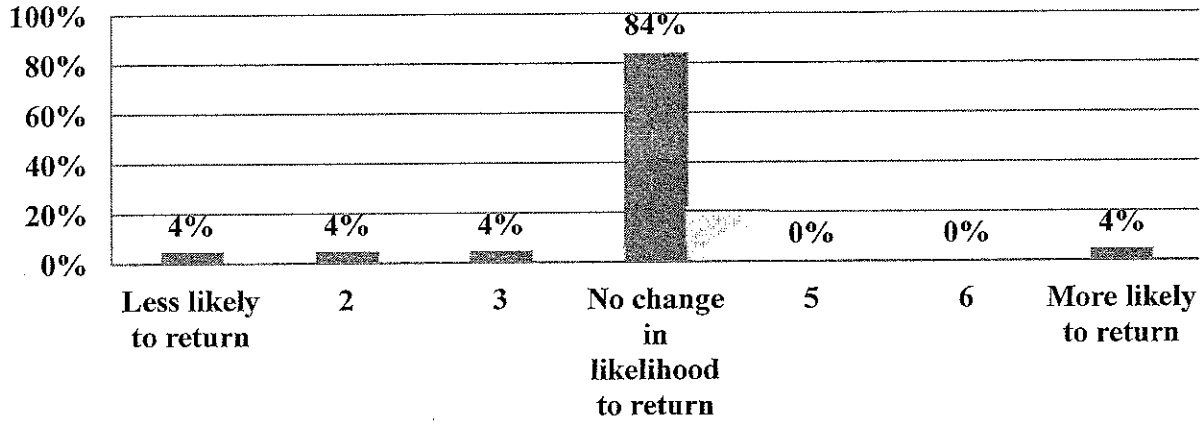
How would the proposed wind project affect your use of Nicatous Lake for Canoeing, or Kayaking? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



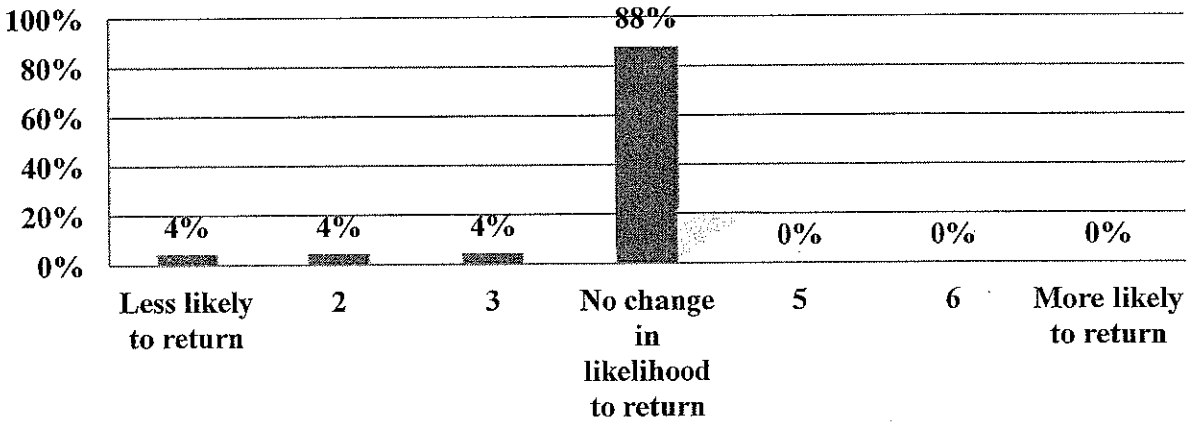
How would the proposed wind project affect your use of Nicatous Lake for Fishing from the shore or a boat? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



How would the proposed wind project affect your use of Nicatous Lake for Ice Fishing? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



How would the proposed wind project affect your use of Nicatous Lake for Swimming? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



Scenic Value of Lower Pistol Lake and Impact of Wind Turbines

Respondents were handed a photo simulation of the view from the informal boat put-in at the north end of Lower Pistol Lake and were then asked to rate the scenic value of this view. Respondents first rated the current view. Respondents were then handed a photo simulation of the same view including the proposed wind turbines. They were then asked to rate the scenic value of this view that included the wind turbines. The views were rated on a seven point scale where 1 represents the lowest scenic value and 7 represents the highest scenic value.

The average rating of the initial view (without wind turbines) among all respondents was 6.3 with 66% of respondents rating the view as a 7, or highest scenic quality, with the lowest rating assigned by respondents being a 4 (with 7% rating as a 4 on the 7-point scale).

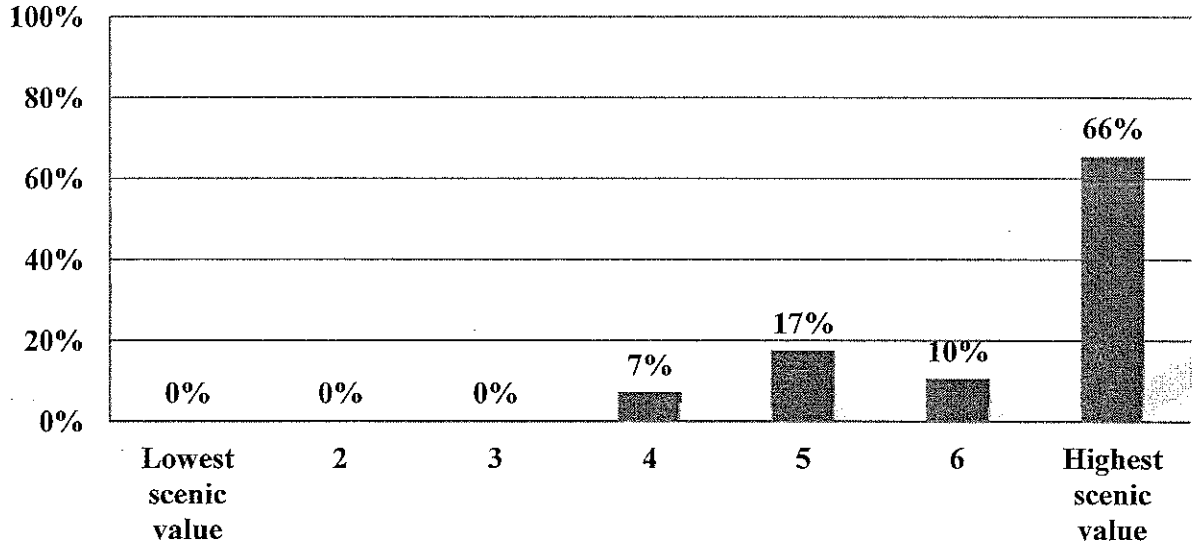
The average rating of the second view (the view containing the wind turbines) was 3.8. Seventeen percent of respondents rated the view with wind turbines as a 7, or highest scenic quality, while 7% assigned a score of 6 and 14% assigned a score of 5 on the 7-point scale. Twenty-one percent of respondents assigned the view with wind turbines a score of 1, or lowest scenic quality. Seven percent assigned the view a score of 2 and 21% a score of 3 on the 7-point scale.

Overall, there was a 2.5 point drop in the average score between the two views from 6.3 to 3.8. There was no difference in assigned scores for 28% of respondents between the view with wind turbines and the view without wind turbines. The assigned scores dropped by one point among 14% of respondents and dropped by 2 points among 10% of respondents. The score assigned to the view with the wind turbines was 3 or more points lower than the view without the turbines among 48% of respondents.

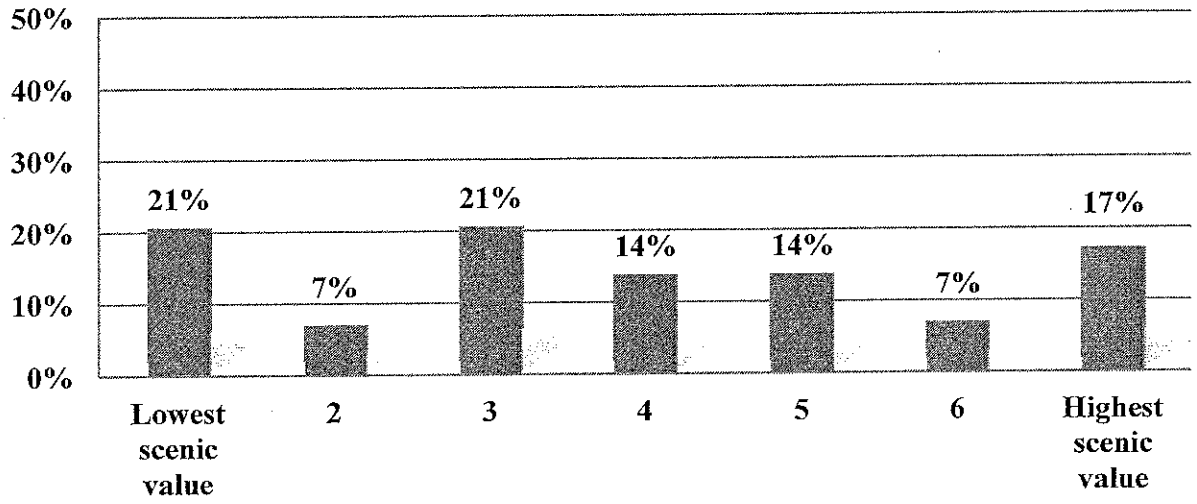
Take a look at this view from the informal boat put-in at the north end of Lower Pistol Lake. On the 1-to-7 scale of scenic value in Maine, where 1 is the LOWEST scenic value and 7 is the HIGHEST, how would you rate the scenic value of this view?

	Mean	Median
View from the informal boat put-in at the north end of Lower Pistol Lake. How would you rate the scenic value of this view?	6.3	7.0
Look at this photo simulation of a wind power project that is being considered for Passadumkeag Mountain. How would you rate the scenic value of this view?	3.8	4.0
Lower Pistol Lake Difference in Scenic Quality Without and With Wind Turbines	*-2.5*	*-2.0*

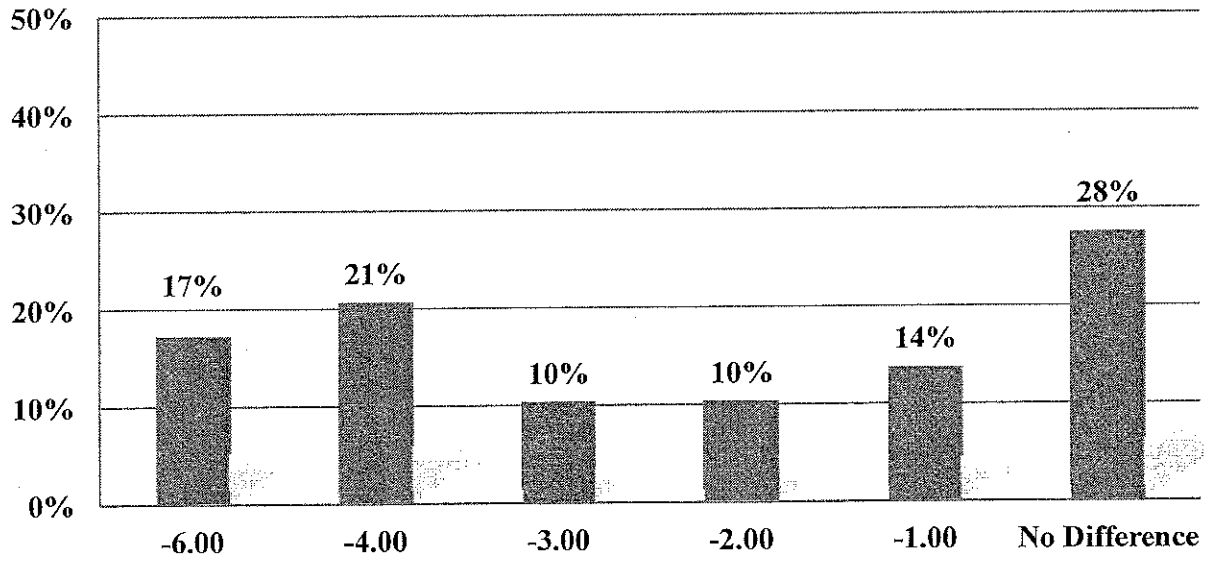
View from the informal boat put-in at the north end of the lake. On the 1-to-7 scale of scenic value in Maine, where 1 is the LOWEST scenic value and 7 is the HIGHEST, how would you rate the scenic value of this view?



Look at this photo simulation of a wind power project that is being considered for Passadumkeag Mountain. How would you rate the scenic value of this view on a scale where 1 is the lowest scenic value and 7 is the highest scenic value?



Lower Pistol Lake Difference in Scenic Quality Without and With Wind Turbines

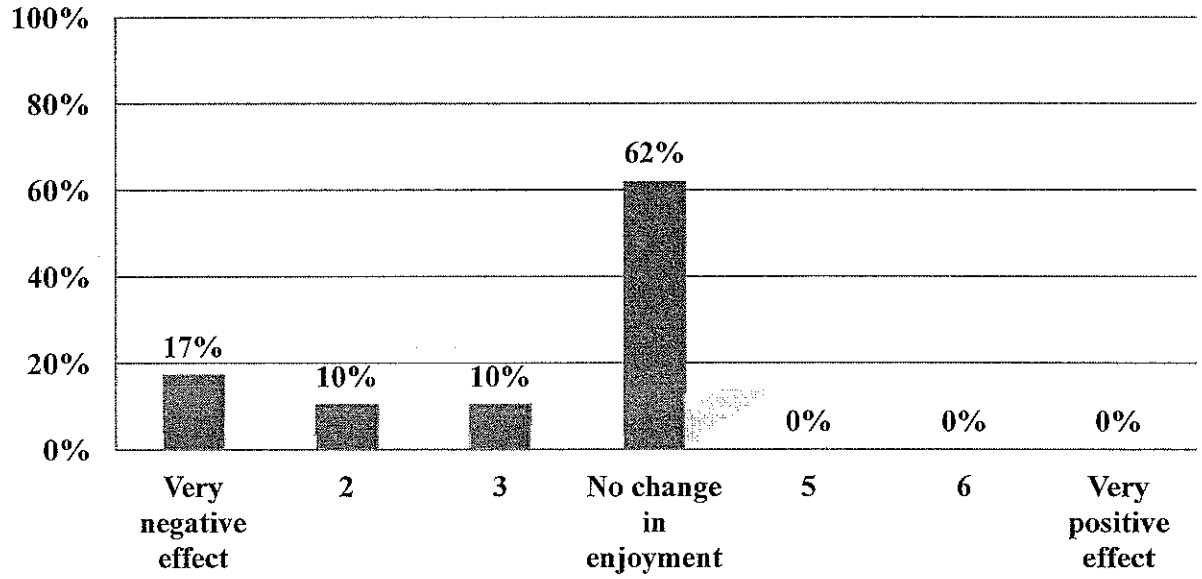


Impact on Enjoyment and Use (Lower Pistol Lake)

A series of questions were asked to evaluate the impact of the proposed wind power project on respondents' enjoyment and use of Lower Pistol Lake. Respondents first evaluated the impact of the proposed wind project on the enjoyment of their visit. Respondents rated the impact on a seven point scale where 1 indicates a very negative effect and 7 represents a very positive effect on the enjoyment of their visit. On the scale, a 4 represents no change in enjoyment.

On average, respondents indicate that the proposed wind project would have a slightly negative effect on the enjoyment of their visit; a rating of 3.2. Sixty-two percent of respondents indicated that the proposed wind project would result in no change to their enjoyment of the lake. Thirty-seven percent of respondents indicated that the proposed wind project would have a negative effect on their visit to Lower Pistol Lake (rating as 1, 2, or 3).

I'd like you to think about how your enjoyment of visiting the lake would be affected if you were to see the proposed wind project. Rate on a scale of 1-7, where 1 is a very NEGATIVE effect and 7 is a very POSITIVE effect on your enjoyment.



Mean -- 3.2
Median -- 4.0

Why do you say that?

ID#	Comment
11	Baldacci wants to have windmills here to benefit off it.
26	Because of the visual distraction
14	Because the wind farm design isn't balanced -- that's not the word I'm looking for -- not aesthetically pleasing -- I know there'd be thought as to the amount of wind at the location [regarding the placement & orientation of the turbines] the look, the aesthetics, are displeasing to the eye -- no balance; they're clustered: one little goblin here, one stuck up over there... It's an eyesore.
28	Because you know it's changing the view; you got them sticking up there
8	Brings money to area
10	Doesn't bother me. Got to do what you got to do.
23	Don't bother me at all
15	Don't use Lower Pistol, wouldn't bother to if that's what it looked like, wouldn't visit the area.
2	Enjoyment would be affected
6	I can't see what difference a few windmills make to your enjoyment of a lake or its surroundings.
4	I come to get away from man! I spend $4 a gallon and 4 hours, I come to get away from man... I don't want to look at this crap!
16	I don't go to Pistol
12	I don't think it would affect it at all
20	I'd come back & still enjoy my time
7	I'd just hate to see it
21	It would affect it. Change the whole view.
29	It wouldn't change views – actually, especially in that picture, they don't look at all like an eyesore -- they look like little twigs in the background
9	Just be a little on the negative side. If you're doing stuff it wouldn't affect. Rather have those than logging trucks near highway.
1	Never been
5	Nope
3	Not in my direct view. Not happy about it being there. Owns property.
19	Same as last answer [because they're so spread out; they really draw your eye to them] -- they kinda draw away from everything else
24	Same reason, not going to stop me from coming & good cause
22	Still will come. Not going to scare me. We're going to lose fishing areas when off shore
13	Still going to enjoy. Interesting to look at.
25	That doesn't bother me in the least. Never been there; I'd still go -- might be more apt to go because now I know it's there when I didn't before.
18	That wouldn't change my view of... wanting to come up here

Respondents were then asked to evaluate how the proposed wind project might affect their use of Lower Pistol Lake for a number of activities. Respondents rated the impact on a seven point scale where 1 indicates they are less likely to return and 7 indicates they are more likely to return. On the scale, a 4 represents no change in their likelihood of returning to Lower Pistol Lake.

On average, respondents indicate that the proposed wind project would have a slightly negative effect on their likelihood of returning to Lower Pistol Lake. The score for the activities were:

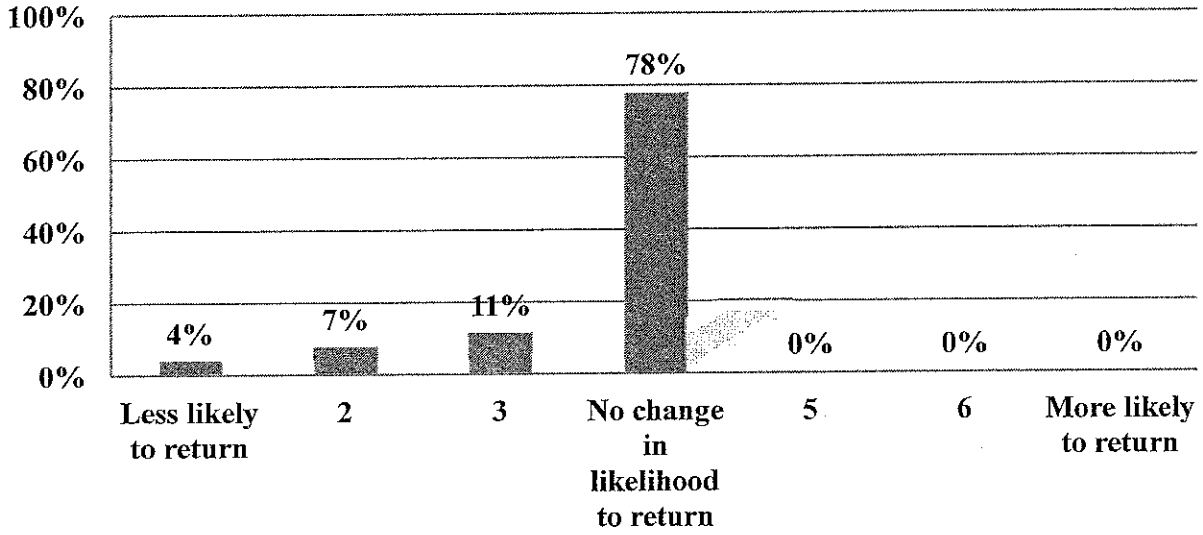
- **Boating** (an average of 3.6) with 78% indicating no change in their likelihood to return and 22% indicating they are less likely to return (rating as 1, 2, or 3)
- **Canoeing, or Kayaking** (an average of 3.6) with 76% indicating no change in their likelihood to return and 24% indicating they are less likely to return (rating as 1, 2, or 3)
- **Fishing from the shore or a boat** (an average of 3.6) with 76% indicating no change in their likelihood to return and 24% indicating they are less likely to return (rating as 1, 2, or 3)
- **Ice Fishing** (an average of 3.7) with 79% indicating no change in their likelihood to return and 21% indicating they are less likely to return (rating as 1, 2, or 3)
- **Swimming** (an average of 3.6) with 77% indicating no change in their likelihood to return and 24% indicating they are less likely to return (rating as 1, 2, or 3)

Next, think specifically about the view from the north end of Lower Pistol Lake comparing the images with and without the proposed wind project. How would the proposed wind project affect your use of the lake for water activities?

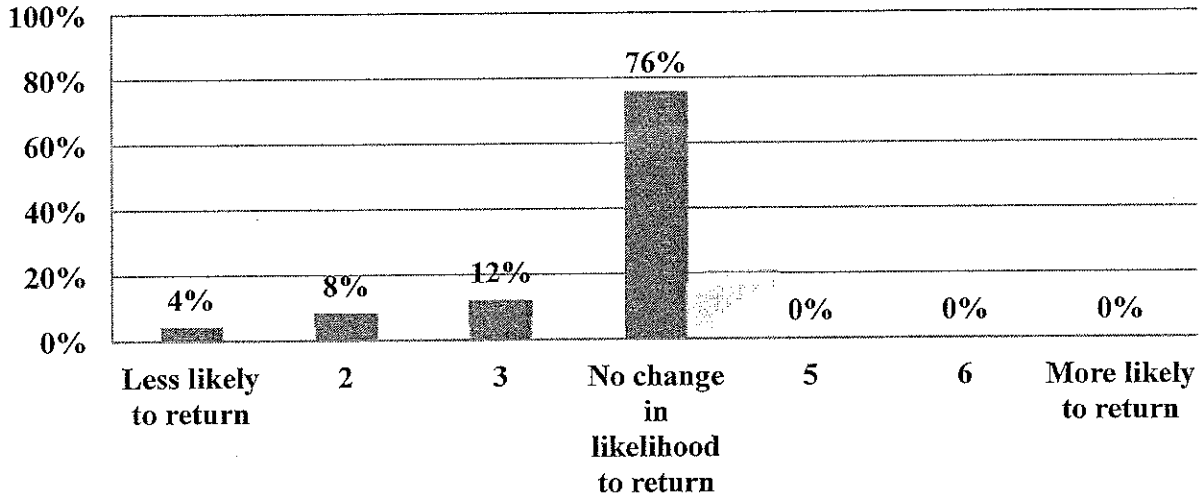
Please rate any affect on a scale of 1-7 where 1 means you are LESS likely to return and 7 means you are MORE likely to return.

Activity	Mean	Median
Boating	3.6	4.0
Canoeing, or Kayaking	3.6	4.0
Fishing from the shore or a boat	3.6	4.0
Ice Fishing	3.7	4.0
Swimming	3.6	4.0

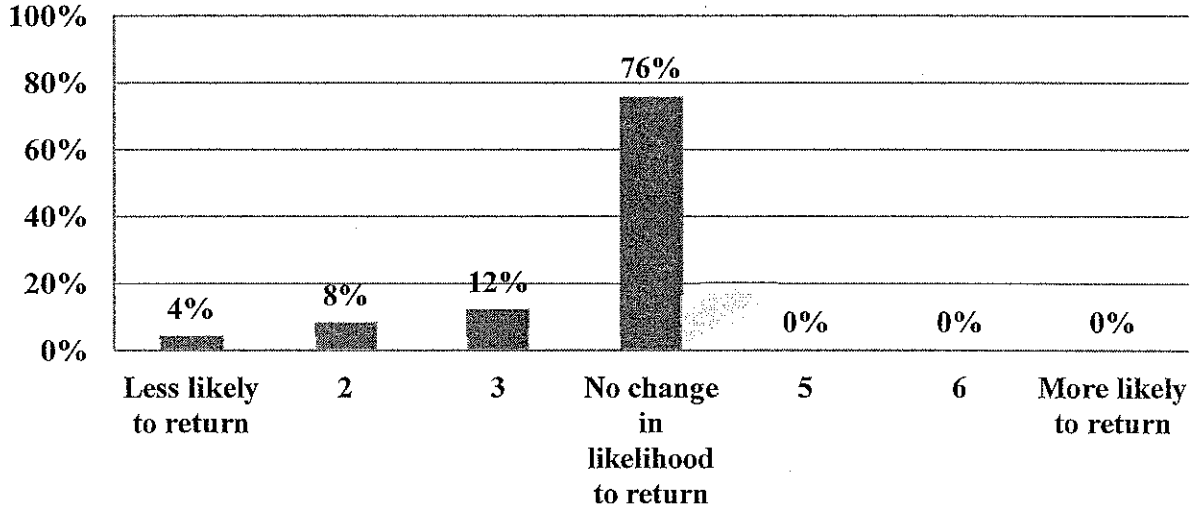
How would the proposed wind project affect your use of Lower Pistol Lake for Boating? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



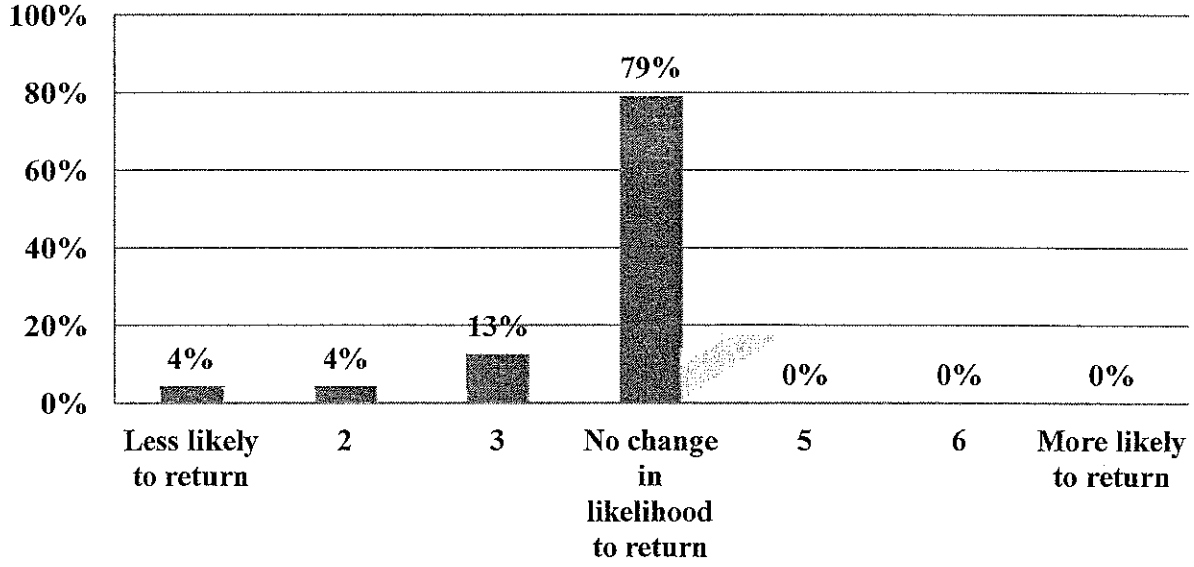
How would the proposed wind project affect your use of Lower Pistol Lake for Canoeing, or Kayaking? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



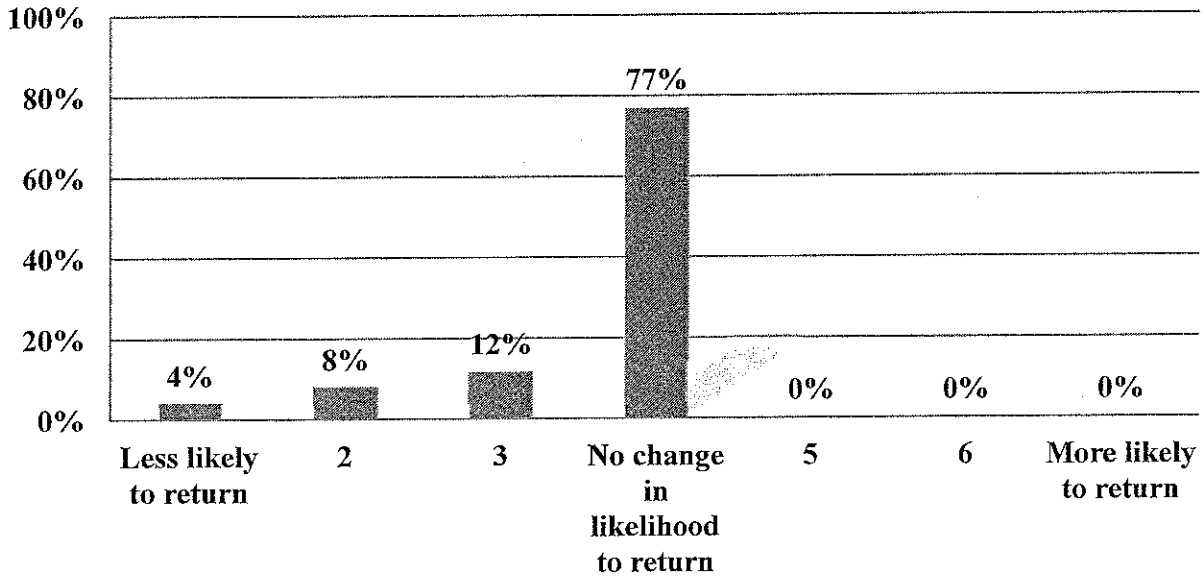
How would the proposed wind project affect your use of Lower Pistol Lake for Fishing from the shore or a boat? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



How would the proposed wind project affect your use of Lower Pistol Lake for Ice Fishing? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.



How would the proposed wind project affect your use of Lower Pistol Lake for Swimming? Rated on a 7 point scale where 1 is less likely likely to return and 7 is more likely to return.

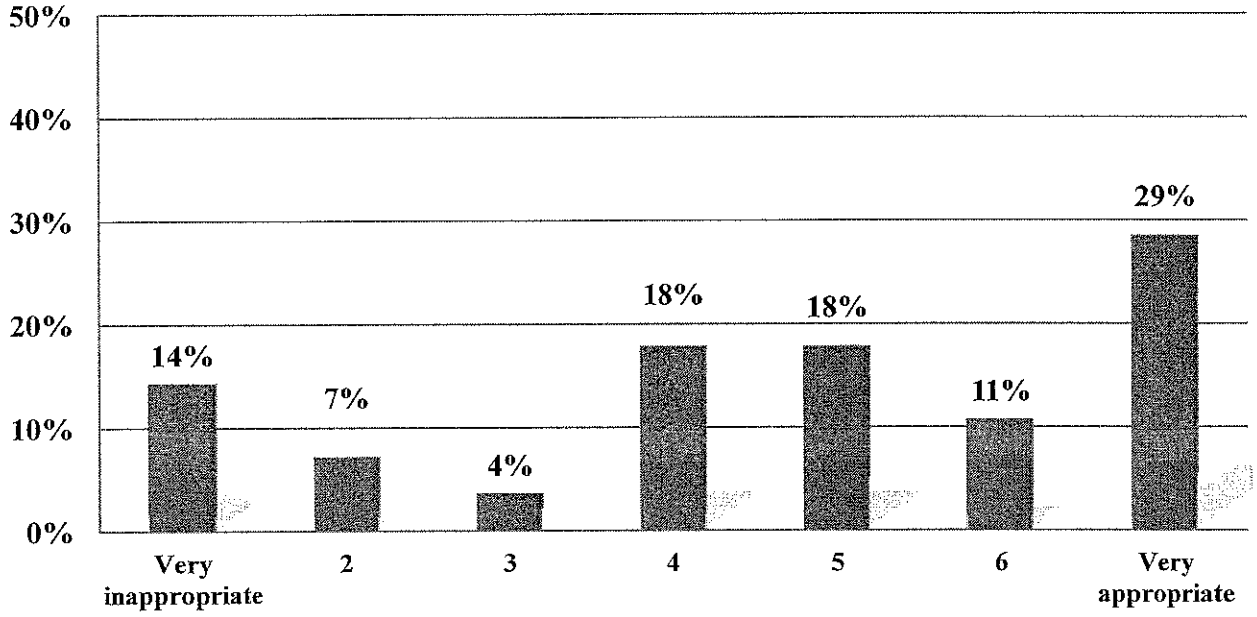


General Views of Wind Power Development

Respondents were asked to indicate how appropriate wind development was for the state of Maine. Respondents rated their views on a 7-point scale where 1 indicates they believe it is very inappropriate and 7 indicates they believe wind power is very appropriate for Maine.

On average, respondents assigned a score of 4.6. Twenty-nine percent rated wind power development for Maine as very appropriate (rating as a 7 on the scale) while 29% indicated wind power development was appropriate to some degree for Maine (rating as a 5 or 6). Only 25% of respondents rated wind power development as inappropriate to some degree (rating as a 1, 2, or 3) for Maine.

Thinking about wind power development in general, please rate how appropriate it is for Maine on a scale of 1 to 7, where 1 means wind power is generally very inappropriate and 7 means it is generally very appropriate.



Mean – 4.6
Median -- 5.0

Why do you feel that way?

ID#	Comment
26	6, but @ right place & I don't think these -- there are more remote places -- not remote but there are less touristy areas to put them -- areas that are not scenic overlooks in themselves -- more industrial metropolitan areas I think would be less distracting, less undisturbed -- to drive down Route 1A in Brewer & see windmills is one thing -- you're getting [outside?] of when you go out to see God's beauty you don't want to see a mill in an otherwise pristine location. They generally have their place with the energy prices we're faced with...
24	Because it's going to help & it's clean. Why not use?
14	Because of issues that have arisen concerning the wind farms we've already got -- don't know if these issues have been addressed to date. Don't know if distrust; the honesty of the wind developers. Issues, concerns raised -- not sure if ANY have been addressed or remedies made.
12	Because this is such a good idea. Had this technology before. It took incentives to motivate people to do something. My tax money... $.06 a kilowatt per electricity in Oregon.
6	Because we have to get off coal. We have to have renewable energy. It will be good business for Maine, jobs for blade construction, and composition.
29	Because we HAVE to start using alternative energies -- we cannot depend on gasoline & oil & foreign countries -- we have to get more green / I think we have to take global warming very seriously
19	Because we need different sources of energy; can't rely on oil all the time; we should be looking for better ways
8	Brings money to the area
18	Depending on spots in the state -- I don't think there's enough wind to actually make a difference. I'm from Saco; we have a big one in town; It doesn't make enough electricity; doesn't do what it was promised to do -- I know it was one, not many -- I think with today's technology it's not far enough ahead
16	Honestly, don't know how well they've been doing. I know they put up windmills near us, but I don't know how they're doing. If they get info out to people, "you'll see a change in your electricity bill, you'll see less pollution," then they'll have better basis to form an opinion.
28	I don't -- if it was to benefit us; it might give people work -- but rather than that -- if we're getting the power from it -- we don't get the power, do we? I've seen people on TV and mountains -- hear they're noisy but I've never been near enough to hear
1	I don't think it produces enough for the cost
3	I have solar panels. Not opposed to wind. Doesn't have the same potential as solar. Solar panels drop in price every couple of years, by half. Turbines don't do that.
25	I just think we've got -- wind & water should be developed. I worked with [redacted]; thought it was stupid to stop. Bangor Hydro uses natural gas & oil. A lot of people want to get rid of dams -- dams [are] producing power too. They reduce the water level of Graham Lake, a problem for camp owners... The big dam in Ellsworth (Graham Lake?) was bought by Pennsylvania Power & Light -- now all the power goes out of state when it should go to Maine. Any dam in Maine should provide power to Maine, not out of state.
17	I just think windmills would be a big... I think it'd be great to have windmills installed all over
2	I like tidal power, don't like the windmills. Cost effective anyways. They look bad.
20	If it is appropriate power. Pick places. No one wants them near houses. That's why you come out to the woods, don't want to see mechanical things outdoors.
5	If it's going to benefit the state.

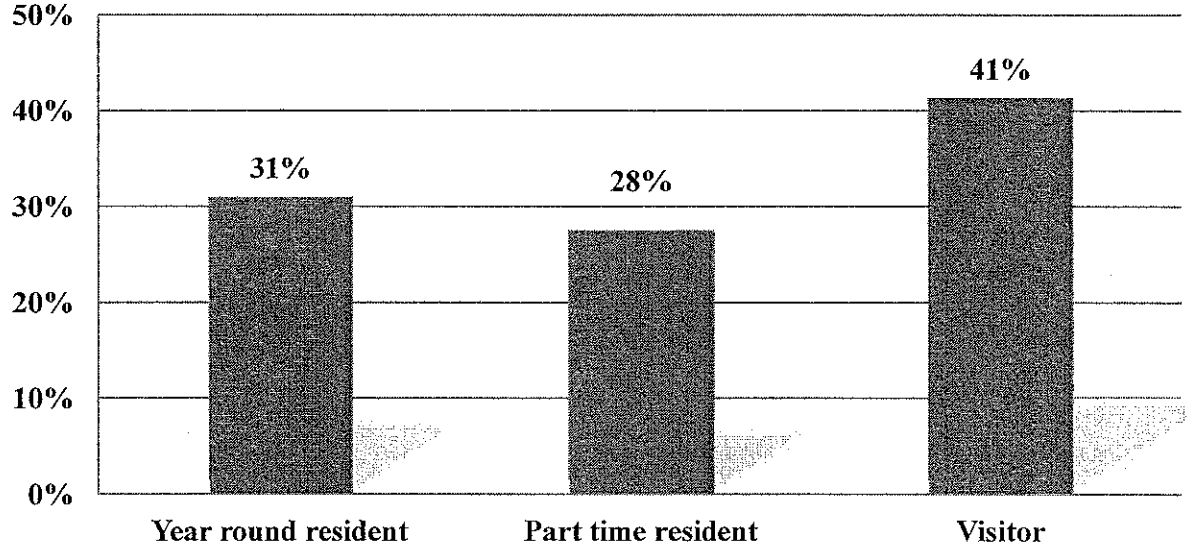
11	If you want to put them up 30-40 miles off shore, put them up. Don't let them sell out. Everybody's talking green... Well, I'd like to have green in my pocket. Taxed on everything. Government is taking everything.
4	I'm what the state wants. I come here and buy day licenses for snowmobiling and hunting. I come to get away from Mass and they turn me into Mass.
15	In the right place - it shouldn't affect quality of life.
22	It has its place. Same old thing: I don't want in my backyard. I thought it was cool with Maine Yankee. One spot.
13	It's windy. Lots of high areas. Good places for it. Better than a nuclear power plant or damming rivers.
27	Just better than fossil fuel -- nobody likes to look at it, but you still gotta do something
21	Mostly because I know Maine has enough energy to be self sufficient.
9	Not knowing wind patterns of Maine. In general, wind power is an appropriate energy source. Put them in a place no one can see or hear them.
23	Saves our environment
10	They need those things. If it's going to help any go for it.
7	Think wind power has its place, not every place in Maine. Over 100 years ago used water power, very little use of it now. Need to get off the foreign oil.

Demographics

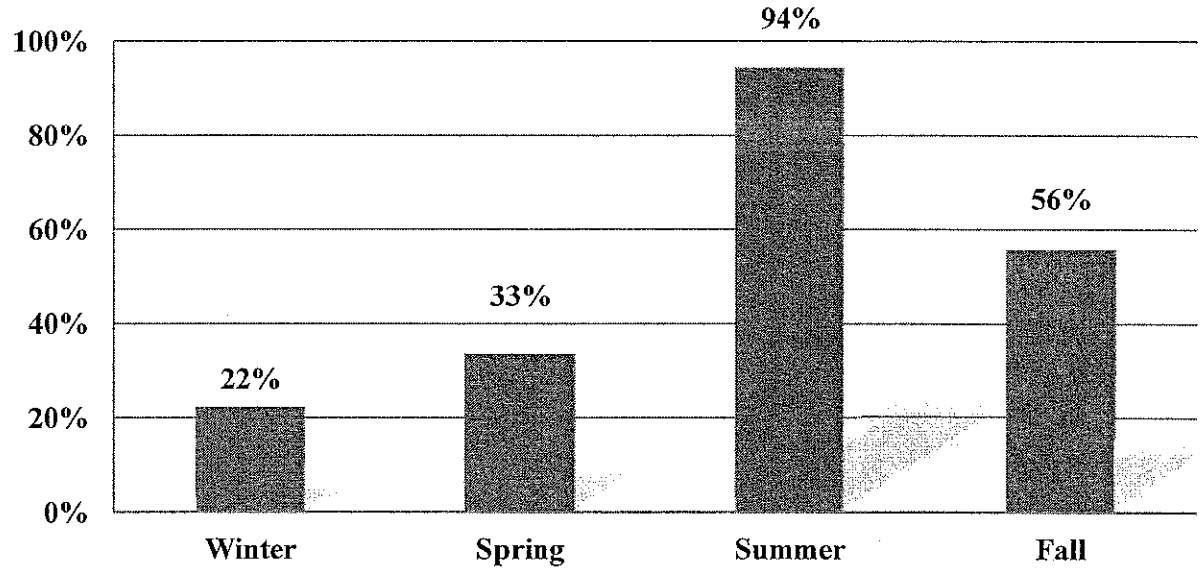
Thirty-one percent of respondents were full time residents, 28% were part time residents, and 41% were visitors to the area. Among part time residents and visitors, 94% indicated they lived in or visited the area in the summer while 56% lived in or visited the area in the fall, 22% in the winter, and 33% in the spring. More than half (52%) have a seasonal camp in the area.

The largest percentage of respondents (48%) was aged 45 to 54 while 24% were 55 to 64 and 7% were 65 and older. Seven percent of respondents were aged 25 to 34 and 14% were 35 to 44. Sixty-two percent of respondents were male while 38% were female. Thirty-one percent of respondents were with one other person while 3% were alone. Sixty-five percent of respondents were with two or more other people. Most respondents were from Maine while four respondents were from out of the state.

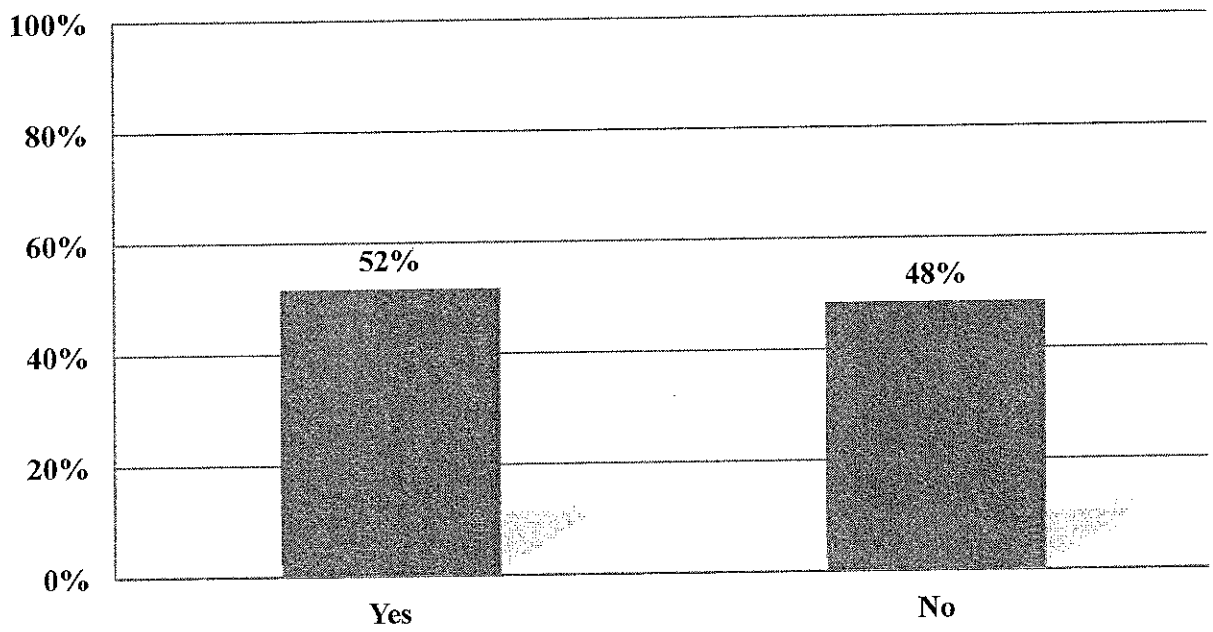
Are you a year round resident, part time resident, or visitor to this area?



IF PART TIME RESIDENT/VISITOR:
Do you live in or visit the area in:
(Multiple responses accepted)

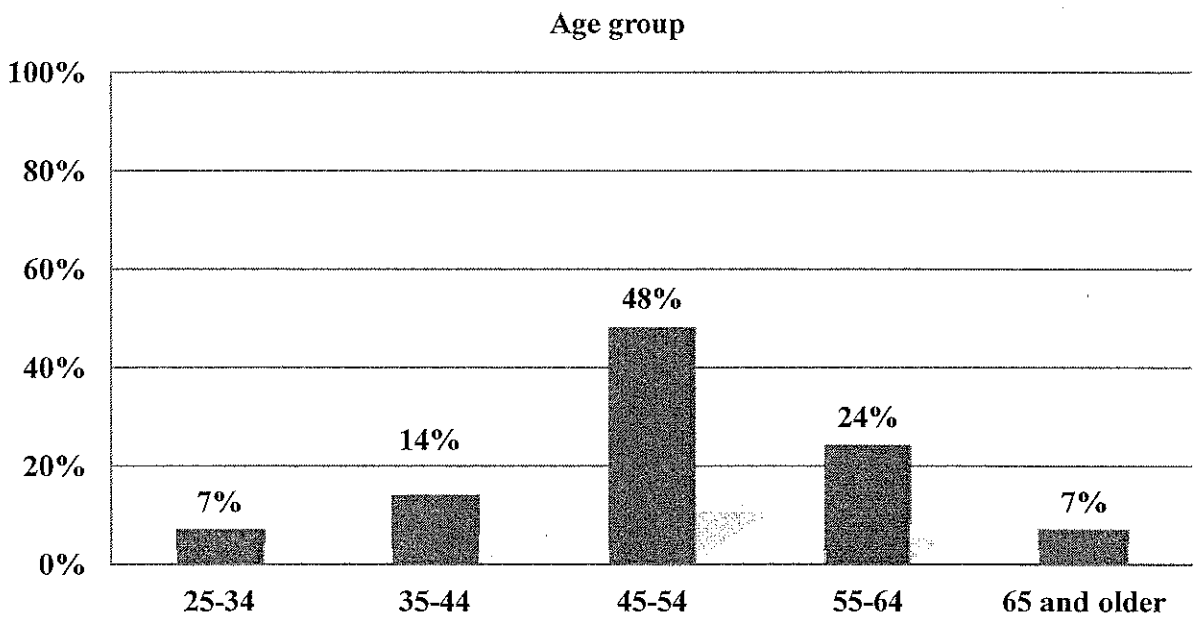


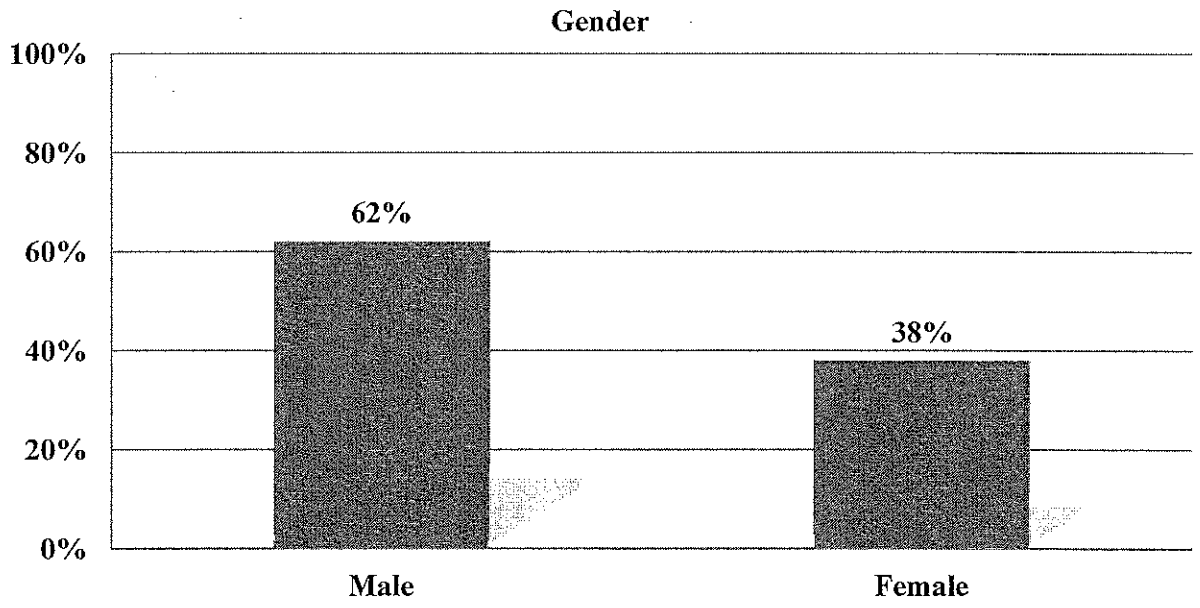
Do you have a seasonal camp or residence in this area?

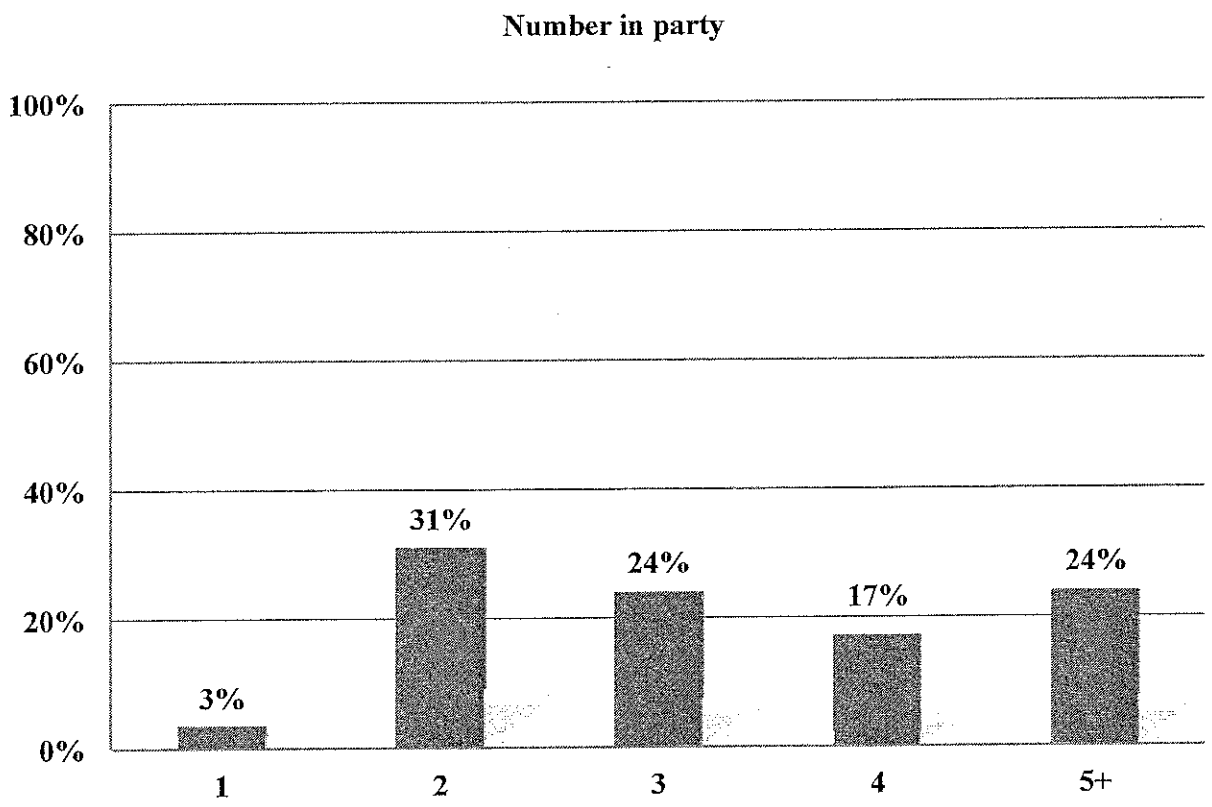


Where is it located?

ID#	Comment
1	Brewer
7	Burlington
6	Dayton Island in Nicatous Lake
2	Lincoln
8	Lincoln
3	Lower Pistol Lake
21	Millinocket
4	Near Old Town
11	Nicatous lodge
16	Porter Point
5	Residence & camper. Monroe, ME
26	RV lot, north shore of West Lake
15	Saponac Lake, Nicatous Lake
28	Upper Lead Mountain
14	Where Gassabias Lake & Gassabias Stream meet


Age group
100%
80%
60%
40%
20%
0%
7%
14%
48%
24%
7%
25-34
35-44
45-54
55-64
65 and older


Gender
100%
80%
60%
40%
20%
0%
62%
38%
Male
Female


Number in party
100%
80%
60%
40%
20%
0%
3%
31%
24%
17%
24%
1
2
3
4
5+

What is your zip code?

ID#	Comment
16	01201
4	03062
10	04005
13	04040
2	04043
18	04072
6	04105
19	04345
24	04352
23	04355
26	04365
20	04401
1	04412
7	04417
11	04417
27	04434
8	04457
21	04462
29	04462
12	04493
22	04609
28	04609
14	04627
25	04681
15	04864
5	04957
17	04981
3	14619
9	17603

Appendix

Survey Instrument

Passadumkeag Mountain Survey
SAPONAC POND VERSION

GREET HIKERS/VISITORS: Hello, I am conducting a short survey about impressions of visitors to Saponac Pond, Nicatous Lake, and other lakes in the area. Do you have a few minutes?

Activities

1. **Think about your activities on Saponac Pond. What are your plans for today? (READ AND CHECK ALL MENTIONED)**

2. **IF MORE THAN ONE: What is your primary reason for coming here today? (CIRCLE PRIMARY REASON)**

	Canoeing/Kayaking
	Boating (Motor Boat)
	Personal watercraft
	Viewing the scenery
	Fishing from a boat or shore
	Swimming
	Beach going, use of the beach
	Staying at a lodge
	Staying at a camp
	Picnicking
	Nature study
	Other:

3. **What parts of the pond are you planning on visiting today?**

INTS: SHOW MAP AND HAVE THEM DRAW A ROUTE. HAVE THEM CIRCLE ON THE MAP WHERE THEY EXPECT TO SPEND THE MOST TIME

4. **How long do you expect to be out on the pond today? _____ (ENTER HOURS)**

Prior Visits

5. During the past year, how many times have you visited the following …?

Saponac Pond _____ **(ENTER # OF TIMES)**
Nicatous Lake _____ **(ENTER # OF TIMES)**
Spring Lake _____ **(ENTER # OF TIMES)**
Lower Pistol Lake _____ **(ENTER # OF TIMES)**

6. IF YES: During the past year, how many times have you visited _____ for…?

Activity	Saponac Pond	Nicatous Lake	Spring Lake	Lower Pistol Lake
Canoeing/Kayaking				
Boating (Motor Boat)				
Viewing the scenery				
Personal watercraft				
Snowmobiling				
Fishing from a boat or shore				
Ice fishing				
Swimming				
Beach going, use of the beach				
Staying at a lodge				
Staying at a camp				
Picnicking				
Nature study				
Hiking				
Any other reasons (Specify Below)				

_____

6a. Do you use or visit the pond at night for star gazing, fishing, boating, canoeing, kayaking, or any other uses? (IF YES, SPECIFY USES)

YES / NO _____

Importance of Attributes and Expectations

7. **Next, I would like you to think about your use of the pond today. Please rate each of the following on a 7 point scale, where 1 is NOT AT ALL important and 7 is EXTREMELY important to you. (READ AND RECORD SCORE FOR EACH)**

Attribute	SCORE	DK	N/A
Enjoying the outdoors			
Enjoying time with family/friends			
Getting back to nature			
Relaxing/unwinding			
Seeing/observing wildlife			
The enjoyment of being on a boat			
The scenery and scenic views			
The general experience of being out on the water			
The quality of the fishing			
An opportunity to have some time by myself			

8. **Is there anything else about coming here today that is important to you?**

_____

_____

_____

_____

Expectations for the Area

9. In general, what are your expectations for your recreational experience during your visit to Saponac Pond?

_____

_____

_____

_____

I would like you to think about two specific aspects of your expectations.

10. First, please think about your expectations for the number of people that may also be using the pond. Please rate this on a scale from 1 to 7 where one means you expect it to be un-crowded with few or no other people and 7 means you expect it to be crowded with a large number of people. You may also use any number in between.

Un-crowded, few or no people						Crowded, a larger number of people	
1	**2**	**3**	**4**	**5**	**6**	**7**	**DK**

11. Next, think about your expectations for level of development that you will see along the pond. Please rate on a scale from 1 to 7 where one means you expect the pond to be largely UN-developed and 7 means you expect it to largely or mostly developed. You may also use any number in between.

Undeveloped						Developed	
1	**2**	**3**	**4**	**5**	**6**	**7**	**DK**

Scenic Value and Quality

12. Now I'd like to ask you about scenic quality. Can you think of a place in Maine that has a very high scenic quality, or outstanding views? That is, one that on a scale of 1 to 7 for scenic quality, one you would rate as a 7 for the HIGHEST scenic quality.

_____

_____

13. What is it about this place that makes it highly scenic?

_____

_____

_____

_____

14. Next, can you think of an outdoor place in Maine that has a VERY LOW scenic quality? That is, one that on a scale of 1 to 7 for scenic views, one you would rate as a 1 for LOWEST SCENIC QUALITY?

_____

_____

15. What is it about this place that gives it low scenic value?

_____

_____

_____

_____

Photo Simulation Questions and Impact

Now, please think about the scenic value of Saponac Pond, Nicatous Lake, and Lower Pistol Lake. I am going to show you a series of photographs of views from the pond and the lakes and I would like you to rate the scenic value of these views.

If you hold the photograph the distance indicated on the back from your face, it will in correct perspective so that everything in the photograph is the same size that it would be if you were looking at it from where the photograph was taken.

I'd like you will use a 7 point scale where 1 is the LOWEST scenic value in Maine, 7 is the HIGHEST scenic value in Maine, and 4 is the TYPICAL scenic value in Maine.

Saponac Pond

First, please look at these views of Saponac Pond.

16. Take a look at this view from the Main Road at the north end of Saponac Pond. On the 1-to-7 scale of scenic value in Maine, where 1 is the LOWEST scenic value and 7 is the HIGHEST, how would you rate the scenic value of this view? (CIRCLE NUMBER)

1	2	3	4	5	6	7	DK	REF

17. Now, please take a look at this photo simulation of a wind power project that is being considered for Passadumkeag Mountain. How would you rate the scenic value of this view? (CIRCLE NUMBER)

PROMT AS NEEDED: On the 1-to-7 scale of scenic value in Maine, where 1 is the LOWEST scenic value and 7 is the HIGHEST, how would you rate the scenic value of this view?

1	2	3	4	5	6	7	DK	REF

Impact on Enjoyment and Use (Saponac Pond)

18. Now I'd like you to think about how your enjoyment of visiting this pond would be affected if you were to see the proposed wind project during your visit today. On a scale of 1-7, where 1 is a very NEGATIVE affect and 7 is a very POSITIVE effect on your enjoyment, how would your enjoyment be affected? A "4" means that it would not change your enjoyment at all. (CIRCLE NUMBER)

1	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**REF**

19. Why do you say that?

_____

_____

_____

_____

20. Next, think specifically about the view from Maine Road comparing the images with and without the proposed wind project. How would the proposed wind project affect your use of Saponac Pond for water activities?

Please rate any affect on a scale of 1-7 where 1 means you are LESS likely to return and 7 means you are MORE likely to return. A "4" means the change in the view would have no effect on your return. How would it affect your use of the pond for…? (READ EACH AND CIRCLE NUMBER)

Boating	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**
Canoeing, or Kayaking	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**
Fishing from the shore or a boat	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**
Ice Fishing	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**
Swimming	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**

Nicatous Lake

Next, please look at this view of Nicatous Lake.

21. Take a look at this view from the northern end of the lake. On the 1-to-7 scale of scenic value in Maine, where 1 is the LOWEST scenic value and 7 is the HIGHEST, how would you rate the scenic value of this view? (CIRCLE NUMBER)

1	2	3	4	5	6	7	DK	REF

22. Now, please take a look at this photo simulation of a wind power project that is being considered for Passadumkeag Mountain. How would you rate the scenic value of this view? (CIRCLE NUMBER)

PROMT AS NEEDED: On the 1-to-7 scale of scenic value in Maine, where 1 is the LOWEST scenic value and 7 is the HIGHEST, how would you rate the scenic value of this view?

1	2	3	4	5	6	7	DK	REF

Impact on Enjoyment and Use (Nicatous Lake)

23. Again, I'd like you to think about how your enjoyment of visiting this lake would be affected if you were to see the proposed wind project. On a scale of 1-7, where 1 is a very NEGATIVE affect and 7 is a very POSITIVE effect on your enjoyment, how would your enjoyment be affected? A "4" means that it would not change your enjoyment at all. (CIRCLE NUMBER)

1	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**REF**

24. Why do you say that?

_____

_____

_____

_____

25. Next, think specifically about the view from Nicatous Lake comparing the images with and without the proposed wind project. How would the proposed wind project affect your use of Nicatous Lake for water activities?

Please rate any affect on a scale of 1-7 where 1 means you are LESS likely to return and 7 means you are MORE likely to return. A "4" means the change in the view would have no effect on your return. How would it affect your use of the lake for…? (READ EACH AND CIRCLE NUMBER)

Boating	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**
Canoeing, or Kayaking	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**
Fishing from the shore or a boat	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**
Ice Fishing	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**
Swimming	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**

Lower Pistol Lake

Next, please look at this view of Lower Pistol Lake.

26. Take a look at this view from the informal boat put-in at the north end of the lake. On the 1-to-7 scale of scenic value in Maine, where 1 is the LOWEST scenic value and 7 is the HIGHEST, how would you rate the scenic value of this view? (CIRCLE NUMBER)

1	2	3	4	5	6	7	DK	REF

27. Now, please take a look at this photo simulation of a wind power project that is being considered for Passadumkeag Mountain. How would you rate the scenic value of this view? (CIRCLE NUMBER)

PROMT AS NEEDED: On the 1-to-7 scale of scenic value in Maine, where 1 is the LOWEST scenic value and 7 is the HIGHEST, how would you rate the scenic value of this view?

1	2	3	4	5	6	7	DK	REF

Impact on Enjoyment and Use (Lower Pistol Lake)

28. Again, I'd like you to think about how your enjoyment of visiting this lake would be affected if you were to see the proposed wind project. On a scale of 1-7, where 1 is a very NEGATIVE effect and 7 is a very POSITIVE effect on your enjoyment, how would your enjoyment be affected? A "4" means that it would not change your enjoyment at all. (CIRCLE NUMBER)

1	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**REF**

29. Why do you say that?

_____

_____

_____

_____

30. Next, think specifically about the view from the north end of Lower Pistol Lake comparing the images with and without the proposed wind project. How would the proposed wind project affect your use of the lake for water activities?

Please rate any affect on a scale of 1-7 where 1 means you are LESS likely to return and 7 means you are MORE likely to return. A "4" means the change in the view would have no effect on your return. How would it affect your use of the lake for…? (READ EACH AND CIRCLE NUMBER)

Boating	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**
Canoeing, or Kayaking	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**
Fishing from the shore or a boat	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**
Ice Fishing	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**
Swimming	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**DK**	**N/A**

General Views of Wind Power Development

31. Now, I would like you think about renewable energy sources. Thinking about wind power development in general, please rate how appropriate it is for Maine on a scale of 1 to 7, where 1 means wind power is generally very INappropriate and 7 means it is generally very appropriate.

1	2	3	4	5	6	7	DK	REF

32. Why do you feel that way?

_____

_____

_____

_____

Finally, we would like to ask a few questions so that we can develop a demographic profile of the visitors to this area.

33. Are you a year round resident, part time resident, or visitor to this area?

☐ Year round resident ☐ Part time resident ☐ Visitor

34. IF PART TIME RESIDENT/VISITOR: Do you live in or visit the area in: (READ AND CHECK ALL)

☐ Winter ☐ Summer
☐ Spring ☐ Fall

35. Do you have a seasonal camp or residence in this area? ☐ Yes ☐ No

36. IF YES: where is it located? (SPECIFY GENERAL LOCATION)

_____

_____

37. Please stop me when I say your age group (Circle Response)

☐	18-24	☐	55-64
☐	25-34	☐	65 and older
☐	35-44	☐	DK/REF
☐	45-54		

38. What is your zip code? _____ **(ENTER ZIP CODE)**

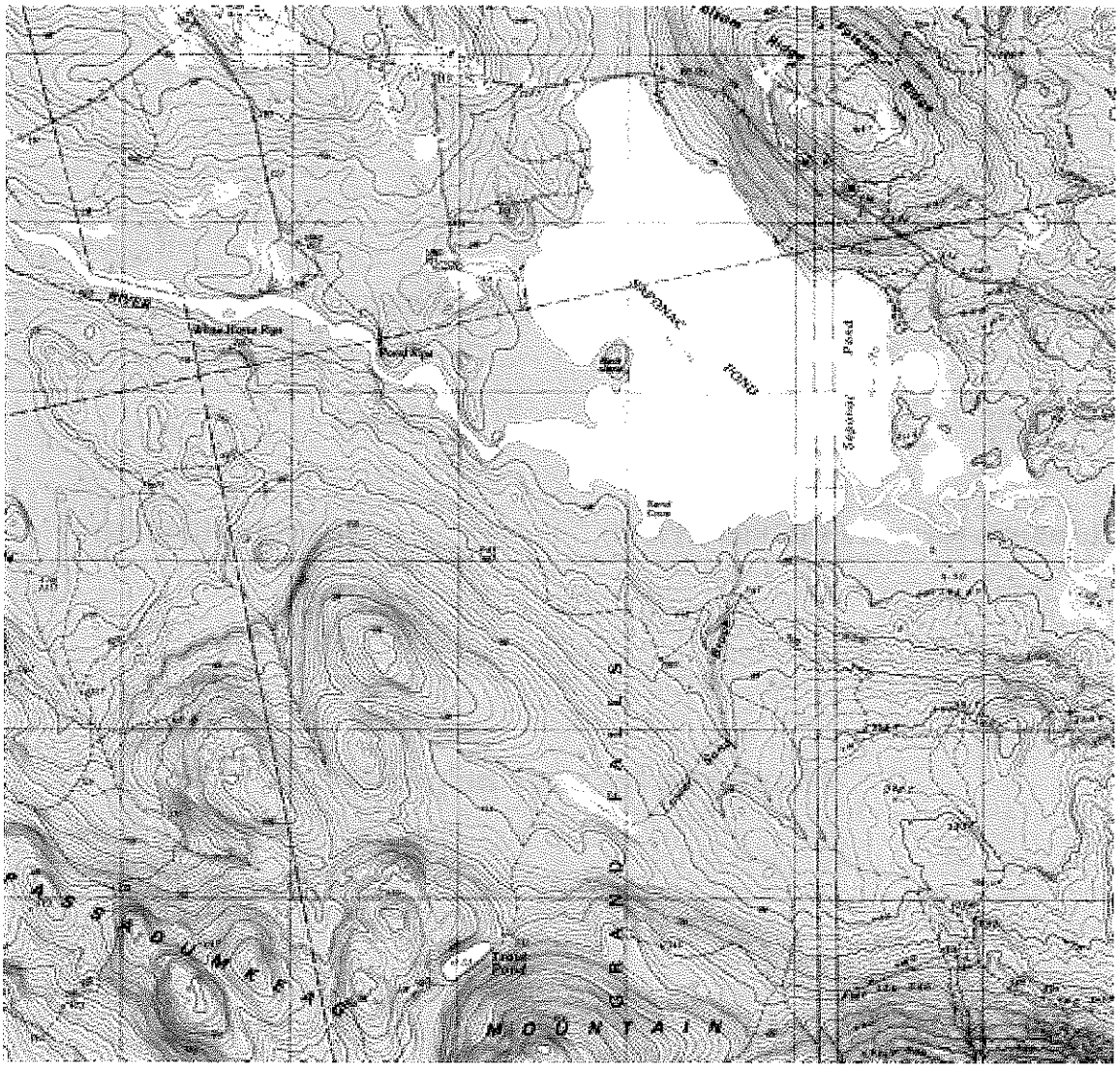
39. GENDER ☐ Male ☐ Female

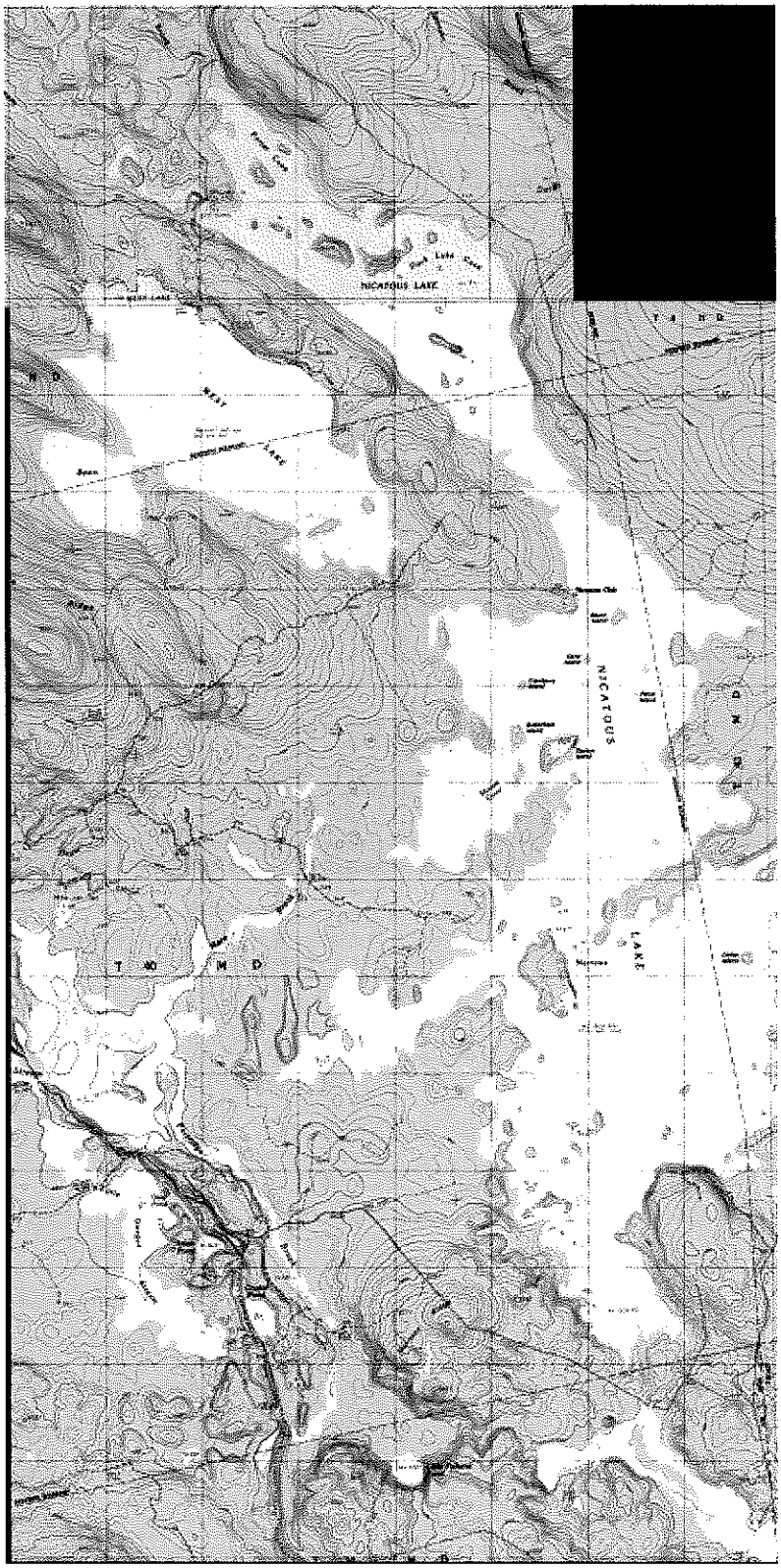
40. Number in party (BY OBSERVATION) _____ **(ENTER NUMBER)**

Thank you for your help today.

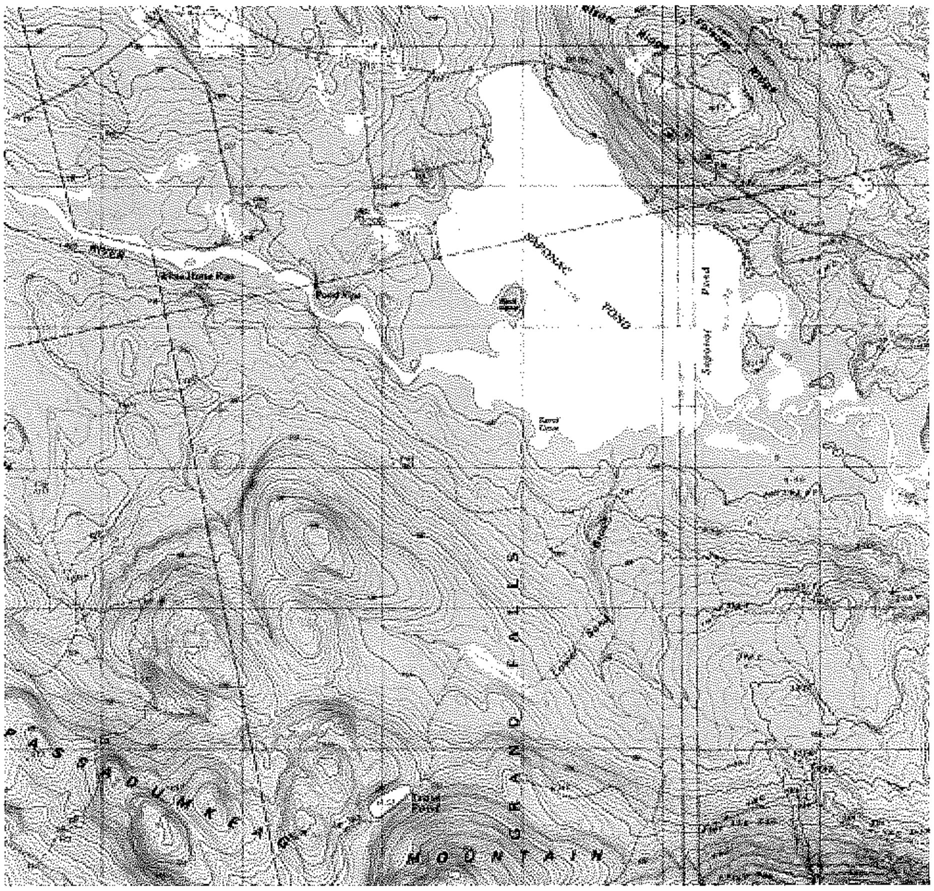
Date: _____ **Time:** _____

268


SAPONAC
POND
Saponac Pond
GRAND FALLS
MOUNTAIN
PASSADUMKEAG


NICATOUS LAKE
NICATOUS
LAKE

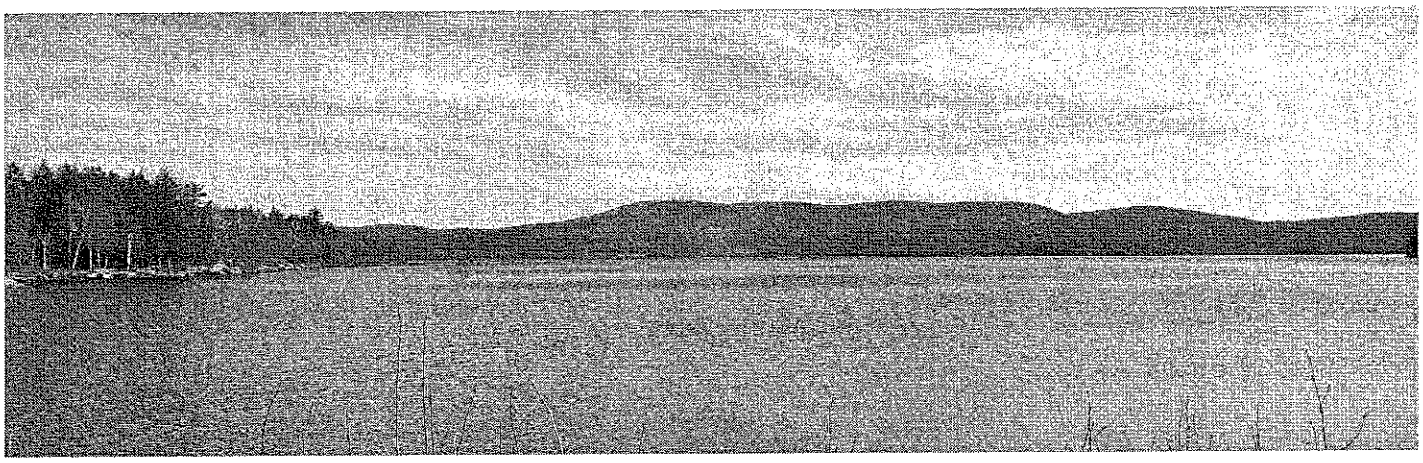
270

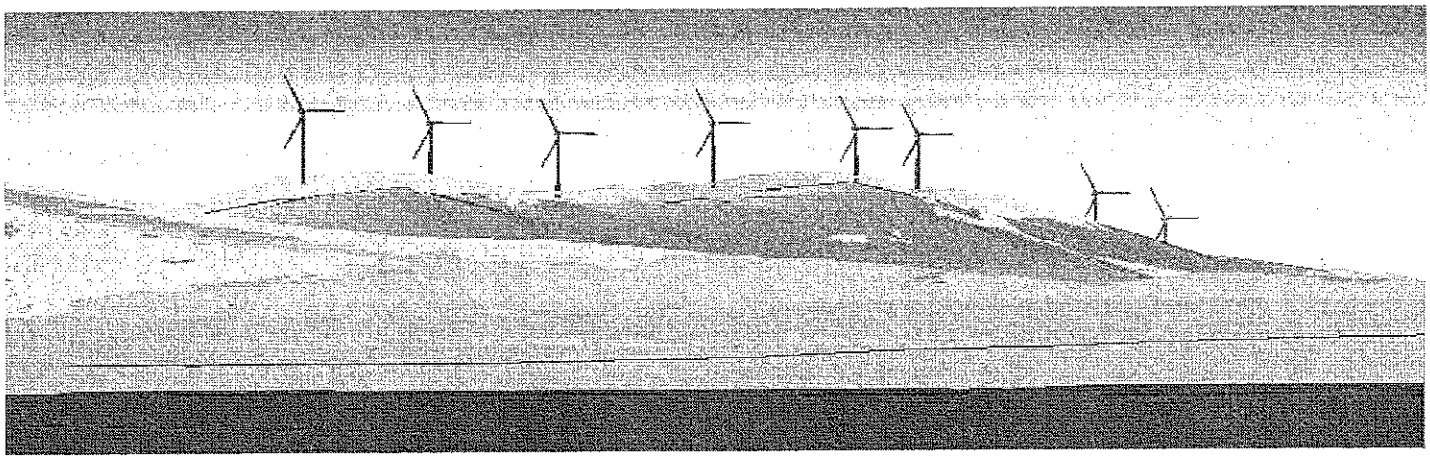


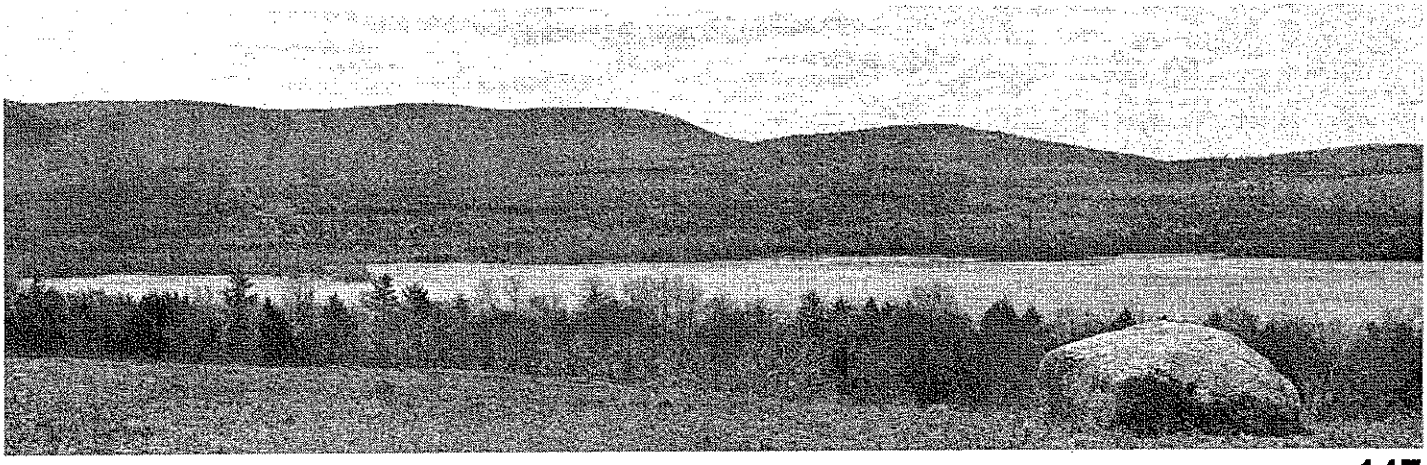
Review of the Passadumkeag Wind Project Visual Impact Assessment

Prepared by LandWorks in Middlebury, Vermont

Prepared for Maine Department of Environmental Protection







Review of the Passadumkeag Wind Project Visual Impact Assessment

Prepared by LandWorks, Middlebury, Vermont

Prepared for Maine Department of Environmental Protection

June 19, 2012

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Introduction

Passadumkeag Windpark LLC submitted a permit application in February 2012 for the Passadumkeag Wind Project (the Project) located in Grand Falls Township, Penobscot County, Maine. The Project will produce 42-megawatts (MW) of power, and includes an electrical collection infrastructure, an electrical substation, a transmission line, and an Operations and Maintenance (O&M) Building.

LandWorks has been retained by the Maine Department of Environmental Protection (DEP) to review the Visual Impact Assessment (Section 30) prepared by Terrance J. DeWan & Associates (TJD&A) as part of the expedited permitting process, defined by 35-A M.R.S.A. Section 3451.

The generation facilities include:

Turbines

The Project consists of 14 Vestas V112 3.0-MW turbines that are 84 meters tall (approximately 276 feet) to the center of the hub and 140 meters (approximately 459 feet) to the tip of a fully extended blade. The turbines are planned to be located on Passadumkeag ridge, elevation 1,471 feet, running in an east-west direction for approximately 4.5 miles. The proposed Project location is currently used for commercial forestry operations. The existing logging roads will be upgraded and used, where appropriate, to minimize clearing and wetland impacts.

Associated facilities include:

Meteorological Tower

The Project will have one permanent 80-meter meteorological tower on site to monitor wind turbine performance.

Collector Line, Substation and Operations & Maintenance Building

The 34.5 kilovolt (kV) collector line for the Project is approximately 17 miles long, running from the ridge along Greenfield Road, through Summit Township, Greenfield Township and into Greenbush. Most of the proposed collector line will be located within an existing distribution line right-of-way immediately adjacent to an existing road. The Project will construct a substation and Operations & Maintenance building which will be located in Greenbush at the intersection of Greenfield Road and an existing 115 kV transmission line (Line 64).

Adequacy of the TJD&A Report

Visual Impact Assessments (VIA) are a common tool used to systematically assess the impact a proposed project will have on scenery and views, and often include viewshed mapping, visual simulations, and photographic inventories. While VIA's can vary depending on location and context, the Maine Expedited Permitting Act has developed specific criteria that must be addressed in a VIA in order to determine if a project unreasonably impacts the scenic values or existing uses of scenic resources of state or national significance. This section reviews whether the TJD&A report adequately responds to these criteria. This review is supported by our first-hand experience in conducting such evaluations, as well as through field analysis conducted April 18, 19, and 24, 2012, and the use of GIS technologies including ArcGIS and 3D Analyst software.

1.0 Introduction and Project Description

The TJD&A report begins with an Executive Summary that outlines the details of the project, the resources located within the 8-mile study area, and the overall conclusion. The VIA correctly identifies all six of the state and national resources of scenic significance within the 8-mile study area, which include: one national natural landmark, one site listed on the National Register of Historic Places, and four Great Ponds. These resources are identified in Table 1 below and are excerpted from various sections of the report. It would have been helpful if the report had included a similar table summarizing the data, as it was not readily accessible. The report continues to outline the various approaches and methodologies used in developing the technical study, which include user surveys, viewshed mapping, and photosimulations.

Table 1. Scenic Resources of State or National Significance within 8 Miles of the Generating Facilities as Identified in the TJD&A Report

RESOURCE	DISTANCE TO NEAREST VISIBLE TURBINE	NUMBER OF TURBINES VISIBLE
National Natural Landmarks		
1. Passadumkeag Marsh and Boglands, Lowell and Summit Twp	8 miles	1 (top of blade)[1]
Historic Sites		
2. Old Tavern, Burlington	N/A	0[1]
Great Ponds		
3. Lower Pistol Lake, T 3 ND	5.2 miles	0-14
4. Nicatous Lake, T 3 ND and T 40 MD	7.0 miles	0-14
5. Saponac Pond, Burlington and Grand Falls Twp	2.3 miles	0-14
6. Spring Lake, T 3 ND	6.7 miles	0-4 (blades only)

[1]Determined by field investigation.

2.0 User Surveys

Market Decisions conducted intercept surveys for the Passadumkeag Wind Project, which TJD&A referenced in its report and used to make conclusions about public use. User surveys have been regarded in recent wind applications as a good tool in helping to identify the extent, nature and duration of public use of a state or national scenic resource, as well as viewer expectations and likelihood to return. Because any number of variables can skew the results of user surveys, they should be regarded as just one tool in understanding use and enjoyment, and therefore should be used in conjunction with a number of other resources, as available, including field study, anecdotal information (e.g. conversations with locals), and data research.

The survey was conducted at locations on Saponac Pond and Nicatous Lake over two weekends in late summer, August 26 to 29 and September 2 to 5, 2001. Of the 45 people observed at these lakes over this time period, a total of 29 interviews were completed. While the methodology used by Market Decisions is a standard approach to intercept surveys, it may have been a more effective survey if it was completed during peak times and on more occasions over the summer, rather than two consecutive weekends at the end of summer when families and students are back at school.

Another observation about the survey was the number of questions – a total of 62 according to the report. The length alone is a deterrent for those who do not have the time, or are not invested or interested in the subject. Respondents also tend to concentrate less and rush through questions as they near the end. Reducing the number of open-ended questions and offering multiple choice makes for a simpler survey with more clearly defined results. It may have also been more effective to interview users for one lake at a time on location, rather than multiple lakes in one survey. In general, user surveys should try to target the key questions (or answers) the statute seeks to address about the resource:

1. What types of activities occur?
2. What is the level of use?
3. What are viewer's expectations?
4. What is the impact on enjoyment?
5. How likely are people to return?

Demographics of respondents are also important to understand. For example, the opinions of an out-of-state user need to be weighed against the opinions of a local, who is more likely to return on a frequent basis. These six categories can be ascertained in two pages (5 minutes) or less of questions.

Rather than just presenting the results as percentages and mean and medians in the report, it would have been useful to see the value as well (i.e. the actual number of responses, e.g. 6 out of 10 people indicate no change in enjoyment if turbines were in view). Otherwise, the survey

appears to follow standard methodologies in intercept surveys (i.e. visual simulations, random sampling), and the **key results** are similar to those conducted for other wind projects – ***the turbines will have a slightly negative effect on scenic quality, but people will continue to use and enjoy the resources.***

3.0 Viewshed Mapping

TJD&A prepared viewshed maps using WindPRO, an accepted software technology. Three analyses were completed, which include:

1. Figure 2. Topography – this map identifies potential visibility from the blade tip (140m) and does not account for the screening effects of vegetation, buildings and other structures that may block views.
2. Figure 3. Topography and Vegetation – this map identifies potential visibility from the blade tip (140m) and accounts for the screening effects of three types of vegetation.
3. Figure 4. Topography and Vegetation HUB ONLY - this map identifies potential visibility from the turbine hub (84m) and accounts for the screening effects of three types of vegetation.

Data used by TJD&A to complete the analysis includes generally available and accepted information, including topographic information from the National Elevation Dataset (NED) and land cover data from Maine Office of GIS. The three vegetative classes were given a height of 40 feet, which is considered the conservative approach, and include deciduous forest, evergreen forest and mixed forest.

Using the same data inputs, LandWorks conducted like viewshed analyses using ArcMap software, a comparable viewshed generating program, and found the results to be similar if not identical to TJD&A's (see Figures 1 – 3). The only critique on TJD&A's viewshed maps would be the color differentiation used for turbine visibility. The three shades of green are difficult to discern from one another, especially on the lakes where the delineation is more critical to the reviewer. Using three distinct colors that are easily identifiable from the other would have made for a more legible map. It is also noted that a small portion of Nicatous Lake that is within the 8-mile study area has not been identified as a Scenic Lake or Pond. While there will be no visibility from this portion of the lake, it should be labeled.

4.0 Photosimulations

4.1 Overall Summary of Visual Simulations

TJD&A has used WindPRO software to create a digital elevation model (DEM) and 3D models of the turbines and subsequent registration/overlay of these models over the digital photographs. Post-production editing was then used to adjust/edit the appearance of the view as necessary to create a realistic simulation (e.g., removing screened portions of towers). This approach, when

properly executed, is consistent with industry standards and should result in reasonably accurate simulations. The turbines that are clearly represented in the simulations appear accurate in terms of their scale and positions on the ridgeline, and they are appropriately rendered to reflect the light/weather conditions. Some of the simulations, however, indicate that a number of turbines are visible, yet no turbines are discernible. This could be a function of the pixelated nature of some of the photographs, perhaps due to PDF image compression, or it could indicate an error or omission. For simulations with turbines that are very difficult to discern, it would be helpful if they were identified with callouts to aid the viewer of the documents. As noted in our critique of one simulation, it appears that an error may have occurred in terms of the viewer location listed in relationship to the view depicted. Another comment is that if a single visual simulation is provided for a given resource, it should either represent a 'worst case' view or be from a popular public vantage point. In some instances, alternative viewpoints would have resulted in more turbines being visible in the simulations.

In order to analyze the accuracy of the visual simulations, LandWorks utilized 3D Analyst to create a 3D model of the terrain, forest cover, turbines, associated clearing, and water bodies. 3D views were then created from the vantage points provided by TJD&A and subsequently overlaid on their simulations in order to compare results. The 3D views presented as Figures 4 – 8 were modeled with both 40' tall tree cover and 70' tall tree cover, which clearly conveys how shoreline tree height can dramatically affect project visibility. Although LandWorks found the average tree height in the area to be 50' and higher, much of the shoreline vegetation includes mature white pine trees, which are more often in the 70' height range.

4.2 Nicatous Lake – Duck Lake Cove

Based on the analysis conducted for this simulation, the coordinates and location description do not appear to be correct for the view depicted. The 3D view for Duck Lake Cove, Figure 4, does not match up with the topography or turbine layout of the simulation. This suggests that this photo was taken from a different location than described. As such, TJD&A should review the simulation to ensure that the correct viewer coordinates were used and provide updated information as appropriate.

According to the Photosimulation Information box, 8+/- turbines are visible, but only the forms of five turbines are discernable. It would be helpful to identify the turbines that are difficult to discern with callouts. Figure 4 indicates that only two or fewer turbines would potentially be visible.

4.3 Nicatous Lake – Porter Cove

It is difficult to ascertain the accuracy of this simulation because no turbines are discernable, yet 7+/- turbines should be visible according to the Photosimulation Information box. Either the turbines are not depicted at all or they are difficult to discern due to photo pixilation. If it is

simply a case of the blades blending with the vegetation, it would be helpful to identify them with callouts. The 3D view for Porter Cove, Figure 5, indicates that 2-14 turbines could be visible, depending on shoreline tree height. Based on observations of typical shoreline tree height, it is not unreasonable to assume that only the blades of 7 or fewer turbines would be visible just above the treeline.

4.4 Lower Pistol Lake

The turbines appear to be accurately depicted, in terms of location, scale, and lighting. However, clearing and exposed ground would potentially be visible on the ridge from this vantage point, depending on the time of day and weather conditions. No clearing is discernible in the simulation. Another minor point is that a vantage point further to the north/west would have resulted in all of the turbines being visible, as opposed to the 12+/- that are visible from the simulation vantage point.

4.5 Saponac Pond

The turbines appear to be accurately depicted, in terms of location, scale, and lighting. If anything, the height of the turbines might be slightly overstated. However, a vantage point just down the road west of the bridge, where we observed people fishing, would have provided a view of all the turbines. The vantage point of this simulation only allows 10 of the turbines to be seen, as the other four are obscured by shoreline vegetation.

4.6 Spring Lake

It is difficult to ascertain the accuracy of this simulation because no turbines are discernable, yet 5+/- turbines should be visible according to the Photosimulation Information box. Either the turbines are not depicted at all or they are difficult to discern due to photo pixilation. If it is simply a case of the blades blending with the vegetation, it would be helpful to identify them with callouts. The 3D view for Spring Lake, Figure 7, indicates that 4-11 turbines would be visible, depending on shoreline tree height. Based on observations of typical shoreline tree height, it is not unreasonable to assume that only the blades of 5+/- turbines would be visible just above the treeline.

5.0 Character of the Area

The TJD&A report describes the overall character of the 8-mile study area, which includes:

- Landforms – elevations and terrain
- Water resources – lakes, ponds, rivers, and wetlands
- Vegetative patterns – forest cover
- Cultural character – villages, residential development, and recreational resources

The descriptions found in this section generally correspond to what was identified during our field analysis and technical study.

6.0 Distance Zones

TJD&A presents the rationale for distance zones, a concept based on the USDA Forest Service Handbook on Scenery Management, which indicates, with increased distance the concern for visual impact diminishes. The zones identified in the VIA report – foreground (0 to 1/2 mile), midground (1/2 to 3-5 mile), and background (greater than 3 to 5 miles) – are the same zones identified by the USDA Forest Service. While this approach is one valuable methodology used to assess visual impact in a typical landscape, it is our experience that because turbines are larger than other elements normally viewed in the landscape, and the details of which can be perceived beyond the 1/2 mile limit established by the Forest Service criteria, distance zones should be extended to account for this difference. This adjusted range might be better represented at 0 to 2-3 miles for foreground, 2-3 to 6-8 miles for midground, and greater than 6-8 miles for background. The Maine Expedited Permitting Act has determined that the visual impact of wind turbines beyond 8-miles is insignificant.

7.0 Evaluation of Visual Impacts on Scenic Resources of State or National Significance

For the six identified resources of state or national significance, TJD&A evaluates the potential visual impact using the seven criteria outlined in the Main Expedited Permitting Act, and have presented the criteria using the following approach:

- *Context* (35-A MRSA § 3452.3.B and 3452.3.D)
- *Significance* (§ 3452.3.A)
- *Public Uses* (§ 3452.3.E)
- *Viewer Expectations* (§ 3452.3.C)
- *Project Impact* (§ 3452.3.F)
- *Potential Effect on Public Use* (§ 3452.3.E)
- *Overall Scenic Impact* (§ 3452.1)

7.1 Passadumkeag Marsh and Boglands

Passadumkeag Marsh and Boglands are listed as a National Natural Landmark (NNL). The TJD&A report has included this resource because the very tip of the easternmost boundary of the 6,100-acre marsh touches the 8-mile line of the study area, an approximate area of only 0.6 acres. The report suggests that the very tip of one blade may be visible, however, the viewshed analysis conducted by LandWorks suggests that this small portion would not have any visibility. Moreover, this very insignificant portion that is located within the 8-mile study area is entirely wooded, as evidenced by aerial photography. Because there will be no visual impact from this resource, it was not necessary to provide a full assessment using the criteria outlined in 7.0.

7.2 Old Tavern

The Old Tavern in Burlington is listed on the National Register of Historic Places. This historic structure will not have any visibility, therefore a full assessment using the criteria outlined in 7.0

was not conducted. While TJD&A confirms no visual impact by way of field investigation, it should also be noted that the viewshed analysis, as conducted by LandWorks, also indicates no visibility.

7.3 Saponac Pond

- *Context.* The report identifies the general character of the pond, including existing land uses, access and fishery. Passadumkeag Mountain is identified as "the most distinctive landform in the vicinity," and the history of commercial harvesting and sawmills are detailed, including the "gross sawdust pollution that has been scattered along the west shore." (pg. 30-18) However, an analysis of how the context and character of the pond contribute to scenic quality, and the impact turbines might have on those attributes are not discussed.
- *Significance.* Saponac Pond is rated as "significant" in the Maine Wildlands Lakes Assessment but is not identified in Maine's Finest Lakes, The Results of the Maine Lakes Study. The report also includes a table identifying the ratings from the State Planning Office's Scenic Lakes Character Evaluation in Maine's Unorganized Towns. The primary attributes of the pond are its physical features and dramatic and complex relief (Passadumkeag Mountain), which score at the high end of the "significant" rating. The report does not provide an analysis of how the significance of the pond, or the prominence of Passadumkeag Mountain, relates to scenic quality and how turbines might impact that significance.
- *Public Uses.* Public use levels were noted as being "light" based on observations by TJD&A and the results of the intercept survey. The report also references the Bureau of Land Mangement's Recreation Opportunity Spectrum (WROS) as a method of identifying lake use. This method suggests Saponac Pond use levels are within the Rural Natural area rating.
- *Viewer Expectations.* The report concludes that the users expect low development and an uncrowded pond, suggesting limited use. This is based on the results of the intercept survey and no other source is cited.
- *Project Impact.* Except for some areas along the southern shoreline, the majority of the pond (97%) will have visibility of all 14 turbines. Clearings of several of the turbine pads and a segment of the ridgeline road will also be visible. A photosimulation from a point on Route 188 near the boat launch is presented. There are some inconsistencies between the narrative section and the text presented on the photosimulation. The report suggests that 14 turbines would be visible at distances of 4.0 to 4.8 miles. However, the photosimulation says (and illustrates) that 10 turbines would be visible at distances of 4.0 to 4.9 miles. The narrative further reports that red warning lights will be visible at distances of 2.3 to 4.8 miles. The results of the intercept survey indicate an average drop from 6.6 points to 3.8 points in scenic quality (on a scale of 1 to 7, with 1 being low, 7 being high, and 4 being typical) after turbines are installed. The report suggests that the "presence of turbines will not have an affect on the pond's relief or its physical features," and therefore would not

change its rating based on the Scenic Lakes Character Evaluation. (pg. 30-21)

- *Potential Effect on Public Use.* Based solely on the results of the intercept survey, the report suggests that most people (70%) will continue to return to the lake, but on average the Project would have a slightly negative effect. Additionally, the Project would result in no change to their enjoyment of the pond for over half of respondents (59%), but on average would have a somewhat negative effect on the enjoyment of their visit.
- *Overall Scenic Impact.* The report concludes that the Project will have an adverse effect on the scenic value of Saponac Pond. No further discussion or reason is given why it is not *unreasonably* adverse.

7.4 Nicatous Lake

- *Context.* The report identifies the general character of the pond, including existing land uses, access and fishery. While low-lying hills encircle the pond, there are "no named mountains or distinctive focal points." (pg. 30-22) The most notable features include the varying shoreline and numerous islands found throughout the lake. However, an analysis of how the context and character of the pond contribute to scenic quality, and the impact turbines might have on those attributes are not discussed.
- *Significance.* Nicatous Lake is rated as "outstanding" in the Maine Wildlands Lakes Assessment due to its multiple outstanding values. It is also identified as an outstanding scenic resource in Maine's Finest Lakes, The Results of the Maine Lakes Study due to its "numerous sand beaches, islands, boulders, rock ledges, diverse vegetation, wildlife viewing, and a very interesting shoreline configuration." (pg. 30-25) The report also includes a table identifying the ratings from the State Planning Office's Scenic Lakes Character Evaluation in Maine's Unorganized Towns. The primary attributes of the lake are its physical features and shoreline configuration, which score in the "outstanding" category. The report provides an excerpt from the website Land for Maine's Future, but does not provide any additional analysis of how the significance of the lake relates to scenic quality and how turbines might impact that significance.
- *Public Uses.* Public use levels were not specifically analyzed or concluded, but a few sources were cited, including the results from the intercept survey and an interview with the owner of Nicatous Lodge. A better understanding or conclusion of lake usage (what do the results of the survey and interview mean?) would be beneficial. The WROS rating system suggests that the portion of Nicatous Lake that is within the 8-mile study area exhibits use levels within the Rural Natural area rating.
- *Viewer Expectations.* The report concludes that the users expect low development and a less crowded lake, suggesting limited use. This is based on the results of the intercept survey and no other source is cited.
- *Project Impact.* Up to 46% of the lake within the 8-mile study area will have visibility of up to 14 turbines. Depending on location, the number of visible turbines varies greatly. Photosimulations from Porter Cove and from Duck Lake Cove are presented. Again, there

are some inconsistencies between the narrative section and the text presented on the photosimulations. The report suggests that between 10 and 14 turbines would be visible from Duck Lake Cove. However, the text on the photosimulation says approximately 8 turbines would be visible, but this is difficult to discern in the photo (which looks like less than 8). From Porter Cover, the report suggests that the tops of 8 turbines would be visible. However, the text on the photosimulation says 7 turbines would be visible, but this is impossible to see in the photo. Identifying the location of the turbines on the photosimulation, even if not visible, would have been helpful. The narrative further reports that red warning lights on the turbines as well as the existing communication tower will be visible at distances of 5.8 to 8.0 miles. It is suggested that these will not be commonly viewed due to limited campsites along the lake and to submerged rocks that create a safety hazard at night. The results of the intercept survey indicate an average drop from 5.9 points to 4.4 points in scenic quality (on a scale of 1 to 7, with 1 being low, 7 being high, and 4 being typical) after turbines are installed. The report suggests that the "presence of turbines will not have an affect on the lake's physical features or shoreline configuration," and therefore would not change its rating based on the Scenic Lakes Character Evaluation. (pg. 30-28)

- *Potential Effect on Public Use*. Based solely on the results of the intercept survey, the report suggests that most people (88%) will continue to return to the lake, but on average the Project would have a slightly negative effect. Additionally, the Project would result in no change to their enjoyment of the lake for 48% of respondents, a negative effect for 31%, and a positive effect for 20%. On average the Project would have a slightly negative effect on the enjoyment of their visit.
- *Overall Scenic Impact*. The report concludes that the Project will have an adverse effect on the scenic value of Nicatous Lake, but will not have an unreasonable effect on its scenic character or public uses. No further discussion or reason is given why it is not *unreasonably* adverse.

7.5 Lower Pistol Lake

- *Context*. The report identifies the general character of the pond, including existing land uses, access and fishery. Rolling wooded hills and an unnamed hill to the southwest characterize this undeveloped lake. Logging operations have created rough roads that provide access to the lake. An analysis of how the context and character of the pond contribute to scenic quality, and the impact turbines might have on those attributes are not discussed.
- *Significance*. Lower Pistol Lake is rated as "significant" in the Maine Wildlands Lakes Assessment. Because it is not explicitly stated, it is assumed that the lake is not identified in Maine's Finest Lakes, The Results of the Maine Lakes Study. The report also includes a table identifying the ratings from the State Planning Office's Scenic Lakes Character Evaluation in Maine's Unorganized Towns. The primary attributes of the lake are its relief, physical

characteristics, and vegetation diversity, which score at the high end of the "significant" rating. The report does not provide an analysis of how the significance of the lake relates to scenic quality and how turbines might impact that significance.

- *Public Uses.* The report concludes that use is very low based on the results of the intercept survey, observations by TJD&A, and access road conditions. The report also references the Bureau of Land Mangement's Recreation Opportunity Spectrum (WROS) as a method of identifying lake use. This method suggests Lower Pistol Lake use levels are within the Semiprimitive area rating.
- *Viewer Expectations.* No intercept survey was conducted at this lake due to inadequate access. It is assumed that users would have high expectations for a less crowded, less developed lake due to its inaccessibility. No additional analysis or resources are cited.
- *Project Impact.* Up to 50% of the lake will have visibility of up to 14 turbines. A photosimulation from a point on the northern end of the lake is presented. There are some inconsistencies between the narrative section and the text presented on the photosimulation. The report suggests that all 14 turbines (only 8 are within 8 miles) would be visible at distances of 5.0 to over 8 miles. However, the photosimulation text says (and illustrates) that approximately 12 turbines would be visible at distances of 5.6 to 9.5 miles. The narrative further reports that red warning lights will be visible at distances of 5.0 to over 8 miles. The results of the intercept survey indicate an average drop from 6.3 points to 3.8 points in scenic quality (on a scale of 1 to 7, with 1 being low, 7 being high, and 4 being typical) after turbines are installed. The report suggests that the "presence of turbines will not have an affect on the lake's physical features or shoreline configuration, characteristics that accounted for the majority of points" and therefore would not change its rating based on the Scenic Lakes Character Evaluation. (pg. 30-31) However, the majority of points were in the relief, physical features, and vegetation diversity. Shoreline configuration only received 5 points based on the table on page 30-30.
- *Potential Effect on Public Use.* Based solely on the results of the intercept survey, the report suggests that most people (ranging between 76-79%) will continue to return to the lake, but on average the Project would have a slightly negative effect. Additionally, the Project would result in no change to their enjoyment of the lake for over half of respondents (62%), but on average would have a slightly negative effect on the enjoyment of their visit.
- *Overall Scenic Impact.* The report concludes that the Project will have an adverse effect on the scenic value of Lower Pistol Lake, but will not have an unreasonable effect on its scenic character or public uses. No further discussion or reason is given why it is not *unreasonably* adverse.

7.6 Spring Lake

- *Context.* The report identifies the general character of the pond, including existing land uses, access and fishery. Rolling wooded hills and a single island characterize this relatively undeveloped lake. Logging operations have created rough roads that provide access to the

lake. An analysis of how the context and character of the pond contribute to scenic quality, and the impact turbines might have on those attributes are not discussed.

- *Significance.* Spring Lake is rated as "significant" in the Maine Wildlands Lakes Assessment. Because it is not explicitly stated, it is assumed that the lake is not identified in Maine's Finest Lakes, The Results of the Maine Lakes Study. The report also includes a table identifying the ratings from the State Planning Office's Scenic Lakes Character Evaluation in Maine's Unorganized Towns. The primary attributes of the lake are its relief, physical characteristics, and special features, which score at the middle of the "significant" rating. The report does not provide an analysis of how the significance of the lake relates to scenic quality and how turbines might impact that significance.
- *Public Uses.* The report concludes that use is very low based on the results of the intercept survey, observations by TJD&A, and access road conditions. The report also references the Bureau of Land Mangement's Recreation Opportunity Spectrum (WROS) as a method of identifying lake use. This method suggests Spring Pistol Lake use levels are within the Rural Natural area rating.
- *Viewer Expectations.* No intercept survey was conducted at this lake due to inadequate access and low development. It is assumed that users would have high expectations for a less crowded, less developed lake due to these factors. No additional analysis or resources are cited.
- *Project Impact.* Up to 45% of the lake will have visibility of up to 14 turbines. A photosimulation from a point on the northern end of the lake is presented. There are some inconsistencies between the narrative section and the text presented on the photosimulation. The report suggests that the blades of up to four turbines may be seen at distances of 7 to 8 miles. However, the text on the photosimulation says that approximately 5 turbines would be visible at distances of 6.9 to 9.5 miles, but are not shown on the photosimulation. Identifying the location of the turbines on the photosimulation, even if not visible, would have been helpful. The narrative does not provide the impact of the red warning lights, which can be assumed to be not visible based on the photosimulation, but clarification would help confirm this. Spring Lake was not included in the intercept survey, therefore there is no information regarding scenic quality. The report suggests that the "presence of turbines will not have an affect on the lake's physical features or shoreline configuration, characteristics that accounted for the majority of points" and therefore would not change its rating based on the Scenic Lakes Character Evaluation. (pg. 30-31) However, the majority of points were in the relief, physical characteristics, and special features. Shoreline configuration only received 5 points based on the table on page 30-33.
- *Potential Effect on Public Use.* An intercept survey was not conducted for this lake, so it is inferred that the Project will not have a significant effect on public use and enjoyment due to limited number of turbines, viewer distance, and limited visibility.
- *Overall Scenic Impact.* The report concludes that the Project will have a very slight adverse effect on the scenic value of Spring Lake, but will not have an unreasonable effect on its

scenic character or public uses. No further discussion or reason is given why it is not *unreasonably* adverse.

8.0 Evaluation of Associated Facilities

"The primary siting authority shall evaluate the effect of associated facilities of a wind energy development in terms of potential effects on scenic character and existing uses related to scenic character in accordance with Title 12, section 685-B, subsection 4, paragraph C or Title 38, section 484, subsection 3, in the manner provided for development other than wind energy development, if the primary siting authority determines that application of the standard in subsection 1 to the development may result in unreasonable adverse effects due to the scope, scale, location or other characteristics of the associated facilities. An interested party may submit information regarding this determination to the primary siting authority for its consideration. The primary siting authority shall make a determination pursuant to this subsection within 30 days of its acceptance of the application as complete for processing." (Title 35-A, Ch. 34-A, §§ 3452.2)

The TJD&A report concludes that the associated facilities (e.g. O&M building, access roads, crane pads, etc.) will not result in an unreasonable adverse affect and provides brief narratives for this conclusion. However, there are no exhibits or supporting materials to validate this conclusion. While some of the photosimulations account for clearing for crane paths and turbine pads, there are no photo inventories, viewshed maps, or even location maps for the associated facilities. The report does mention that it used Google Earth to visualize associated facilities, but these images are not included. The information presented is not sufficient enough to evaluate or conclude whether or not the associated facilities will have an unreasonable adverse affect. However, because the Maine Department of Environmental Protection (DEP) made no request of the applicant for a VIA for the associated facilities within the statutory 30-day period, the evaluation presented in this report has no bearing on the denial or approval of the application, and is provided for information only.

It is duly noted that the statutory requirement to make a request for a VIA for associated facilities within 30-days of application acceptance is not sufficient enough time for DEP to determine if such a request is necessary, for two key reasons: 1) in a preliminary review it is easy to overlook within the VIA; and, 2) because DEP does/can not hire reviewers for the VIA within 30-days of application acceptance. Furthermore, it is suggested that the language of the statute be reworded to read "A VIA of the wind energy project's associated facilities shall be prepared and submitted by the Applicant unless it is demonstrated with substantive proof that no scenic resources, other than those already being addressed by the VIA, will be impacted by the associated facilities of the project." It is also recommended that this interpretation be adopted as policy by DEP.

LandWorks Analysis

Using the applicant's Visual Impact Assessment (VIA) as a point of departure[1], LandWorks has analyzed both the regional and local context as well as the identified scenic resources that will be potentially affected by the proposed Wind Park project. The proposed Passadumkeag Wind Park is located in the Grand Falls Township with ancillary facilities (transmission line upgrade and a proposed new substation and Operation and Maintenance facility) located in Summit Township and the Town of Greenfield.

1.0 Landscape Qualities

This area, and as confirmed by the information provided by the applicant, is situated in an area of Maine referred to as the Maine-New Brunswick Lowlands, with abundant lakes, low hills and ridges, and extensive surface water features such as rivers, brooks, streams, bogs and wetlands (See Figure 10. Photo Inventory).

Passadumkeag Mountain, at 1,463 feet is the most prominent of a series of lower ridges scattered throughout this area of Maine, which is characterized by extensive working forestlands and low ridges. It is a prominent east west ridge that is approximately 5 miles overall encompassing several summits.

The elevation of the region ranges from 190 feet above sea level at Saponac Pond and 399 feet at West Lake to ridges and low mountains topping out (aside from Passadumkeag) at between 600 and 1,100 feet (at Duck Mountain). These landforms, while not necessarily distinct or dramatic in relief, do provide the project area with a rolling topography that surrounds the lakes and provides a visual backdrop to many vantage points along roads and on waterbodies. The geology of the area includes both igneous and metamorphic bedrock types as well as some unique glacial features such as the distinct esker south of Pistol Green.

As stated, another prominent feature of this region are the lakes, which range size from a little over a mile in length (Spring Lake) to 8.5 miles in overall length (Nicatous). There are numerous smaller ponds, wetlands (including the 1,000 acre heath as well as rivers [Passadumkeag River], streams and brooks [Madagascal, Nicatous and Lower and Upper Sand Brooks in the vicinity of

[1] Terrance J. DeWan and Associates. *Section 30 Visual Impact Assessment*. Yarmouth, ME

Passadumkeag Mountain]). Passadumkeag River, the most extensive watercourse in the study area, which flows through Sapanoc Pond, is not rated as highly scenic in the *Maine Rivers Study*.[2]

The woodlands that predominate in this area are characterized by northern hardwoods and evergreens that are predominantly pine, with spruce, fir and white cedar in certain areas. There are also areas of old field succession or re-growth and vegetation commonly found in wetlands Much of the woodland is comprised of second (and, perhaps in some cases, third growth) forestland given the historic use and management of the timber resource in this area. The extensive forest cover has been the basis for the traditional forest products industry in this portion of Central Maine, and logging and forest management activity can be seen from area roadsides as well as being clearly visible in distinctive patterns from the air. Additionally, there are numerous logging roads and unimproved jeep trails throughout the wooded and lake areas of the region, reinforcing the long term timber harvesting activity of the area, and providing access for different types of recreation.

2.0 Land Use and Community

The nearest town center to the project site is Burlington (population 351), just to the north and west of Passadumkeag Mountain, and several other nearby towns in the region include Enfield (pop. 1,616) and Howland (pop. 1,362). These towns include some industrial infrastructure, although some, if not most, of the established larger industrial sites and buildings are no longer occupied or in use (See Figure 11. Annotated Aerial).

Low-density rural residential land uses predominate amidst the lands being managed for timber harvesting, except along the lakeshores, where there are sections with summer camps. On Nicatous Lake, for example, there are over 100 camps along the shorelines of this major lake as well as an established tourism destination in Nicatous Lodge, situated at the northern end of the lake. One or two other commercial establishments are located in this area at the northern end of the lake. Other towns in the region have remnant elements of the forest products industry and few, if any, amenities for visitors and tourism in general. Traditional recreational uses for this region of Maine include hunting, fishing, camping, boating. ATV use and winter sports such as snowshoeing, cross country skiing, ice fishing and snowmobiling. Several of the ponds and lakes do have public campsites, and most ponds or lakes have boat launches or access, although not all of them are readily accessible to trailered boats.

[2] Maine Rivers Study. State of Maine, Department of Conservation. U.S. Department of the Interior, National Park Service. Mid-Atlantic Regional Office. May 1982

3.0 Scenic Resource Analysis

3.1 A Note About the Region and the Significance and Sensitivity of the Scenic Resources

It is important to note that while it is clear that many local residents and camp owners will be potentially impacted by this project, and will have a varying extent of project visibility depending upon location and other factors, this review requires that the potential for impacts to the identified, statutorily defined scenic resources be the focus of the analysis. Thus the charge is to conduct an analysis focused on those resources, rather than a general review of the project's impact to roads, open spaces, individual camps and other locations not listed as or considered to be scenic resources. Nonetheless this review does take into account the presence the project will have in the region and acknowledges certain viewpoints, vistas and locations where project visibility will be possible. In some instances the analysis has included an assessment of other local resources, such as West Lake, where there have been concerns raised with regard to visual impacts.

Another important note is to recognize the statute's approach to project visibility and the recognition that, wind projects, and the individual turbines themselves, are by their very nature, going to be visible in the landscape, and that fact alone is not sufficient to conclude that the project would have unreasonable adverse affect:

"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." MRS Title 35- A, Chapter 34-A: EXPEDITED PERMITTING OF GRID-SCALE WIND ENERGY DEVELOPMENT. §3452. DETERMINATION OF EFFECT ON SCENIC CHARACTERS AND RELATED EXISTING USES. Paragraph 1. Application of Standard

3.2 LandWorks Analysis of Scenic Areas of State and National Significance

As per the applicable statute, the visual assessment must address the potential impacts to several categories of resources located within the projects 3 or 8-mile radius. This section of the report is not intended to duplicate the initial review or analysis of the applicant's work; the purpose is to build on that information and additional analyses focused on key distinctions or information which supports the ultimate conclusions in this report. The use of the intercept survey information developed by Market Decisions also provides understanding with regard to impacts.[3] The survey cannot necessarily be relied on completely due to the limited sample size, and other factors related to respondents familiarity with some of the lakes. However, in a

[3] Robertson, Dr. Brian and Jennifer MacBride. Market Decisions. *Passadumkeag Mountain Wind Power Project Intercepts*. Prepared for: Terrance J. DeWan & Associates. Portland, ME. October 2011

conversation with Brian Robertson of Market Decisions, it was noted that 29 respondents from a potential pool of 45 users observed and noted during the survey period represents a high percentage of respondents given the sample size potential. He believes that this yields reliable information given the factors affecting survey efficacy in this area.[4]

An analysis of the impact of night lighting on the lakes is provided in subsection 4.4 of this section.

As previously established, there 6 scenic or historic resources within the 8-mile study area radius and these include:

1.Passadumkeag Marsh and Boglands (National Natural Landmark)
2. Old Tavern in Burlington (National Historic Register)
3. Saponac Pond - Burlington/Great Falls Township (Significant)
4. Nicatous Lake - T3 ND and T40 MD/Hancock County (Outstanding)
5. Lower Pistol Lake - Passamaquoddy Trust Land/T3 ND/Hancock County (Significant)
6. Spring Lake - T3 ND/Hancock County (Significant)

Resource-by-Resource Analysis

1. Passadumkeag Marsh and Boglands - Lowell/Summit Township Elevation: approximately 50 feet above sea level.

The 6,100 acre Passadumkeag Marsh and Boglands is designated as a National Natural Landmark. The Natural Landmark Brief, as set forth in the applicant's VIA, describes the nature and value of the resource. Only a very small portion of this area, .6 acre, in the most southeasterly section of the Boglands parcel, is within the 8-mile radius.

Based on the viewshed analyses of both the applicant's VIA and that of LandWorks, and an analysis of aerial photography for land cover, it is expected that there will be no visibility of the project from this resource.

2. Old Tavern - Burlington

The Old Tavern in Burlington is located in the village at the intersection of Route 188 (Main Road), Hayden Lane and Long Ridge Road. The Tavern faces Main Road and is oriented in a manner that the view of its external architectural qualities as well as access to the building's

[4] Phone conversation with Brian Robertson of Market Decisions, June 8, 2012

interior is from the west - looking east - a direction from which the project would not be visible. The tavern's site is not the primary historic value associated with the resource.

Any potential views of the project would be in the southerly to southeasterly direction. It appears as though the western end of Passadumkeag Mountain is potentially visible along the road corridor but it is most likely of a portion of the mountain where turbines are not proposed. The tavern is surrounded to the south by mature trees and other structures through which any potential views of the project would be possible, and, for the most part, only in winter. It is unlikely that views are possible, however, due to the intervening vegetation and structures, and therefore it can be concluded that there is no visual impact to this resource.

3. Saponac Pond - Burlington/Great Falls Township (Significant) Elevation is 190 feet above sea level, size is 922 acres.

Saponac Pond is part of the flowage of the Passadumkeag River and is characterized by the distinctive presence of the backdrop of the Passadumkeag Mountain ridge. There is no question that the historic land uses for this context, as with all of the other lakes in the 8 mile radius of the project area are focused on the forest resource, with evidence of clearcuts, logging roads and other resource extraction activity visible around the area of the pond. To the north Folsom Ridge rises above the pond and Route 188/Main Road follows the pond's northern shoreline for a short distance providing extensive views of the pond and Passadumkeag Mountain to the south. There is an area at this point where informal parking is possible and people can launch a small boat here and also fish at this location.

Passadumkeag Mountain has been developed with a 574-foot radio tower that is lit with four pulsating beacons and that is accessible via a service road, which approaches the mountain from the south.

The pond is recognized for its bass and perch fishery, and has been developed with camps primarily along its northeastern and northwestern shores there are up to 50 camps and year round homes on these shores or in the vicinity of the pond. The pond's shoreline is wooded with hardwoods and softwoods, with the exception of clearings for camps and the short section where Route 188/Main Road follows the shoreline, a short distance beyond the southern shoreline are openings in the forest cover as a result of the logging activity.

From Route 188/Main Road the closest turbines will be, according to the applicant, between 4 and 4.8 miles in distance. From the south shore, the closest turbine will be at a distance of 2.3 miles. Saponac Pond, due to its proximity to the project site, and the fact that there will be visibility of the project from nearly all of the surface area and shoreline of the pond (other than the southern shoreline), will, without question be adversely impacted by this project. Many

camps and those users who are boating or fishing on the lake will have the project potentially in view albeit with some exceptions due to north facing shorelines that will benefit from vegetative screening. There is what is considered to be some inharmonious development as identified in the ratings set forth in the publication *Scenic Lakes Character Evaluation in Maine's Unorganized Towns*[5], but the overall scenic rating may be attributable to the presence and prominence of Passadumkeag Mountain itself. Despite this consideration, Saponac Pond is by no means a pristine waterbody, and ironically, it is the logging activity and mountaintop development (with the roads and radio tower) that contributes to the sense that the pond is in a developed area that has been used historically as a working landscape.

The photo simulation prepared by the applicant provides a distinct sense that the wind power project will be a dominant feature in the landscape and will change the visual conditions and character of the pond. The turbine array is propose for a 4.5 mile length and each of the individual turbines will be readily visible against the backdrop of sky and atmosphere. Given this horizontal extent of the project, and the fact that it will be visible from most of the lake and that view will comprise anywhere from 31 degrees of the panorama at the simulation site and up to 62 degrees when in the middle of the lake, this project will be dominant in the views that many users will experience. The visual impact is somewhat mitigated by the fact that the array is orderly insofar as it is linear and singular (without turbines behind or in front creating a more irregular pattern). This is a recommended siting strategy forwarded in the publication Wind Power in View which includes such recommendations as "Provide visual order...and visual uniformity...and use towers of consistent height".[6] Another concern with the visual impact of this project will be the change in the mountain landscape caused by the clearings for the turbine "pads" and the service roads that will connect all the turbine sites. It will add a distinct and unnatural form to this mountain landscape. Thus, this component of the project will have an additional impact and needs to be carefully considered in order to reduce the potential "scar" affect that can often result from large cuts and fills required to accommodate the roads in steep mountain landscapes. One such section may be highly visible and will require mitigation to reduce both environmental and aesthetic impact.

Note also that weather conditions will reduce or eliminate visibility for a sizable portion of the year, given the number of overcast days or days with precipitation in this region of Maine, and this will apply to the accessible visibility from all the identified resources that will have views of the project. The climatic data shown in Diagram 1 below indicate that atmospheric conditions in

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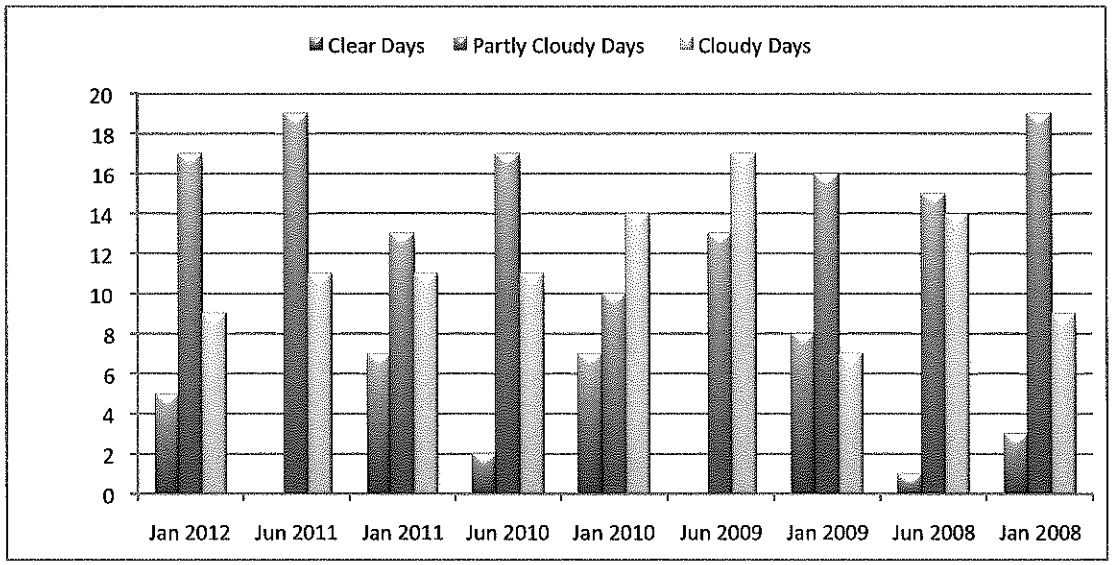
[5] Jones, Jody J. and Holly Dominie. *Scenic Lakes Character Evaluation in Maine's Unorganized Towns.* The Nature Conservancy and Maine State Planning Office for Maine Department of Conservation and Maine State Planning Office. December 1986

[6] Pasqualetti, Martin J, Paul Gipe and Robert W. Righter. *Wind Power in View: Energy Landscapes in a Crowded World.* Academic Press. New York. 2002. pp 180-185

the area result in frequent partly cloudy to cloudy days thereby limiting visibility of the proposed project.

Diagram 1. Climatic Data



Source: http://www.nws.noaa.gov/view/prodsByState.php?state=ME&prodtype=climate. Location: Bangor, ME

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

That then leads to the analysis as to whether this change will be acceptable to users, and affect their use and enjoyment of the resource. Camp owners with views of the project will definitely be affected. There is also evidence that the pond is used by individuals and parties fishing and boating, as well, of course, by those who live around the lake in those camps, as well as residents of the area who will see the project from different vantage points. But the key question is whether the project's visibility will greatly diminish the use and enjoyment of the primary user group on the water. The applicant makes the case for low usage, and this certainly lessens impact with the simple equation that the fewer the users the fewer the people who will be affected. The survey results and takeaways inform this portion of the review.

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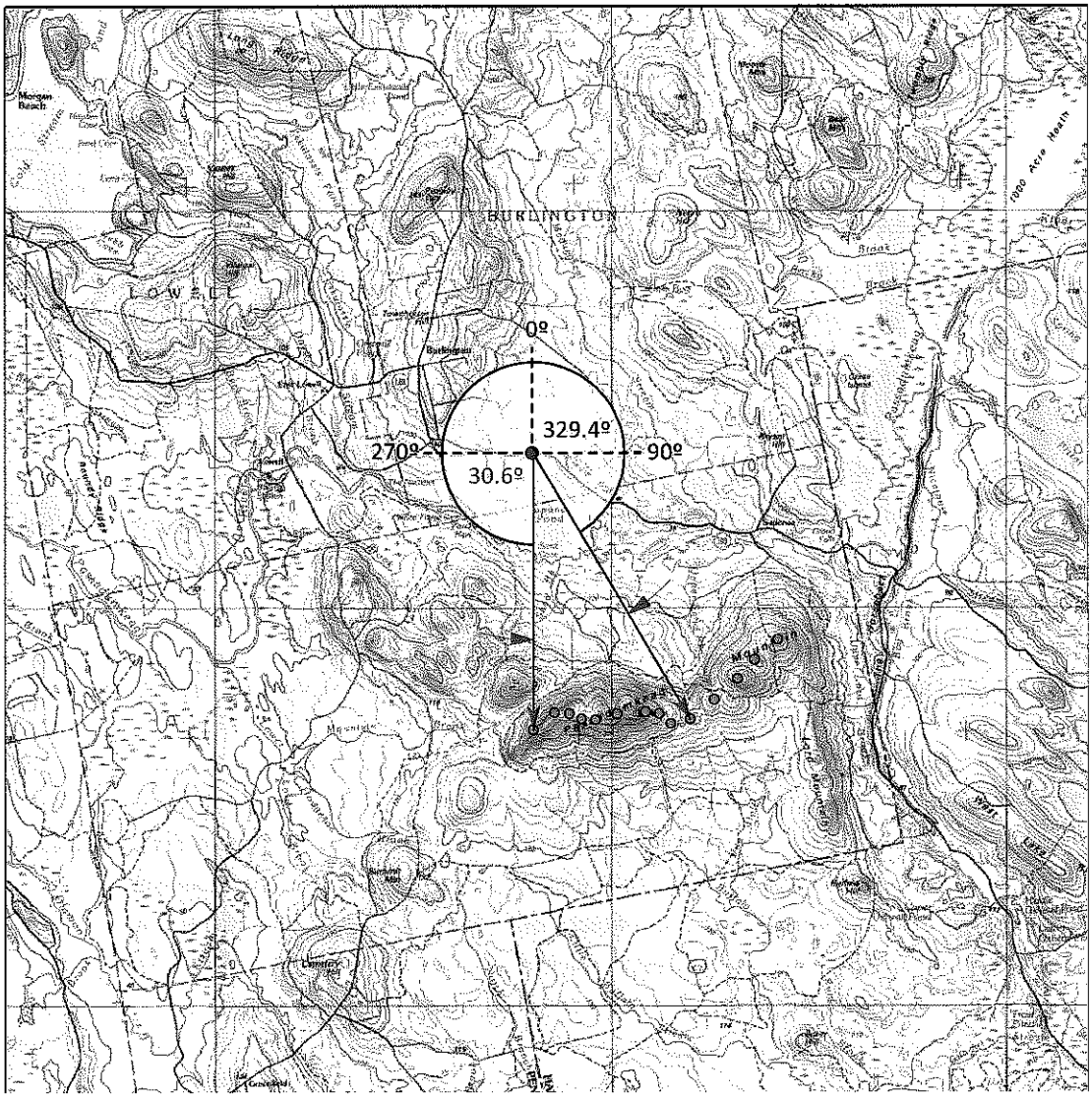
Diagram 2. Extent of view within 360 degree panorama at Saponac Pond. Widest potential angle of view from waterbody would be 62-75 degrees.



Intercept Survey Information and Analysis:

The survey information clearly indicates a change in the perception or rating of scenic quality post project construction. For example, 72% indicated that they believed that Saponac Pond at present has the highest scenic value comparable to other high value areas in Maine. That number became 14% with the wind turbines in place.

Yet these results, interestingly enough, do not translate into direct impacts on use and enjoyment. While respondents were clear in regard to the consideration that wind turbines in view from the lake would not positively influence use and enjoyment, and would have a

negative impact, 59% indicated the project, if built, would not change their sense of enjoyment. (41% indicated it would have a negative impact) Additionally, a wide variety of users indicated that, for several different recreational activities such as swimming, boating, canoeing/kayaking and ice fishing, they would still be likely to return to the pond for those activities. Almost 3/4s of those surveyed (71 to 74%) indicated that they would still be likely to return to the pond to recreate after the project was developed.

Conclusion:

The definition of adverse is "contrary to, unfavorable or opposed to one's interests". This project will most definitely result in an adverse impact to the scenic quality of the pond. While it will not directly affect the physical form and character of the pond itself, the project will be prominent and alter the visual quality and sense of place for the users and camp owners. There are mitigating factors, however, and these include 1) the fact the area has already been developed and the mountain and environs are not pristine, 2) the relatively high number of respondents who indicated the project will not have a substantial impact on enjoyment and their willingness to return; and 3) the results of the evaluation matrix, which takes into account a range of factors, which yielded a rating of 2.1, indicating a moderate impact to scenic quality. While the project does not rise to the level of an unreasonable, adverse effect on scenic quality, its impacts should not be downplayed. A number of mitigation measures, while not required by the statute, should be considered given the nature of the resource, the prominence of the mountain, the presence of camp owners who will be affected. It will be up to the applicant to indicate a willingness to reduce the impacts wherever possible, in order to make this project as acceptable as possible. See the section on night lighting for additional review and considerations in this regard.

4. Nicatous Lake - T3 ND and T40 MD/Hancock County (Outstanding) Elevation: 351 feet above sea level, 5,165 acres.

Nicatous is the largest lake within the proposed project's 8-mile radius and it also has a rating of "outstanding" based on the 6 scenic qualities which are considered in the review issued by the State Planning Office entitled *Scenic Lakes Character Evaluation in Maine's Unorganized Towns.*[7] The Lake has some development on it, particularly in the far northern end and in the most southern, open section; there are 6 public campsites, and a boat launch at the northern end. According to local residents there are over 90 camps on the lake and at the northern end there is a lodge and at least one or 2 other commercial operations, as well as cottage sand camps. Low ridges, rising about 300 feet or more above the lake are visible from various locations on the shore and on the lake, and the shoreline is, for the most part, continuously wooded with a mix

[7] Jones, Jody J. and Holly Dominie. *Scenic Lakes Character Evaluation in Maine's Unorganized Towns.* The Nature Conservancy and Maine State Planning Office for Maine Department of Conservation and Maine State Planning Office. December 1986

of mature hardwoods and softwoods. Beyond the shoreline area, there is ample evidence of timber harvesting, and as with all of the lakes in the project area, the surrounding landscape has long been the focus of timber management activities and the associated elements- logging roads, log landings, clear cut and regeneration areas. The road on the way to Nicatous Lake is marked by frequent clearings and road cuts leading to logged or logging areas. Almost all of the land surrounding the northern portion of the lake has been conserved for multiple use purposes (shoreline buffers, logging, recreation, wildlife management) and adds to the intrinsic scenic, recreational and ecological values represented by this lake.

Only about 1/2 of the 9 mile long lake (4-1/2 miles) is within the project's 8 mile viewshed. As quoted in the applicant's VIA, and taken from the assessment: "...5100 acre Nicatous Lake, widely considered to be one of Maine's most beautiful waterbodies with its pristine sand beaches, intricate coves and 98 islands". (TJD&A Report, pp. 25-30) These qualities are reaffirmed in *Maine's Finest Lakes, The Results of the Maine Lakes Study* which highlights the shoreline characteristics as having a diversity of elements such as outcrops and boulders, sandy beaches, and shoreline configuration that combine to create scenic interest and value. Additionally, this lake was included in the Penobscot Indian Canoe Trail and is a popular paddling area, a fact confirmed by its inclusion in the publication *Quiet Water Maine*, which describes Nicatous Lake in this manner:

The northern and middle sections of Nicatous Lake, the most interesting to paddle, contain many islands, several campsites, and little development away from the access. In contrast, the southern end below the Narrows widens out and consequently has more open water—and more development. It would take a few days to explore the entire shoreline and all of the islands of this 9-mile-long lake. One gets the feeling, in this beautiful setting with forested hillsides all around, that the lake does not see much motorboat traffic, especially on the north end.[8]

Thus it can be concluded from the foregoing narrative that paddling and camping is a popular form of recreation on the lake, along with summer camp type activities, and typical Maine sporting pursuits: hunting, fishing, and motorized recreation such as ATV use and snowmobiling.

The photo-simulations provided by the Applicant in the VIA, along with line of sight/3D analysis conducted by LandWorks indicates that visibility of the project will be limited on the lake. Photo-simulations 1 and 1A developed by the applicant for Duck Lake Cove are unreliable based on LandWorks' analysis and thus cannot provide a definitive conclusion as to visibility. However, based on LandWorks' line of sight/3D analysis coupled with information regarding tree heights and distances - the nearest turbine to the Duck Lake Cove shoreline is over 7 miles, it can be

[8] Wilson, Alex and John Hayes. 2005. *Quiet Water Maine: Canoe and Kayak Guide, 2nd Edition*. Boston: Appalachian Mountain Club Books, pp. 135-137.

concluded that visibility will not be extensive nor dominant on the horizon line as one looks in the direction of the project. Any visibility will be of only a few turbines in a narrow angle of view - about 10.2 degrees, when compared to the overall 360-degree panorama.

The applicant's Porter Cove Photo-simulations 2, and 2A provide a view within which it is almost impossible to discern the turbines; the simulation doesn't even provide guidance as to where to look for the turbines, even though the narrative states that up to 7 turbines may be visible. The turbines range in proximity from this location at between 6.9 miles for the closest visible, and 9.5 miles for the farthest distance of a visible turbine from this simulation/view location. The developed area at the northern end of the lake in Porter Cove is unlikely to have any visibility due to intervening vegetation and topography. Additionally, the viewshed analyses undertaken by both the applicant's visual consultant and LandWorks yields limited visibility of the project on the lake, and within the 8 mile project radius. The distance to the nearest visible turbine is such that these turbines will be neither dominant or serve as a focal point to draw the eye. Passadumkeag Mountain can be discerned from viewing points within the broad lake area, and beyond the 8-mile project radius, but one needs to be looking for it, as it appears as a distant landform just above the treeline. Atmospheric conditions and landscape qualities associated with the lake and shoreline will diminish the "presence" of the project both within and beyond the eight mile radius, lessening the potential effect on the user with regard to visual impact.

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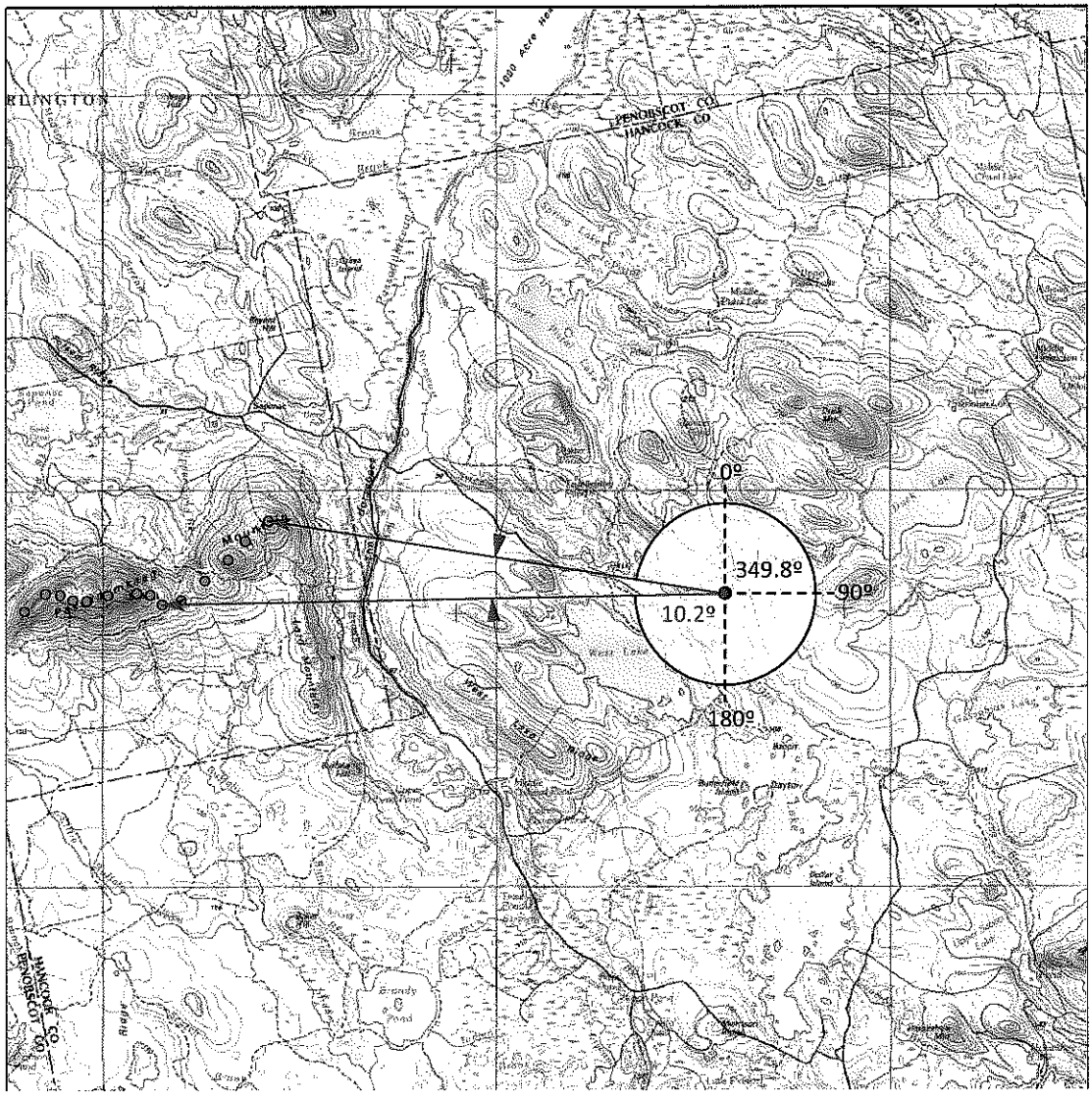
Diagram 3. Extent of view within 360 degree panorama at Nicatous Lake – Duck Lake Cove. Widest potential angle of view from waterbody would be 12 degrees.



Intercept Survey Information and Analysis:

As with all of the lakes in the project area, there is scant information with regard to use and activity levels on Nicatous. Given the number of camps and boat accessed campsites, the presence of Nicatous Lodge and rental cabins at the north end, and the scenic qualities and character of the lake it is likely that there is a fair amount of recreational activity ongoing at this lake and its environs. The Market Decisions survey work observed 33 individuals at Nicatous Lake, with a resulting 25 interviews. Additionally, information provided by the owner of Nicatous Lodge indicated that during the summer season there could be a smany as 2000 users and in the winter 300-400, engaged in winter recreational activities. Scenery and scenic views

were among the expectations of the visitors. The fact that 48% of respondents indicated that if the project was built it would not change their level of enjoyment, coupled with 20% who stated it have a positive effect yields the conclusion that relatively large number - 68% of those surveyed - would see no change or a positive change in their enjoyment. This is a relatively high number supporting the potential for the project, if built, to not have a deleterious effect on enjoyment for the majority of visitors. Additionally, an even higher percentage of those surveyed across different recreational activity types (boating,fishing, ice fishing, swimming, kayaking and canoeing), 88%, stated that they would still be likely to return to the lake for that purpose after the project was in place.

Conclusion:

The Passadumkeag Wind Park project, if built, has the potential to result in an adverse impact to the scenic qualities and values present on Nicatous Lake. The visibility of the project, however limited and distant, will still add an unnatural element to the view and horizon line when and if seen from shoreline or on the lake vantage points. Given the number of camps and campsites (although most, if not all of the camp sites appear to be beyond the 8 mile radius), as well as the extent of recreational activity on the lake and environs, any change in the view and the sense that there is a major, utility scale wind project in the distance will affect the user's sense of the landscape and scenery in a potentially negative manner - sufficient to conclude that the project will have some harmful effects. But these effects, and the nature of the project's visibility as described in the foregoing analysis, do not and will not rise to the level of being unreasonable. The project extent on the horizon is limited, overall visibility in many portions of the lake will be limited or non existent, and the distance of the project from such vantage points limits the sense of project presence and dominance. The scale of the projects' potential visual presence is not such large as to be disconcerting and unsettling. Finally, while the evaluation matrix yields the distinct conclusion that the project's impact to scenic qualities and values will be moderate, at a composite rating of 1.9, it will not rise to the level of being unreasonable, for the reasons cited.

5. Lower Pistol Lake - Passamaquoddy Trust Land/T3 ND/Hancock County (Significant) Elevation is 318 feet above sea level, size is 979 acres.

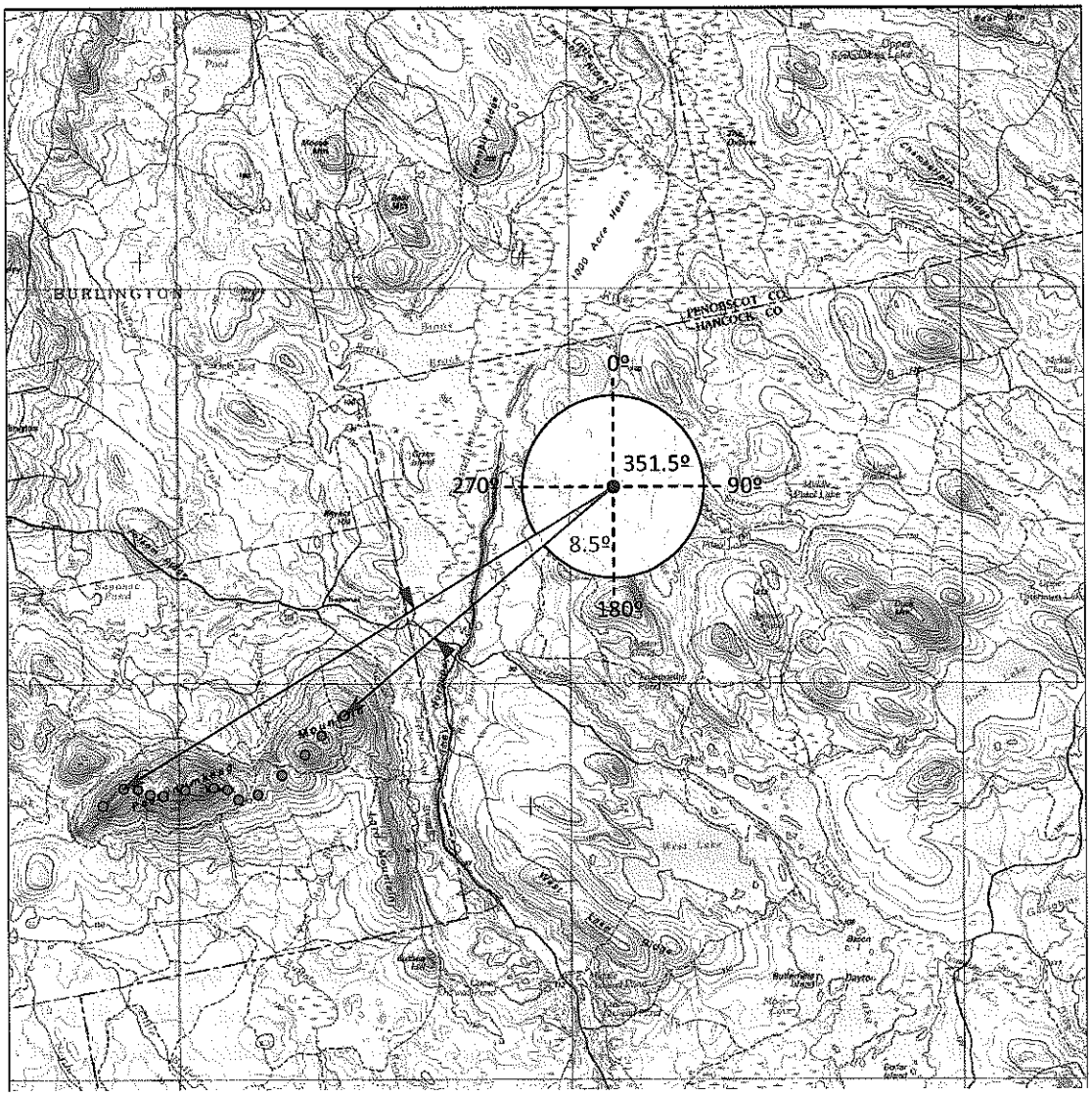
Lower Pistol Lake is considered to be a significant lake for it scenic qualities and as such warrants review as to the potential for adverse or unreasonably adverse impacts if the Passadumkeag Wind Park is constructed. The context for this particular lake is one of an undeveloped, remote pond with the caveat that there is evidence of surrounding timber harvesting and forest resource management. With the surrounding low relief of this pond, and the wooded nature of the shoreline, this area is not particularly unique nor does it rise to the level of being distinctive with regard to other similar lakes in the region. Perhaps the most

important and valuable qualities associated with Lower Pistol Lake is its sense of being remote and the quiet a visitor notices upon reaching the lake.

It is likely that there will be limited visibility of the proposed project from the primary access point. There is ready evidence of forestry activity at the access point to the lake as there is a large sawdust pile/area adjacent to the boat launch and camping area. It is also important to note that this is a difficult lake to get to - the road down to the launch area is not readily accessed by any vehicle other than a 4 wheel drive, high clearance type SUV, truck or ATV. Snow machines would likely be able to reach the lake in winter, and there is evidence of snowmobile trails and activity around the northern end of the lake. Thus use is likely to be relatively low.

Given the distance of over 5 miles to the nearest turbine from the viewing locations at the northern end of the lake, and the consideration that the view of the array. at 8.5 degrees, is limited within the 360 degree panorama. The visual impacts are not as extensive or disconcerting as they might be if closer and more dominant on the horizon. Based on the viewshed analyses about 1/2 of the lake, including the entire southwestern shore will not have any project visibility which is important insofar it can satisfy user interests or expectations for experiencing the lake without the view of the project, and thus sustaining, in part, a sense of remoteness and undeveloped qualities. This consequently can affect user enjoyment by allowing a potential user to still obtain an experience, for the most that meets his or her expectations for remoteness and scenic quality. One important quality to the lake will not change, and that is the sense of quiet that provides solace and comfort to the user seeking that type of experience.

Diagram 4. Extent of view within 360 degree panorama at Lower Pistol Lake. Widest potential angle of view from waterbody would be 11 degrees.



Intercept Survey Information and Analysis:

Given the comments in the Intercept Survey with regard to Lower Pistol Lake (i.e. "Don't use Lower Pistol, wouldn't bother to if that's what it looked like, wouldn't visit the area")[9] and the fact that only one respondent had ever visited the lake, it is hard to infer definitive or reliable information from the responses to the simulation. When posed with the question in concert with a simulated view of the proposed project, "How would you rate the scenic value of this

[9] Robertson, Dr. Brian and Jennifer MacBride. Market Decisions. *Passadumkeag Mountain Wind Power Project Intercepts*. Prepared for: Terrance J. DeWan & Associates. Portland, ME. October 2011. p. 51

view on a scale where 1 is the lowest scenic value and 7 is the highest scenic value?", 17% stated it still had the highest scenic value and 21% stated it would have the lowest scenic value. 52% of respondents rated the scenic value with the turbines in place at the middle of the scale (a rating of 4) or higher. Nonetheless, given that 62% of respondents indicate there would be no change in enjoyment for them at the lake, with similar numbers for specific recreational activities surveyed, and with the inconclusive array of responses to the scenic quality and change in scenic value questions, one can conclude that the view of the project from this lake will certainly alter the perception of the scenic character of this lake, but not so substantively to conclude that it will result in an unreasonable adverse affect on the use, enjoyment and scenic values. (Market Decisions Report, pp. 50-52). Add to this consideration that snowmobilers and ATV users seem to be more amenable to wind energy projects, and do not appear to be overly impacted or influenced by their presence in their recreational landscape.[10]

Conclusion:
This project will result in an adverse impact to the scenic quality of this lake. The presence of turbines in the distance and visible from portions of the lake is a substantial enough change to be contrary to the experience of an unfettered, undeveloped lake. However, given the extent of potential project visibility on the lake, the percentage of the panorama that will be occupied by the project and the lack of impact on the quiet and solitude that this lake provides, it can be concluded that the project will not result in unreasonable averse impact to scenic quality. This is supported by the results of the Evaluation matrix, which, when the various impacts were rated, resulted in a 1.4 rating which is between low and moderate impact.

6. Spring Lake - T3 ND/Hancock County (significant) Elevation is 333 feet above seal level, size is 435 acres.

Spring Lake is another seemingly remote, undeveloped pond surrounded by both wetland systems and timber harvest areas. The shoreline is wooded with spruce, pine, fir and northern hardwoods, and much like Lower Pistol Lake, the topography around the lake is comprised of lowlands and low ridges with elevation differences of about 200-250 feet above the lake surface. This translates into a lake that while scenic, lacks dramatic relief or interest. A key aesthetic quality at this lake, similar to Lower Pistol, is that of the lack of noise (except, of course, when and if nearby logging activities may be ongoing). This quality of quiet provides and valued sense of being apart from development and is an important aspect of some modes of recreation such as camping, fishing or paddling. This is a difficult waterbody to access, over rough logging roads and there is only one identified access point for paddle craft, and no designated campsites. Due to its remote qualities, access impediments, and lack of campsites

[10] LandWorks. Visual Impact Assessment for the Proposed Bowers Wind Project. Prepared for Champlain Wind, LLC. Middlebury, VT. January 19, 2011. p.44

Spring Lake is likely to be a low use resource, although there are apparently a few camps in the vicinity of the lake.

When topography and vegetation is taken into account, the viewshed analyses yield the conclusion that only a small portion of the lake, 15% of the surface and shoreline area or less, will have visibility of the proposed project turbines from the hub height and above. Based on the visual simulations provided by the applicant, and a line of sight analyses conducted as part of this review, and with a distance of about 7 miles from the westernmost shoreline, it appears as though visibility of the project will be highly limited to blade tips down to the hub. Between 6 and 8 miles the impact of visible turbines appreciably lessens under many circumstances. The visibility of these project elements will also be diminished by their proximity, in the view, to the treeline surrounding the pond. The treeline, with its vertical and horizontal elements and forms (evergreen canopies, branches, etc.) provide high visual absorption, making it more difficult to discern the turbines, which have similar linear forms and massing - the landscape better "absorbs" the project elements so as to lessen their visibility, prominence and impact.

Intercept Survey Information and Analysis:
There were no specific questions or survey results applicable to Spring Lake, other than the question with regard to visitor-ship, which yielded limited evidence of visitation among the number of individuals surveyed (2 people).

Conclusion:
The visual impacts to Spring Lake resulting from this Project, will be minimal, if discerned at all. Users will need to be, for the most part, looking in the right direction and will need to know what they are looking for. Given the distance to the project, the minimal visibility, the lack of users and difficult access, as well as the fact that this lake is not an outstanding scenic landscape, it can be concluded that the project's impact will barely be adverse, and the overall impact to scenic quality will be low. The findings set forth in the evaluation matrix, which yielded a rating of 1.1 confirm this conclusion.

A Note About West Lake
A comprehensive visual analysis has not been conducted for West Lake, as it is not listed as significant or outstanding in any of the applicable studies or listings. Nonetheless, it is clear that there will be visual impacts to West Lake, which, for its size, has a large number of camps. The initial hearing conducted by the Department of Environmental Protection for this project in Greenbush on April 25, 2012, included statements by a number of West Lake camp and property owners registering their concern. These concerns are noted but there are additional factors, which will limit overall impacts. One has the sense that public use of this lake is limited due to the attraction of nearby lakes such as Saponac and Nicatous, although there is one public boat launch. Camp orientation for each of the extensive southwest and northeast facing shorelines,

for the most part, is not in the direction of the project, and the intervening vegetation and topography, coupled with the distance from the project (5 miles to the nearest turbine at the closest point of visibility from the lake), will limit overall visual impact. Camp owners on the north shore will not be able to see the project. While the project may have an adverse effect on scenic qualities and lake user's experience, it is not expected that, given some of the reasons cited, the effect on users of the lake would be unreasonable.

3.3 Evaluation Approach

This section sets forth a two part evaluation matrix designed to identify and rank 1) the value of the resource, and 2) the potential impact to the resource. In each category the review has been assigned a ranking and these include:

0 = No potential impact to the resource
1 = Low or minimal potential impact to the resource
2 = Medium potential impact to the resource
3 = High potential impact to the resource

Statutory Requirements

Context/Character. This analysis category assesses the overall landscape character of the resource and its environs. A high ranking would imply that the landscape character is of highest quality within the regional context, with richer resource characteristics such as a lake that is totally undeveloped, surrounded by diverse vegetation types, old growth forests and diverse geological and geomorphological elements (see sketches that follow). A lower ranking implies that while the resource is scenic in a general sense, and contains pleasing landscape characteristics, it does not rise to a level of being exceptional, sensitive, highly valuable or varied.

Significance/Uniqueness. This category assesses the overall significance of the resource based on its unique, distinctive or exceptional character. This evaluation criterion asks the question as to whether or not this landscape or resource is unlike any others, contains distinct landscape elements apart from other landscapes, and is unique. Other qualities considered include "vividness", which relates to the presence of variety and contrast in the landscape and "unity" or "intactness" which implies that the landscape is coherent, lacks intrusive or uncharacteristic elements and thus promotes a sense of order and balance and provides the viewer or user with a memorable experience based on the visual qualities of the landscape alone. The level of development can also affect the rating of a resource's value. This evaluation criterion is derived from the USFS articulation of "scenic attractiveness" as part of its overall Scenery Management System set forth in the publication *Landscape Aesthetics.*[11]

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

Level of Use. This category considers the number of users. A well-used resource would typically indicate a higher value ascribed to that resource (people are more attracted to it than other similar resources) because the potential impacts from a project would affect a higher number of individuals. Level of use information can be derived from 1) field observations, 2) interviews and anecdotal information, 3) user surveys, and 4) other available research data (which may be limited).

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. By far the most prevalent use of these lakes is for fishing and boating, and both of these user groups (which are often the same group - i.e. anglers using boats for fishing) are less focused and dependent on scenic quality for a satisfactory recreational experience. Camping, snowmobiling and ice fishing are also typical recreational activities, and much fewer canoeists and kayakers are users (especially Lower Pistol and Spring Lakes), in part due to lack of access, and the fact that the conditions on larger lakes can be less amenable to flatwater boating. Each user group has different expectations although some of those expectations may be shared among user groups. While scenery and undeveloped lakeshores are valued, these qualities do not appear to be as important as water quality, fresh air, lack of shoreline development and the overall fishing experience. A resource that is well known and promoted for its scenic attributes would contribute to a high value for viewer expectations of scenic quality. However, this value would be diminished based on the level of development experienced by the viewer using or visiting the resource.

Visual Impact. 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; such as 1) most of or a portion of the tower and all of the nacelle and blades, 2) just the nacelle and blades, or 3) just portions of the blades. 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.

Effect on Public Use. It is important to ascertain if visibility of the Project has an impact on the user's ability to enjoy and fully experience the resource, and whether or not they are likely to return to the resource based on that impact. A number of factors can affect this quality, 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 visibility of the Project is considered undesirable by the user. Thus, this is a more difficult category for objective assessment.

A large lake with areas that have no Project visibility could afford the user the opportunity to enjoy their activities in that portion of the lake unaffected by any visibility of the Project; this would translate into a lower impact rating. If the Project is highly visible from most of a lake and relatively close, and its visual qualities or presence is not readily accommodated or absorbed by other landscape qualities or recreational activities, a higher impact level would result and be ranked accordingly. The level of development in and around the resource also impacts enjoyment. The more development that is present within the viewshed (i.e. high density shoreline development), the potential exists for further reduction of the visual impact of a wind project. Furthermore, some activities are less sensitive or depend less on the scenic character of the resource. For example, fishing is influenced more by the quantity and quality of fish than it is on the scenery of an area. Thus, a lake frequented more often for its fishing rather than for its scenic attributes, further reduces the impact of the Project on the users enjoyment.

Additional Evaluation Criteria

Proximity/Distance Zone. The closer the project is to the resource, the greater the potential exists for visual impacts. A resource with visibility within 3 miles of a project will experience a high level of impact and have a corresponding rating of 3. If the project is within 3 to 6 miles of the resource and is visible, it would receive a medium impact ranking; over 6 miles results in a low impact ranking. If the resource is not visible at all, the ranking is 0 or no impact.

Duration/Extent of View. This evaluation is based on whether or not 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. This is another visual assessment category that is used in the Scenery Management System of the Forest Service. In *Landscape Aesthetics* it is stated that "visual absorption capability relates to physical characteristics of the landscape....it is a classification system used to indicate the relative ability of any landscape to accept human alteration without loss of landscape character or scenic condition."[12] Assessing visual absorption relies on an understanding of the Project context and landscape conditions coupled with a review of visibility characteristics and the visual simulations prepared for each resource. (Note that many of these simulations were taken from vantage points that include the greatest extent of visibility from a particular resource.) If an area has a high level of visual absorption, therefore lessening the impacts associated with Project visibility, the ranking in the evaluation criterion will be low. If the resource and the vantage from which the visual impacts to the resource are evaluated from

[12] *Landscape Aesthetics*, p.C-1.

yield a conclusion that the landscape is less able to reduce the visual dominance, presence or visibility, than that condition would result in a ranking a high impact to the resource.

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

Table 2. Summary of Overall Scenic Impact

0 = No potential impact to the resource 1 = Low or minimal potential impact to the resource 2 = Medium potential impact to the resource 3 = High potential impact to the resource	STATUTORY REQUIREMENTS						ADDITIONAL EVALUATION CRITERIA			
RESOURCE	Context/Character	Significance/Uniqueness	Level of Use	Viewer Expectations	Visual Impact	Effect on Public Use	Proximity/Distance Zone	Duration/Extent of View	Visual Absorption	**OVERALL SCENIC IMPACT**
Passadumkeag Marsh and Boglands	0	0	0	0	0	0	0	0	0	**0**
Old Tavern	0	0	0	0	0	0	0	0	0	**0**
Lower Pistol Lake	2	1	1	2	2	1	1	2	1	**1.4**
Nicatous Lake	3	3	3	3	1	1	1	1	1	**1.9**
Saponac Pond	2	2	1	1	3	1	2.5	3	3	**2.1**
Spring Lake	1	1	1	2	1	1	1	1	1	**1.1**

4.0 Project Lighting

One critical element of visual impact resulting from utility scale wind projects is night lighting. All wind power projects must meet FAA requirements for night lighting of obstructions such as

towers, and be approved by the agency. No daytime lighting is required due to the proposed white color of the turbine towers. The lights that are commonly used on wind turbine towers are the pulsating red beacons referred to as L-864 lamps mounted on the nacelles. The VIA does not provide a definitive number of lights that will be required for nighttime visibility, but it is common, as per FAA guidelines to light the two ends of an array, and then towers every 1/2 mile as well as the tallest tower. It is also likely that the meteorological tower will require nighttime lighting.[13] This translates into the potential for as many as 9-lit towers, but will need to be confirmed by the applicant. Night lighting of this project will potentially affect users of all the lakes and ponds analyzed as part of the VIA. While nighttime impacts are greatly diminished by the fact that recreation is limited during the night time hours, those users who are camping, fishing at dusk, out for moonlit paddle, or camp owners with visual access to the project will be affected. Camps, campsites and locations on both Saponac and Nicatous will be particularly sensitive to night lighting impacts. The concern regarding nighttime lighting is mounting, particularly now that there are projects in place with such lighting and the consequent impacts of such lighting can be evaluated.

Despite the fact that the nighttime lights do not produce glare and do not directly impact the viewing of the night sky, there is an annoyance factor associated with the continuous on-off operation of the beacons, as required for aircraft safety. The night sky is a cherished resource and the impact cannot be overlooked. The applicant's VIA has not satisfactorily addressed this issue. One key mitigation measure that has great potential to basically all but eliminate night lighting impacts is the installation of one of the commercially available radar detection systems, referred to as Audio Visual Warning Systems (AVWS). These systems, such as the OCAS and DeTect products, are now being approved by the FAA (first approval in 2011) but each project must be evaluated for applicability feasibility. These are systems which turn on night lighting only when aircraft are in the vicinity of the project, therefore eliminating night lighting impacts for the most part. This project should be required to address the feasibility of installing such a system, and if feasible, be required to do so.

5.0 Associated Facilities

As stated earlier in this review on page 13, the Applicant has not been required to conduct a Visual Impact Assessment of Associated Facilities. A revision as to how this required component of wind energy projects can be better addressed is forwarded in that section. This review, for information purposes only, provides a brief overview of Associated Facilities for this project with

[13] 2 FAA publications provide information and guidance with regard to night lighting: 1) FAA Advisory Circular AC 70/7460-1K, "Obstruction Lighting and Marking", effective 2/1/07, and 2) Development of Obstruction Lighting Standards for Wind Turbine Farms, James W. Patterson, November 2005, FAA, NTIS, Springfield, VA

the understanding that there is a lack of complete and necessary information to conduct a comprehensive review because the Applicant was not required to provide this information.

5.1 Access Roads

One key element of the wind power project is the access roads and crane pads associated with project development and maintenance. The potential for impacts from this aspect of the project is primarily to the viewshed of Saponac Pond, and these impacts have been addressed in the section of this report that reviews impacts to Saponac Pond. Elsewhere, the distance and orientation will limit visibility of access roads, thus de-emphasizing their presence and potential for adverse impacts. Such roads are common on mountains with radio or cell towers such as is the case on Passadumkeag, and the regeneration of surrounding vegetation and revegetation of areas where trees and cover have been removed will reduce visual impacts over time. Additionally, the use of existing mountainside roads and access areas wherever possible, and limiting road cuts and fills, along with vegetative removal, will reduce the potential for visual impacts from this component of the project.

5.2 Meteorological Tower

There will be one permanent meteorological tower placed within the array on the summit of Passadumkeag Mountain. At 262 feet tall and 18" in width, the guyed lattice tower will present a very narrow profile that limits visual presence and visibility past 1 to 3 miles, depending on the vantage point for viewing and atmospheric and light conditions. This element of the project adds little additional impact aside from the fact that it will require night lighting.

5.3 Connector Line, Substation and Operations and Maintenance Facility

The Passadumkeag Wind Park project will be connected to the electric grid by means of a "generator lead" - a 34.5kV transmission line that will run for 17 miles from the western edge of the project to a interconnect site and substation in Greenbush, on Greenfield Road. According to the applicant's VIA most of the line will be developed within an existing electrical distribution line right of way. The substation is proposed to be located 500 feet off of Greenfield Road in an area that is termed a "working forest"; the Operations and Maintenance Facility will be of a "neutral color" and located adjacent to the proposed substation. This will consist of a one-story industrial type structure, parking for 10 cars and an outdoor storage area. According to the applicant's VIA there are no documented resources of state or national significance within the viewshed of the transmission line or the substation/O&M facility, and this analysis, based on the information provided concurs with that conclusion.

However, the analysis of these proposed Associated Facilities is incomplete. More information is required to complete the review including the specific location and width of the ROW and the clearing, the type or height of the transmission line structures, and the size, scale and height of the substation elements. Plans or elevations of these elements also would be necessary for a VIA of these facilities.

Overall Conclusion

There are several areas of the Visual Impact Analysis prepared by Terry J. DeWan & Associates that have not been adequately addressed, including the proposed night lighting of the project, and the details of the associated facilities. At least one set of simulations, those for Duck Lake Cove in Nicatous Lake, appear to be inaccurate and cannot be relied on. This analysis takes those considerations into account when it concludes that **this project will not have an unreasonable adverse impact on the identified scenic resources of the project area** (those resources within the 8-mile project radius) and the public's use and enjoyment of those resources. The overall conclusion is based on a number of factors; no one consideration provides the basis for this determination.

1.0 Public Meeting

The public meeting held by the Maine Department of Environmental Protection in Greenbush on April 25, 2012 was attended by upwards of 30 residents, as well by Department officials, consultants and representatives of the proposed wind power project. The concerns raised included many of the types of issues wind projects are commonly associated with, including noise impacts, loss of property value, and impacts to scenic views and recreational activities. This review cannot address many of these concerns, and other considerations, such as impact to property values and tourism have yet to be substantively determined (and are proving difficult to quantify although existing evidence such as the Hoen study and work done in Searsburg, VT. and Europe has shown that the impacts are not necessary deleterious).[14]

2.0 Saponac Pond

This project is being reviewed under the provisions of the Maine Expedited (Wind) Permitting Act, although portions of the project's 8-mile radius lie outside of the expedited permit area. There is no question that this project will result in adverse impacts to the scenic qualities of the region and these impacts will be most noticeable with regard to Saponac Pond, which is within Grand Falls Township, and area designated for expedited permitting. The Act requires that the VIA address impacts to a set of defined resources, as outlined in the statute. As stated and siscussed in the applicant';s VIA and in the foregoing analysis, the pond is considered to be "significant" for its scenic values.The project's 14 turbines - 279 feet tall to the hub, and 459 feet

[14] "Residents sound off on potential Passadumkeag wind farm", Dawn Gagnon, Bangor Daily News, Bangor, Me., April 26, 2012 (bangordailynews.com)

to the tip of the rotor, 9 of which will be potentiall lit at night, will be readily visible and add a new human- made element in the landscape.

The contradiction with Saponac Pond is that while it exhibits many of the qualities of sensitive scenic area, is beautiful to look at and seems somewhat natural in its own immediate context, and does have permanent year round residents and camp owners who will be directly impacted by the project, the charge with the VIA is to assess users and visitors and the effect the project will have on their enjoyment and willingness to return to the resource for future recreational activities, not residents or seasonal camp owners. Furthering the contradiction is the fact that this is not a natural landscape - aerial photography reveals extensive road networks, timber harvesting and mountaintop development, including a readily visible radio tower. Thus Passadumkeag Mountain is not pristine, is developed, and has been considered for development in the past (the proposal to develop a ski area abandoned in the early 1990s.) Despite the rating of a moderate impact if the project is developed, that impact does not rise to the level of being unreasonable when all the factors are taken into account, including the relatively low level of visitor-ship.

3.0 Statutory Review

Finally, when analyzed within the parameters of the statutory review, and all of the specific qualities to be considered as part of that review, which resulted in an overall moderate (versus high) impact - 1) the resource's significance (and uniqueness); 2) the character of the surrounding area (which has been historically and predominantly used for timber harvesting); 3) Viewer expectations (see survey results); 4) the extent and duration of visibility (limited due to distance and extent of viewshed); 5) effect on continued use and enjoyment (see survey coupled with the fact that in most cases, the project will not be so dominant and so present as to overwhelm the user or undermine their experience; and 6) scope and scale of project views (the extent of topography and vegetation greatly limit views on many of the lakes and throughout the region) - it can be concluded **that the Project will not result in an unreasonable adverse impact** on the scenic qualities of the Project area and the user's appreciation and experience within the context of the scenery.

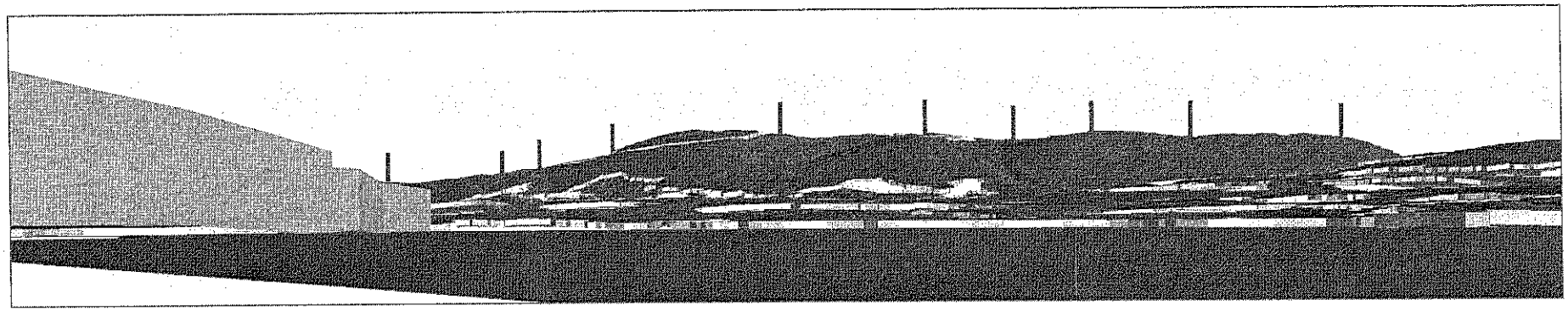


Figure 8A: View with 40' tree cover.

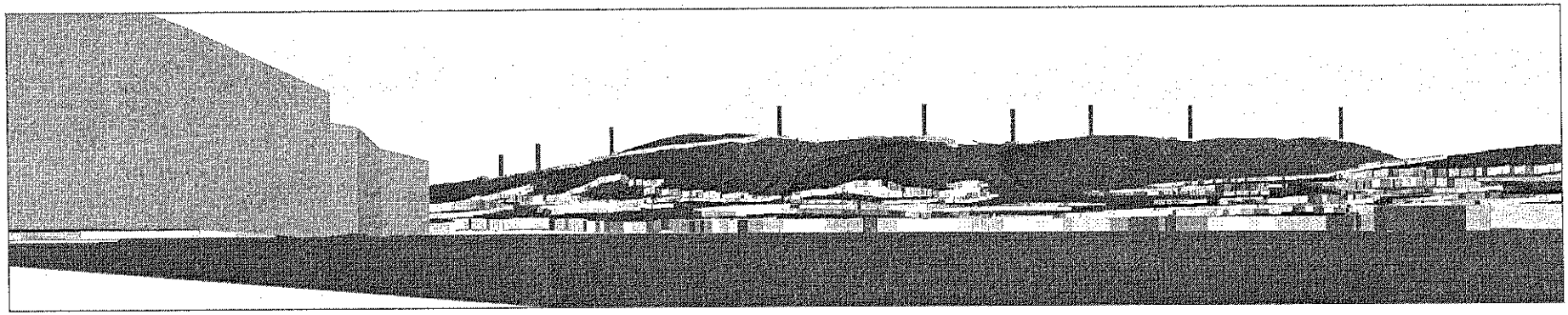


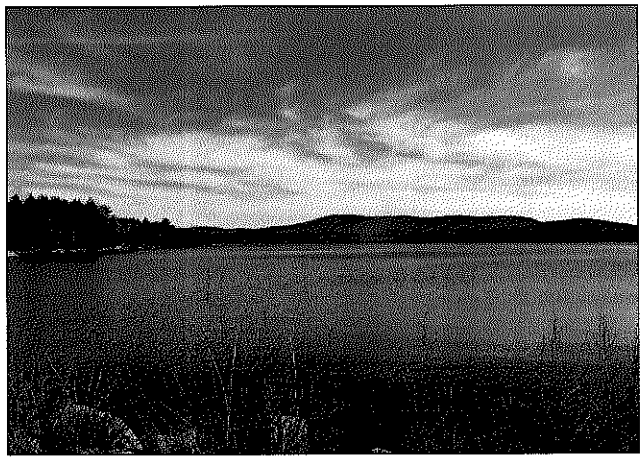
Figure 8B: View with 70' tree cover.

Figure 8 | Saponac Pond
3D VISUALIZATION MODEL

LandWorks

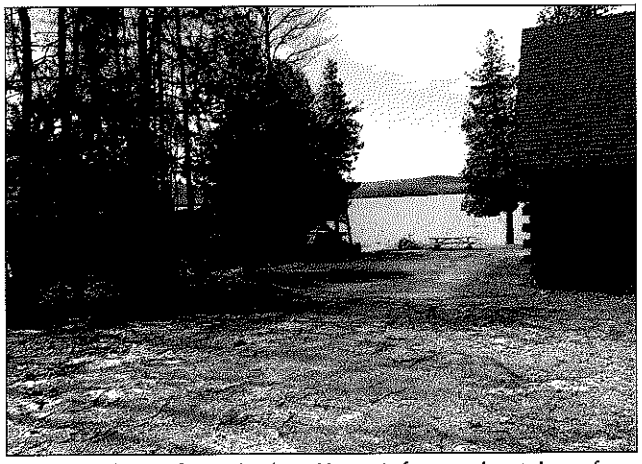
Prepared for: Maine DEP
Date: 6.2012

NOTE: Turbines are represented in red and are to the tip of the blade (140m). Forest cover is represented as dark green and forest edge is represented as lighter green. Where visible, the access road/clearing limits is represented in purple. This 3D visualization was prepared using the visual simulation location shapefile provided by TJD&A, as well as the GIS data used in the viewshed analysis (turbine locations, clearing limits, digital elevation model and land cover data). Due to the coarseness of the GIS data, vegetation may not be entirely accurate. Tree height in Figure A is set to 40 feet, which is the standard approach. However, as noted in the TJD&A report and the readings LandWorks took in the field with a hypsometer, the average tree height in the area is approximately 50 feet and higher. This height difference will cause variations in visibility of the turbines, some of which may be extreme. Tree height in Figure B is set to 70 feet, which illustrates the variations in visibility.



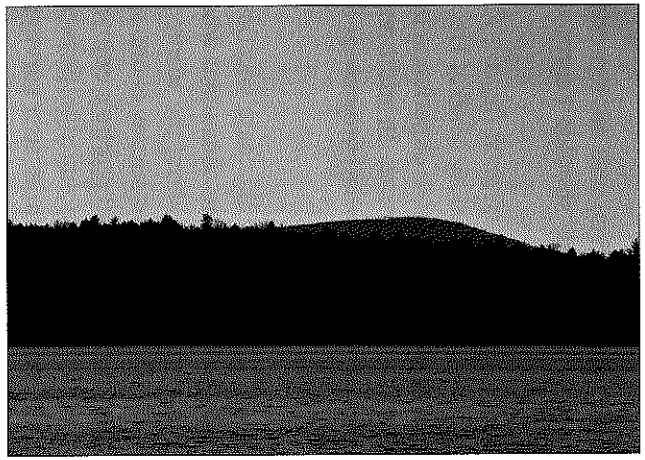
5. View from Saponac Pond at Thompson Brook inlet, from Route 188.

6. Shoreline condition at Saponac Pond

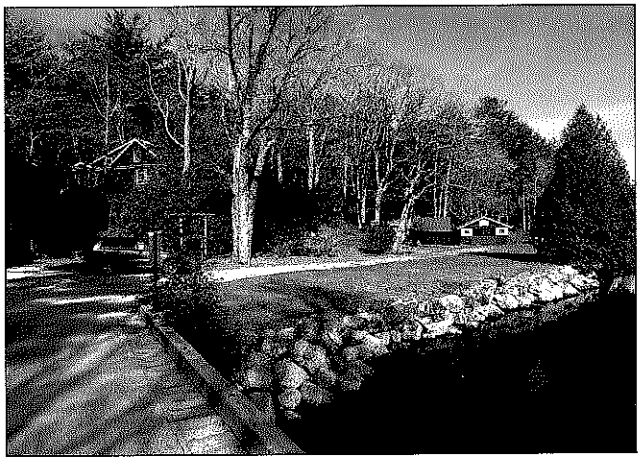


7. Camps and view of Passadumkeag Mountain from northeast shore of Saponac Pond.

8. View from southeast shore of West Lake.



9. Close up from West Lake southeast shore showing Passadumkeag summit.



10. Porter Cove Cottages

Figure 10: Photo Inventory of Project Visibility, page 2 of 6

6/8/12

Prepared for Maine DEP

LandWorks

Passadumkeag Wind Project

316

May 14, 2012

TO: Brooke Barnes / Stantec
FR: Terry DeWan / TDJ&A
RE: PASSADUMKEAG WIND PROJECT
Response to Comments at 04.25.12 Public Meeting

We have prepared the following memo to address some of the major comments on visual impacts heard at the April 25 public meeting sponsored by Maine DEP regarding the proposed wind energy facility at Passadumkeag Mountain. Photographs from our field work are used to illustrate many of our responses.

INTERCEPT SURVEY

Public Comment: The survey was not representative of those who live on the lakes; "not scientifically valid" and "shouldn't carry any weight."

Applicant Response: The *Research Report, Passadumkeag Mountain Wind Power Project Intercepts* was prepared by Market Decisions, a Portland, Maine third-party consulting firm that has extensive experience in preparing and administering public attitude surveys throughout Maine. In addition to this assignment, Market Decisions has worked on similar studies for wind projects at Spruce Mountain, Saddleback Ridge, Bull Hill, and Oakfield.

The survey instrument used in this case was developed by Market Decisions with input from Dr. James Palmer, a scenic consultant who is an advocate for user surveys as one tool for gathering information about the scenic impact of a wind project to public users. Consistent with statute, the user survey is one method of evaluating the effect that a wind project may have on the general public's enjoyment and continued use of designated scenic resources of state or national significance.[1] Dr. Palmer has conducted an independent analysis of the similar user surveys cited above and found them "to be both valid and reliable"[2] as a tool for this purpose.

SAPONAC POND

Public Comment: How can the views of Saponac Pond be M-H, and the views from Nicataous be L-M when the impact is so starkly different?

Applicant Response: The Passadumkeag Visual Impact Assessment considered many factors in determining the overall scenic impact on the resources:

Saponac Pond

[1] 35-A MRSA, § 3452, sub-§3(E)

[2] Palmer, James, Scenic Quality Consultants. *Evaluating When Wind Energy Development Impacts Are Unreasonably Adverse*. January 5, 2012.

- The project will be visible from the majority of the water surface on the pond.
- The pond is a *significant* scenic resource (and not an *outstanding* scenic resource).
- While the pond is noted for its combination of water and mountain views, the views are currently somewhat compromised by inharmonious development (see comments below).
- The photosimulation used in the intercept survey was typical of the views seen from the northern end of the pond. From the selected viewpoint, the turbines would be seen over an arc of 52° at distances of 4.0 to 4.8 miles. This represents 14% of the 360° view that a boater would see while on the pond.
- Fifty-nine percent of respondents to the users survey indicated that the proposed project would result in no change to their enjoyment of the pond, while 41% indicated that it would have a negative effect on their visit to the pond.
- Survey respondents indicated that the project would have a slightly negative effect on their likelihood of returning to Saponac Pond; in general 7 out of 10 people said that the turbines would not have an effect on their likelihood to return.
- Users survey found that the level of public use is relatively low, although the pond is readily accessible form Route 188.

Nicatous Lake

- The project will be visible in a very tight pattern from a few locations among the numerous islands on the northern third of Nicatous Lake.
- The lake is an outstanding scenic resource.
- The photosimulation used in the intercept survey was typical of the views seen from the northern end of the lake, where numerous islands will block the view of the turbines. From the selected viewpoint the tops of 8 turbines within 8 miles would be visible over an arc of 11°. This represents 3% of the 360° view that a recreational user would see while on the lake. At these distances the turbines, where visible, would be seen as relatively small objects on the far horizon.
- Forty-eight percent of the survey respondents indicated that the project would result in no change to their enjoyment of the lake; 31% indicated that the project would have a negative effect on their visit to the lake; and 20% indicated that the turbines would have a positive effect on their visit.
- On average, respondents indicate that the project would have a slightly negative effect on their likelihood of returning to the lake: 88% indicated no change or a positive change in their likelihood to return for boating, 11% indicated they are less likely to return.
- Users survey found that the level of public use is relatively low, although readily accessible.

SAWDUST PILES ON SAPONAC POND

Public Comment: The VIA incorrectly states the pond water quality; the sawdust piles are gone, the lake is clear. Do other criteria get considered when evaluating scenic impact, e.g., does it matter that there are sawdust piles on Saponac Pond?

Applicant Response: The sawdust piles at the northwestern end of the lake are clearly

visible in a photograph from the informal boat put-in on Main Road (Route 188) and from a Google Earth image from 2011. Site visits in July 2011 confirmed that the sawdust pile is still present. Field visits also determined that a thick layer of sawdust covers a significant portion of the beach west of the bridge on Route 188 (see attached photos).

The sawdust in piles and on the beach is a sign of previous commercial activity and may detract from an individual's perception of the visual quality of the pond, since it is clearly another intrusion into the natural character of the landscape. Additional inharmonious development includes direct adjacency of Route 188; the very visible bridge; homes and camps along the shoreline; and a cell tower on Passadumkeag Mountain. An additional communications tower on the mountain summit is currently under development.

The Maine Wildlands Lakes Assessment notes that Saponac Pond is accessible and developed. It received a resource rating of 'significant' for its scenic resources.

Prior to the publication of the Assessment, the State Planning Office issued the Scenic Lakes Character Evaluation in Maine's Unorganized Towns. The Evaluation was based on six criteria: relief, physical features, shoreline configuration, vegetation diversity, special features, and inharmonious development. As noted in the Visual Impact Assessment for this project, the Evaluation deducted 5 points (out of a possible 20-point deduction) for "Inharmonious Development (Residential development, visible roads, powerlines, etc.)" on Saponac Pond.

1. Google Earth view of Saponac Pond. Sawdust pile visible at northwest corner near Main Road. Image date: 09.01.11

2. Sawdust pile on northwest shore of Saponac Pond. Photo by TJD&A: 07.27.11

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3. View looking east toward bridge on Saponac Pond outlet. Sawdust on beach visible in foreground. Photo by TJD&A: 07.27.11

4. View looking west toward on Saponac Pond beach. Sawdust on beach visible in foreground. Photo by TJD&A: 07.27.11

5. View near Main Road looking toward Saponac Pond, with remnant of sawdust piles in foreground. Photo by TJD&A: 07.27.11

6. View from Main Road at informal boat put-in, looking west. Sawdust piles visible on far side of Saponac Pond. Photo by TJD&A: 07.28.11

322

July 23, 2012

TO: Brooke Barnes / Stantec
FR: Terry DeWan / TJD&A
RE: PASSADUMKEAG VIA PEER REVIEW

We have reviewed the peer review of the Visual Impact Assessment of the Passadumkeag Wind Farm provided by LandWorks and offer the following comments. This review concentrates on what we perceive to be significant issues; we are not responding to relatively minor comments, many of which we found to be helpful and on target (e.g., the length of the intercept survey).

LANDWORKS PEER REVIEW

1. In general, we have no issues with the conclusions reached by LandWorks, i.e., that there will be a visual impact, but it will not be unreasonably adverse. However, we have serious concerns with the use of a new matrix as a tool to evaluate overall scenic impact, using criteria not found in the law.

2. Palmer Comments. We have also reviewed the unsolicited comments offered by Dr. James Palmer, the DEP/LURC peer reviewer who has worked on most of the other wind power projects brought before the state. Dr. Palmer brings particular expertise and experience in research, data analysis, and the use/interpretation of surveys. His commentary reflects our thinking on the need to use the statutory criteria to appropriately evaluate a grid scale wind project. We are very concerned that LandWorks' use of additional criteria and discussion about non-relevant resources (e.g., West Lake on pp. 30/31) confuses the analysis.

3. Photosimulation 1 Location. LandWorks (p. 23) notes "Photosimulations 1 and 1A developed by the applicant for Duck Lake Cove are unreliable based on LandWorks' analysis and thus cannot provide a definitive conclusion as to visibility." We believe the statement that these photosimulations are "unreliable" is unfounded.

LandWorks' Figure 4 purportedly is from the location where we took the photograph used for Photosimulation 1 in the VIA. We double-checked our GPS points and the location on our maps and believe that our photograph matches the computer-generated image. As another check we entered our coordinates into Google Earth, which gave us a location that matched the Viewpoint Location Map on our Photosimulation 1 for Duck Lake Cove.

It appears that the image in LandWorks' Figure 4 may represent a location several hundred feet to the north, where turbines may be visible on the right side of a small island in the immediate foreground. No locational data (GPS coordinates) or feature labels were provided with the LandWorks peer review, so the exact location of their image is difficult

to verify. LandWorks should provide this data so we can verify or refute their observation.

LandWorks' photograph #16 is taken from the same location in Duck Lake Cove that was used for Photosimulation #1 in the VIA. However, LandWorks' Figure 9: Photo Location Map mislocates photograph #16 at the far northern end of Nicatous Lake at Porter's Cove, when it should be at Duck Lake Cove. Landwork's should provide the GPS data for their photo locations so they can be verified.

4. Turbine Visibility in Photosimulations. For two of the photosimulations LandWorks reports that the turbines are not discernable, even though the VIA says that they would be seen. In these situations (Nicatous Lake at Porter Cove and Spring Lake) LandWorks should have used the digital copies provided by this office, since the turbine blades are seen at the treeline. The blades are slightly visible on the paper copies provided by MDEP, but they are difficult to pick out since the thinness of the blades causes them to resemble the branching patterns of intervening deciduous trees.

5. Editorial Comments. LandWorks' editorial commentary and recommendations on the review process for Associated Facilities (p. 13) should not be included in the main peer review. While they may have points worthy of debate in a rule or law change, their recommendations should be in an appendix, not in an objective evaluation of the VIA.

6. Impact from turbine pad clearing and roads. On p. 19 LandWorks notes "Another concern with the visual impact of this project will be the change in the mountain landscape caused by the clearings for the turbine "pads" and the service roads that will connect all the turbine sites. It will add a distinct and unnatural form to this mountain landscape..." Photosimulation 5 does show the cutting required for the roads and turbine pads. LandWorks should recognize that these project elements have been included in the visual analysis.

7. Lighting. It is our understanding that a radar-based lighting system has not been approved by the FAA for use on wind projects.

8. Evaluation Matrix. LandWorks uses a two-part evaluation matrix to evaluate and rank the value of the resource and the potential visual impact. It is unclear where this matrix originated and how it has been tested and validated. What is most confusing is how the results are tabulated and evaluated.

The matrix is somewhat similar in appearance to the chart that we've used in recent VIA's (Table 1 Summary of Evaluation Criteria). Our chart was based upon the Wind Energy Act and a similar effort developed by Dr. Palmer to a) illustrate relative values for each criteria, and b) to evaluate the impact.

It is unclear how the LandWorks matrix is to be used. The key at the top left assigns a numerical value to a resource depending upon potential impact. However, this value system should only apply to the factors that are considered part of impacts assessment

(i.e., effects on public use), and NOT to the inherent characteristics of the resource itself (i.e., significance or current level of use). In the case of the Old Tavern, the LandWorks matrix assigns a value of 0 across the row. However, this resource is significant (on the National Register), has a well-defined context in Burlington, but has a limited number of visitors.

The LandWorks' matrix appears to simply add ratings for both scenic significance and impact to arrive at an average value, but without an explanation as to how this methodology works or how to interpret the numbers.

As noted above, we agree with Palmer's characterization of this approach and the inappropriate introduction of additional evaluation criteria. We should be aiming for an easily understood, universally accepted approach to define and evaluate overall scenic impacts. The legislature has provided a very useful framework in the Wind Energy Act; deviations from it will only cause confusion on the part of decision makers and uncertainty on the part of applicants.

PHOTO INVENTORY

Without seeing the Request For Proposals for Peer Review services, it is difficult to understand why the peer review has included such an extensive collection of photographs of existing conditions. Many of the images are duplicates of those that were provided by TJD&A. We do have several comments on the photographs that were presented:

1. Photographs are only useful if they inform the review process. Photo #4 is labeled as a 'panorama view' without identifying the subject, the location, or the direction of view.

2. The photographs of West Lake (#8 and #9) are not relevant, since this is not a regulated scenic resource.

3. Ideally, all photographs should be labeled to indicate where the project would be visible from (as was done in image #13).

4. Photograph #16 is taken from the same location that was used for Photosimulation #1 in the VIA. LandWorks review (p. 5) noted "this photo was taken from a different location than described…" We have checked our GPS position and found it to be accurate. We would respectively request that LandWorks do the same. Landworks Figure 9: Photo Location Map indicates that the photo was taken at the far northern end of Nicatous Lake at Porter's Cove; we do not believe that is correct.

5. Photographs #16, 17, and 18 appear to be all taken from the same viewpoint on the lake. Photo #18 is labeled as a close-up view. The other two photos should be labeled as either 'normal' or 'wide-angle' views to help the reviewer understand the relative size of Passadumkeag Mountain as seen in the context of Nicatous Lake.

6. Photo #19 appears to be from the central portion of Nicatous Lake, beyond the 8-mile regulatory boundary, and not from the northern portion of the lake as indicated in the caption.

7. Photographs #19 through 23 should not be included, since they are taken from the southern end of Nicatous Lake, well beyond the regulatory limit. The location of photos #20-23 are also mis-labeled. LandWorks' Figure 9: Photo Location Map indicates that the photos were taken at the southern end of Nicatous Lake, approximately 10+ miles from Passadumkeag Mountain.

8. Photographs #22 and 23 are either telephoto shots or enlargements of 'normal' photographs. These images exaggerate the size of Passadumkeag Mountain and may lead to a false impression of how visible the turbines would be from the lake.

9. The caption for photo #29 on Folsom Ridge should identify whether this location was on public or private property.

From: Barnes, Brooke <brooke.barnes@stantec.com>
Sent: Tuesday, August 07, 2012 4:57 PM
To: Beyer, Jim R (Jim.R.Beyer@maine.gov)
Cc: MBeckner@quantumug.com; Tom Swank; Katherine Joyce
Subject: Passadumkeag wind project: processing time

This message has been archived.

Jim

The decision date for Department action on the Passadumkeag Wind Project is August 30. In order for the applicant to submit additional information and to provide time for the Department to analyze that information, please place the application on hold until October 5. I anticipate that the majority of additional information will be filed prior to September 15.

Please let me know if you have any questions.

Brooke

Brooke Barnes

Senior Project Manager

Stantec Consulting Services

30 Park Drive

Topsham, ME 04086

brooke.barnes@stantec.com

Office: 207-729-1199

Cell: 207-522-4870

From: Beyer, Jim R <Jim.R.Beyer@maine.gov>
Sent: Friday, August 10, 2012 11:32 AM
To: Alan Marchut; Bangor Daily News; Bob Golman; Barnes, Brooke; Charles Todorich; Chris Jackson; David Corrigan; Dr. Donald W. Wilson; Dr. Peter Meyer; Dylan Voorhees; Elizabeth Johns; Gail Bishop; Gene Blake; Herseys; James Talcott; Jeff Harriman; Jerry Davis; Jim Palmer; Juilette Browne; Katie Donovan; Kay Michka; Kevin & Marie Gurall; Len Price ; Martha Marchut; Matt Border; Mike Beckner (MBeckner@quantumug.com); Monique Aniel; Peter Roy; Robert Bulay; Scott & Susan McIntyre; Steve Thurston
Subject: Project Update

This message has been archived.
The FTP site will be updated today with the following statement:

At the applicant's request, the application review process for Passadumkeag Wind Park has been placed on hold. It is anticipated that the applicant will request the review to be reopened in October, at which point the Department will be preparing a draft order. Any additional information submitted by the applicant will be posted to the FTP site as soon as possible after receipt by the Department. The record will remain open for public comment up until the final agency action is taken.

James R. Beyer

Regional Licensing and Compliance Manager

Division of Land Resources Regulation

Eastern Maine Regional Office

Maine Department of Environmental Protection

(207) 446-9026

September 7, 2012

To: Mark Bergeron
From: David Raphael, LandWorks
RE: Terry DeWan response to Passadumkeag Peer Review

The following provides a response to the "significant issues" outlined in Terry DeWan's memo to Brooke Barnes, dated July 23, 2012.

1. In general. We do not agree that our matrix evaluation deviates significantly from the criteria found in the law. On the contrary, we believe our evaluation helps to better define the criteria. The statute does not specify the means by which to conduct the analysis of the criteria or how to best evaluate potential impact within each criteria. Further discussion is provided in the response to item number 8 below.

2. Palmer Comments. Dr. Palmer has worked on several other wind power projects in the state, and does offer some insight and expertise, but we do not believe his comments are appropriate in this review. While he can be considered an interested person per state law, has public access to information, and is free to provide comment, he is not employed by the state (or the applicant to the best of our knowledge) in this proceeding and does not hold exclusive or sanctioned expertise in the interpretation of the statute. The Department has directed LandWorks to not respond to any of Dr. Palmer's requests or comments, unless one of the staff specifically asks us to reply to an issue raised by him. At this time, the Department has not asked us to review or respond to Dr. Palmer's comments, and, therefore, we have not done so in this review.

Because we are contracted with Maine DEP, we have certain services and obligations to fulfill. This includes providing information at the state's request. As such, we were specifically asked by Robin Clukey to be aware of concerns regarding West Lake and to provide a short review of potential impacts to the lake in our report. We were also instructed to provide a statement about associated facilities and the implications of the statute.

3. Photosimulation 1 Location. LandWorks used the photosimulation points in the GIS shapefile provided by TJD&A in order to check the accuracy of their photosimulations. The use of this data was clearly stated in LandWorks' Figures 4-8, as well as the report. The latitude and longitude coordinates for the Duck Lake Cove shapefile point given to LandWorks correspond with the "view coordinates" defined in Photosimulation 1 of the TJD&A report (45.128793°, -68.162040°). These coordinates were inputted into ArcGIS 3D Analyst, and the 3D view does not match up with the photo view in Photosimulation 1 of Appendix C of the TJD&A report. This discrepancy suggests there is an error, and LandWorks' Figure 4 confirms this inaccuracy. Furthermore, when one compares the point location for Duck Lake Cove shown in TJD&A's Figures 1-6 of Appendix B (labeled as PSIM 1), with the view location map of Photosimulation 1 in Appendix C, the photosimulation point location appears to be situated further to the northeast. TJD&A even point out in the July 23, 2012 memo "It appears that the image in LandWorks' Figure 4 may represent a location several hundred feet to the north, where turbines may be visible on the right side of a small island in the immediate foreground." This is indeed the case, and the coordinates used to locate this point are the ones provided to us by TJD&A in a GIS shapefile, as well as identified on Photosimulation 1 of Appendix C. Figure 1 below illustrates the location of the coordinates provided to LandWorks in a GIS shapefile (which are the same as the view coordinates defined in Photosimulation 1 of the TJD&A report), and compares this location with the point shown in TJD&A Figures 1-6 (see Figure 3 below). Based on this comparison, it is our

conclusion that the approximate location of PSIM 1 would appear to be a more accurate location of Photosimulations 1 and 1A, not coordinate 45.128793°, -68.162040°.

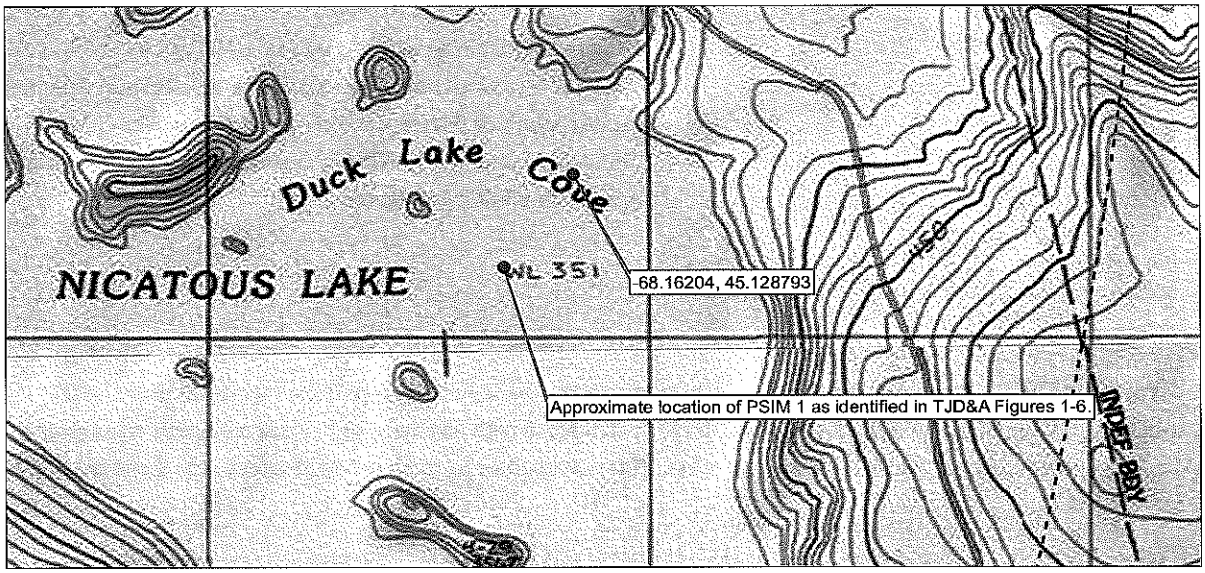

Figure 1. This map illustrates where the GIS shapefile point (which is the same as the view coordinates defined in Photosimulation 1 of the TJD&A report) is located on the lake, and compares it to the approximate point location shown in TJD&A Figures 1-6 of Appendix B (labeled PSIM 1).

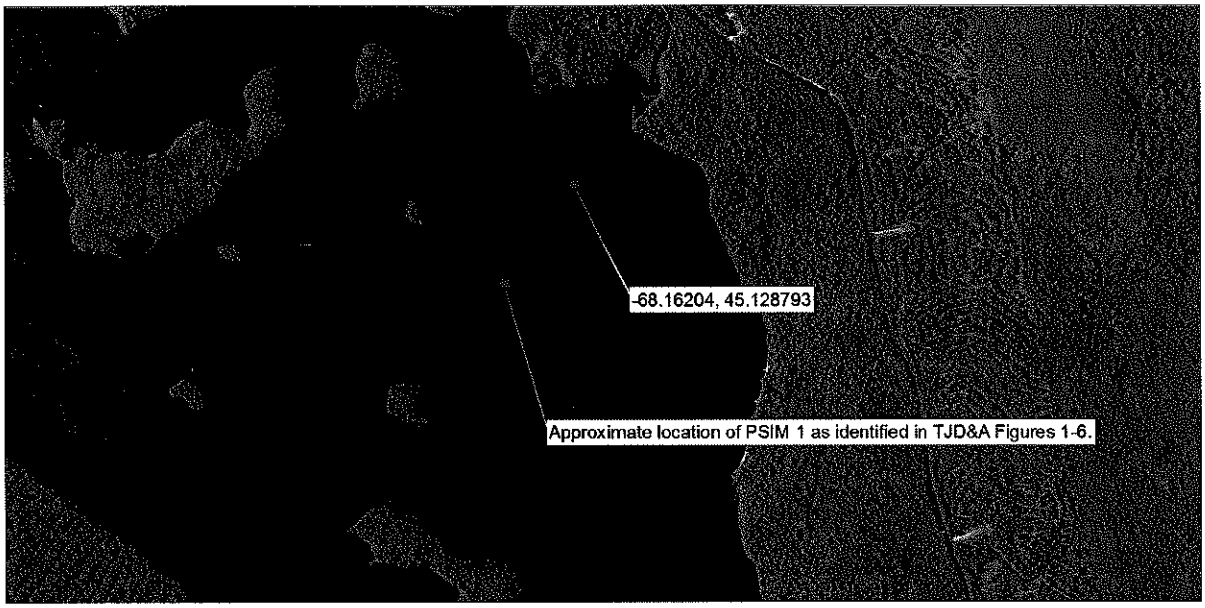

Figure 2. This is the same map as Figure 1 above, only it shows the location of points on an aerial photo.

330

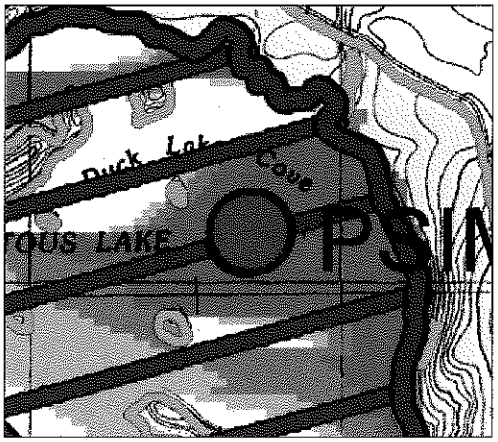

Figure 3. The image at left is a zoom of TJD&A Figure 4 of Appendix B, which illustrates a location several hundred feet to the south of the view coordinates provided by TJD&A in Photosimulation 1. This point is probably where the actual photosimulation was taken.

4. Turbine Visibility in Photosimulations. LandWorks used both the hard copy and the high-resolution digital copies of the report, and the blades were still difficult to discern with any certainty. Thus, we simply recommend pointing out where they are located with call-outs. This would allow us to ascertain accuracy with some degree of confidence.

5. Editorial Comments. As discussed in number 1 earlier, the inclusion of the associated facilities commentary and recommendations were directed by the Department and therefore included in our report.

6. Impact from turbine pad clearing and roads. LandWorks does not dispute that Photosimulation 5 included clearing for roads and turbine sites, and this is confirmed on pg. 13 of our report. The comment on pg. 19 was not intended to analyze or discredit Photosimulation 5, but to simply point out that clearing for roads and pads needs to be carefully considered when evaluating visual impact, especially when viewed from Saponac Pond. Correspondingly, if the project is approved, this aspect of construction needs to be carefully monitored.

7. Lighting. Radar-based lighting technology or Audio Visual Warning Systems (AVWS) are already approved by the FAA and in use in several applications in the U.S., like power lines, bridges, and other hazard structures. The FAA has previously approved AVWS for wind turbine application, but at this time, all approvals have been suspended or revoked until the FAA's Circulatory Advisory (CA) relating to VWS requirements is officially issued late this summer, at which point it will be commercially available, although still subject to FAA approval on a project by project basis. This does not mean that the use of AVWS can not be considered a viable option for a wind power project. There are several wind projects across the U.S. who have already committed to using AVWS, such as Pioneer Wind Park in Wyoming, or the Kingdom Community Wind project in Vermont, which was permitted on the condition the company "take all reasonable steps" to get permission from the FAA to use AVWS technology. In fact, AVWS installations have already occurred in anticipation of the new CA. A DeTect unit has been installed at NextEra's Perrin Ranch Wind Energy Center in Coconino County, AZ. The unit has been successfully tested, but until the FAA CA comes out, the red synchronized lights are left on at night. Once the CA language is final, they will simply throw the switch, and the lights will remain off unless an aircraft approaches the wind farm. Thus, it is our recommendation that the Applicant look into the feasibility of committing to or installing such a system, as many other developers are now doing.

8. Evaluation Matrix. The Legislature has indeed set out the six basic evaluation criteria for determining whether or not a project will have an unreasonable adverse effect on scenic resources of state or national significance. However, we do not agree that the framework is well defined in terms of how to evaluate impacts under each of the criteria. The criteria listed in the Act are broad and do not clearly dictate how they should be interpreted, nor does the Act regulate how they should be presented or the specific tools or definitions that must be used to understand the evaluation criteria. As such, we do not believe that our interpretation of the Act or our use of additional indicators deviates from the Act. Rather, we believe it helps to better define the criteria. However, we do understand that there is some confusion in how to interpret these indicators as they are assigned in the matrix. In our review, the matrix is only intended to summarize the conclusions previously discussed in the narrative section for each resource. It is not the only method for defining overall scenic impact. Furthermore, the matrix continues to evolve as a tool, and there is no formal or approved approach to its method and use, nor does the Act even require the use of a matrix. Nevertheless, we have reframed our matrix to follow the six evaluation criteria, exactly, to avoid any further confusion. The "additional evaluation criteria" we identified in the original matrix are now used in the interpretation of the appropriate statutory requirement. We have also removed the numbering system, even though we believe it's clear what the numbers represent (i.e. 1 and Low mean the same, 2 and Medium mean the same, and 3 and High mean the same). In fact, we believe the numbers clearly indicate how the overall impact is derived, compared to other matrices methods that have been used, which apparently use some form of weighting but do not explain how or to what criteria this weighting is applied. This reformatting does not change any of our conclusions. It merely restructures and accommodates the original matrix for people who may have had difficulty in its interpretation.

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

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

SCENIC RESOURCE OF STATE OR NATIONAL SIGNIFICANCE	*STATUTORY EVALUATION CRITERIA							OVERALL SCENIC IMPACT
	A.	B.	C.	D.	E1.	E2.	F.	
Passadumkeag Marsh and Boglands	NA	NA	NA	NA	NA	NA	NA	**NA**
Old Tavern	NA	NA	NA	NA	NA	NA	NA	**NA**
Lower Pistol Lake	Low	Medium	Medium	Low	Low	Low	Medium	**Low-Medium**
Nicatous Lake	High	High	High	Low	High	Low	Low	**Medium**
Saponac Pond	Low	Medium	Low	High	Low	Low	High	**Medium**
Spring Lake	Low	Low	Medium	Low	Low	Low	Low	**Low**

***Statutory Criteria as defined and interpreted for this evaluation:**

A. *Significance of the Scenic Resource* – indicators include but are not limited to the state or national designation; unique, distinctive or exceptional character (is the resource typical of the region, or does it have special, memorable qualities unlike

others in the area); vividness, intactness, and scenic attractiveness (does the landscape contain intrusive or uncharacteristic elements or does it promote a sense of order and balance that makes it memorable);

B. *Existing Character of the Surrounding Area* – indicators include but are not limited to the overall landscape of the scenic resource and its surrounding environs, types of land uses and activities that occur in the vicinity of the resource, and include not only what you see from the resource, but what you see as you approach the resource or what is present in the area of the resource;

C. *Typical Viewer Expectations* – indicators include but are not limited to the type of user groups, landscape character (developed or not), size of resource, and popularity of resource;

D. *Purpose and Context of the Proposed Activity* – indicators include quality and significance of the Project site in relation to the scenic resource, which are defined by but not limited to, is it the best use of the site, does the site hold local or state significance/value other than wind generation, is the site a prominent feature in the landscape;

E1. *Extent, Nature and Duration of Public Use of the Scenic Resource* – indicators include but are not limited to the type and number of users, frequency and duration of use, ease of access, types of facilities,

E2. *The Project's Effect on Continued Use and Enjoyment of the Scenic Resource* – indicators include but are not limited to viewer's association with the resource, attitude towards wind, type of activity, and available alternatives.

F. *Scope and Scale of Visibility from the Scenic Resource* – how much of the Project is visible, factoring in several indicators, which include but are not limited to the number of turbines visible, proximity or distance of turbines, angle of view, duration and extent of view, visual absorption (measure of a landscapes' ability to absorb alteration and maintain its visual integrity), and visual dominance (scale of the project in relation to the vantage point and the project surroundings).

PHOTO INVENTORY – The photo inventory merely documents our site visits and what was observed in the field. It was also used in our evaluation of Criterion B and existing character of the surrounding area. The photos presented are not necessarily intended to document project visibility. Further, the photo inventory is not meant to analyze, critique, contradict or supersede any work done by TJD&A. It was provided for the Department's and LandWorks' reference and there is no reason to not include it. Comments are welcome by TJD&A, but not necessary as no analysis or conclusions that relate to the TJD&A report are provided in this section of our report.

From: Beyer, Jim R <Jim.R.Beyer@maine.gov>
Sent: Friday, September 14, 2012 7:29 AM
To: Barnes, Brooke
Subject: FW: Passadumkeag Robbins memo.docx
Attachments: @

This message has been archived.

Brooke,

Here is the Department's position on whether or not the Robbins' easement area is a SRSNS.

James R. Beyer

Regional Licensing and Compliance Manager

Division of Land Resources Regulation

Eastern Maine Regional Office

Maine Department of Environmental Protection

(207) 446-9026

From: Parent, Heather
Sent: Thursday, September 13, 2012 1:44 PM
To: Aho, Patricia
Cc: Beyer, Jim R; Margerum, Mark T; Bergeron, Mark
Subject: Passadumkeag Robbins memo.docx

Please see the attached memorandum re: the Robbins Lumber easement related to the Passadumkeag Wind project.

Attachments:

Passadumkeag Robbins memo.docx (24 KB)

INTEROFFICE MEMORANDUM

TO: PATRICIA AHO

FROM: HEATHER PARENT

SUBJECT: PASSADUMKEAG WIND PARK, LLC NRPA PERMIT APPLICATION

DETERMINATION OF IMPACT ON SCENIC CHARACTER AND RELATED EXISTING USES

DATE: 9/13/12

CC: JAMES BEYER, MARK MARGERUM, MARK BERGERON

The Department is responsible for making findings regarding the effect of an expedited wind energy development on scenic character and existing uses related to scenic character, including whether the development significantly compromises views from a scenic resource of state or national significance. As a result of the public input process, it was brought to the Department's attention that a 20,000 acre conservation easement exists on a parcel within 8 miles of the proposed project. As a result, it is necessary to determine whether the identified conservation easement is a "scenic resource of state or national significance" as that term is defined by law.

35-A MRSA §3451(9) defines "scenic resource of state or national significance" to mean "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; . . ."

The plain language of the easement establishes that the public has a legal right to access the land at issue.

The applicant has argued that the law provides an exclusive list, and that the phrase "or other comparable outstanding natural and cultural feature" should not be broadly interpreted, in part because the examples of the Orono Bog and the Meddybemps Heath are national natural landmarks. However, if the intent was to include only national natural landmarks and federally designated wilderness areas, then the addition of "or other comparable outstanding natural and cultural feature(s)" in the definition would be unnecessary. Because the Department is not permitted to conclude that the addition of language in any statute is unnecessary, it must conduct a reasonable evaluation of the meaning of the criteria.

The question becomes, then, whether the easement established under the Forest Legacy Program is "comparable" to a national natural landmark or a federally designated wilderness area. When land is designated as a national natural landmark, the landowner must agree to preserve the significant natural values of the site or area. Federally designated wilderness areas are to provide values such as "solitude or a primitive and unconfined type of recreation," as well as "ecological, geological, or other features of scientific, educational, scenic, or historical

value." The Department must therefore evaluate whether the land at issue is a natural or cultural feature comparable to areas under the other two programs.

In this particular application, the easement is not simply an easement placed on a portion of land by a well-meaning landowner, but the land was intentionally encumbered by an easement pursuant to the Forest Legacy Program (a Federal program, administered by the Maine Forest Legacy Program). The purposes of the easements were to effect the purposes of the Forest Legacy Program, and included not only the prohibition of development, but also to protect a "wide array of public values" including, but not limited to, all manner of public recreation and "nature observation." (March 30, 2012 letter from Kathy Eickenberg of Maine Department of Conservation to Maine Landowners or Land Conservation Organizations). Access for "wildlife watching by the general public" is one of the criteria, along with the criteria that the land should be protected from non-forest use. Land does not simply get included in the Forest Legacy Program by conveyance by an interested party. An established committee solicits applications, ranks the applications regarding the fit to the values and goals necessary for the program, and makes determinations. Because acquisition of easements utilizes federal funds, the ranking process and guidance must be strictly adhered to. In fact, since the Maine Forest Legacy Program is a subset of the Federal Forest Legacy Program, it must be fully compliant with federal guidance on the use of legacy dollars. All steps completed by the Committee are completed through a public process, and the meetings are public meetings and in a means that ensures the public process necessary to utilize legacy dollars.

Land under the Forest Legacy program is intended to be protected from non-forest use (development not related to forestry), and must include not only protection and conservation of the natural resources, but also opportunities for public access to appreciate the natural values of the site. Based upon an evaluation of the Forest Legacy Program, and a comparison of the lands protected under that program to the lands protected under the programs that designate national natural landmarks and federally designated wilderness areas, the Department concludes that the land under the Forest Legacy Program (the Robbins easement) is comparable to a national natural landmark or federally designated wilderness area, and therefore is a scenic resource of state or national significance. As such, it must be part of any visual impact assessment for the proposed project.

From: Beyer, Jim R <Jim.R.Beyer@maine.gov>
Sent: Friday, September 14, 2012 2:04 PM
To: Barnes, Brooke
Subject: RE: Passadumkeag Robbins memo.docx

This message has been archived.

Brooke,

As you can see from the memo the Department's position is that the Robbins Lumber easement area is considered a SRSNS. As such you will need to evaluate the scenic impact of the project on that resource. I noticed from looking at the view shed maps that there are limited areas from which the turbines would be visible, but I have already had two interested persons ask about West Lake. The lake itself is not a SRSNS, but certainly if there are places on the shoreline where the project would be visible, those need to be evaluated. The view shed map seems to indicate that there is no visibility along the shoreline except from the West Lake itself. Please confirm this is the case.

James R. Beyer

Regional Licensing and Compliance Manager

Division of Land Resources Regulation

Eastern Maine Regional Office

Maine Department of Environmental Protection

(207) 446-9026

From: Barnes, Brooke [mailto:brooke.barnes@stantec.com]
Sent: Friday, September

From: Barnes, Brooke <brooke.barnes@stantec.com>
Sent: Monday, September 24, 2012 4:14 PM
To: Beyer, Jim R (Jim.R.Beyer@maine.gov)
Cc: MBeckner@quantumug.com; Tom Swank; Katherine Joyce
Subject: Passadumkeag: Application processing extension

This message has been archived.

Jim

In response to the September 13, 2012 DEP memo recommending that the Robbins Easement is a SRSNS under the Wind Act, the Applicant is undertaking a visual impact analysis of the Robbins Easement. Due to the time necessary to accomplish the field work and prepare this VIA amendment, the applicant is requesting that the hold on processing its application be extended from October 5 to October 19, 2012.

Please let me know if you have any questions.

Brooke

Brooke Barnes

Senior Project Manager

Stantec Consulting Services

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tjd&a Terrence J. DeWan & Associates Landscape Architects / Planners

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Yarmouth, ME 04096
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September 26, 2012

To: Brooke Barnes / Stantec

From: Terry DeWan / TJD&A

Subject: ADDITIONAL COMMENTS ON PASSADUMKEAG WIND PROJECT

The following memo has been developed in response to comments from the public, LandWorks, and the Maine Department of Environmental Protection (MDEP) regarding the visual impacts associated with the Passadumkeag Wind Project.

Saponac Pond is not Remote or Undeveloped

The northern third of Saponac Pond is located in the town of Burlington under MDEP jurisdiction; the other two-thirds are located in Grand Falls Township, under Land Use Planning Commission (LUPC) jurisdiction. While it requires approximately two hours to reach the pond from Augusta and points further away, it is not 'remote' in the accepted sense of the term in Maine, i.e., undeveloped and difficult to reach.

A. Saponac Pond is not Remote

Saponac Pond is easily accessed by Route 188, which traverses its northern end and affords easy water access at an informal boat put-in. Several other local roads – Sibley Road and Twin Hills Road on the west and Randall Road, Old Bark Road, Saponac Pond Road, and several unnamed gravel roads on the east – provide ready access to the land surrounding the pond.

Within LUPC jurisdiction, the term 'remote' is reserved for lakes and ponds that are in Management Class 6, Remote Ponds. To qualify for this classification, a waterbody (in LUPC territory) must not be accessible within 0.5 mile by a two-wheel drive vehicle during the summer months; must not have more than one non-commercial remote camp; and must support a cold water fishery. As noted above and in our Visual Impact Assessment (VIA) for the Passadumkeag Wind Project, Saponac Pond is easily accessible by gravel roads. There are many camps that line its shore; and the water does not support a viable cold water fishery. In 2004, the Maine Department of Inland Fisheries and Wildlife (MDIFW) observed that "*a large portion of the pond has become a sterile settling basin for the gross sawdust pollution that has been scattered along the west shore...*" The LUPC Comprehensive Land Use Plan (CLUP) recognizes 176 remote ponds within their jurisdiction and has classified them as Management Class 6 – Remote Ponds. Saponac Pond is not one of them and is listed in Management Class 3 – potentially suitable for development.

In addition to the presence of four dozen camps along the shoreline, boaters on much of Saponac Pond will be aware of the traffic on Route 188. Approximately 850 feet of the roadway is located immediately adjacent to the water, exposing boaters to views of highway traffic, parked cars, and utility lines. To a boater in the middle of the pond, a vehicle traveling at 45 miles per hour will be visible for approximately 12 seconds.

In addition to the camps along the waterfront, a large sawdust pile, presumably from an earlier mill operation, is highly visible on the northwestern shoreline. As noted in the VIA, remnants from the pile have drifted to the east and completely cover several hundred feet of the beach adjacent to Route 188, making it virtually unusable as a swimming beach.

B. Saponac Pond is Developed

The VIA notes approximately a dozen camps are located on the northwestern shore and about 30 camps are located on the northeastern shore. Additional fieldwork by TJD&A on July 30, 2012 located a total of 48 camps: 14 on the western and southern side of the pond, and 34 on the east side of the pond. In addition, 'For Sale' signs were noted on several undeveloped sites along the shoreline, indicating that some level of additional home construction may continue in the future.

As part of the July field work, TJD&A photographed every visible camp along the shoreline to illustrate the extent of development along Saponac Pond. The results are provided in the accompanying inventory (Attachment 1), which keys the camp number to the Camp Location Plan. As noted on this plan, camps tend to be located in groups. While there are a few isolated camps (e.g., #35 at the southern end near Sand Cove and #36 on Black Island), most of the structures are found in small to moderate sized groups (e.g., #1–7; #8–14; #16–29 [the largest cluster]; #30–34; #37–42; and #43–48).

In many instances (e.g., cluster #37–42), the riparian vegetation between these structures and the water has been thinned or eliminated, exposing the camps, vehicles, picnic tables, and other personal effects to view. These clusters tend to draw the eye by their contrast in color, form, and texture that they present to the more natural landscape that surrounds them.

Only a few camps are visible in the immediate foreground from the Route 188 bridge, which is the primary point of public visibility. However, to someone on a boat traveling south from the boat put-in, there is virtually no part of the pond where camps are not visible. While there is still a considerable amount of shoreline that has not been built upon, one should not expect to see an undeveloped landscape when out on the pond.

As noted above, Saponac Pond is classified by LUPC as Management Class 3: Potentially Suitable for Development, based on available information on water quality, access, conflicting uses, shoreland availability, water level fluctuation, location, regional considerations, and special planning needs. Based upon this designation and the current land use patterns, it is likely that additional homes and camps will be built on the pond in the future.

The majority of the camps visible from the pond are oriented perpendicular to the shoreline, where the primary view is toward the open water and the shoreline on the opposite side of the pond. Very few of the camps face due south or southeast, where the turbines will be located.

Cumulative Visual Impacts

Comments have indicated some interest in the fact that users of Saponac Pond may be able to see both the Rollins Wind Project and the Passadumkeag Project while using the resource. While cumulative visual impact is not technically one of the criteria required for assessment, the following is noted for reference.

As stated in the *Report of OEIS Assessment of Cumulative Visual Impacts from Wind Energy Development* (March 2012) (Attachment 2):

> *Cumulative visual impact (CVI) can result from seeing the accumulation of more than one wind energy project in a relatively concentrated area such that they become a dominant feature of that area. Landscape architects and scenic experts identify three types of cumulative visual impacts based on the perspective of the viewer:*
>
> 1. ***Combined**: where a viewer sees multiple wind facilities or groups of turbines from a stationary point, each separated by a minimum distance, within a typical cone of vision (45± degrees).*
> 2. ***Successive**: In this model the viewer would see multiple projects from a particular viewpoint, but not within the same viewing arc, i.e., viewers would have to turn their heads and/or bodies a minimum number of degrees to see another wind project.*
> 3. ***Sequential**: More than one wind project would be seen as the viewer travels along a linear route (e.g., hiking trail or scenic highway) or planar surface (e.g., a large water body).*

The nearest turbines in the Rollins Wind Project are located six to seven miles north of Saponac Pond. The Rollins VIA identified a wedge-shaped portion of Saponac Pond where turbines within eight miles would be visible. Field observations by TJD&A confirmed that the Rollins turbines are visible on the pond in approximately the location predicted by the VIA (see Attachment 1 photographs on pp. 9–11, taken from three locations on Saponac Pond).

The Rollins turbines are most visible from the center of Saponac Pond, where the viewing distance is at the edge of the 8-mile study limit (see photo 9 in the inventory). Within this area, turbines are visible in a group that covers 5-6 degrees of the view (or approximately the width of three thumbs). Four turbines are within eight miles of this viewpoint on the pond; the closest turbine is seven miles from the observer.

From the northern end of the pond (both on the water and from Route 188), trees on the north side of the road screen views of most of the Rollins turbines. Those that are visible

are just above the horizon and generally not apparent unless the observer is looking for them. (See photographs on pp. 10 and 11 in the inventory.)

The combination of the proposed Passadumkeag Wind Project and the existing Rollins Wind Project will have a successive visual impact on Saponac Pond, as defined above (i.e., a viewer will see multiple projects from certain viewpoints, but not within the same viewing arc). TJD&A has prepared a QuickTime VR movie to demonstrate the visibility of both wind projects from a point on Saponac Pond near Black Island (Electronic Attachment 3). By moving the cursor across the image on the screen, the viewer is able to see the entire 360° view from the surface of the pond, including the existing Rollins turbines to the north and the proposed Passadumkeag turbines to the south and southeast.

As seen in the QuickTime movie, the cumulative visual impact will be relatively minor for several reasons. The visual impact of the Rollins turbines on Saponac Pond is low due to the effect of distance, the small viewing arc, and intervening topography and vegetation. The two projects are separated by an arc of 115°, so they would not be visible within the same field of view.

LandWorks Matrix Table

As part of their June 19, 2012 peer review, LandWorks developed Table 2, A Summary of Overall Scenic Impact. This was presented as a matrix meant to summarize their observations and findings relative to the Passadumkeag project, and to illustrate how they came to their conclusion regarding overall scenic impact. We commented on the initial matrix in our July 23, 2012, memo to MDEP.

LandWorks' Table 2 was revised as part of their September 7, 2012, response to Mark Bergeron. In the revised version of the matrix, numerical ratings were replaced with descriptives (high, medium, low), and the key was modified to match the statutory criteria. Columns A, B, C, D, and E1 summarize the existing conditions of the various criteria in the Wind Energy Law (e.g., significance of the scenic resource, character of the surrounding area, viewer expectations, existing public use, etc.), while columns E2 and F summarize the impact of the proposed project on those criteria.

In both the July and September versions of Landworks analyses, their conclusion was that the overall visual impact on Nicatous Lake and Saponac Pond was "Medium", and that "**this project will not have an unreasonable adverse impact on the identified scenic resources of the project area ...**and the public's use and enjoyment of those resources."(emphasis in original). While we remain concerned that the key does not clearly separate the importance of the criteria as a factor in determining overall scenic impact versus the extent of the specific impact of the project on a particular criteria (i.e., is the impact on viewer expectation high, or is the viewer expectation simply high, with or without the Project), we do agree as to the conclusion of our visual analyses.

Intercept Surveys

The use of intercept surveys employing photographs and photosimulations to test the general public's reaction to proposed wind energy facilities has become a frequent part of

the wind power VIA process in Maine. The technique of having the public rate 'before' and 'after' images to determine scenic value and scenic impact has also been accepted by the federal government for its reliability and validity. The intercept survey for the Passadumkeag project was developed, administered, and analyzed by Market Decisions, one of Maine's leading public research firms.

The format for the surveys has been developed with the assistance of Dr. James Palmer, who is frequently the state's peer reviewer for visual impact issues, and one of this country's leading authorities on surveys and visual assessment methodology. As an independent researcher, Dr. Palmer has been very interested in determining the reliability of these efforts, which are an important component of addressing the key questions relating to public use and enjoyment in the Maine Wind Energy Act. Dr. Palmer recently presented a paper to the National Association of Environmental Professionals that summarized his review and analysis of the various surveys done for the Bull Hill, Highland, Saddleback Ridge, and Spruce Mountain wind projects. In his paper he re-analyzed the data from these surveys – constructed very similar to the Passadumkeag Project surveys – and the results were found to be both valid and reliable.

One comment on the survey is that the number of respondents on Saponac Pond is low. As evidenced by the attached use observation report by Stantec Consulting, the respondent number is low because the use of the pond is very low. This data is very informative, as they are directly linked to the evaluation of the "extent, nature and duration of public use", which serves as a foundation for understanding the continued use and enjoyment of the resource.

Use Observations

As part of the 2011 intercept surveys, the survey team kept a running count of the number of people and boats on Saponac Pond. In response to comments regarding the time of year that intercept survey was conducted, Stantec conducted an additional set of use observations on the pond over a portion of 13 days between August 8 and September 3, 2012 (Attachment 4). The observer spent 86.25 hours during this time observing boating, fishing, swimming, camping and other recreational activity on Saponac Pond. The individual observations (Table 2 in the Stantec report) are presented in tabular form, showing the date, time of day, boat type (where applicable), number of people observed, the direction that the boat was heading, the location of the observer, the amount of time the party spent on the pond, and whether this was a repeat party. Notes in the chart provide additional insight into other recreational use of the pond.

The Stantec observer saw a total of 24 boats (motorboats, canoes, kayaks) and 42 individuals on the water in the 86.25 hours spent at the pond, or approximately 0.3 boats per hour. There were never more than two boats on the pond at any one time. During the observation time an additional 9 individuals were seen on the shore, swimming (2 individuals), drinking coffee by the boat put-in (1 individual), camping (2 individuals), and sitting/fishing on private docks (4 individuals).

The results from the 2012 Stantec observations closely parallel those from the 2011 Market Decisions survey. Market Decisions personnel were present on Saponac Pond for a total of 60 hours on portions of eight days (Friday through Monday on two consecutive weeks) during the summer of 2011. During that time they counted a total of 13 boats (including kayaks) on the water, or approximately 0.2 boats per hour. Likewise, there were never more than two boats on the pond at any one time.

These two sets of visual observations provide insight into the statutory criteria that requires an analysis of the *extent, nature, and duration* of public use to determine how the resource is currently being used. The following observations and conclusions are based upon these observations:

- **Extent of use** on Saponac Pond: recreational use is scattered throughout the pond, with no central point of concentration. Observers saw recreational activity at the boat put-in adjacent to Route 188, at a campsite at the southern end of the pond, on private docks in different parts of the pond, and on the pond itself (fishing and boating). Use levels, based upon samples taken by two separate survey teams a year apart, are very light; on average, one boat was observed (during 2012) for every 3.5 hours spent on the pond.
- **The nature of use** on Saponac Pond is typical of many developed lakes and ponds in Maine, with a variety of activities occurring throughout the day. As noted above, Saponac Pond is not heavily used for any of the observed activities.
- **The duration of use** on Saponac Pond. The 2012 Stantec survey found that the average trip length for boaters on the pond was 1.8 hours. Campers who used the beach on the southwestern shore stayed overnight (in a location where turbines would not be visible).

Photosimulation 1 (Duck Lake Cove) Location

Landworks' September 7, 2012, comments correctly identify a transcription error for the coordinates found in the legend of Photosimulation 1 Duck Lake Cove included in the VIA. When we did our initial field photography on July 27, 2011 on Nicatous Lake, we were guided by the viewshed map that showed an area near Duck Lake Cove with the highest degree of turbine visibility within the 8-mile radius of the project. While we were at Duck Cove we photographed the view toward the project site from several locations. From these photographs we selected two locations to develop preliminary models in WindPro to test for visibility and to determine which would show the 'worst case.' The coordinates provided for Photosimulation 1 in the VIA were for the <u>first</u> location that was modeled. However, since we determined that the <u>second</u> location had a higher impact, that was the location we used for the simulation. Our error was not changing the coordinates on the photosimulation to match the second location. However, the simulation does properly show the "worst case" impact based on the viewshed map, modeling, and field verification. Attachment 5 is the same Duck Lake Cove photosimulation, with corrected coordinates in the legend.

Saponac Pond Photographs
PASSADUMKEAG WIND PROJECT

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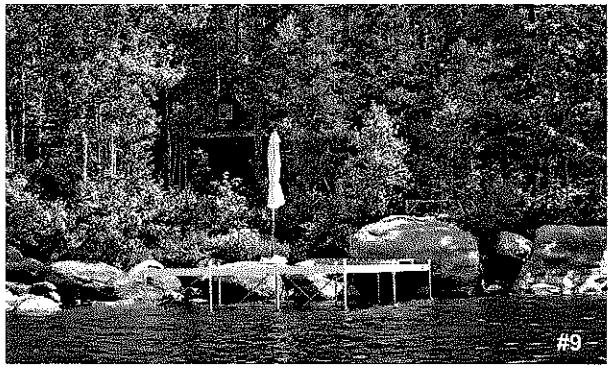
#2

#5

#8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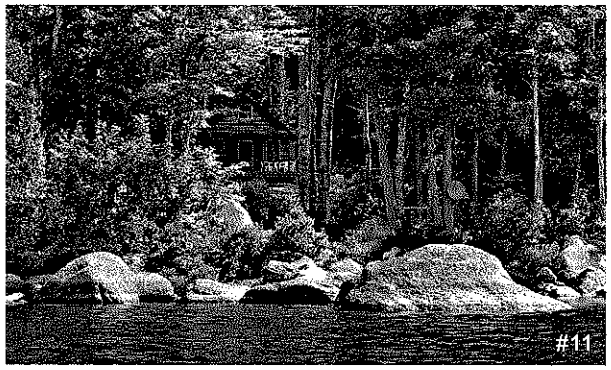
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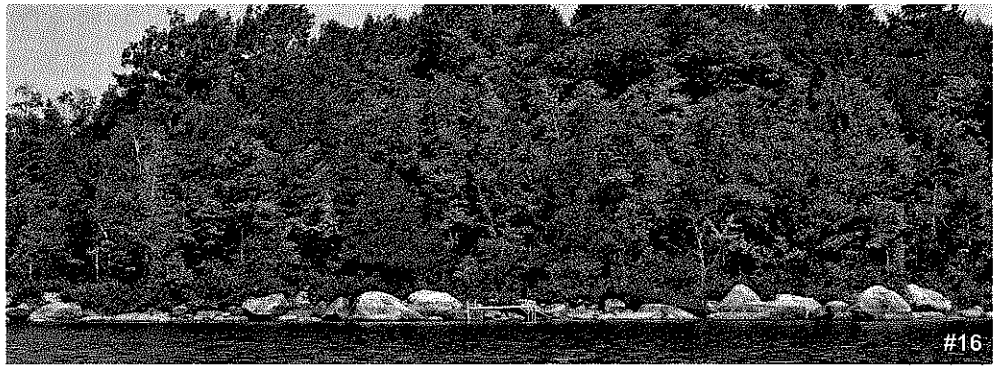
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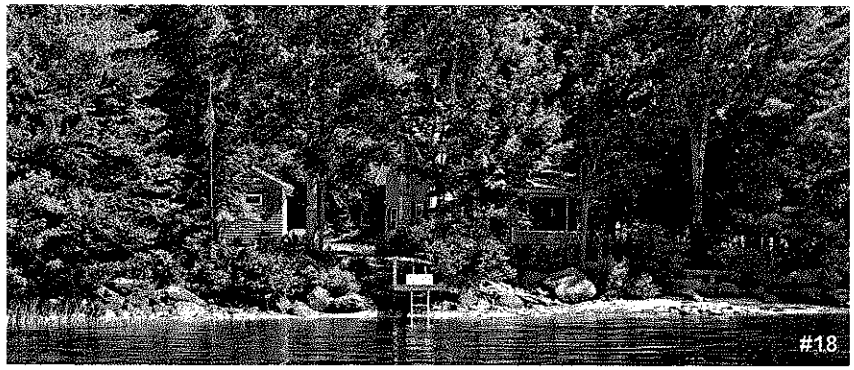
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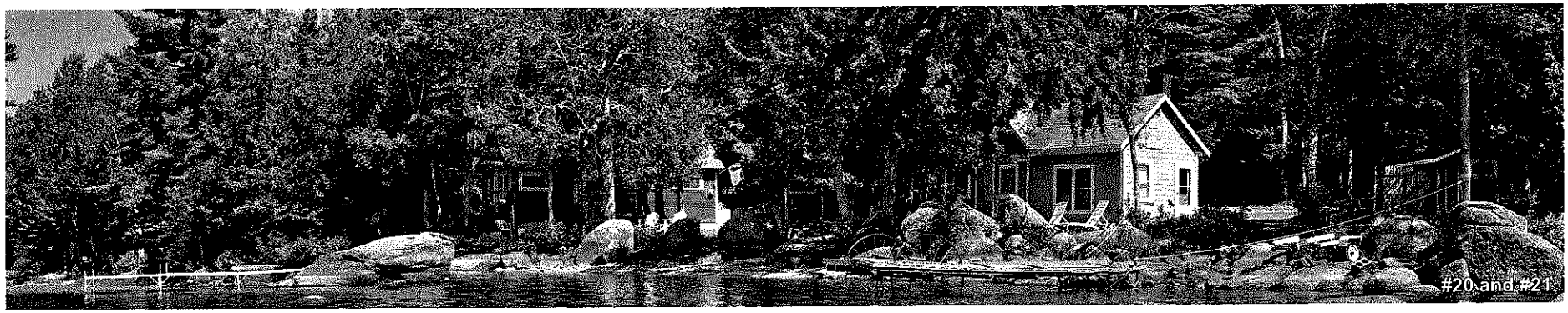

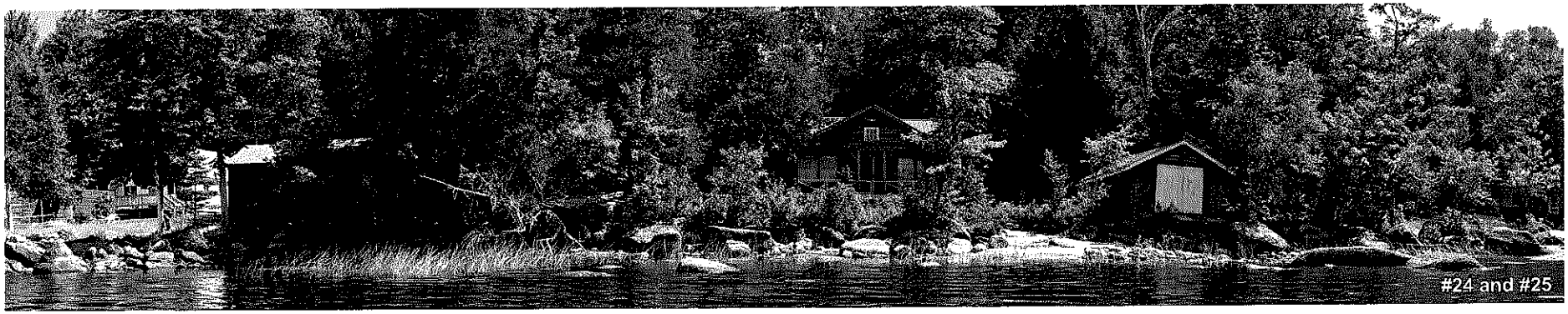

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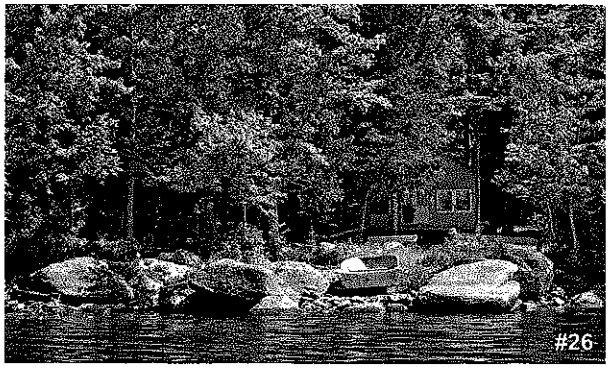
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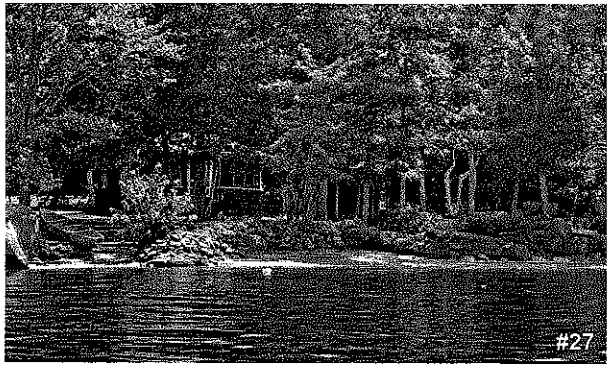
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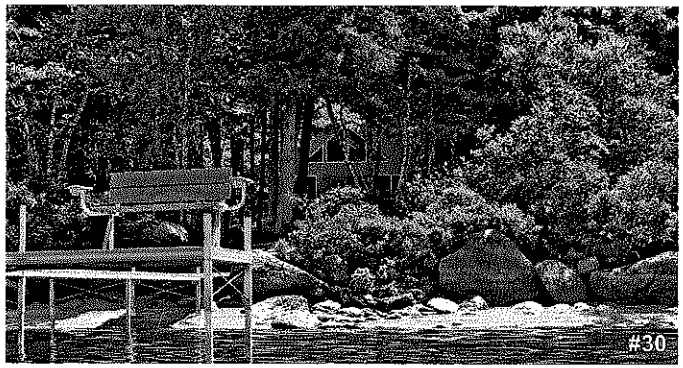
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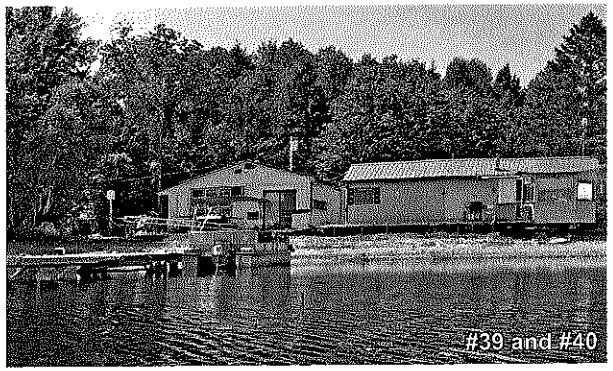
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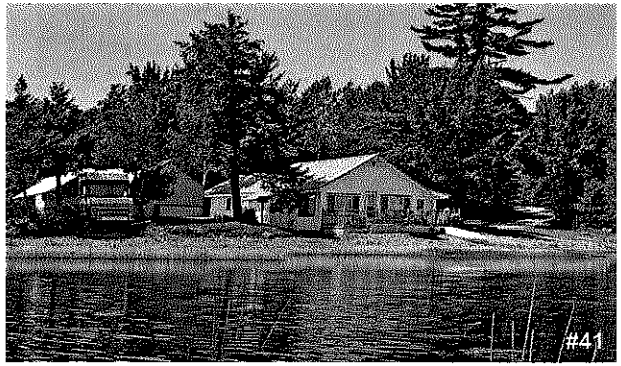
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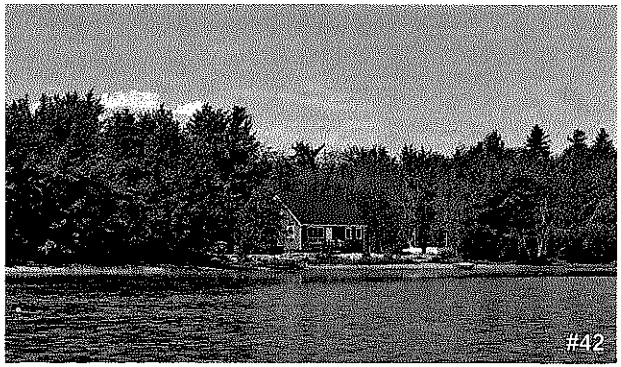
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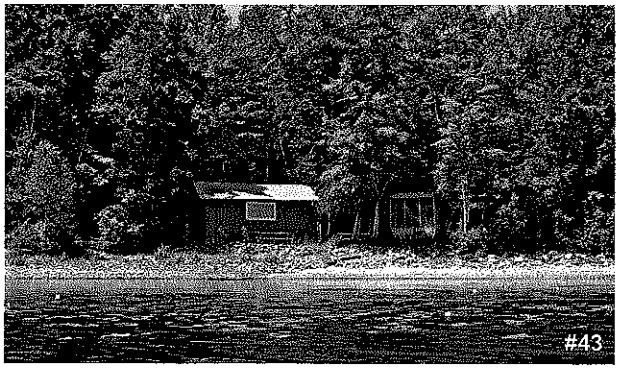
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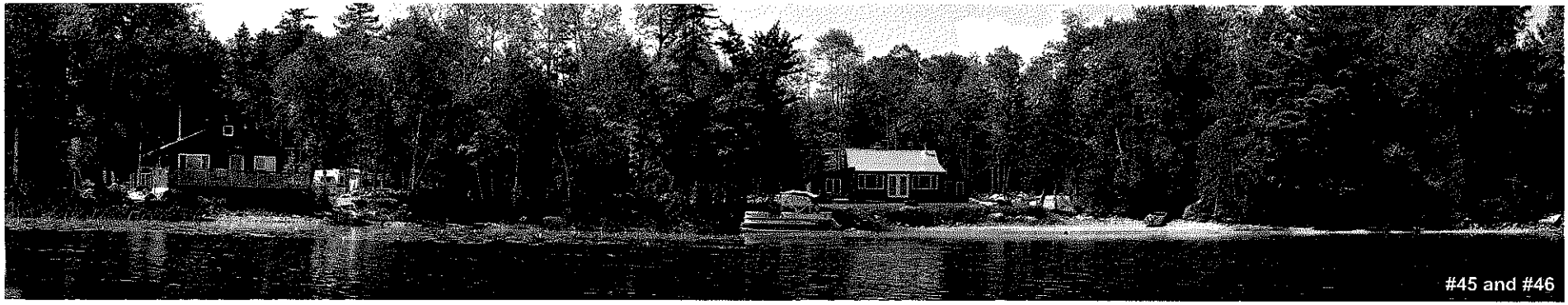
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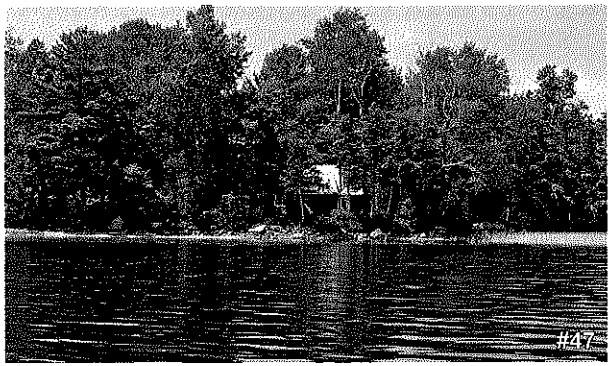
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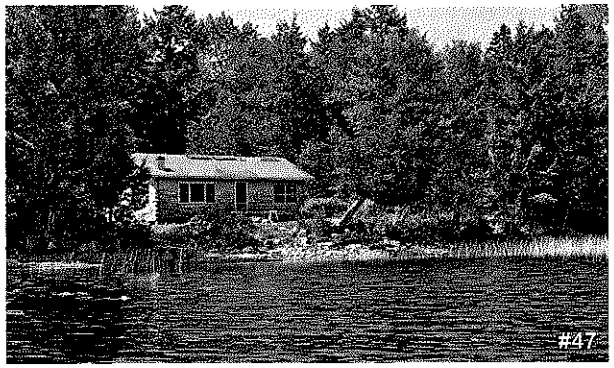
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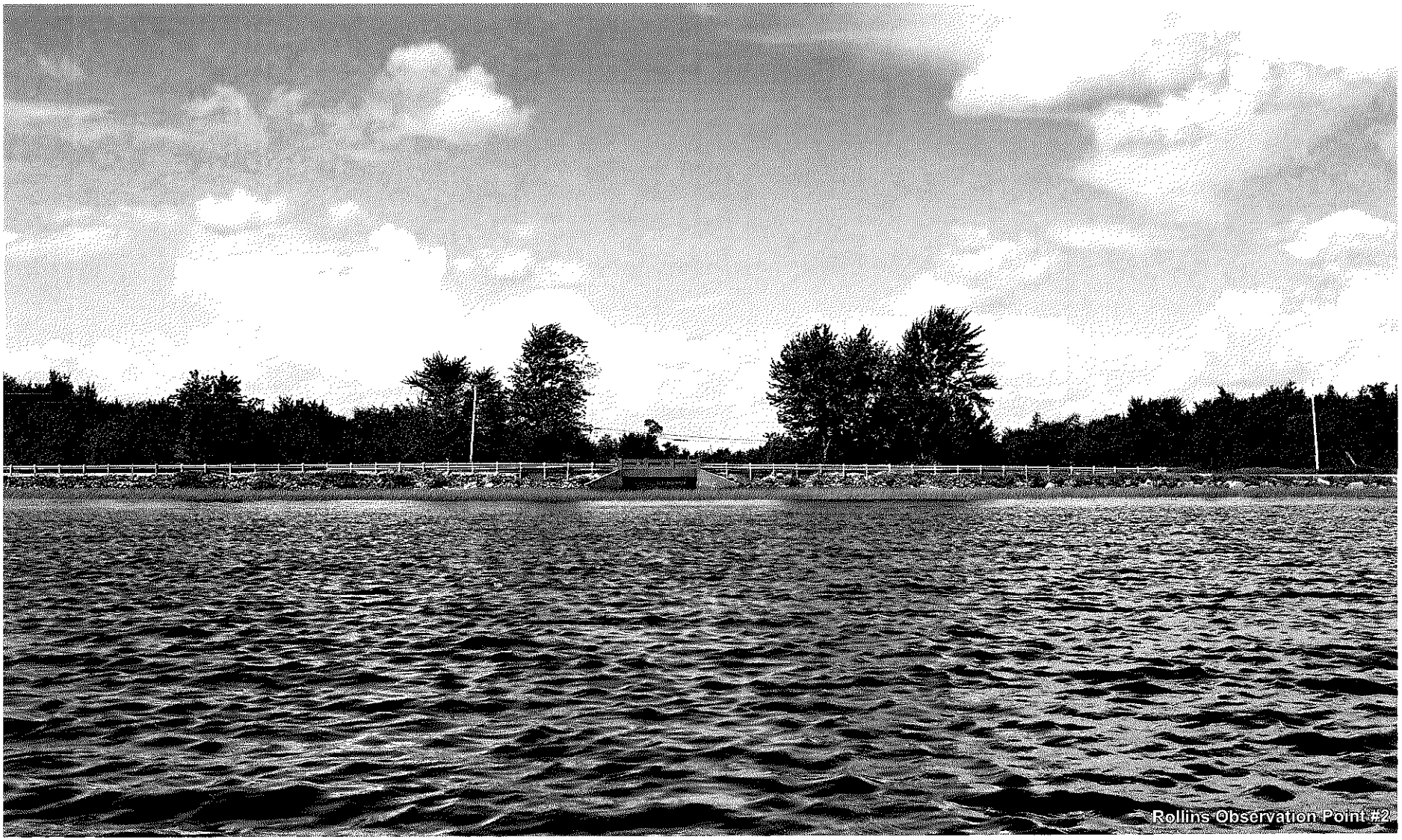
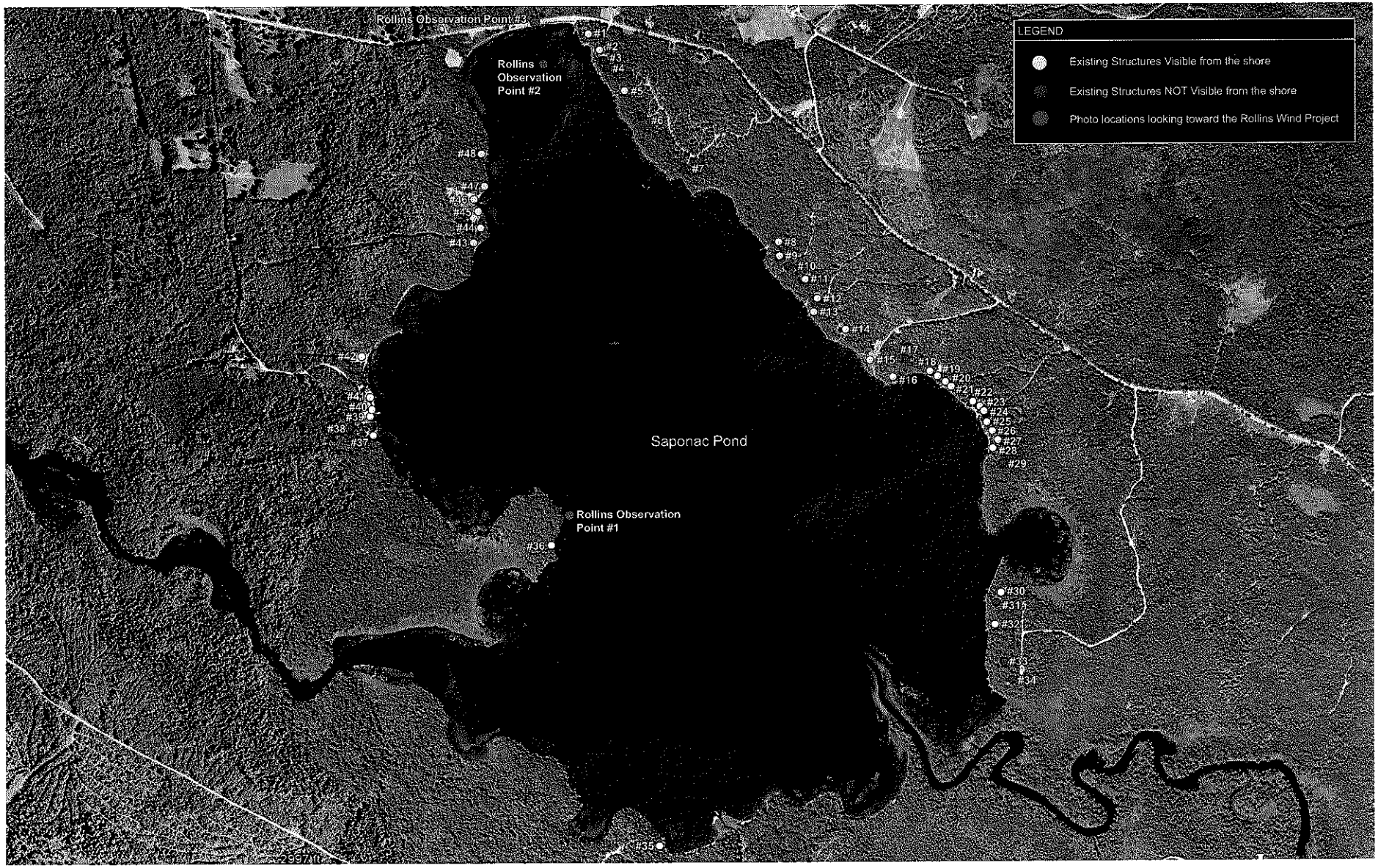
View looking north from Saponac Pond near the northeast shore of Black Island toward the Rollins Wind Project. Four turbines in the Rollins Wind Project are within 8 miles of this viewpoint. The closest turbine is 7.0 miles away.



View looking north from Saponac Pond 500 feet south of Route 188 toward the Rollins Wind Project. Ten turbines from the Rollins Wind Project are within 8 miles of this viewpoint. The closest turbine is 6.1 miles away. The turbines that are visible are seen just above the treeline near the bridge in the center of the image.

View looking north from the bridge on Route 188 north of Saponac Pond toward the Rollins Wind Project. Eleven turbines from the Rollins Wind Project are within 8 miles of this viewpoint. The closest turbine is 6.0 miles away. The turbines that are visible are seen just above the treeline in the center of the image.


LEGEND
Existing Structures Visible from the shore
Existing Structures NOT Visible from the shore
Photo locations looking toward the Rollins Wind Project
Rollins Observation Point #3
Rollins Observation Point #2
Rollins Observation Point #1
Saponac Pond
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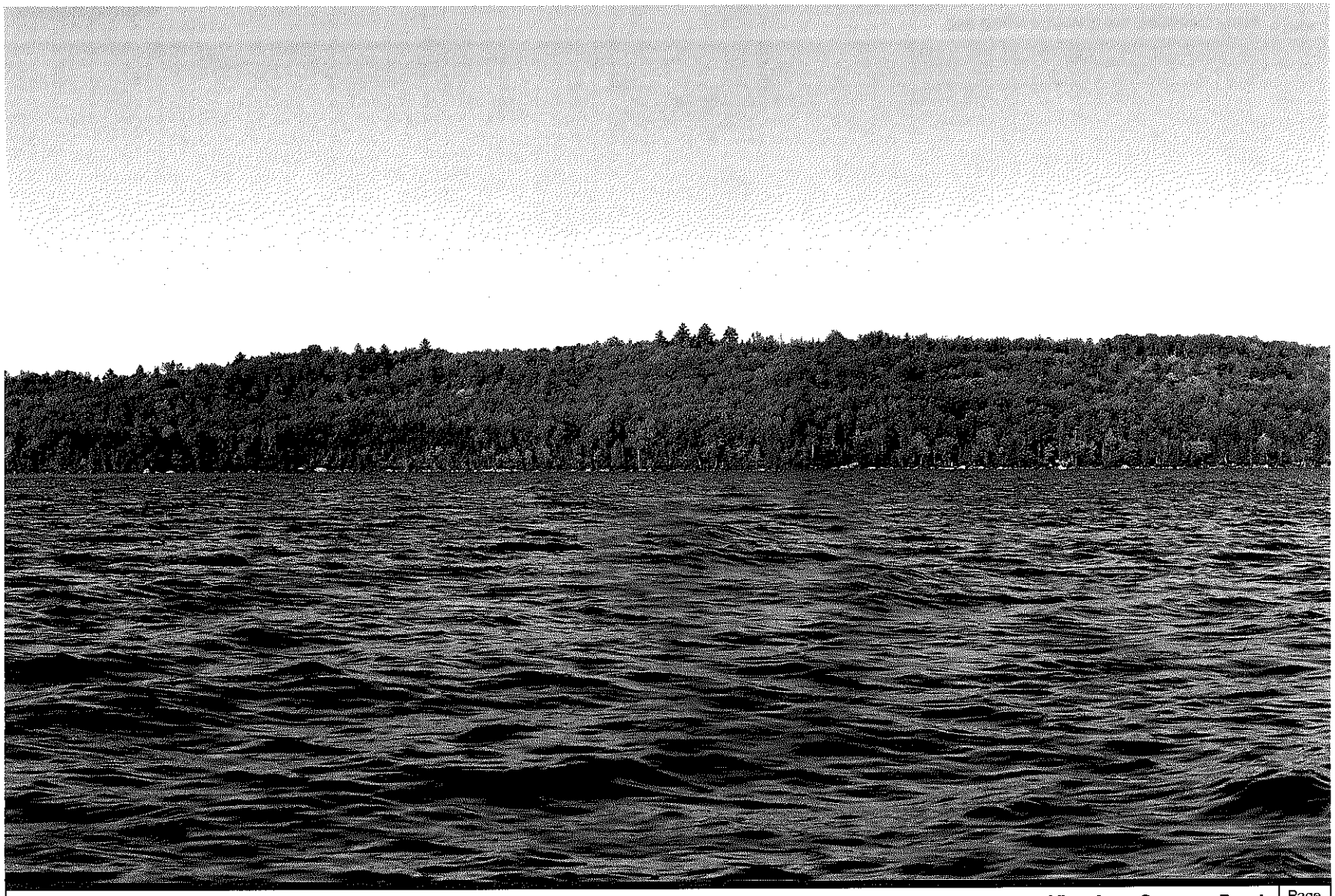
360 Degree View from Saponac Pond | Page 1



360 Degree View from Saponac Pond

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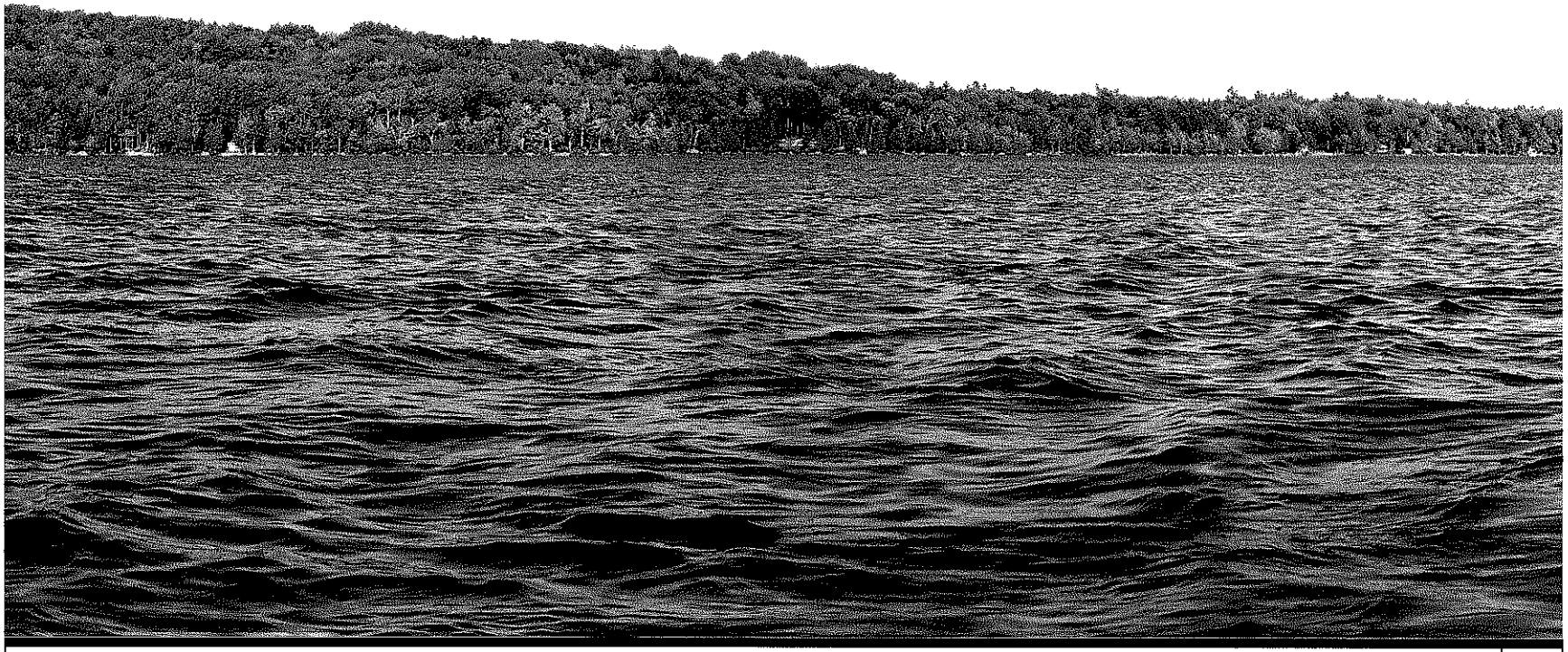
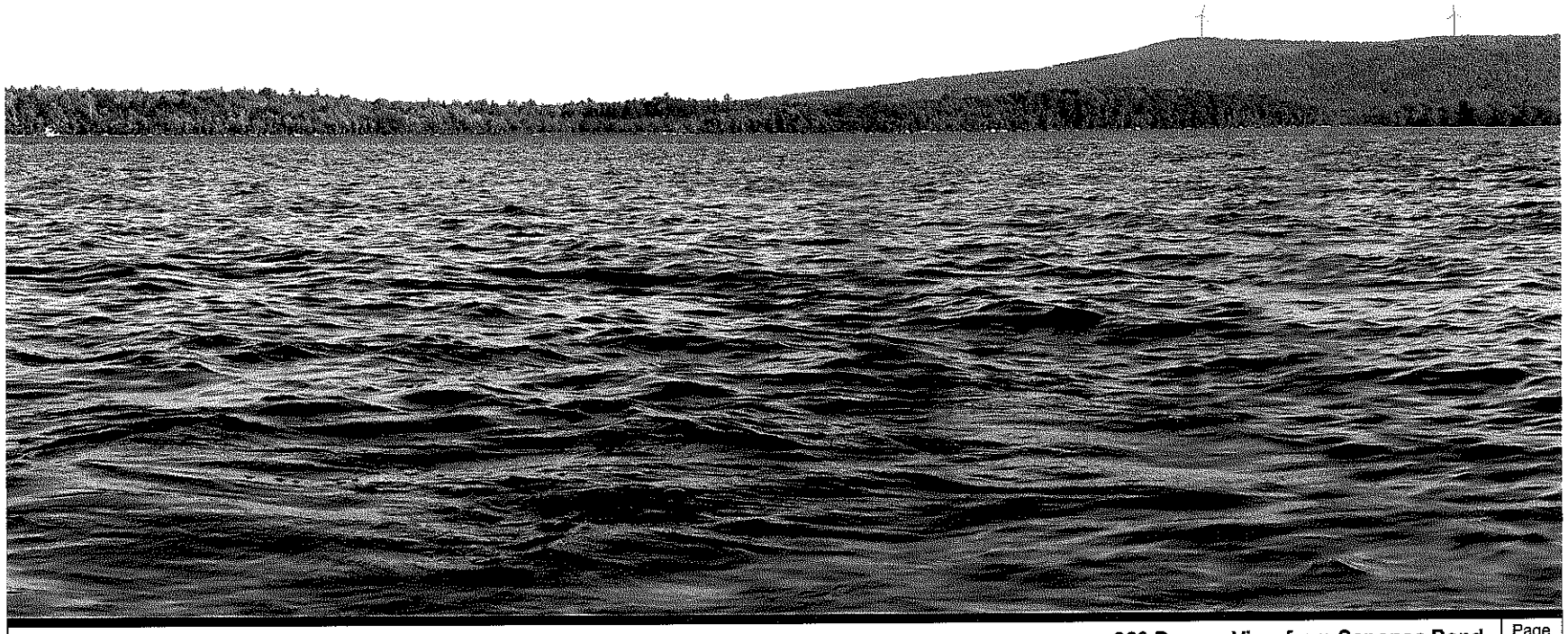


360 Degree View from Saponac Pond

Page 3



360 Degree View from Saponac Pond

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360 Degree View from Saponac Pond

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360 Degree View from Saponac Pond

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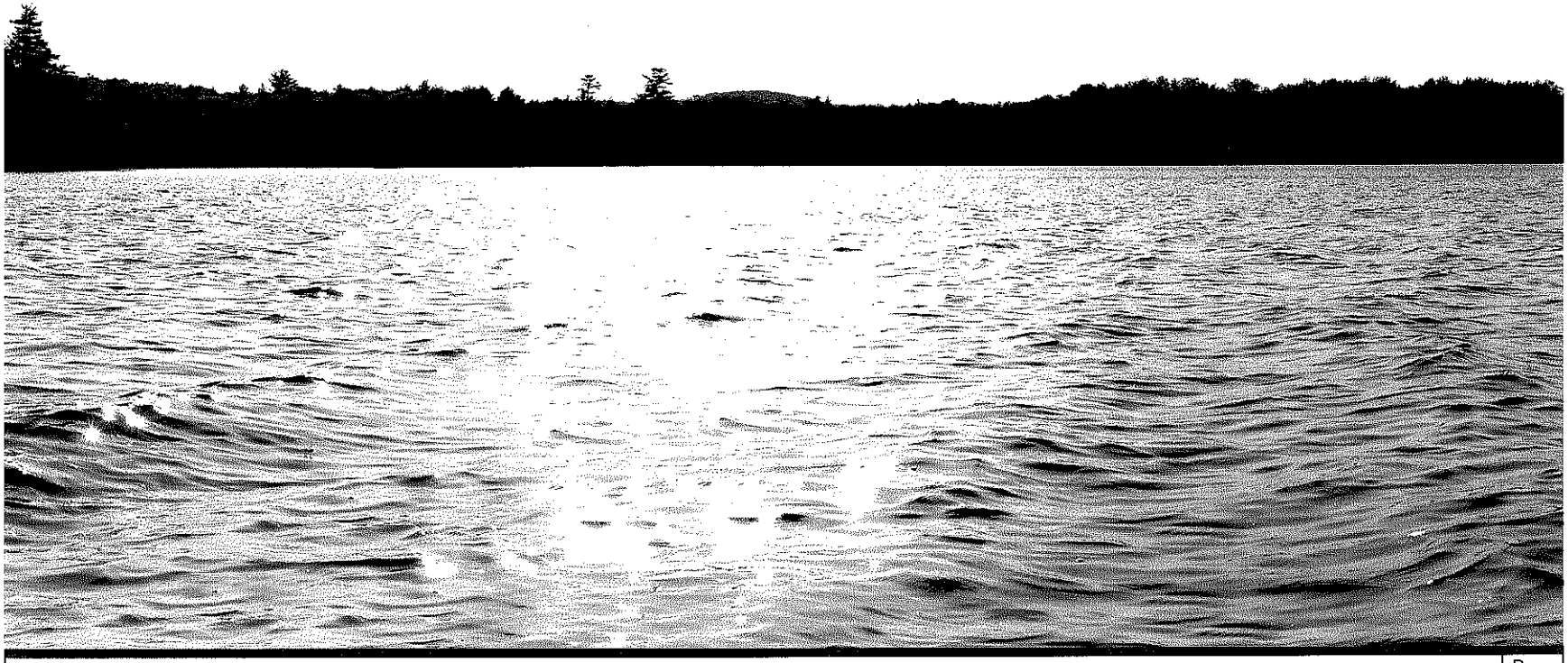
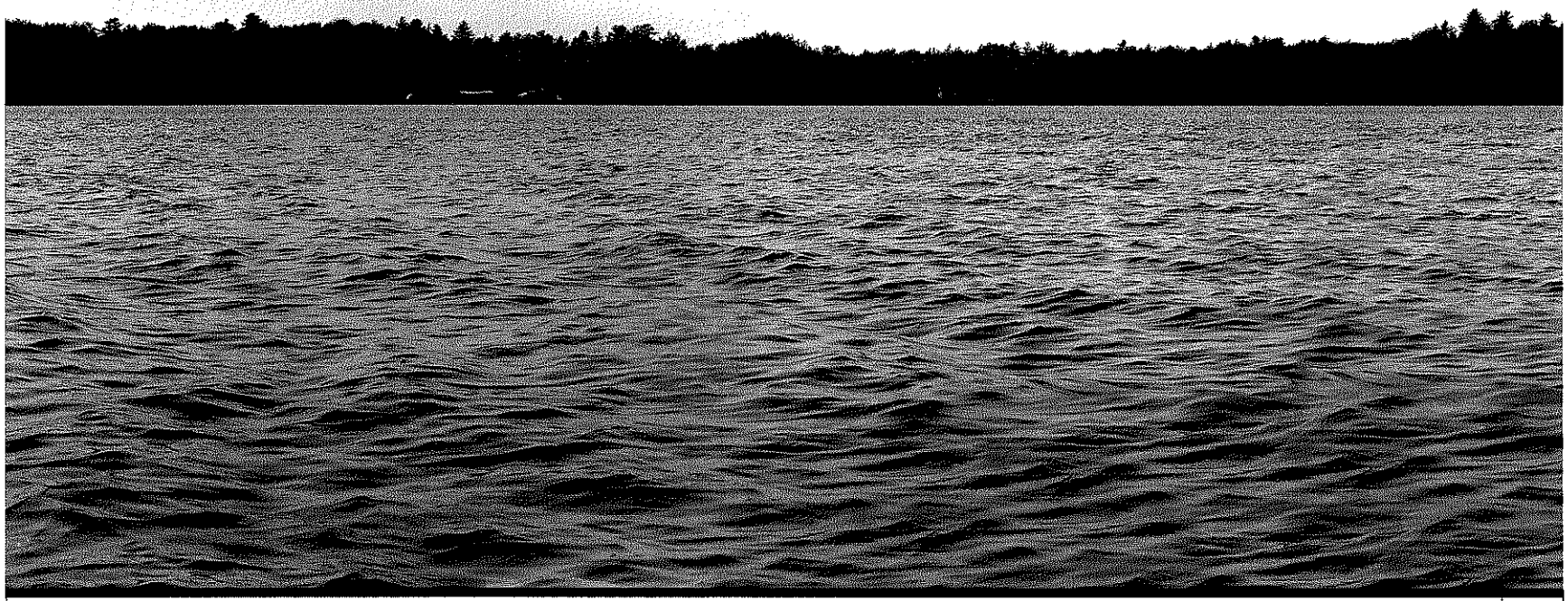
360 Degree View from Saponac Pond



360 Degree View from Saponac Pond

364



360 Degree View from Saponac Pond

360 Degree View from Saponac Pond

360 Degree
Viewpoint

Stantec

To: Brooke Barnes, Project Manager, Stantec Consulting

From: Katelin Nickerson, Project Scientist, Stantec Consulting

Date: September 4, 2012

Re: Saponac Pond Lake Use Survey Results

As requested, Stantec Consulting conducted a survey of boat activity at Saponac Pond, near the proposed Passadumkeag Wind Project. This memo summarizes the results of those surveys.

The purpose of the survey was to obtain data regarding the level of boat traffic and recreational use of Saponac Pond, located in Burlington and Grand Falls Township, Maine.

Surveys were conducted on 13 days between August 8 and September 3, 2012. Survey time varied from two to ten hours each day, observation times were varied, and observations were conducted with the aid of field glasses. Observers were most often located at the boat launch at the Northern shore of the pond, a beach and campsite on the Southern shore of the pond, or in a kayak paddling around the pond (see Appendix, Map 1). Observers frequently scanned the lake with binoculars as well as listened for audible cues of activity on the pond. Observers generally avoided contact with lake users, and were careful not to make locals aware of the purpose of their presence. Weather during this time varied from 80 and sunny to low 60's and cloudy. See Table 1, below, for a summary of observations.

All boats observed in Saponac Pond were documented, as well as incidental observations of activity along the shoreline. Information documented about each observation included: time of observation; type of boat (motor, canoe, kayak, other); number of people in boat; direction of travel; time spent on the pond; and previously documented boat. Activities of individuals on the pond were recorded if this observation could be made (Appendix Table 2).

In total, 24 boats carrying 42 boaters were observed on Saponac Pond in the 13 day period. This included 5 canoes, one canoe with an outboard motor, 5 kayaks, and 13 motor boats. Only one motor boat was a previously documented boat. In this time, there were 6 incidental shoreline observations with a total of 9 individuals observed. Roughly half of observed activities on-shore and in the pond were people fishing. See daily observations table below.

The length of trips observed varied. Eleven trips lasted one hour or less; thirteen trips lasted two to four hours, and two trips lasting 5 and 6+ hours respectfully. The average trip length of boats on the pond was 1.8 hours.[1]

Table 1: Daily Observations – Saponac Pond, 2012

Date	Hours of observation	Number of boats observed	Number of individuals observed on the pond	Number of incidental on-shore observations	Weather conditions
Wednesday 8/8/2012	6:30 - 8:30 am	1	2	1	Clear skies, no wind
Thursday 8/9/2012	6:30 - 9:45 am	1	1	0	Clear skies, no wind
Friday 8/10/2012	11:55 am - 3:00 pm	1	5	0	Foggy, 74 degrees, drizzle, slight breeze
Friday 8/17/2012	7:00 am - 5:00 pm	5	9	2	70-80 degrees, cloudy in morning and clearing
Saturday 8/18/2012	7:00 am - 5:00 pm	4	9	4	Hazy, mid 70s light rain around 10-11am
Sunday 8/19/2012	7:00 am - 12:00 pm	0	0	0	Clear skies, no wind, mid 70s
Saturday 8/25/2012	6-8:30 am and 5-7:30 pm	3	4	0	Cloudy, southern wind, mid 70's
Sunday 8/26/2012	6-8:30 am and 5-7:30 pm	4	5	1	partly cloudy, southern wind, 80 degrees
Wednesday 8/29/2012	8:00 am - 5:30 pm	1	2	0	Sunny, windy, NW wind, mid 60's
Thursday 8/30/2012	7:00 am - 5:00 pm	1	2	0	Partly cloudy, NW wind, mid 60's
Friday 8/31/2012	12:00 - 7:30 pm	2	2	0	Cloudy, SW wind, upper 60's low 70's
Saturday 9/2/2012	6:00 am - 1:30 pm	0	0	1	cloudy, SSW wind, low 60's
Sunday 9/3/2012	10:00 am - 5:30 pm	1	1	0	cloudy, Southern wind, low 60's
TOTALS:	**86.25 hours**	**24**	**42**	**9**	

[1] Accounting for unknown trip lengths due to observer not being present, the time each boat was observed on the pond was used to find this average.

Appendix

Table 2: Individual Observations – Saponac Pond, 2012

Date	Time	Boat type	Number of people	Direction of Boat	Location of observer	Length of Trip	Repeat?	Notes
8/8/2012	Before 6:30 AM	Motor	2	East/West	North end of pond, at boat launch	2 hours +	no	Boat was in the water before observer arrived and was still in the water after observer left
8/8/2012	before 8:30 AM	none	1	n/a	North end of pond, at boat launch		no	One man on lake shore drinking coffee at the boat launch.
8/9/2012	Before 6:30 AM	Motor	1	West	North end of pond, at boat launch	1 hour +	no	Boat was in the water before observer arrived and lost sight of boat after an hour
8/10/2012	1:00 PM	Motor	5	North	North end of pond, at boat launch	1 hour +	no	Three adults and two kids on board, already in water when observer arrived. Appear to have been out fishing
8/17/2012	10:50 AM	Canoe	2	WSW	small beach on southwest side of pond	0.5 hours	no	Two guys paddled out into outlet and came back through twenty minutes later
8/17/2012	4:00 PM	2 Kayaks	2	SSW	Paddling in the middle of the pond	0.5 hours	no	Two adults paddling along western shore in kayaks.
8/17/2012	4:15 PM	Canoe	2	South	paddling toward the boat launch on northern shore	1 hour +	no	Two young adults fishing from canoe paddled out to the middle of the lake and along the eastern shore. They were still there when observer left.
8/17/2012	4:40 AM	Motor	3	South	paddling toward the boat launch on northern shore	0.5 hours +	no	Three adults in a small motor boat went out to middle and eastern shore of lake to fish. They were still there when observer left.
8/17/2012	2:00 PM	none	2	n/a	beach/camping area on southern shore	20 minutes	no	Two people swimming on the North Western shore of the lake
8/18/2012	12:50 PM	2 Canoes	4	South	beach/camping area on southern shore	1.5 hours on pond/overnight	no	Four young adults in two canoes came to a beach on the south shore of the lake to camp and fish for the night. They said they were from about 20 minutes away.
8/18/2012	2:20 PM	Canoe	2	South	small beach on southwest side of pond	1.5 hours on pond/overnight	no	Two more young adults joined the group of four that are camping/fishing on the south shore of the lake
8/18/2012	3:07 PM	Motor	3	South and East	small beach on southwest side of pond, and paddling around the pond	2 hours	yes	Three adults fishing around Eastern and Southern shore of the lake. Came to boat launch around 4:45 PM, they looked familiar. These folks have been observed on the lake during a previous survey.

8/18/2012	12:00 PM	none	2	n/a	small beach on southwest side of pond, and paddling around the pond	1.5 hours/overnight	no	Two adults were sitting on the beach on the island on western shore of lake; they appear to be camping overnight.
8/18/2012	4:15 PM	none	2	n/a	paddling along north eastern shore	.65 hours	no	Adult couple sitting on dock on North Eastern shore of lake.
8/25/2312	6:00 AM	Motor	1	South West	North end of pond, at boat launch	2 hours	no	Fishing
8/25/2312	6:00 AM	Motor	2	South	North end of pond, at boat launch	2 hours	no	Fishing
8/25/2312	5:00 PM	Kayak	1	SW and NE	North end of pond, at boat launch	2 hours	no	trolling
8/26/2012	6:00 AM	Motor	2	SSW	North end of pond, at boat launch	2 hours	no	Fishing
8/26/2012	6:00 AM	Motor	1	South	North end of pond, at boat launch	2 hours	no	Fishing
8/26/2012	5:00 PM	Kayak	1	North	North end of pond, at boat launch	2 hours	no	Paddling
8/26/2012	6:00 PM	none	1	n/a	North end of pond, at boat launch	1 hour	no	One adult on the western shore of the pond, fishing off a dock.
8/26/2012	6:30 PM	Motor	1	North	North end of pond, at boat launch	1 hour	no	Fishing
8/29/2012	10:30 AM	Motor	2	South, Southeast	beach/camping area on southern shore	5 hours	no	Two adults fishing mostly along the north and southeast sections of the pond.
8/30/2012	10:38 AM	Canoe w/outboard motor	2	South, southeast	beach/camping area on southern shore	6 hours +	no	Two adults fishing mostly along the north and southeast sections of the pond. They were still out fishing when observer left at 5pm.
8/31/2012	12:30 PM	Kayak	1	South, North Loop	Western shore, alternate observation point 1	2 hours	no	Paddling around the pond, no destination
8/31/2012	1:00 PM	Motor	1	North	Western shore, alternate observation point 1	0.5 hours	no	Single person observed leaving the pond from the southwestern part of the pond.
9/2/2012	8:00 AM	none	1	n/a	Western shore, alternate observation point 1	2 hours	no	One person on the western shore of the pond, fishing off a dock.
9/3/2012	10:00 AM	Motor	1	West	North end of pond, at boat launch	2 hours	no	Appeared to be a local person on the pond, did not take boat out of water at boat launch. Traveled from the Eastern shore to the western outlet.

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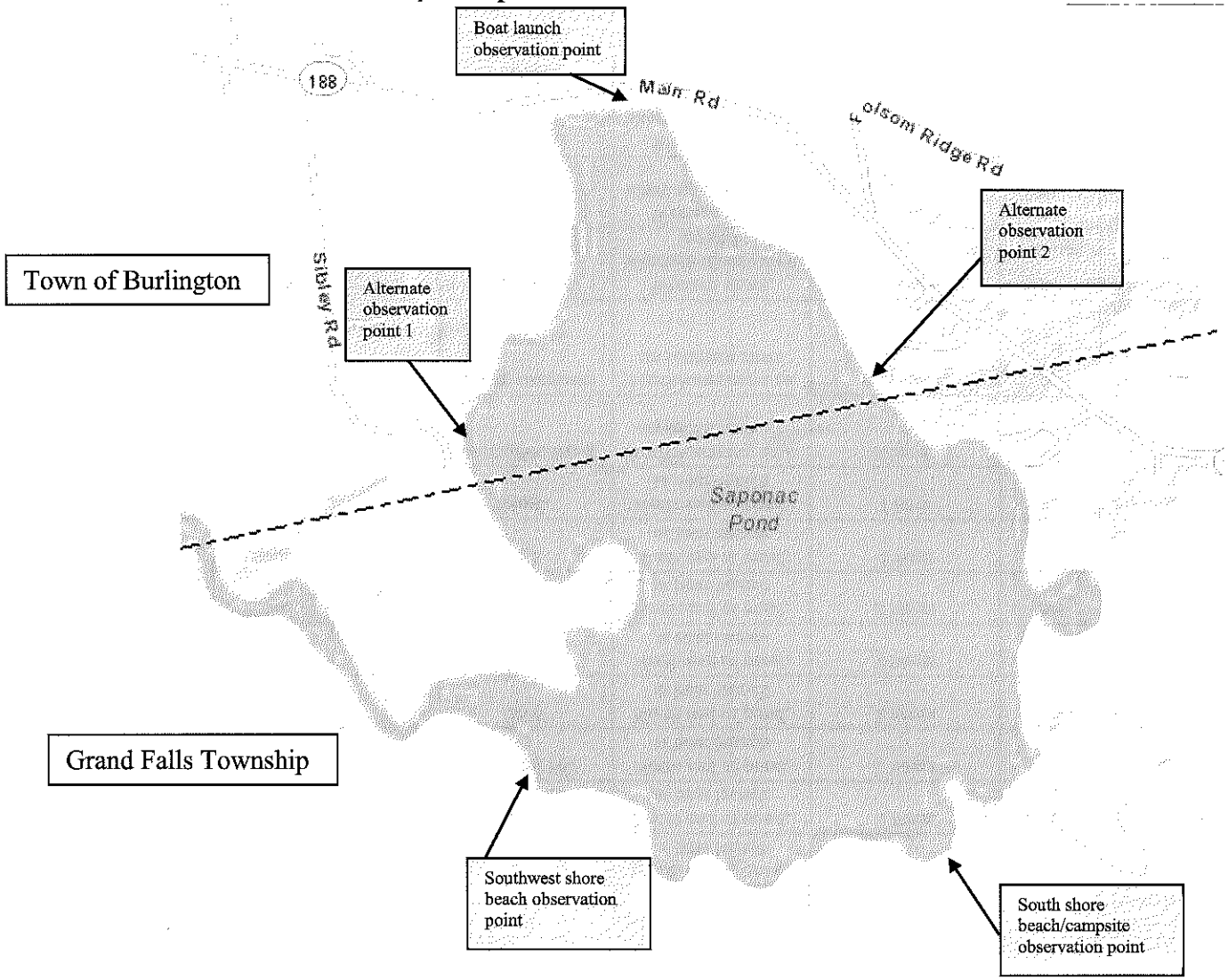
Map 1: Saponac Pond Lake Use Observation Locations



LandWorks

Landscape Architecture

Planning

Graphic Design

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Middlebury, VT 05753

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info@landworksvt.com

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Memo

To: James Beyer Date: 10.3.12

Company: Maine Department of Environmental Protection No. of Pages:

Address: 106 Hogan Road
Bangor, ME 04401

From: David Raphael

Re:

❑ attachment/enclosure

We have reviewed the panorama provided by T.J.DeWan and Associates regarding the view from the middle of Saponac Pond, and we have several specific conclusions from this exhibit. These conclusions are qualified by the fact that we haven't completed our review of the Supplemental Application Information dated 9-26-12; we have just downloaded that information from the website today as you have made us aware of it.

1. It is difficult to ascertain the true size of the turbines as the eye would see it in the "Quicktime movie" representation. This does not come through as a simulation sized document that reflects accurately what the viewer would see from this vantage point; therefore it is difficult to truly assess the visual impact. The turbines appear smaller in the photo than they probably would appear to the viewer.

2. The closest turbine in the Rollins project from the nearest shoreline of Saponac Pond is over 6 miles away; at this distance the turbines appeal small in scale and do not typically disrupt or unduly affect viewer activities. Couple this factor with atmospheric conditions, and the visual presence of the project in the viewers' cone of vision is diminished - this is exemplified by the white coloring of the turbines which make them hard to pick out on the day the photographs were taken.

3. The view to the Rollins project takes up a relatively small portion of the view horizon and therefore in and of itself does not appear as though it will have an unreasonable effect on the scenic resource. The closest Rollins turbine is about 6 miles from the nearest shoreline. However, when the viewer is confronted with the Passadumkeag Project coupled with the Rollins Project, there will be most likely a diminishment of scenic values in the viewer's mind - the question is to what extent? This is the type of issue that the intercept survey is/can be designed to address. It does not appear that this has been done by the applicant. This might be desirable to provide sufficient and reliable guidance as to the determination of effect on use and enjoyment.

Copies to:

4. The Pond is identified as an SRSNS, and its scenic quality rating of "significant" is due to, in part, its topographic relief and shoreline. Beyond those considerations, the pond is not a unique or highly sensitive resource. While we agree in general with the findings on cumulative impact set forth in the Supplemental Application Information we believe some additional descriptions of the viewer's experience on the lake would be desirable to further substantiate these conclusions would be desirable. The purpose would be to further address how the two projects would be perceived and affect the experience of the lake user.

5. Given the local recognition of Passadumkeag Mountain as an important regional landmark, a consideration that was not readily understood until the public hearings, it is possible that one could reach the conclusion that the impact to this landmark could be considered unreasonable. However, given that the mountain has not in and of itself been identified as a SRSNS, nor is it considered a tourism or recreational destination, it is difficult, from a purely statutory perspective with regard to the visual assessment process required, to reach this conclusion. This is coupled with the fact that the pond appears to not have a high level of use, or visitation from beyond the region, and thus the project 's possible impacts will not affect a large number of individuals.

From: Beyer, Jim R <Jim.R.Beyer@maine.gov>
Sent: Thursday, October 11, 2012 9:45 AM
To: Barnes, Brooke
Subject: FW: Passadumkeag letter/attachment
Attachments: @

This message has been archived.

Brooke,
Here is the revised memo on the Robbins Easement issue. I will try and do a posting to the FTP site either today or tomorrow, so everyone else gets to see this.

James R. Beyer
Regional Licensing and Compliance Manager
Division of Land Resources Regulation
Eastern Maine Regional Office
Maine Department of Environmental Protection
(207) 446-9026

From: Boutilier, Lynn A
Sent: Wednesday, October 10, 2012 4:15 PM
To: Beyer, Jim R
Subject: Passadumkeag letter/attachment

Attachments:

passadumkeag letter attachment.docx	(27 KB)
Passadumkeag 10-20-12 letter.doc	(132 KB)

INTEROFFICE MEMORANDUM

TO: PATRICIA AHO

FROM: HEATHER PARENT

SUBJECT: PASSADUMKEAG WIND PARK, LLC NRPA PERMIT APPLICATION

REPONSE TO ADDITIONAL QUESTIONS RELATED TO IMPACT ON SCENIC CHARACTER AND RELATED EXISTING USES

DATE: 10/11/12

This memorandum is intended to respond to questions you have posed to me regarding the memorandum provided to you on September 18, on the Passadumkeag Wind Park application.

The analysis I provided in the 9/18 memo centered around whether the land (or feature) encumbered by the Robbins Easement was "comparable to" a "national natural landmark" or a "federally delegated wilderness area."[1] In order to provide you with the additional analysis you requested I have reviewed factual information specific to this parcel and the easement that encumbers it.

Critical to an analysis of comparable features is (1) the identification of the feature(s) at issue, and (2) an evaluation of whether the feature(s) rank high on the elements, uses and values that are comparable to the National Natural Landmarks or Federally Designated Wilderness Areas (hereinafter "NNL/FDWA").[2]

As stated in the 9/18 memo, when land is designated as a National Natural Landmark, the landowner must agree to preserve the "significant natural values" of the site or area, and federally designated wilderness areas are to provide values such as solitude or a primitive and unconfined type of recreation," as well as "ecological, geological, or other features of scientific, educational, scenic, or historical value." These are values and features that should be considered when making a determination of comparability.

When determining whether a specific parcel of land, such as a Forest Legacy property, is comparable to the NNL/FDWA, the specific features of the land in question must be considered.[3]

[1] The portions of the 9/18 analysis related to public access and the public process (two key aspects of a national natural landmark or a federally delegated wilderness area) won't be addressed in this supplemental memorandum.

[2] Merely because a Forest Legacy Easement is contained on a property or a property receives federal funding does not alone invoke the comparable features analysis. Nothing in this memorandum should be construed to mean that all Forest Legacy Easement must be analyzed for comparable features.

[3] The question before the Department was whether the Robbins Easement, which is an easement established under the Forest Legacy Program, contained an outstanding natural and cultural feature that is comparable to NNL/FDWA lands. For this reason, all discussion in the 9/18 memorandum and this follow-up memorandum relates to whether the land subject to this particular easement, established under the Forest Legacy Program, contains "comparable features" as that

The purposes underlying the protection property, in comparison to the values of NNL/FDWA programs should also be considered. The way the specific values of the parcel as a whole were ranked for those values (under the Forest Legacy program), as compared to the NNL/FDWA values, informs this evaluation.

With respect to the question regarding the ranking of values under the Forest Legacy program, the parcel in question was selected as a Forest Legacy site due to the threat of conversion to non-forestry-related activities, and 19,380 acres of the 22,305 acre parcel were specifically set aside to be used as commercial forest land. While there are other values taken into consideration for designation in the Forest Legacy program, in the case of most such easements and in particular the Robbins easement in question, the primary values at issue are identified as protecting wildlife habitat and commercial forest management activity. Although public access and recreation are ancillary values for the easement, those values do not appear to be of primary focus and therefore, this particular property does not appear to be land comparable to those lands identified in NNL/FDWA lands.

Turning to the specific features protected in the Robbins easement, the Purpose of the Forest Legacy program easement in question is listed as to: (a) continue the Property's availability for long term forest management, including commercial timber production, (b) protect and conserve the undeveloped character and the natural and ecological features of the Property, which provide important wildlife and fisheries habitat and help ensure the quality of the water in Nicatous and West Lakes, and (c) ensure the Property's availability and scenic enjoyment for traditional outdoor recreation and use by the general public. However, every portion of the entire parcel of land does not serve all three purposes. As stated above, 19,380 acres of the 22,305 acre parcel was specifically set aside to be used as commercial forest land. Only small portions of the property are not treated as Forest Management Areas. Because the value placed on this easement by the Forest Legacy Program is primarily commercial forestry, and because other values are ancillary to that purpose, we conclude that the property in question is <u>not</u> comparable to NNL/FDWA.

Based upon this further consideration of facts specific to this property, the Department concludes that the features within the Robbins Easement are not comparable to the NNL/FDWA, and do not have to be evaluated as part of a visual impact assessment for the project.

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term is used in the Expedited Permitting of Grid-Scale Wind Energy Development Law. No other comparable provisions of Maine law have been considered in this analysis, nor should this analysis be utilized to respond to other scenic impact standards contained elsewhere in Maine law. All discussion in both the 9/18 memo and this memo relate to the specific property in question and the specific provisions of law implicated. The Department may consider rulemaking pursuant to the Wind Energy Development Law, 35-A MRSA §3451(9)(A), scenic resources considered for wind energy development application or the Department may seek clarity from the Legislature regarding the applicability of 35-A MRSA §3451(9)(A). The information provided to the Department today, however, is sufficient for the evaluation of comparability of the property in the Robbins Easement that was established under the Forest Legacy Program.

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

October 20, 2012

Mr. Michael Beckner
Passadumkeag Windpark LLC
5 Houston Center
1401 McKinney Street, Ste. 1800
Houston, TX 77010

Dear Mr. Beckner:

Subsequent to the release of the memorandum dated September 18, 2012 in the Passadumkeag Wind Park, LLC NRPA Permit Application, we conducted further review of the matter. The Maine Department of Environmental Protection (DEP) has further analyzed the issue at hand and prepared the attached memorandum intended to provide clarity as a result of this further review. The primary conclusions are that (1) the Robbins Easement in question is not an "other comparable outstanding natural or cultural feature" under the Maine Wind Energy Development Act and (2) the DEP will consider whether rulemaking pursuant to 35-A MRSA §3451(9) is appropriate to define for the public and the regulated community that which constitutes "other comparable" land subject to the visual impact review.

Sincerely,

Patricia W. Aho
Commissioner

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web site: www.maine.gov/dep

From: Barnes, Brooke <brooke.barnes@stantec.com>
Sent: Tuesday, October 23, 2012 4:23 PM
To: Beyer, Jim R (Jim.R.Beyer@maine.gov)
Cc: MBeckner@quantumug.com
Subject: Passadumkeag Wind Project

This message has been archived.

Hi Jim

As I noted in my call today, the applicant would like to put a hold on the application for this project for 30 days. I believe this brings the decision date to December 11---can you please confirm that my calculations are correct?

Thank you

Brooke

Brooke Barnes

Senior Project Manager

Stantec Consulting Services

30 Park Drive

Topsham, ME 04086

brooke.barnes@stantec.com

Office: 207-729-1199

Cell: 207-522-4870

From: Beyer, Jim R <Jim.R.Beyer@maine.gov>
Sent: Wednesday, October 24, 2012 9:08 AM
To: Barnes, Brooke
Subject: FW: Passadumkeag Wind Project

This message has been archived.

Brooke,

The commissioner has declined your request to put the project on hold for an additional 30 days. The current schedule is that a draft decision will be made available on or about October 31, 2012 and final agency action must take place by November 9, 2012.

James R. Beyer

Regional Licensing and Compliance Manager

Division of Land Resources Regulation

Eastern Maine Regional Office

Maine Department of Environmental Protection

(207) 446-9026

From: Aho, Patricia
Sent: Wednesday, October 24, 2012 8:34 AM
To: Bergeron, Mark; Parent, Heather
Cc: Beyer, Jim R; Kuhns, Mick
Subject: Re: Passadumkeag Wind Project

Thank you Mark- I concur with your recommendation, and believe we need to finalize this application.

From: Bergeron, Mark
Sent: Wednesday, October 24, 2012 08:19 AM
To: Aho, Patricia; Parent, Heather
Cc: Beyer, Jim R; Kuhns, Mick
Subject: FW: Passadumkeag Wind Project

Hi-

The applicant has requested to put

Tom Swank

From: Bergeron, Mark <Mark.Bergeron@maine.gov>
Sent: Friday, November 02, 2012 10:14 AM
To: Tom Swank
Cc: Aho, Patricia; Beyer, Jim R; Mike Beckner; Katherine Joyce; Bensinger, Peggy
Subject: RE: Passadumkeag Application Process Suspension Request

Follow Up Flag: Follow up
Flag Status: Completed

Hi Tom-

I apologize in the delay in replying to your email. I wanted to respond to a few of the points you raised in your email.

1. I spoke with Brooke Barnes on 7/27/12 about the Department's concerns about scenic impacts, in addition to other conversations Jim Beyer had with Brooke Barnes in July.
2. At the 8/1/12 meeting with Pattie, we discussed putting the project on hold to allow you to submit additional information on scenic impacts, financial capacity, decommissioning and tangible benefits. In an effort to save you money and effort, at that meeting Jim Beyer and I offered to meet with you within a week of the 8/1/12 meeting to discuss possible project modifications or additional information that could be submitted to help address the Department's concerns on scenic impacts, before a significant amount of work was undertaken by you or your consultants. You did not take the opportunity to meet with us again, but submitted the supplemental information on 9/27/12.
3. The issuance of the second memorandum clarifying the Department's position on the Robbins easement (10/11/12) was not intended to time with the submission of the supplemental VIA.
4. I do not recall indicating that I was unavailable to meet with you to review your supplemental information. Jim Beyer was available to meet even if I was unavailable.
5. The meeting on 10/23/12 was a courtesy meeting to inform you that the Department was preparing a draft order denying the project. I emphasized during that meeting that the Department believes that the proposed project will have an unreasonable adverse effect on the scenic character of Saponac Pond, primarily due to the undeveloped nature of Passadumkeag Mountain, and the horizontal angle of view that 14 turbines would be visible from the pond.
6. In order to meet the 11/9/12 statutory deadline for the project (which includes the time the project was put on hold in August), the Department needed to prepare a draft order to allow parties 5 days to provide comments before the final order is issued by 11/9/12.

The reason the Department denied your request for a 30 day extension to the project was that the Department believes you had the opportunity after the 8/1/12 meeting to provide supplemental information (which you did) to address the Department's concerns. Because the Department's primary concerns on scenic impacts to Saponac Pond are the undeveloped nature of Passadumkeag Mountain, and the horizontal angle of view that the 14 turbines would be visible from the pond, it appears highly unlikely that any project modification (short of a substantial reduction in the amount of turbines, which you have indicated is not economically feasible) would affect the Department's findings on scenic impacts.

Thank you, Tom.
Mark Bergeron, P.E.
Director, Division of Land Resource Regulation
Maine Department of Environmental Protection
(207) 215-4397
mark.bergeron@maine.gov

From: Tom Swank [mailto:TSwank@quantumug.com]
Sent: Wednesday, October 24, 2012 9:49 PM
To: Bergeron, Mark
Cc: Aho, Patricia; Beyer, Jim R; Mike Beckner; Katherine Joyce
Subject: Passadumkeag Application Process Suspension Request

Mark,

We were surprised to receive notice today that you recommended the denial of our request for additional time, given that we left the meeting yesterday with the clear impression that the meeting represented one step in an iterative process.

That process was initiated when DEP informed us FOR THE FIRST TIME in the FINAL month of application review that there was an issue with visual impact on which DEP wanted additional information. In that final month, Commissioner Aho stated that she had a number of issues with the application that had, to that point, never been communicated to us, leaving us with virtually no time to respond. At that time, we requested an extension to provide that additional information for DEP's review (a photosimulation from your selected location on Saponac, information on the limited use of the resource to demonstrate the reasonableness of our user survey, etc.; a 360 degree view of the Pond to represent the viewscape for a user in the center of the Pond to illustrate the significantly developed nature of the Pond's shoreline), after which we understood we would either have changed DEP's perspective on Saponac, or we would discuss other potential options.

Since that meeting, the Applicant provided all of that information; also since that meeting, the DEP directed the Applicant to conduct a supplemental VIA on a newly minted Scenic Resource, and within one business hour of our submitting that supplemental VIA, the DEP issued a "revised" directive stating that the supplemental VIA was not necessary. When we requested to meet with you to discuss our submissions before "re-starting" the clock on the project, you indicated you were unavailable to do so; so, based on your schedules, ***it was not until yesterday*** that the DEP provided feedback stating that this information did not influence their analysis of Saponac because the DEP based its determination solely on visibility, an attribute which has obviously not changed as we awaited a response from DEP on our recent submissions.

While you stated yesterday that you could not, at that time, provide us with a standard of what percent of view would be acceptable to the DEP, our conversation ended yesterday with our understanding that DEP would go back to other projects to provide a sense of the percent of view that has previously been deemed acceptable (with the understanding that these are evaluation on a case by case basis) – to help us in determining whether there is any feasible revision of the site plan that might better match what the DEP considers reasonable. We also committed to going back to look at our layout to see what might be done, now that we have your feedback on the information we submitted on Saponac. You also stated that you would also have to see what we proposed before making a determination. In light of this conversation, we requested an additional 30 days to allow for both of us to figure out if there is some layout that DEP would find acceptable, and to ensure that we are not forced to put you in the uncomfortable position of receiving (and reviewing) significant new or revised information just days before the permit is scheduled to issue.

We understand that (despite your statement yesterday that you would have to see what we proposed prior to making a determination) you stated in a call with our consultant today that there is no information that Passadumkeag could provide within 30 days that would "change your mind", and that you are now willing to consider a comparison with other projects only if there is an appeal of the DEP's decision. This cavalier approach seems contrary to an efficient use of the public's and the applicant's time and resources.

We are disappointed with the DEP's failure to allow additional time for consideration of all the information relevant to what has been identified as the critical issue for the project. As was pointed out in our meeting, Quantum has made a considerable investment in the development of a project that would contribute over $70 Million into the local Maine economy, and create 225 new jobs. Given the expected economic benefit to the state, and the time and money spent to

date by the Applicant to address previous requests of the DEP, to not be afforded a reasonable opportunity to address the concerns you expressed in yesterday's meeting is concerning to us.

We would ask that you reconsider approving our request for the suspension of the application timeline given the new information and directives that you provided to us in our meeting with DEP staff yesterday.

Regards,

Tom Swank

Tom Swank
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October 29, 2012

TO: Brooke Barnes / Stantec
FR: Terry DeWan / TJD&A
RE: Passadumkeag Wind Project
Visual Impact on Saponac Pond

This memo is in response to your request to evaluate the potential visual impact of the proposed Passadumkeag Wind Project on Saponac Pond as a follow-up to our meeting with DEP staff on October 23, 2012.

I. QuickTime VR Movie

In light of questions and comments by DEP indicating concern over the impact of the Project on Saponac Pond, including a perception that it was a pristine pond, we generated supplemental material. In particular, we created a QuickTime VR movie to supplement our original visual impact assessment (VIA) for the Passadumkeag Wind Project, submitted to DEP on September 25, 2012. The QuickTime movie was derived from a series of photographs taken just off the northeastern end of Black Island on Saponac Pond. (See location on attached image from GoogleEarth.) This point was selected to illustrate the worst-case scenario, i.e., a location where the most number of turbines would be visible from the surface of the pond, along with a view of the Rollins wind project. This location does not represent the experience of typical public viewers who would most commonly view the Pond from Route 188, which is located immediately adjacent to the northern shoreline.

From this particular point, viewers get the sense that they are in the middle of the pond with a 360° open water view. Black Island is perceived as part of the shoreline and not as a separate land mass. Turbines would be seen on Passadumkeag Mountain in the midground – at distances of 3.2 to 4.4 miles – over a horizontal arc of approximately 62°. Turbines would be visible within approximately 17% of the 360° panorama available to the boater, as illustrated in the QuickTime movie. This movie also illustrates the extent of development on the shoreline of Saponac Pond.

From the point where the photographs used in the QuickTime movie were taken, viewers are able to see approximately half of the 48 camps along the shoreline that are visible from the pond; 800' of Route 188 at the northern end of the pond; and extensive areas of commercial forest harvest operations on the north face of Passadumkeag Mountain. The movie illustrates that the land surrounding Saponac Pond is not wilderness and that users would not experience a sense of remoteness.

In evaluating overall scenic impact, it is very important to understand the context of the viewpoint, as well as viewer sensitivity and anticipation. The turbines will appear larger at the point near Black Island than the more frequently visited viewpoint along the north shore of Saponac Pond because the viewer would be closer to them. However, significantly fewer members of the public will view the turbines from that closer viewpoint or similar locations. (The user study submitted into the record showed that Saponac Pond is used by an average of two to three boats per day.) A viewer near Black Island would see the turbines in a much more water-oriented environment in which the primary focus is the surrounding water and the adjacent shoreline.

In contrast to the viewer on the pond itself, to a person on a shoreline (e.g., from Route 188), the view is generally focused toward the waterbody, which often occupies a horizontal field of view of up to 180°. A person on the water is generally not in a fixed position and will rotate by virtue of wind direction and alignment of their boat (and therefore be facing the Project for only a portion of its time using the resource). For these reasons, while the turbines appear larger from the surface of the Pond, the actual visual impact from the Pond is significantly less than the visual impact from Route 188.

II. Visibility: Comparison with Other Approved Projects.

The Wind Energy Act provides criteria to review the visual impacts of wind energy projects on scenic areas of state or national significance, and specifically notes that

> *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.* 35-A MRS §3452(3).

However, it does not offer guidance in determining the exact threshold for "unreasonably adverse" scenic impacts. There are no metrics to help the applicant, the Department, or the peer reviewer determine what is considered an acceptable level of change to the visual environment. Given this lack of specific direction, it is informative to examine recent wind energy projects in Maine that have been evaluated for visual impact (and specifically for impacts on the horizontal field of view) and approved.

Oakfield Wind Project. In January 2012 the DEP approved First Wind's application for the Oakfield Wind Project, which includes 50 3.0 MW turbines on the north side of Pleasant Lake (rated as a significant scenic resource). The VIA included three photosimulations that illustrated what an observer would see from various parts of the lake. That project has horizontal viewing arcs that are close to or – in several instances – considerably greater than the Passadumkeag Wind Project.

At the southeastern end (largely undeveloped) of Pleasant Lake, the nacelle and blades from at least 13 turbines would be visible above the horizon at distances ranging from 2.3 to 6.0 miles. From this viewpoint, turbines would be seen throughout a horizontal viewing arc of 80°.

At the midpoint of the lake, the nacelle and blades from at least 13 turbines would be visible above the horizon at distances ranging from 2.2 to 5.2 miles. From this viewpoint, groups of turbines would be seen over a horizontal viewing arc of 71°.

From the western (most developed) end of the lake, the nacelle and blades from 8 turbines would be visible above the horizon at distances ranging from 2.5 to 6.1 miles. From this viewpoint, groups of turbines would be seen over a horizontal viewing arc of 43°.

In addition to the views from Pleasant Lake, the turbines will also be visible from approximately 80% of Mattawamkeag Lake (also rated as a significant scenic resource). From Big Island near the middle of the lake, the turbines will occupy a horizontal angle of approximately 54° to the north northeast[1].

Stetson Mountain Wind Project. While the Stetson project (both the initial application and a second phase) was reviewed and approved by LURC (and not DEP), it is instructive to look at the impact it had on the visual resources and use patterns on Baskahegan Lake, a large waterbody on the east side of the wind project. Although Baskahegan Lake is not rated as a scenic resource, it was considered during the LURC review of the 38-turbine Stetson I project, which occurred prior to the enactment of the Maine Wind Energy Act.

The recently completed Stetson project (both Phases I and II) has a total of 55 turbines arranged in a relatively straight line on Stetson Mountain, where they are visible from over 90% of the surface of Baskahegan Lake at distances ranging from 5.0 to 9.3 miles. An earlier study of recreational use on Baskahegan Lake[2] found that over 50% of the boating occurred in the southwestern part of the lake, where there are views of 40 – 55 turbines starting at a distance of approximately 6 miles to the nearest turbine. In this location, the turbines are seen over a 66±° horizontal field of view, which is greater than the impact on the horizontal field of view on Saponac Pond from the Passadumkeag wind project.

In October, 2012, First Wind commissioned Kleinschmidt to prepare a Baskahegan Lake User Survey[3] to gather information about the impact that the Stetson project has had on lake users and their perception of the scenic quality of the lake. The Survey was

[1] *Oakfield Wind Project Amendment, Visual Impact Assessment*. Terrence J. DeWan & Associates. June 2011.
[2] *Baskahegan Stream Watershed Recreation Use & Resource Analysis*. Report to Washington County TIF & Stetson Mountain Fund Committee. Ednie, A., C. Everett, and J. Daigle. 2010.
[3] *Baskahegan Lake User Surveys*. Prepared for First Wind. Kleinschmidt. Pittsfield, Maine. October 2012.

conducted at the Brookton boat launch, where 55 turbines are seen over a 58° horizontal field of view. Despite this high visibility and large field of view, 74% of those surveyed rated the views around the lake as having the "Highest Scenic Quality." Additionally, 81% of those surveyed said that the wind farm has had "No Effect" or a "Positive Effect" on the scenic value of Baskahegan Lake. Further, 93% of those surveyed stated that the presence of the wind farm would not affect their likelihood to return to the lake.

The Baskahegan Lake User Survey was independently peer reviewed by Dr. Kevin J. Boyle,[4] who concluded "There is convincing evidence that the existing Stetson wind farm has not reduced scenic quality of nearby Baskahegan Lake nor has it reduced the quality of recreation experiences or recreational use[5]."

III. Conclusion

The Passadumkeag Wind project is now proposing 13 turbines, which is considerably less than other projects that have been recently approved in Maine, and considerably less than the preliminary project design that included 23 turbines. While the project will be highly visible, its visibility over a 62° horizontal field of view is equivalent to or less than other Maine wind projects that have been approved in recent years. Furthermore, in looking at the full range of visual impact criteria (e.g., impacts on continued use and enjoyment), rather than simply at the visibility, it is important to understand that 59% of respondents to the Market Decisions Intercept Survey said that the project would not affect their enjoyment of Saponac Pond. And further, over 70% of the respondents reported that the presence of the wind project would not affect their desire to return to the pond for recreational activities[6].

While the Project would be visible from most of Saponac Pond, its visibility would not exceed that of other recently permitted projects near significant scenic resources. When all of the statutory factors going into the analysis of visual impacts are considered, including the results of the use and user surveys, it is our professional opinion, an opinion shared by the DEP's third party professional review, that the project will not have an unreasonable adverse impact on the public's continued use and enjoyment of Saponac Pond, or any other scenic resources of state or national significance.

---

[4] *Expert Report of Kevin J. Boyle, PhD. Assessment of the Kleinschmidt Bowers Mountain Wind-Farm and Baskahegan Lake Recreational User Surveys.* Newport, Virginia. October 1, 2012. Dr. Boyle is a professor in the Department of Agriculture and Applied Economics at Virginia Tech. Prior to September 2005 Dr. Boyle was a Distinguished Maine Professor in the Department of Resource Economics and Policy at the University of Maine, Orono.

[5] Boyle. P. 2.

[6] *Research Report: Passadumkeag Mountain Wind Power Project Intercepts.* Market Decisions. Portland, Maine. October 2011.

BASKAHEGAN LAKE USER SURVEYS

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October 2012

FIRST WIND

BASKAHEGAN LAKE USER SURVEYS

OCTOBER 2012

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FIRST WIND

BASKAHEGAN LAKE USER SURVEYS

OCTOBER 2012

1.0 EXECUTIVE SUMMARY

Recreational users of Baskahegan Lake were surveyed in August of 2012 to learn if the presence of the Stetson Mountain Wind Farm, which is visible from 90% of the lake (personal communication with N. Steen of LandWorks, September 2012), influences visitation to and enjoyment of the lake. Results indicate that the Stetson Mountain Wind Farm does neither.

An important result is that everyone said they were likely to return to visit the lake again in the future. Eighty-six percent of respondents are repeat visitors, who have been visiting Baskahegan Lake for 21 years, and who return about 17 times each year. In addition, 59% of visitors also visit Pleasant, Junior, Scraggly and Shaw Lakes. This suggests the completion of the Stetson wind farm in 2010 did not cause respondents to avoid Baskahegan Lake; they were visiting the lake prior to construction of the Stetson Wind Farm and they will continue to visit in its presence. Further, while they do visit lakes where a wind farm is not present, they still choose to visit Baskahegan Lake.

Eighty-five percent of respondents were aware of the wind farm prior to visiting the lake and most (81%) said it has no effect or a positive effect on the scenic value of Baskahegan Lake. Almost all respondents (93%) reported that the wind farm has no effect or a positive effect on the overall quality of their recreational experience. In fact, 74% gave the lake the highest scenic rating, and 93% rate the scenic quality of Baskahegan Lake as better than the typical scenic value. These results indicate that the presence of the wind farm does not negatively influence respondents' recreation experiences, nor does it detract negatively from the scenic value of views around Baskahegan Lake.

2.0 INTRODUCTION

The purpose of this study was to learn if recreational visitation to and enjoyment of Baskahegan Lake are influenced by the presence of Stetson Mountain Wind Farm, which is visible from 90% of the lake (personal communication with N. Steen of LandWorks, September 2012); 68% of the lake has visibility of more than 30 turbines. This research concentrated on three main study objectives to be achieved in a manner that allows for comparison with pre-development studies of wind projects in Maine:

a) Identify recreational users and characteristics of their trips;

b) Rate the effect of a wind farm on scenic value and the quality of a recreational experience; and,

c) Rate the effect of a wind farm on repeat visitation.

This document details the process used to achieve these objectives, and presents study results.

The presence of turbines at existing Maine projects provides valuable opportunities to assess what impact, if any, visibility of turbines has on users of recreational resources. For example, in 2010, professors and students at several University of Maine locations conducted an evaluation of recreational use patterns and site conditions around the Baskahegan watershed area (Ednie et al., 2010), including the 7,145 acre Baskahegan Lake (the "2010 Baskahegan Study" or "2010 Study"). Baskahegan Lake is located approximately 5.1 miles from the existing Stetson Mountain Wind Farm at its closest distance. At the time of the 2010 Study, the Stetson Wind Farm was fully constructed and operating, with turbines visible from 90% of the lake, and visibility of more than 30 turbines from 68% of the lake.

The purpose of the 2010 Study was to collect accurate recreational user information that could serve as a foundation to assist in deliberate and sustainable land-use planning and management of the area's resources and recreational opportunities. Data were gathered through the use of two surveys. Specifically, forty-seven interviews were conducted along the shores of Baskahegan Lake, with additional, in-depth interviews of long-term recreational users of the lake (ranging in length of use from at least 10 to more than 60 years). Interviewees were asked open-ended questions about the length of time they had visited the lake, how they use lakes and streams generally, and what they felt were the best qualities of the region. Questions specifically addressed scenery, how the use of lakes and streams had changed over time and whether there were any developing problems related to use of the resource. No question mentioned the presence of the Stetson wind turbines.

The 2010 Study found that the principal use of the Baskahegan watershed is fishing. Interviewees also mentioned as important attributes such as the scenery, quietness and opportunity to camp. Respondents identified the undeveloped shoreline, recreational access and wild character of the resource as important aspects of the landscape worthy of protection. Items in need of long-term planning and improvement related to infrastructure such as boat launch improvements or outhouse facilities. Lack of development was identified as an important component of the scenery. When asked what the biggest threat to future enjoyment of the resource would be, additional residential development was selected as the item most likely to

diminish the aesthetic quality of the watershed. There was no evidence that the use of Baskahegan Lake or the watershed had declined since construction of the Stetson project. To the contrary, participants in the 2010 Study indicated that the lake usage either remained the same or had slightly increased during their time visiting the resource, particularly with respect to fishing and boating.

Importantly, not one interviewee mentioned the presence of turbines in the viewshed as having either a positive or negative effect on their experience. In fact, the results were so surprising that First Wind contacted the 2010 Study's principal author to discuss the specific omission of turbine impacts from the findings (see Pre-Filed Direct testimony of David Raphael dated June 10, 2011 in DP 4860 at 22). The Author confirmed that no reference of the turbines was made in any of the responses and that residential development was perceived much more negatively. The 2010 Baskahegan Study has also been described by third-party reviewer James Palmer as the closest thing the wind industry has to a post-construction survey (see transcript of Bowers Hearing in DP 4860 (July 6, 2011) at 58).

This Baskahegan study builds upon findings in the 2010 Study by specifically asking lake users the extent to which the visibility of the Stetson Wind Farm has impacted scenic quality, their use and enjoyment of Baskahegan Lake, and their likelihood to return to Baskahegan Lake. Key characteristics of the two studies are compared in Attachment C.

3.0 STUDY AREA DESCRIPTION

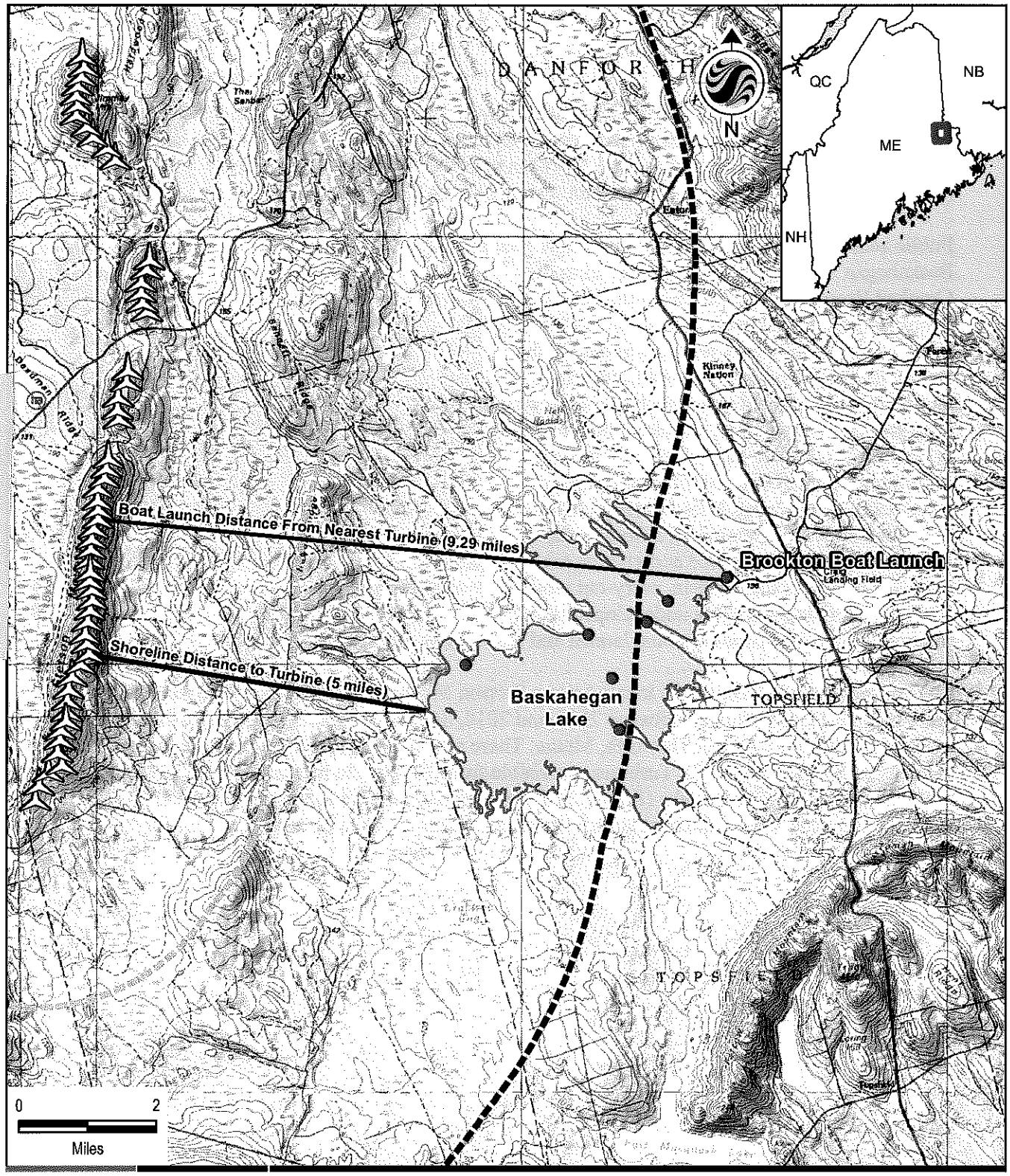
Baskahegan Lake is located in northern Washington County, Maine (Figure 1). It lies within the watershed for the Mattawamkeag River, which feeds into the Penobscot River. The lake is approximately 7,145 acres (Ednie et al., 2010) in size with 41 miles of shoreline (LakesofMaine.org, 2012). The maximum water depth is 22 feet.

Public access to the lake is limited to a single boat launch in Brookton (Photo 1), or via Baskahegan Stream, which originates from the Crooked Brook Flowage in Danforth. The Brookton boat launch is located at the end of Baskahegan Road, which provides access to the launch from US Route 1. The road is newly paved; the parking area and launch are surfaced with gravel. Tenting at the Brookton boat launch is permitted, but large hard-sided campers are prohibited (Ednie, et al., 2010). There are six island campsites available for use (Figure 1). All recreation sites are operated on a first-come, first-served basis. Use is free and visitors are expected to follow the carry-in, carry-out ethic. The lake shoreline is largely undeveloped with the exception of the Brookton boat launch and a few cabins located nearby.

PHOTO 1. FULL PARKING AREA AT BROOKTON BOAT LAUNCH, MAY 25, 2011

Stetson Mountain Wind Farm is located along Stetson Mountain, to the west of Baskahegan Lake (Figure 1). Constructed between 2008 and 2010, Stetson Mountain Wind Farm is an existing facility located near Danforth, Maine. There are 55 wind turbines with a total generating capacity of 83 MW (Photo 2). Turbines are visible from 90% of the lake; more than 30 turbines are visible from 68% of the lake (Figure 2). On a clear day, turbines extending across the ridgeline are visible from the boat launch across the lake.

396



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00522_001_BaskaheganLake_8.5x11.mxd

Legend

- Stetson Turbine
- Baskahegan Lake Campsite
- 3 Mile Turbine Distance
- 8 MileTurbine Distance

Figure No.
1

Title
Baskahegan Lake and Stetson Turbines
9/18/2012

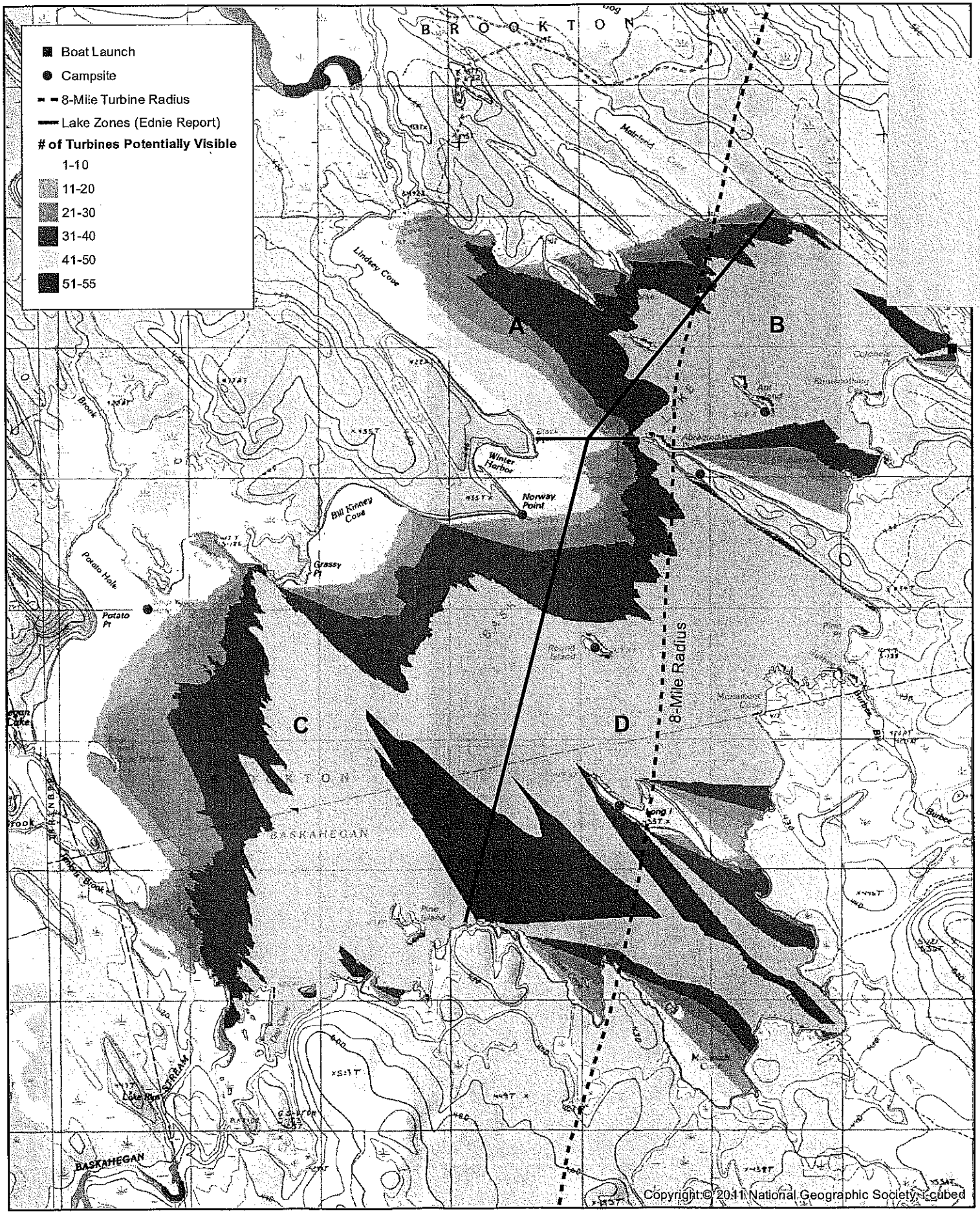


Figure 2 - Visibility of Stetson Wind Turbines on Baskahegan Lake

Assumes 40 foot tree height and 80 meter hub height

0 0.5 Miles

N

Date: 9.18.12

LandWorks

Photo 2 View of Stetson Mountain Wind Farm from the Brookton Boat launch, May 25, 2011

4.0 METHODS

The Baskahegan Lake survey was developed to be similar to the survey administered to users of lakes within eight miles of the proposed Bowers Wind Project (Kleinschmidt, 2012). Some modifications were required due to different interviewing methods and the presence of the existing wind farm. Differences included modifications to question wording, and in some cases question sequence, to accommodate for the fact that the Stetson Mountain Wind Farm is operational and visible from Baskahegan Lake while the Bowers Wind Project is in the proposal stage. There were also differences in survey implementation.

4.1 SURVEY DESIGN

The survey was designed to collect information on respondent characteristics, their use of Baskahegan Lake and perceptions of Stetson Mountain Wind Farm, and its effect on recreation and repeat visitation. Information collected for each topic area is identified below. A copy of the questionnaire is provided in Attachment A.

Respondent characteristics

- Home/camp ownership on lake
- Home/camp rental on lake
- Use of Pleasant, Shaw, Junior, Scraggly Lakes
- Location of primary residence
- Age group

Trip characteristics

- Primary reason for visiting the lake
- Day trip/overnight trip
- Using services of Registered Maine Guide
- Group size (interviewer observation)
- Gender (interviewer observation)

Quality of experience

- Overall quality of experience at Baskahegan Lake
- Rating of views around Baskahegan Lake

Repeat visitation

- Effect of wind farm on overall quality of visit to lake
- Likelihood of visiting the lake in the future
- Knowledge of the wind farm before visit to lake
- Effect of wind farm on scenic value of lake
- Effect of wind farm on likelihood of return to lake in future

A 7-point Likert-type scale was used for all ratings. Information on respondent and trip characteristics was collected to aid our understanding of who uses Baskahegan Lake and how. These data also allow for a comparison of survey respondents between this study and the 2010 Study.

4.2 SAMPLE

The survey was conducted on weekdays and weekends from August 2 through August 23, 2012 (Table 1). The 2010 Study suggested that most recreation occurs on weekends, a finding consistent with Kleinschmidt's experience completing recreation studies on and around water bodies nationwide. A local resident who is also a regular user of the boat launch reported that the launch often is used on weekdays, particularly during hot summer afternoons, when people come to boat, swim or fish and cool down at the lake. Interview dates and times were selected using this information. Weekends and weekdays were selected to capture the majority of people who recreate on these day types. Interviews were conducted on Thursdays and Fridays from 4 PM to 7 PM, and on Saturdays and Sundays from 1 PM to 7 PM.

TABLE 1
SAMPLE DAYS FOR INTERCEPT SURVEYS
August 2 through August 23, 2012

	TOTAL AVAILABLE			SAMPLED		
	WEEK DAYS	WEEKEND DAYS	TOTAL	WEEK DAYS	WEEKEND DAYS	TOTAL
AUGUST	21	6	27	6	5	11

4.3 IMPLEMENTATION

Surveys were completed as "access point surveys" at the Brookton Boat Launch. This differs from the Bowers recreation study (Kleinschmidt, 2012), which used "roving" surveys. Both methods are referred to as *on-site intercept* surveys. With access point surveys, access to the water body is restricted to defined access points (e.g., the Brookton boat launch). Individuals are interviewed at the conclusion of their recreation experience and can respond to questions based on their full visit at the lake. Roving surveys are used when access to a lake is diverse and there are too many access points to cover using a traditional access point survey method. In this case, individuals might enter the lake from multiple public access areas, private property, from other lakes, boat launches or roadside parking areas.

For this study, interviews were completed at the Brookton boat launch. From it, there is a clear view of the Stetson Wind Farm, so recreators who remain at the launch and do not venture out onto the water will still see from 41 to 55 wind turbines during their visit (Figure 2). The boat launch is the only public access to the lake, unless users boat the Crooked Brook Flowage downstream from Danforth.

The interviewer was instructed as follows:

1. Interview people who appear 18 years old or older.

2. Interview one person per group. Select one person randomly. On one day, select people from right to left. For example, if there are three people, interview the person farthest to your left for your first interview. On the second interview, select the person in the middle, and on the third, select the person farthest to the right. Repeat if more than three interviews. The next day, reverse the order. Do not allow people to self-select a representative to answer the survey questions.

3. IF there are so many groups present that you cannot interview them all, you will randomly select every n^{th} person or group, depending on the density of users. If you can interview everyone, do it!

The interviewer was provided training on how to approach potential respondents and conduct the interview. The training was supplemented with a manual (Figures 3 through 5).

At the beginning of the study, interviews were completed electronically using a Toughbook computer. However, the computer was unwieldy, preventing the interviewer from following respondents around as they loaded up their boats. This resulted in a higher than expected refusal rate. Subsequently, interviews were completed using pencil and paper, and the participation rate increased.

The interviewer received training in interviewing techniques and was provided with a survey kit containing supplies, a project-specific training manual (a portion of which is replicated in Figures 3 through 5), project and emergency contact information, and other pertinent materials such as a hand counter for tracking the number of people observed, pencils, copies of letters to local law enforcement alerting them of our presence at the boat launch, etc.

Individuals were eligible to complete just one interview during the course of the study. Individuals encountered more than once were

FIGURE 3
THE INTERVIEW

When someone agrees to be interviewed, proceed with the survey. Take your time and ask each question as it is written and in the order in which it is written.

Some interviews may be completed on paper, while others may be completed using a computer.

At all times, remember that it is your job to ask questions and collect information for Kleinschmidt. It is not your job to answer questions about our client. You will be provided with a package of Kleinschmidt business cards. If someone should ask you questions that you cannot answer, or are uncomfortable answering, simply hand out a business card and tell them they are welcome to call if they have any questions or comments regarding the study. You will also be provided with responses to Frequently Asked Questions which you may use to respond to questions.

Likewise, it is not your job to police people's behavior. If you observe distasteful behavior, someone breaking fishing regulations, etc., make a note of it in your journal and move on. If necessary, we will see that appropriate individuals are informed.

CONCLUDING THE INTERVIEW

At the end of the survey, please thank the respondent for his or her time. Check to make sure that your survey is SAVED on the computer and your paperwork is in order before moving to the next interview.

thanked for their input, but were not administered the survey a second time.

Once collected, all data were compiled and cleaned prior to analysis. Data were examined for appropriate skip patterns and out-of-range responses. Responses to open-ended questions were categorized.

FIGURE 4
THE APPROACH

You must realize that you are interrupting someone else's privacy and leisure time.

- Establish contact in as courteous a manner as possible.
- Try to gain their trust in the beginning.
- Speak loudly and clearly.
- Once the person has agreed to the survey, move out of the line of traffic at the launch if necessary.

Introduce yourself to the respondent, briefly explain that you are conducting interviews to gather information on their recreational experience today, and ask if he or she minds if you ask them a few questions about their day. The approach is important for a successful survey. When approaching people:

- Start with Hello and a SMILE.
- Provide a greeting such as "How are you today?", "Did you catch any fish?", "Hot out here today", etc.
- Politely ask if they have a few minutes.
- Explain you are conducting a survey.
- State that the survey will take 5 to 10 minutes.
- If it's your first few surveys, it's okay to tell them that, and that you're just learning. Typically, people are very patient with that.

It is important to keep a record of the number of people approached, the number interviewed, and the number who refused. If someone refuses to participate, cannot participate due to a language barrier or is not of legal age, you will record that on the survey form and move on.

FIGURE 5
INTERVIEWING TIPS

Matters of Form, Delivery and Style

- **Read each question exactly as it is written and in the order in which it appears in the questionnaire.** Surveys only work if everyone is asked the same question in the same manner. Therefore please read the question exactly as it is written with no substitutions, additions or deletions.
- **Ask each respondent every appropriate question.** Do not skip questions because an answer was given earlier and you "know" the response. If that is the case, you may preface your question with a phrase such as "I know we've talked about this…" or "I know you just mentioned this, but I need to ask each question as it appears in the questionnaire…"
- Avoid leading the respondent toward an answer. Remain neutral in your questioning. The quality of your delivery – your style – can affect the quality of the information you collect. Emphasize underlined word to enhance the meaning. Keep your tone neutral and avoid voice inflections that might bias results.
- Read slowly. Take your time and make sure the respondent understands the question. Read the entire question before accepting a response. Remember that although you may have read a question many times, the respondent is hearing it for the very first time.
- Use standard feedback phrases such as "thank you" and "I see" for acceptable responses. This helps "train" the respondent to know what an acceptable response is. If you need a more complete response to a question, you may need to probe for additional information. Use cues such as "Could you tell me more about that?" or "Which would be closer to the way you feel?" If an answer is different from what you expect, do not remind the respondent of an earlier remark or try to force consistency. Record the responses given.
- You should not use phrases such as "good" or "right" that imply a correct answer.
- If a respondent refuses to answer an individual question, please mark refused and proceed to the next question.
- For open ended questions, it is very important that you take the time to record the exact answer verbatim of the respondent. Do not abbreviate or edit responses. Repeat the response back to the respondent to make sure that what you recorded is accurate and acceptable to the respondent. If you do not understand a respondent's reply to an open-ended question, please ask them if they could tell you what they have in mind, what their thoughts are, or what they mean by that. If their answer is incomplete, please follow up with probing questions like "Could you please elaborate on that?" or "Would you tell me more about your thoughts on that?" If the respondent responds, "I don't know" to an open-ended question, follow up with, "What are your thoughts?", "What are your expectations?" Again, the goal is to provide as much general direction and information as necessary without unduly influencing the responses to the survey. If there is not enough space in the computer to record a complete response, you may paraphrase the response and ask the respondent if that accurately reflects his or her comment. It is not okay, however, to paraphrase the questions.

Clarifying Questions for Respondents

- Sometimes a respondent will ask you for additional information or clarification of a question. If an individual needs clarification because he or she did not accurately hear the question, please repeat it. If an individual still has trouble hearing you or understanding the question, you may show them the survey and allow them to read the question for themselves. If the individual asks you to repeat the question or response options, even if they are only questioning part of it, please repeat the entire question and list of response options to them.
- If there are items that are confusing to the individual or they do not understand the question, please provide limited additional information and guidance. We do not want to influence the individual's response but want to provide enough information to the individual to be able to accurately respond to the question. For example, the question "On a scale from 1 to 5, with 1 being light, 3 being moderate, and 5 being heavy, how would you rate the crowdedness at this recreation site today?" may cause confusion for larger recreation sites. If an individual is confused about whether you mean the site as a whole, or the area that they spent most of their time, you could repeat the question and add "Overall" as a preface.

5.0 RESULTS

The total number of people observed at the launch during the surveys was 135, averaging 15 people per interview period (Table 2). The interviewer selected one person per group to interview. Group sizes ranged from 1 to 8 people, averaging 3 people per group. Forty-four people who had not already completed a survey were asked to participate in the study. Of those, 27 completed interviews and 17 refused, for a response rate of 61% ((27/44)*100). One survey respondent answered the first few questions and then declined to respond to the remainder of the survey. While the responses to the questions are presented herein, the survey is not counted as "complete" in the survey response rate.[1]

Individuals were eligible to be interviewed if they had not already been interviewed during this study. However, repeat visitors they were counted each time they were observed at the launch, and therefore are included in the reported number of people observed.

TABLE 2
SURVEY RESPONSE RATE; PEOPLE OBSERVED

	NUMBER	PERCENT
SURVEYS COMPLETED	27	61%
PEOPLE APPROACHED	44	NA
REFUSALS	17	NA
PEOPLE OBSERVED	135	NA
AVERAGE NUMBER OBSERVED PER DAY	12	NA
MEDIAN NUMBER OBSERVED PER DAY	9	NA
AVERAGE GROUP SIZE	3 PEOPLE	NA

[a] Surveys were completed with one person per group. As a result, not all people observed were eligible to be surveyed.

There were 17 refusals. Most refusals (16) occurred during the first week of the survey. The high number of refusals is due to two reasons:

[1] Not every respondent answered every question in the survey. Because of this, the total number of responses shown in tables may not always sum to 27. Conversely, tables that show more than 27 response or observations reflect information recorded by the interviewer or from respondents who did not complete the full survey.

1. Size and weight of the field computer used to implement the survey. Ideally, the interviewer is mobile and able to follow respondents as they pack up their vehicles and boats, thus minimizing disruption of a respondent's schedule. We switched to using paper surveys to increase the mobility of the interviewer, and the survey response rate increased immediately from 38% using the electronic data collection to 94% using paper surveys, for an overall response rate of 61%.[2]
2. Complications due to other surveys having been conducted at this location. Several individuals declined participating, stating they had already taken the survey. Respondents may have been referring to the surveys conducted here in 2010 by Ednie, et al. Other survey research completed here also may have contributed to fatigue associated with the number of contacts/surveys conducted at this location.

A total of 27 responses were achieved, which is a sample size that allows a reasonable degree of statistical confidence in summary statistics of responses to survey questions. We are confident that the results reported herein reflect the characteristics and opinions of individuals using the launch during the interview periods.

5.1 Respondent Characteristics and Use of Baskahegan Lake

Summary statistics of respondent and trip characteristics are provided in Table 3. Almost all survey respondents (88%) are Maine residents, neither owning nor renting property at the lake (91%). They are long-time repeat users, having visited the lake an average 21 years, and therefore the presence of Stetson Mountain Wind Farm did not push them to find substitute locations at which to recreate. In fact, they visit often, averaging 17 trips annually. Most take day trips to fish, and thus are within sight of the wind farm for much of their trip, as turbines are visible from 90% of the lake. Further, given that a majority of boats frequent the southeastern portion of the lake (Ednie et al., 2010), we conclude that respondents choose to boat in an area of the lake with the greatest visibility of turbines (Figure 2). Few reported using the services of a Registered Maine Guide.

[2] Survey Response Rates by Data Collection Method

	ELECTRONIC		PAPER		OVERALL	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
SURVEYS COMPLETED	10	38%	17	94%	27	61%
PEOPLE APPROACHED	26		18		44	
REFUSALS	16		1		17	

TABLE 3
RESPONDENT AND TRIP CHARACTERISTICS

	RESPONDENTS	
	NUMBER	PERCENT
RESPONDANT CHARACTERISTICS		
PERCENT MALE	24	86%
	(n=28)	
AGE		
18-24	6	22%
25-34	4	15%
35-44	6	22%
45-54	6	22%
55-64	3	11%
65 OR OLDER	2	7%
TOTAL	27	100%
MAINE RESIDENT	23	88%
	(n=26)	
OWN OR RENT PROPERTY ON BASKAHEGAN	2	9%
	(n=23)	
REPEAT VISITORS	24	86%
	(n=28)	
AVG. NO. OF YEARS VISITING THE LAKE	21	
	(n=24)	
AVG. NO. OF TRIPS PER YEAR	17	
	(n=23)	
TRIP CHARACTERISTICS		
USING GUIDE SERVICES	3	11%
	(n=27)	
TYPE OF TRIP		
DAY TRIP	20	74%
OVERNIGHT TRIP	7	26%
TOTAL	27	100%
PRIMARY ACTIVITY		
FISHING	16	70%
MOTORBOATING	1	4%
VIEWING SCENERY	1	4%
RELAXING	1	4%
OTHER	4	17%
TOTAL	23	100%

The majority of respondents (59%) visited at least one of the four lakes included in the Bowers Wind Project study area. The largest percentage (58%) visited Pleasant Lake during the past year (Table 4), where up to 16 wind mills of the Bowers Wind Project will be visible.

Scraggly, Junior and Shaw Lakes were reported as having been visited by 33%, 26% and 15% of respondents, respectively, during the past year. Other lakes visited included East and West Grand Lakes, the St. Croix Lakes, and Musquash Lake. (Respondents were not specific about whether they visited East or West Musquash Lake.)

TABLE 4
PERCENT OF RESPONDENTS WHO HAD VISITED JUNIOR, SCRAGGLY, PLEASANT OR SHAW LAKES

	RESPONDENTS	
	NUMBER	PERCENT
LAKE		
PLEASANT	15	58%
SCRAGGLY	9	33%
JUNIOR	7	26%
SHAW	4	15%
TOTAL	35	
VISITED AT LEAST ONE OF THE 4 LAKES	16	59%
	(n=27)	

Percentages may sum to greater than 100 due to multiple responses

5.2 QUALITY OF EXPERIENCE

Nearly all (81%) respondents had a "High Quality" experience at Baskahegan Lake, placing a rating on their experiences of "5", "6" or "7" (Table 5). The largest percentage, 48%, gave their experience the highest rating of "7" (Very High Quality). When asked to explain their rating, the most popular response was an affinity for the lake or area, followed by good fishing (Table 6). Of the minority of respondents (12%) who had "Low Quality" experiences, none identified the wind farm as the basis for their negative experience. Reasons for low quality ratings related to water quality and fishing.

TABLE 5
RATING OF OVERALL QUALITY OF THE EXPERIENCE AT BASKAHEGAN LAKE
(Survey Question 7)

	RESPONDENTS	
	NUMBER	PERCENT
RATING		
1-VERY LOW QUALITY	1	4%
2	1	4%
3	1	4%
4-NEITHER HIGH NOR LOW QUALITY	2	7%
5	2	7%
6	7	26%
7-VERY HIGH QUALITY	13	48%
TOTAL	27	100%

TABLE 6
REASON FOR RATING OF OVERALL QUALITY OF THE EXPERIENCE AT BASKAHEGAN LAKE
(Cross Tabulation of Survey Questions 7 and 8)

REASON	QUALITY OF THE EXPERIENCE							TOTAL
	VERY LOW QUALITY 1	2	3	NEITHER HIGH NOR LOW QUALITY 4	5	6	VERY HIGH QUALITY 7	
LIKE THE LAKE/AREA	0	0	0	1	1	0	8	10
GOOD FISHING	0	0	0	0	1	2	5	8
LACK OF FACILITIES/MARKINGS	0	0	0	0	0	2	0	2
POOR AIR/WATER QUALITY	0	1	1	0	0	0	0	2
POOR FISHING	1	0	0	0	0	1	0	2
OTHER	0	0	0	0	0	2	0	2
TOTAL	1	1	1	1	2	7	13	26
PERCENT OF TOTAL	4%	4%	4%	4%	8%	27%	50%	

Ninety-three percent of respondents rated the scenic value of views from Baskahegan Lake better that a "Typical Scene" (Table 7). Most (74%) rated the views around Baskahegan Lake as having the "Highest Scenic Value." It is important to note that respondents accessed Baskahegan Lake where up to 50 windmills from the Stetson Wind farm are visible, and this is the location where the interviews were conducted.

TABLE 7
RATING OF VIEWS OF BASKAHEGAN LAKE
(Survey Question 9)

	RESPONDENTS	
	NUMBER	PERCENT
RATING		
1-LOWEST SCENIC VALUE	0	0%
2	0	0%
3	2	7%
4-TYPICAL SCENIC VALUE	0	0%
5	2	7%
6	3	12%
7-HIGHEST SCENIC VALUE	20	74%
TOTAL	27	100%

5.3 REPEAT VISITATION

All respondents are "Likely" to return to Baskahegan lake and 93% are "Very Likely" to visit the lake again in the future (Table 8). Primary reasons for returning were the same reasons as those stated for having a quality experience: a liking of the lake/area and good fishing (Table 9).

TABLE 8
RATING OF LIKELIHOOD OF RETURNING TO BASKAHEGAN LAKE IN THE FUTURE
(Survey Question 10)

	RESPONDENTS	
	NUMBER	PERCENT
RATING		
1-VERY UNLIKELY	0	0%
2	0	0%
3	0	0%
4-NEITHER UNLIKELY NOR LIKELY	0	0%
5	2	7%
6	0	0%
7-VERY LIKELY	25	93%
TOTAL	27	100%

TABLE 9
REASON FOR RATING OF LIKELIHOOD OF RETURNING TO BASKAHEGAN LAKE IN THE FUTURE
(Cross Tabulation of Survey Questions 10 and 11)

REASON	LIKELIHOOD OF RETURNING IN THE FUTURE							TOTAL
	VERY UNLIKELY 1	2	3	NEITHER UNLIKELY NOR LIKELY 4	5	6	VERY LIKELY 7	
LIKE THE LAKE/AREA	0	0	0	0	0	0	10	10
GOOD FISHING	0	0	0	0	0	0	6	6
TRADITION	0	0	0	0	0	0	5	5
SHORT TRAVEL DISTANCE/EASY ACCESS	0	0	0	0	2	0	2	4
TIME WITH FRIENDS/FAMILY	0	0	0	0	0	0	2	2
TOTAL	0	0	0	0	2	0	25	27
PERCENT OF TOTAL	0%	0%	0%	0%	7%	0%	93%	

Almost all respondents (85%) were aware of the presence of Stetson Mountain Wind Farm before visiting Baskahegan Lake (Table 10). A majority (69%) indicate it has "No Effect" on the scenic value of the lake, and 81% say the wind farm has "No Effect" or a "Positive Effect" on the scenic value of Baskahegan Lake (Tables 10 and 11). Of those who reported the wind farm has a "Negative Effect" on the scenic values of Baskahegan Lake, reasons for the rating related to the unnaturalness of the wind farm and that the electricity produced does not remain local. Comments relating to the unnatural environment included "people do not want to see turbines, came to see wildlife", and "I do not like looking at the windmills".

Still, considering the results in Table 8, those who said the wind farm has a "Negative Effect" on scenic value are still "Likely" to visit Baskahegan Lake in the future.

TABLE 10
AWARENESS OF STETSON WIND PROJECT PRIOR TO VISIT AND RATING OF ITS EFFECT ON OPINION OF SCENIC VALUE OF BASKAHEGAN LAKE
(Survey Questions 12 and 13)

	RESPONDENTS	
	NUMBER	PERCENT
AWARENESS OF STETSON FARM PRIOR TO VISIT	23 (n=27)	85%
RATING		
1-VERY NEGATIVE EFFECT	3	12%
2	1	4%
3	1	4%
4-NO EFFECT	18	69%
5	2	8%
6	1	4%
7-VERY POSITIVE EFFECT	0	0%
TOTAL	26	100%

TABLE 11
REASON FOR RATING OF THE EFFECT OF THE WIND FARM ON OPINION OF SCENIC VALUE OF BASKAHEGAN LAKE
(Cross Tabulation of Survey Questions 13 and 14)

	EFFECT OF STETSON WIND FARM ON CURRENT AND FUTURE TRIPS TO BASKAHEGAN LAKE							
REASON	VERY NEGATIVE EFFECT 1	2	3	NO EFFECT 4	5	6	VERY POSITIVE EFFECT 7	TOTAL
NO NEGATIVE AFFECT ON SCENIC OR RECREATION QUALITY	0	0	0	13	1	1	0	15
GOOD ENERGY RESOURCE	0	0	0	5	0	0	0	5
IT IS UNNATURAL AND AFFECTS SCENIC QUALITY	2	1	1	0	0	0	0	4
ELECTRICITY DOES NOT BENEFIT LOCALS	1	0	0	0	1	0	0	2
TOTAL	3	1	1	18	2	1	0	26
PERCENT OF TOTAL	12%	4%	4%	69%	7%	4%	0%	

Almost all respondents (93%) stated the presence of Stetson Mountain Wind Farm has either "No Effect," or a "Positive Effect" on the quality of their visit (Table 12), supporting the findings of high scenic ratings and extensive reports of repeat visitation. Reasons for negative responses included "the turbines do not help Brookton with electricity," and "better without the wind farm" (Table 13).

TABLE 12
EFFECT OF STETSON WIND PROJECT ON LIKELIHOOD TO RETURN TO BASKAHEGAN LAKE AND RATING OF THE EFFECT OF THE WIND FARM ON OVERALL QUALITY OF VISIT
(Survey Questions 15 and 16)

	RESPONDENTS	
	NUMBER	PERCENT
STETSON EXHIBITS NO EFFECT ON LIKELIHOOD TO RETURN	25	93%
	(n=27)	
RATING OF EFFECT OF WIND FARM ON OVERALL QUALITY OF CURRENT VISIT		
1-VERY NEGATIVE EFFECT	1	4%
2	1	4%
3	0	0%
4-NO EFFECT	24	89%
5	1	4%
6	0	0%
7-VERY POSITIVE EFFECT	0	0%
TOTAL	27	100%

TABLE 13
REASON FOR RATING OF EFFECT OF THE WIND FARM ON OVERALL QUALITY OF VISIT
(Cross Tabulation of Survey Questions 16 and 17)

	EFFECT OF STETSON WIND FARM ON OVERALL QUALITY OF CURRENT VISIT							
REASON	**VERY NEGATIVE EFFECT** 1	2	3	**NO EFFECT** 4	5	6	**VERY POSITIVE EFFECT** 7	**TOTAL**
NO NEGATIVE AFFECT ON SCENIC OR RECREATION QUALITY	0	0	0	24	1	0	0	25
OTHER	1	1		0	0	0	0	2
TOTAL	1	1	0	24	1	0	0	27
PERCENT OF TOTAL	4%	4%	0%	89%	4%	0%	0%	

6.0 DISCUSSION

Visitors to Baskahegan Lake recreate within view of the 55-turbine Stetson Mountain Wind Farm during most of their visits, regardless of whether they participate in day trips or camping. The turbines are visible from 90% of Baskahegan Lake, the Brookton boat launch (the primary public access point to the lake), and almost all island and shoreline campsites.

Respondents are long time, frequent users of Baskahegan Lake. They were visiting the lake before construction of Stetson Mountain Wind Farm, and continue to do so now that it is there. In fact, the current study found that respondents had been recreating an average of 21 years at the lake, compared to an average of 19 years reported just two years ago (Ednie, et al., 2010). This finding indicates that the Baskahegan Lake user group has retained users over time, and in the presence of the wind farm.

Respondents knew about the wind farm prior to arriving at the lake (85%) and choose to visit anyway. Most (81%) rate their visits as having high-quality. In fact, even with interviews conducted within sight of Stetson Mountain Wind Farm, 93% rate the scenic views of Baskahegan Lake as better than a "Typical Scene," and all—100%—are likely to return in the future.

Eighty-one percent report the presence of the wind farm as having no effect or a positive effect on the scenic values of Baskahegan Lake (69% no effect, 12% positive effect). Almost all (93%) respondents state the visibility of the wind farm has no effect (89%) or a positive effect (4%) on the quality of their experience. Further, 93% of the respondents stated the wind farm presence does not affect their likelihood to return to Baskahegan Lake.

Significant visibility of a 55-turbine wind farm in the viewshed of Baskahegan Lake, which is valued for its scenery and fishing, does not adversely impact survey respondents. For almost all users, turbine visibility does not adversely impact scenic quality, the quality of the recreational experience, nor the likelihood of their continued recreation in and enjoyment of Baskahegan Lake.

7.0 REFERENCES

Ednie, A., C. Everett, J. Daigle. 2010. Baskahegan Stream Watershed Recreation Use & Resource Analysis. Funded by Washington County TIF & Stetson Mountain Fund Committee in Partnership with the Forest Society of Maine.

Kleinschmidt, 2012. Bowers Wind Project User Surveys. Prepared for First Wind, Portland Maine.

ATTACHMENT A

BASKAHEGAN LAKE SURVEY

INTERVIEWER TO COMPLETE

SURVEY ID	__ __ __ __
DATE	__ __/__ __ (MM/DD)
TIME OF INTERVIEW	__ __:__ __ (HH/MM) □ AM □ PM
INTERVIEWER INITIALS	__ __ __
NUMBER OF PEOPLE IN GROUP	__ __ ADULTS __ __ CHILDREN
GUIDED TRIP	□ YES □ NO □ DON'T KNOW
INTERVIEWEE IS A MAINE GUIDE?	□ YES □ NO □ REFUSED
RESPONDENT IS	□ MALE □ FEMALE

Hello. My name is _____. We are conducting a short survey about opinions of visitors to Baskahegan Lake. The survey will only take a short time. Will you participate? (SELECT ONE NUMBER. IF YOU NEED TO ENCOURAGE A PERSON TO PARTICIPATE, ASSURE HIM OR HER THAT THEIR ANSWERS WILL REMAIN ANONYMOUS.)

1 YES→	GREAT! Okay, part of my job is to interview just one person. If you have any questions or comments about the study, if you could hold them until we're done, I'll try to answer them at the end of the survey.
2 NO →	OK. Thank you very much for your time. Have a great day. (TERMINATE INTERVIEW)
3 REPEAT CUSTOMER →	Well thank you for participating! We're only asking people to take the survey once. Have a great day. (TERMINATE INTERVIEW)
9 REFUSED→	OK. Thank you very much for your time. Have a great day. (TERMINATE INTERVIEW)

1. Is this your first visit to Baskahegan Lake? (SELECT ONE NUMBER)

   1 YES→ SKIP TO Q5
   2 NO
   9 REFUSED→ SKIP TO Q5

2. How many years have you come to the lake? (PROMPT: If you cannot recall exactly, please give us your best estimate.) (SELECT THE FIRST OPTION OR FILL IN A NUMBER. DO NOT ACCEPT A RANGE OF NUMBERS.)

   1 THIS IS MY FIRST YEAR
   _____ YEARS
   99 REFUSED

3. On average, how many trips per year do you make to Baskahegan Lake? (PROMPT: If you cannot recall exactly, please give us your best estimate.) (FILL IN A NUMBER. DO NOT USE A RANGE OF NUMBERS.)

   _____ AVERAGE NUMBER OF TRIPS PER YEAR
   99 REFUSED

4. Do you own a home or a camp on Baskahegan Lake? (SELECT ONE NUMBER)

   1 YES
   2 NO
   9 REFUSED

5. What is your primary reason for being at the lake today? (HAND LAMINATED CARD TO RESPONDENT; SELECT ONE)

1	Canoeing
2	Kayaking
3	Motor boating
4	Personal watercraft
5	Berry picking
6	Viewing the scenery
7	Camping
6	Fishing from a boat or shore
9	Relaxing
10	Stargazing / enjoying the night sky
11	Swimming
12	Enjoying the scenery / scenic viewing
13	Beach going / using the beach
14	Observing wildlife or nature
15	Staying at a lodge
16	Staying at a camp
17	Driving an ATV
18	Picnicking
19	Sunbathing
20	Nature study
21	Fishing at night
22	Boating at night
22	Other _____

6. Is this a day trip to the lake or is it an overnight trip where you spent at least one night camping on an island or elsewhere on or near the lake? (RECORD RESPONSE)

1	DAY TRIP
2	OVERNIGHT TRIP
9	REFUSED

7. On a scale of 1 to 7, where 1 is very low quality, 7 is very high quality, and 4 is neither high nor low quality, what was the overall quality of your **experience** at Baskahegan Lake today? (SELECT ONE NUMBER)

VERY LOW QUALITY			NEITHER HIGH NOR LOW QUALITY			VERY HIGH QUALITY	REFUSED
1	2	3	4	5	6	7	9

8. Why do you say that? (RECORD RESPONSE)

_____

_____

_____

9 REFUSAL

9. On a scale of 1 to 7, where 1 is the lowest scenic value in Maine, and 7 is the highest scenic value in Maine, how would you rate the **views** around Baskahegan Lake? (SELECT ONE NUMBER)

LOWEST SCENIC VALUE			TYPICAL SCENIC VALUE			HIGHEST SCENIC VALUE	REFUSED
1	2	3	4	5	6	7	9

10. On a scale of 1 to 7, where 1 is very unlikely, 7 is very likely, and 4 is neither unlikely nor likely, how likely is it that you will **visit** Baskahegan Lake in the future? (SELECT ONE NUMBER)

VERY UNLIKELY			NEITHER UNLIKELY NOR LIKELY			VERY LIKELY	REFUSED
1	2	3	4	5	6	7	9

11. Why do you say that? (RECORD RESPONSE)

_____

_____

_____

9 REFUSAL

12. A wind farm is a group of wind turbines that capture energy from the wind to generate electricity. Did you know there is a wind farm near Baskahegan Lake **before** your visit today? (CIRCLE ONE RESPONSE)

1 YES
2 NO
9 REFUSED

13. On a scale of 1-7, where 1 is a very negative effect on your opinion, 7 is a very positive effect on your opinion, and 4 means no effect how does the presence of the wind farm affect your **opinion** of the scenic value of Baskahegan Lake? (SELECT ONE NUMBER)

VERY NEGATIVE EFFECT			NO EFFECT			VERY POSITIVE EFFECT	REFUSED
1	2	3	4	5	6	7	9

14. Why do you say that? (RECORD RESPONSE)

_____

_____

_____

9 REFUSAL

15. Does the presence of the wind farm affect your likelihood of returning here in the future? (CIRCLE ONE RESPONSE)

1 YES
2 NO
9 REFUSED

16. On a scale of 1-7, where 1 is a very negative effect on the quality of your visit, 7 is a very positive effect, and 4 means no effect on the quality of your visit, how did the presence of the wind farm affect the **overall quality** of your visit to Baskahegan Lake today? (SELECT ONE NUMBER)

VERY NEGATIVE EFFECT			NO EFFECT			VERY POSITIVE EFFECT	REFUSED
1	2	3	4	5	6	7	9

17. Why do you say that? (RECORD RESPONSE)

_____

_____

_____

9 REFUSAL

18. Have you visited any of the following lakes in the area ....? (READ LIST; CIRCLE ALL THAT APPLY)

		YES	NO	REFUSED
1	PLEASANT LAKE	1	2	9
2	SHAW LAKE	1	2	9
3	JUNIOR LAKE	1	2	9
4	SCRAGGLY LAKE	1	2	9
5	Other (list)			
	_____	1	2	9

19. What is the zip code of your primary residence? (RECORD RESPONSE)

_ _ _ _ _

9 9 9 9 9 REFUSED

20. Are you using the service of a Registered Maine Guide today? (SELECT ONE NUMBER)

1 YES
2 NO
9 REFUSED

21. Please tell me the number that best represents your age group. (HAND CARD TO RESPONDENT. SELECT ONE NUMBER)

1
2
3
4
5
6
9 REFUSED

Those are all the questions that I have for you today. Thank you very much for your time and enjoy your visit to the lake!

RESPONSE CARD FOR Q5

What is your primary reason for being at the lake today?

1 Canoeing
2 Kayaking
3 Motor boating
4 Personal watercraft
5 Berry picking
6 Viewing the scenery
7 Camping
8 Fishing from a boat or shore
9 Relaxing
10 Stargazing / enjoying the night sky
11 Swimming
12 Enjoying the scenery / scenic viewing
13 Beach going / using the beach
14 Observing wildlife or nature
15 Staying at a lodge
16 Staying at a camp
17 Driving an ATV
18 Picnicking
19 Sunbathing
20 Nature study
21 Fishing at night
22 Boating at night
22 Other _____

RESPONSE CARD FOR Q21

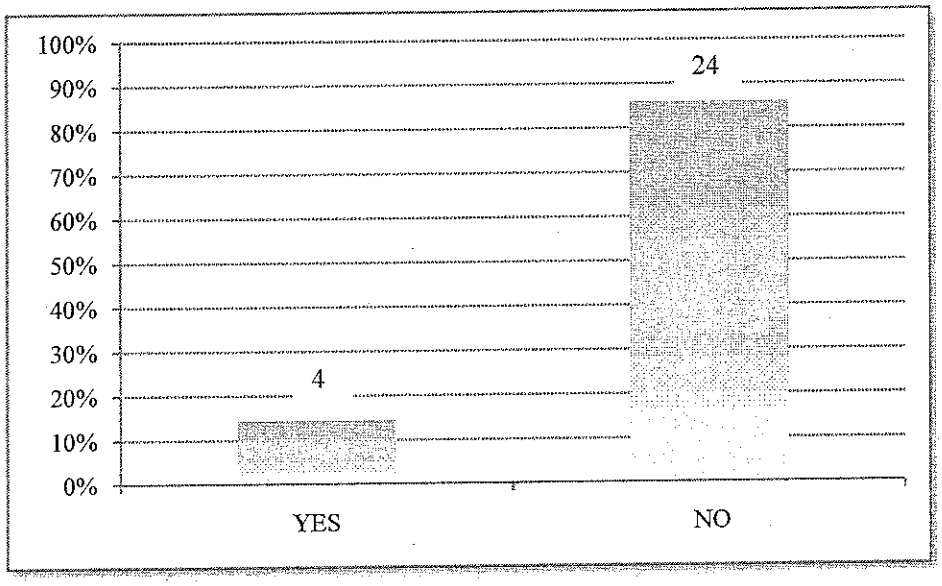
Please tell me the number that best represents your age group.

1	18-24
2	25-34
3	35-44
4	45-54
5	55-64
6	65 or older

ATTACHMENT B

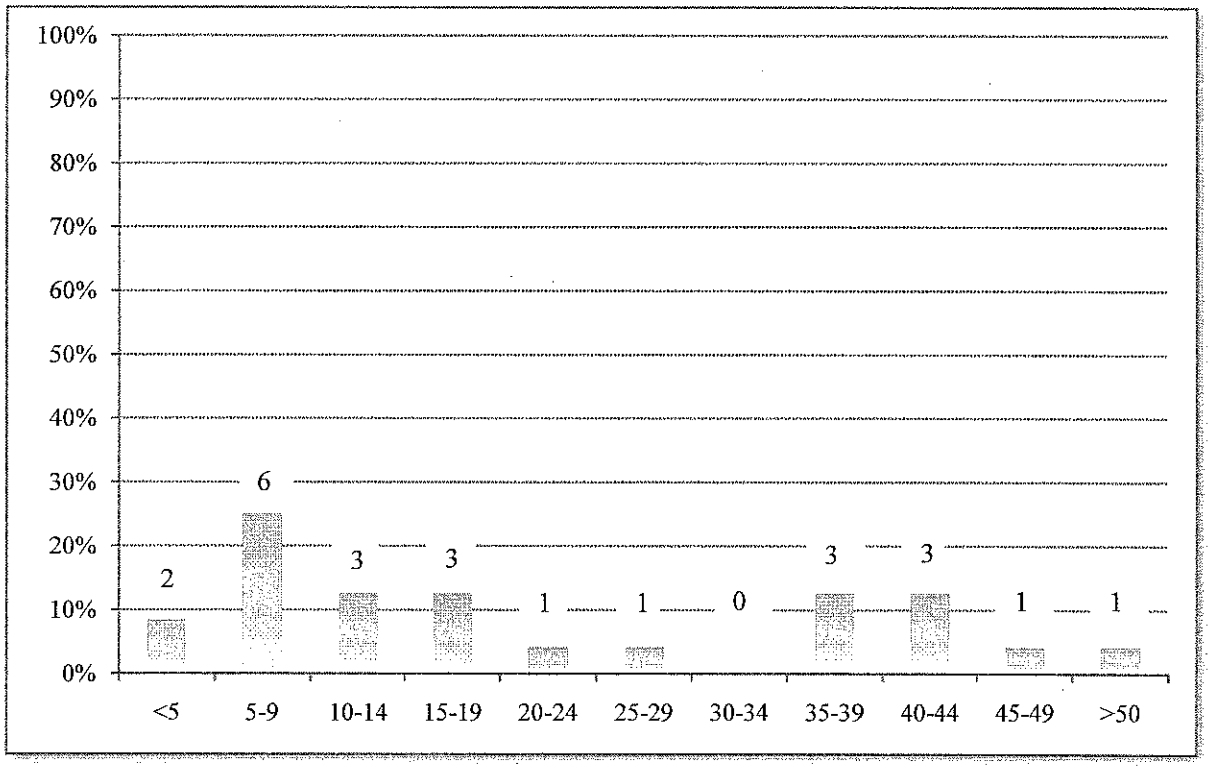
FREQUENCIES OF SURVEY RESULTS

Q1: Is this your first visit to Baskahegan Lake?



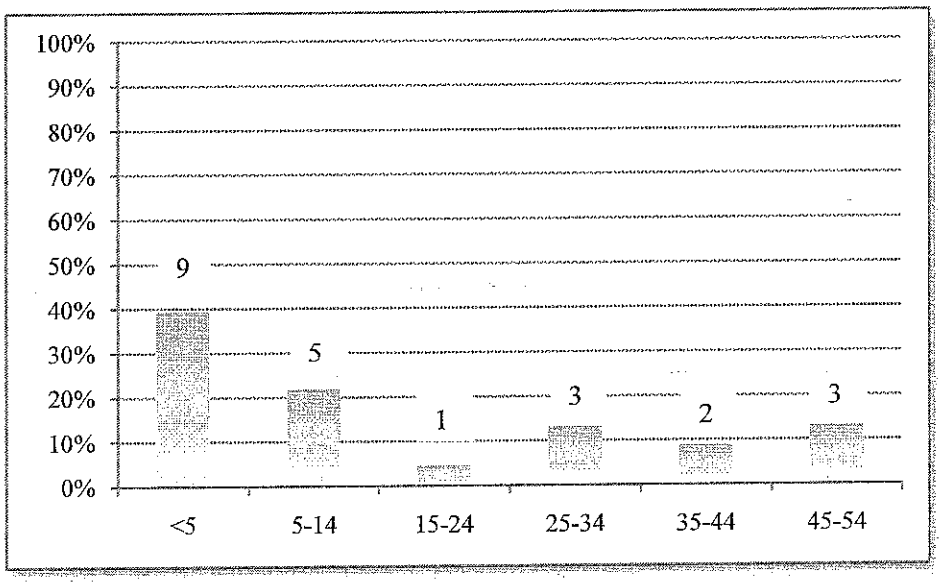
n = 28

Q2: How many years have you come to the lake?



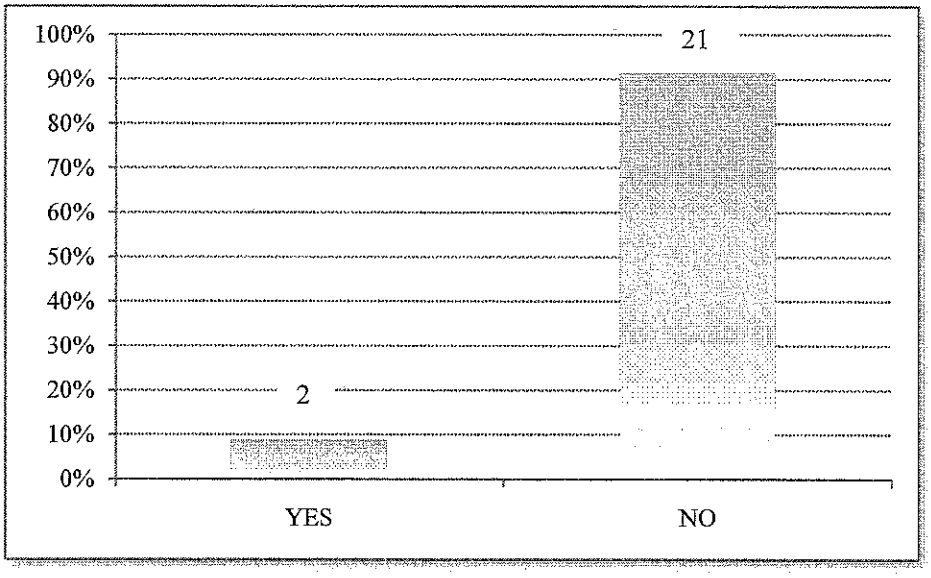
n = 24

Q3: How many trips per year do you make to Baskahegan Lake?



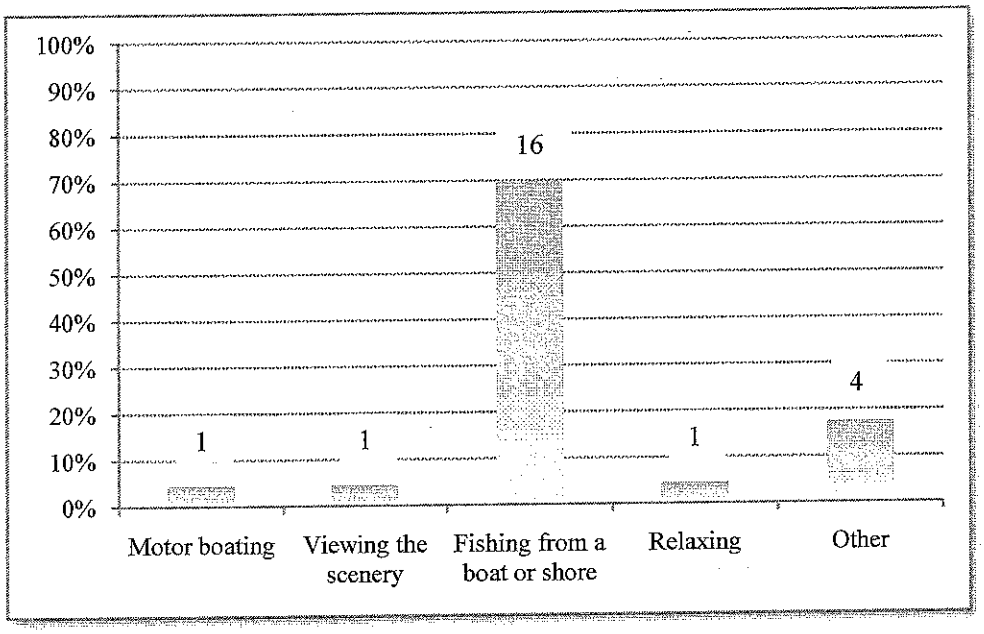
n = 23

Q4: Do you own a home or camp on Baskahegan Lake?



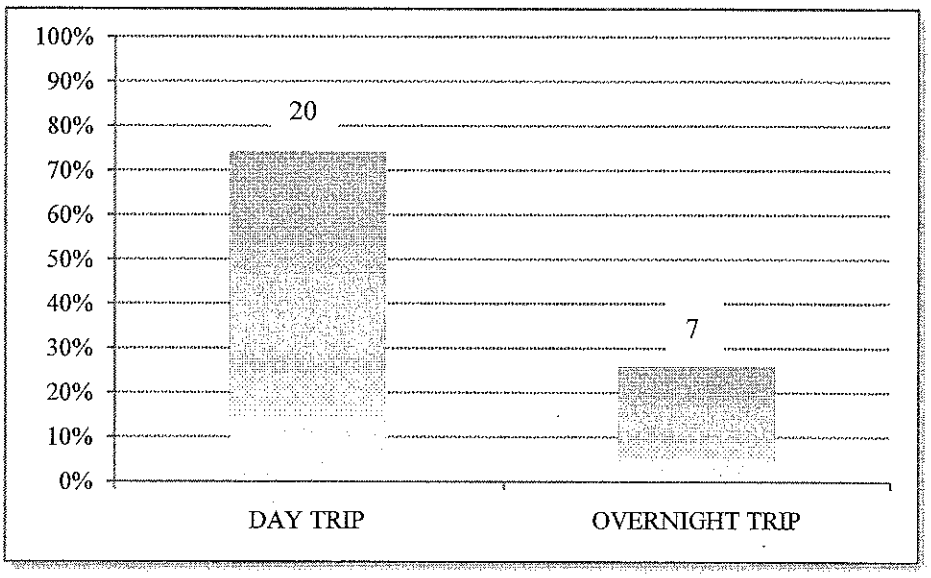
n = 23

Q5: What is your primary reason for being at the lake today?



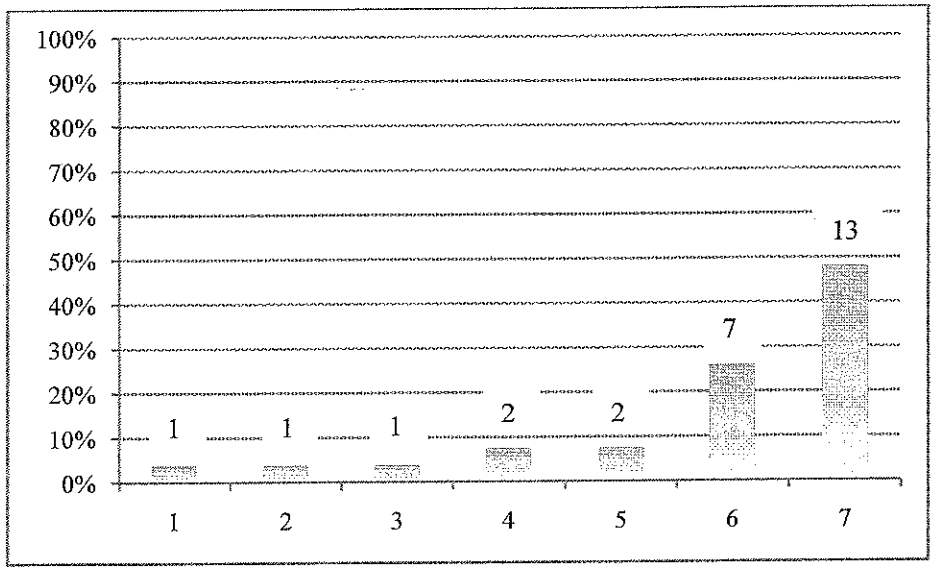
n = 23

Q6: Is this a day trip to the lake or an overnight trip where you spent at least one night camping on an island or elsewhere on or near the lake?



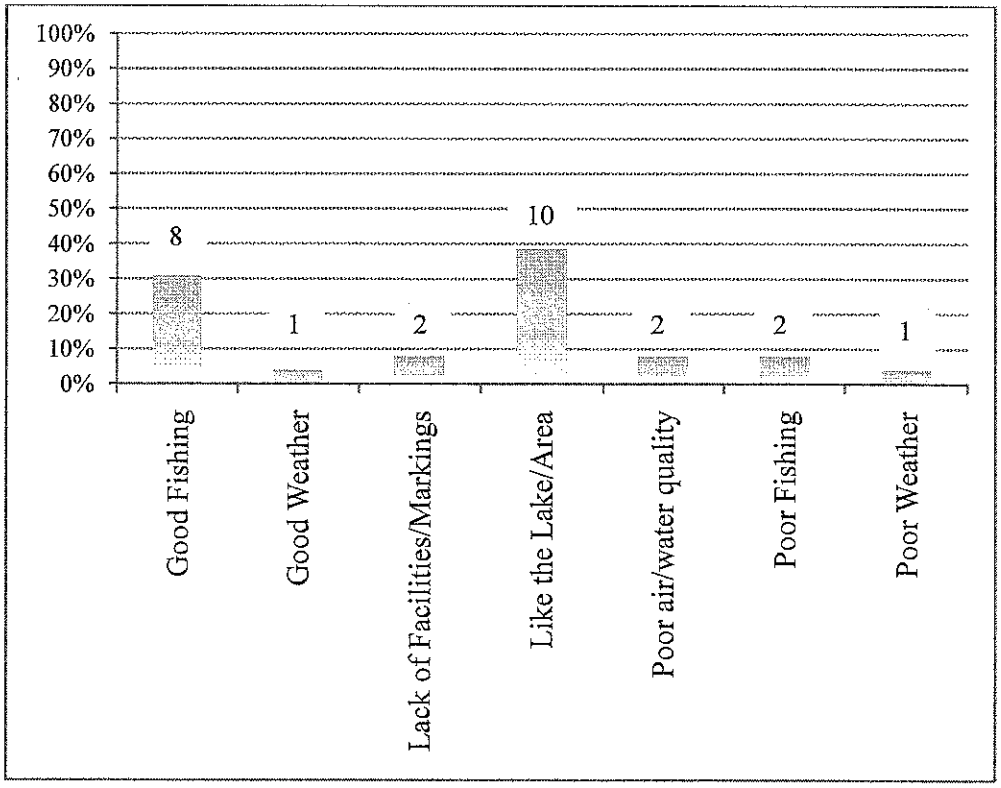
n = 27

Q7: On a scale of 1 to 7, where 1 is very low quality, 7 is very high quality, and 4 is neither high nor low quality, what was the overall quality of your experience at Baskahegan Lake today?



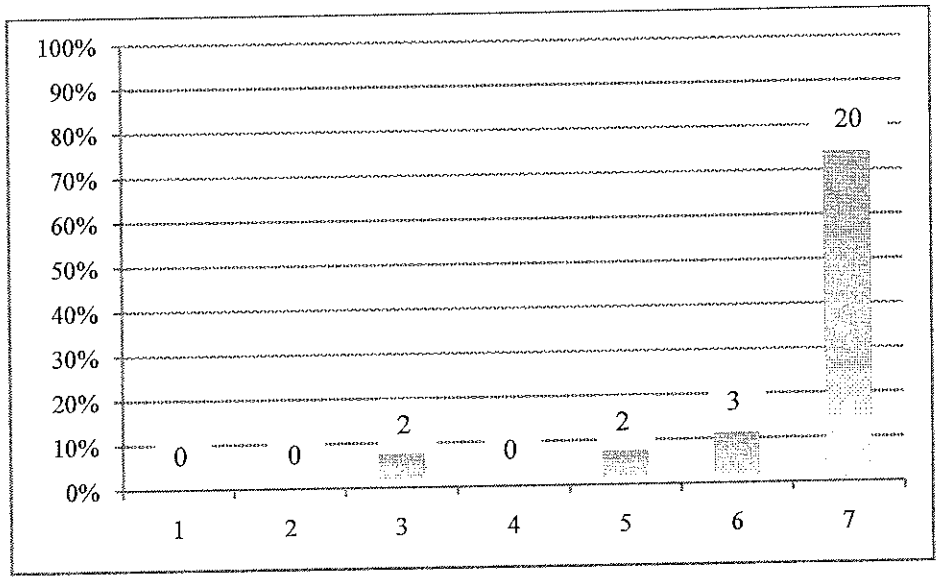
n = 27

Q8: Why do you say that (overall quality of experience)?



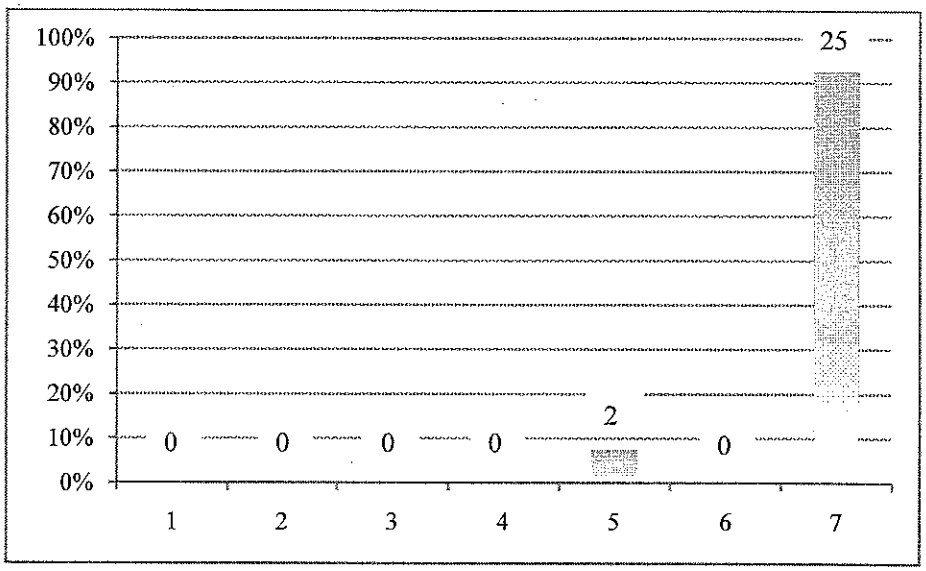
n = 26

Q9: On a scale of 1 to 7, where 1 is the lowest scenic value in Maine, and 7 is the highest scenic value in Maine, how would you rate the views around Baskahegan Lake?



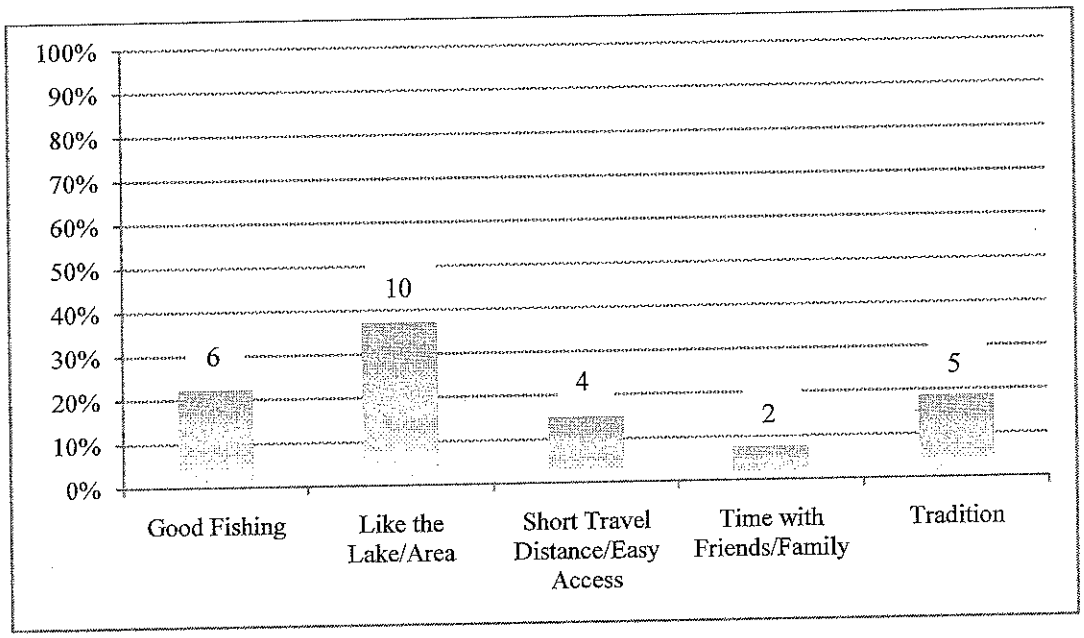
n = 27

Q10: On a scale of 1 to 7, where 1 is very unlikely, 7 is very likely, and 4 is neither unlikely nor likely, how likely is it that you will visit Baskahegan Lake in the future?



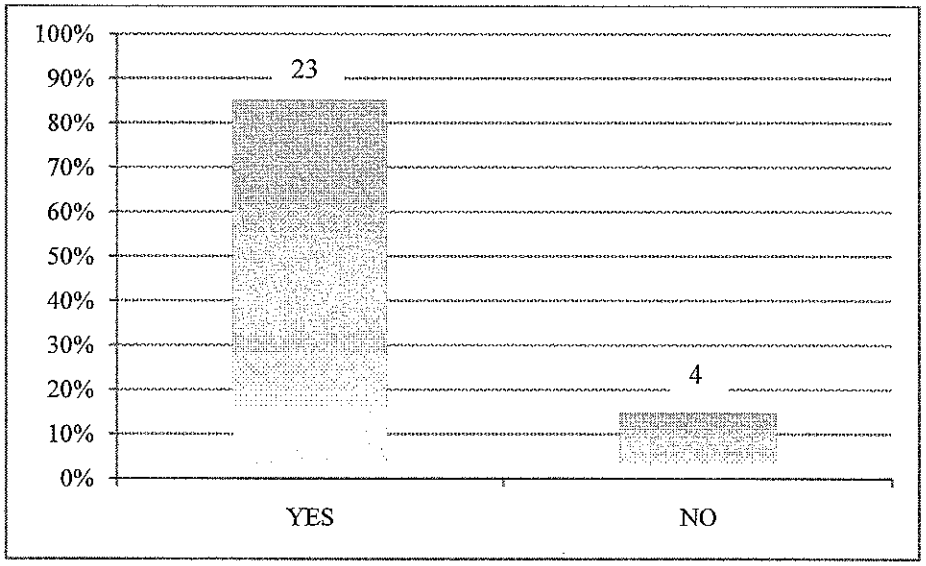
n = 27

Q11: Why do you say that (future visit)?



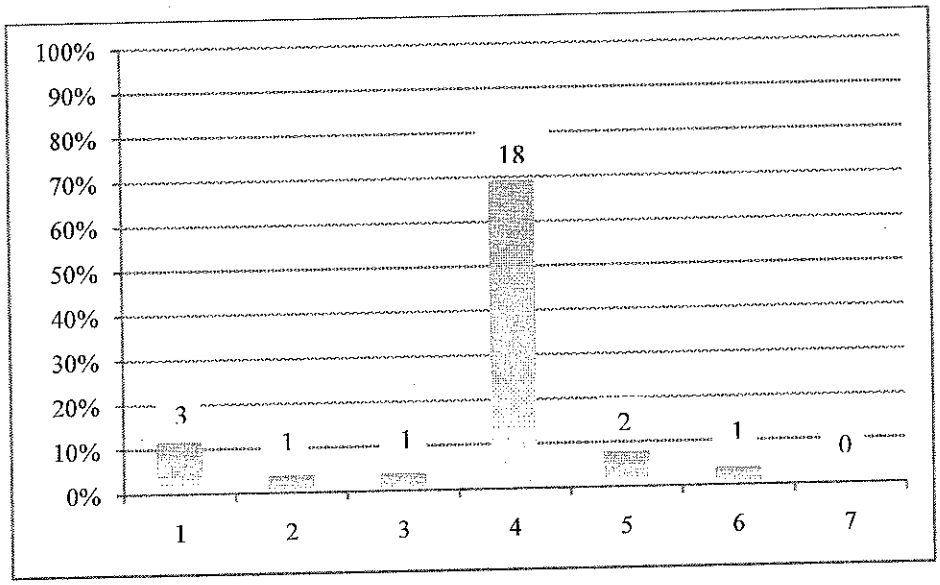
n = 27

Q12: Did you know there is a wind farm near Baskahegan Lake before your visit today?



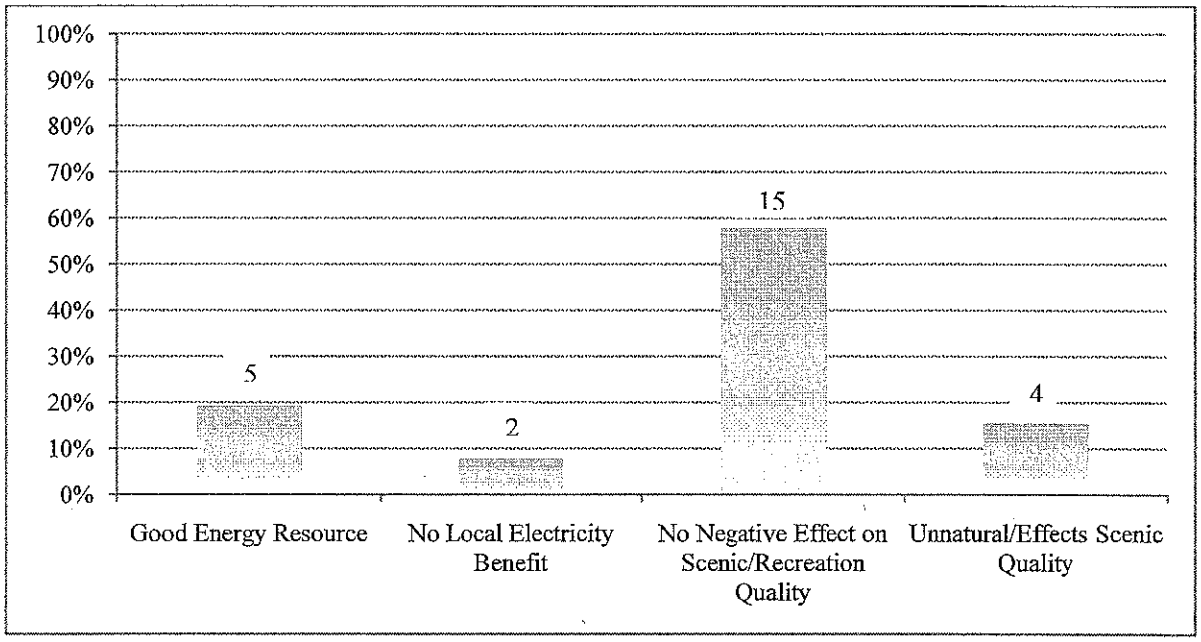
n = 27

Q13: On a scale of 1-7, where 1 is a very negative effect on your opinion, 7 is a very positive effect on your opinion, and 4 means no effect, how does the presence of the wind farm affect your opinion of the scenic value of Baskahegan Lake?



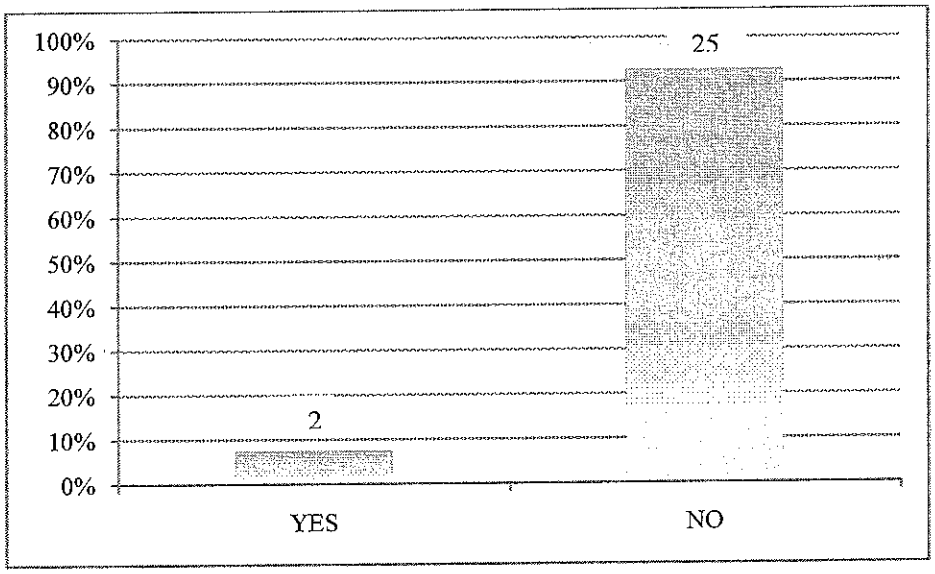
n = 26

Q14: Why do you say that (scenic value of the lake)?



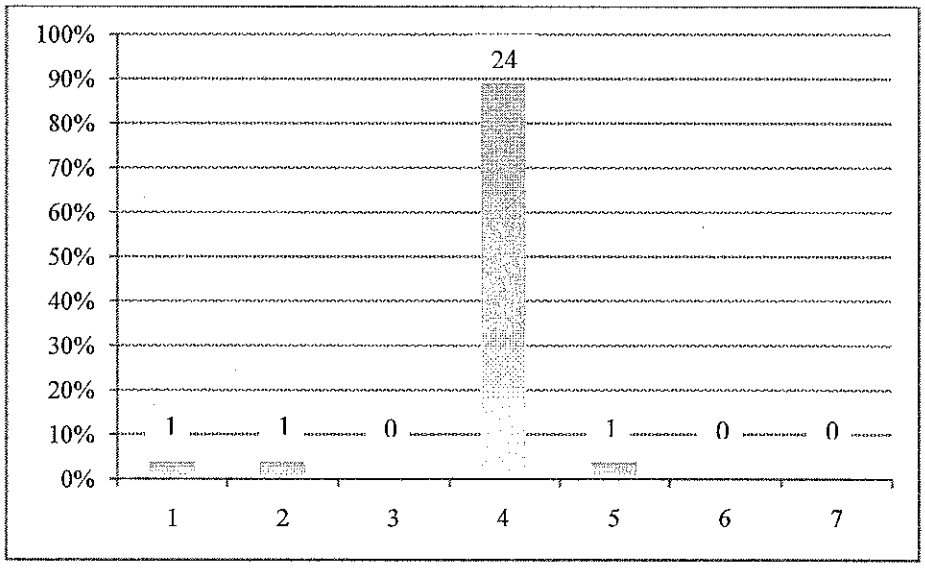
n = 26

Q15: Does the presence of the wind farm affect your likelihood of returning here in the future?



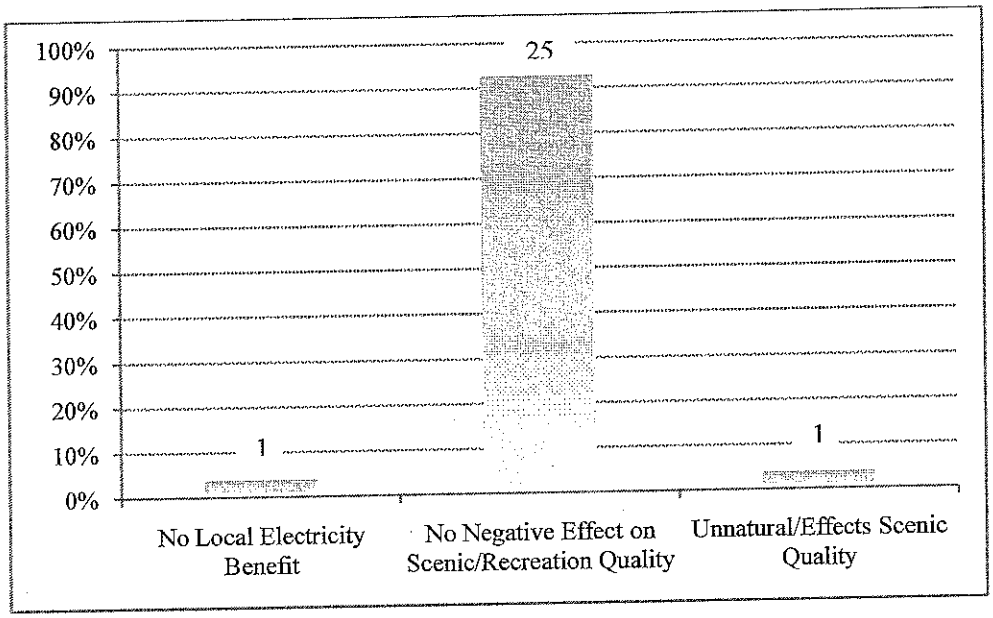
n = 27

Q16: On a scale of 1-7, where 1 is a very negative effect on the quality of your visit, 7 is a very positive effect, and 4 means no effect on the quality of your visit, how did the presence of the wind farm affect the overall quality of your visit to Baskahegan Lake today?



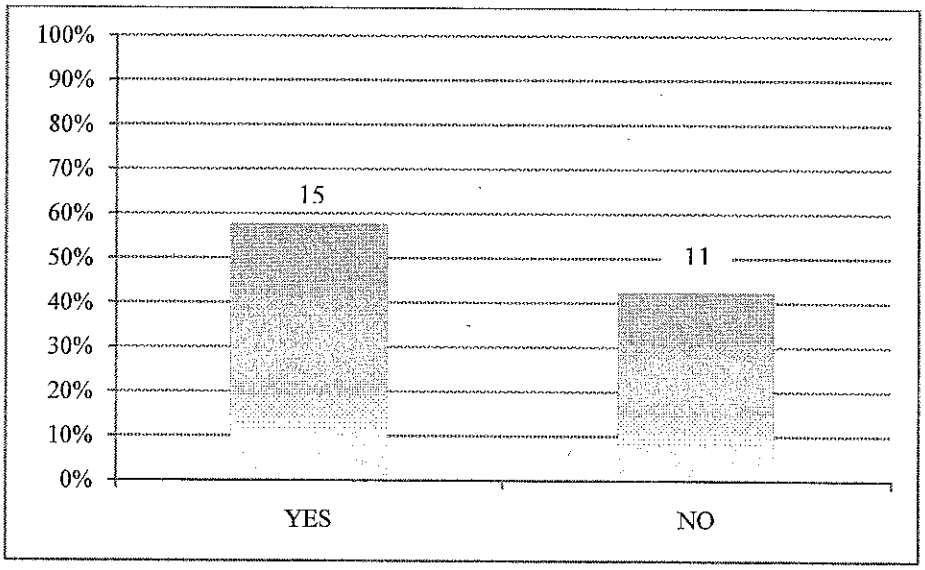
n = 27

Q17: Why do you say that (overall quality of visit)?

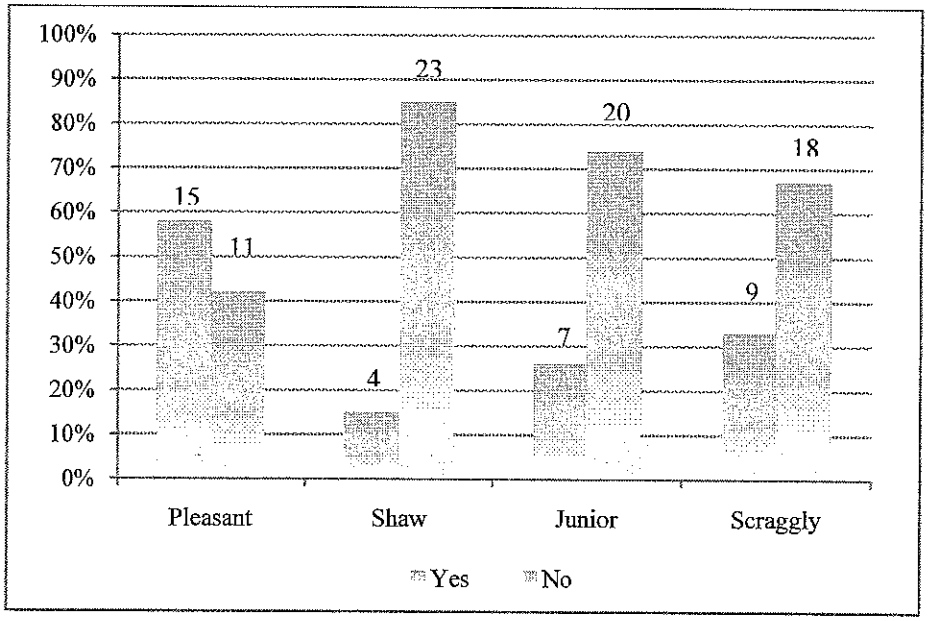


n = 27

Q18: Have you visited any of the following lakes in the area?



n = 26



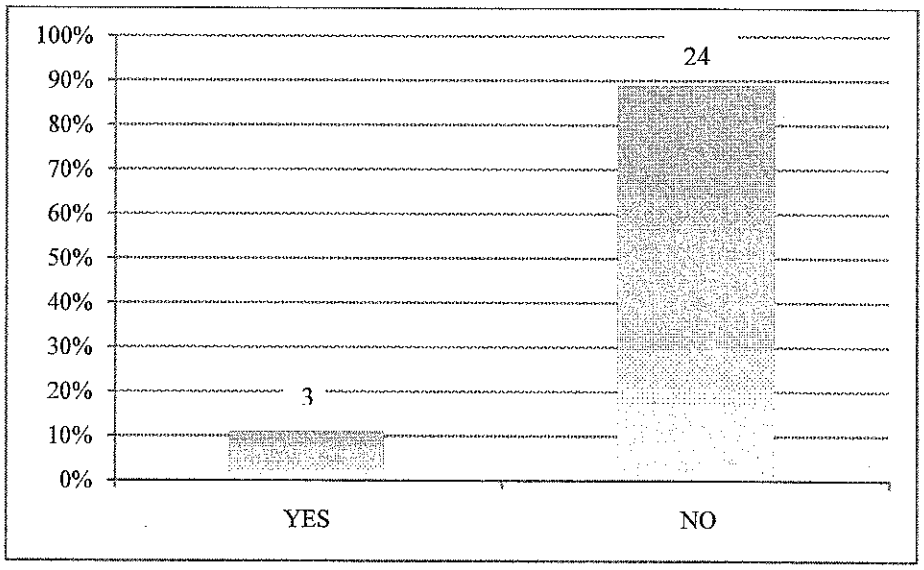
n = 27 (Pleasant Lake n = 26)

Q19: What is the zip code of your primary residence?

Zip Code	Frequency	Percentage
02368	1	4%
02920	1	4%
04412	1	4%
04413	7	27%
04419	1	4%
04487	1	4%
04490	1	4%
04579	1	4%
04668	1	4%
04730	1	4%
04735	1	4%
04736	2	8%
04750	2	8%
04757	2	8%
04785	1	4%
04924	1	4%
07607	1	4%

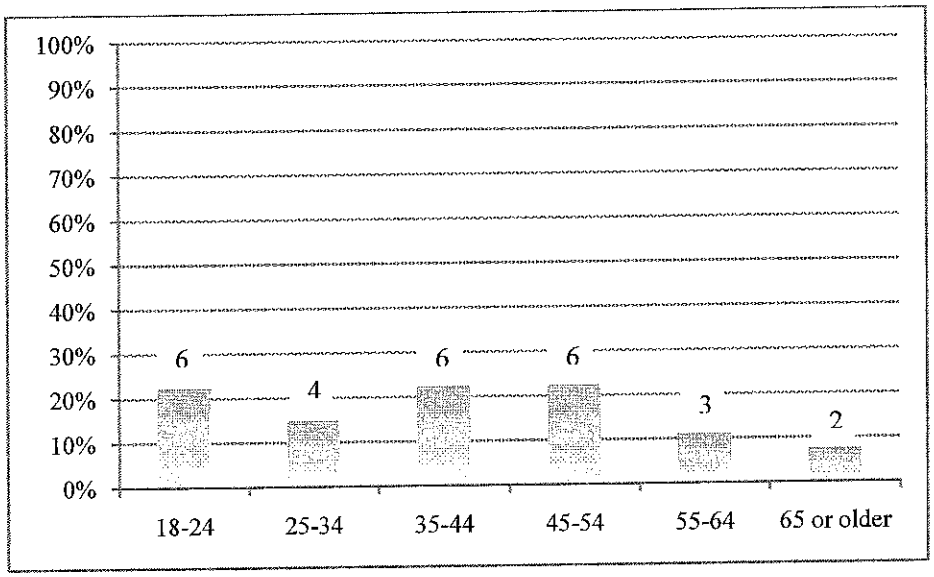
n = 26

Q20: Are you using the service of a Registered Maine Guide today?



n = 27

Q21: Please tell me which best represents your age group.



n = 27

ATTACHMENT C

KEY COMPARISONS BETWEEN THE 2010 AND 2012 STUDIES

ATTACHMENT C

COMPARISON OF THE 2010 AND 2012 BASKAHEGAN STUDIES

The following tables present comparisons of the 2010 Baskahegan Stream Watershed Recreation Use and Resource Analysis (Ednie, et al., 2010) with the current study presented in this report. Table 1 provides a comparison of key study methods. Table 2 presents a comparison of selected study findings.

Table 1
Comparison of Key Components of the 2010 and 2012 Baskahegan Study Methods

	2010	2012
Purpose	Identify baseline recreation use patterns and document recreation site conditions in the Baskahegan Watershed	Examine the influence of an existing wind farm on the recreational use and scenic quality of and likelihood of returning to Baskahegan Lake
Study Area	Baskahegan Watershed—from the Danforth public landing, through Crooked Brook Flowage to and including Baskahegan Lake	Baskahegan Lake
Date of Implementation	May 30-September 5, 2010	August 2-23, 2012
Methods (No. completed)	Visitor Access Surveys (47) Interviews with long time and frequent visitors (6) Vehicle Counts Observations	Visitor Access Surveys (27)
Locations of Visitor Surveys	Brookton Boat Launch Danforth Boat Launch Crooked Brook Flowage	Brookton Boat Launch
No. of Monitoring Days	24	11
No. of People Interviewed Per Group	One person per group One interview per group per season	One person per group One interview per group per season

Table 2
Key Findings of the 2010 and 2012 Baskahegan Studies

	2010	2012
Age	Majority adults	Majority adults (18-54 years)
Average Group Size	3 People	3 People
Length of Trip	Day Trip 67% Overnight Trip 33%	Day Trip 74% Overnight Trip 26%
Repeat Visitors	94%	86%
Average No. Years Visiting Study Area	19	21
Primary Residency	Maine (75%)	Maine (88%)
Primary Activity	Fishing	Fishing
Reason for Enjoying Lake	Scenery (beauty, remoteness, wildlife) Opportunity for Camping Lack of Development	Scenery Fishing

Expert Report of Kevin J. Boyle, PhD.

Assessment of the Kleinschmidt Bowers Mountain Wind-Farm and Baskahegan Lake Recreational User Surveys

October 1, 2012

Prepared b:

Kevin J. Boyle
275 Orchard Hill Lane
Newport, VA 24128

1. Executive Summary

The Maine wind energy permitting act provides consideration for:

"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" [35-A M.R.S.A. Section 3452(1)].

The survey results summarized below characterize "the expectations of a typical viewer" [35-A M.R.S.A. Section 3452(3)] and indicate that the proposed Bowers Mountain wind farm will not have an unreasonable adverse impact on users of Junior, Pleasant, Scraggly and Shaw Lakes. The results show that while some people fear the construction of the wind farm, the data show that the Bowers Mountain wind farm is not going to have a significant adverse impact on recreational use and enjoyment of lakes within eight miles of the project. In addition, the Baskahegan Lake user surveys reveal that visibility of a wind farm does not substantially diminish recreational users' enjoyment of the lake or their rating of the scenic quality of the lake.

The survey results indicate that the effect of the wind farm's "presence on the public's continued use and enjoyment of the scenic resource" [35-A M.R.S.A. Section 3452(3)] will be minimal. People will continue to use Junior, Pleasant, Scraggly and Shaw lakes after the Bowers Mountain wind farm is constructed and there will be no appreciable loss in economic activity from reduced expenditures by those recreating on lakes within eight miles of the Bowers Mountain wind farm. While users of Junior, Pleasant and Scraggly Lakes may fear the impact of the Bowers wind farm on scenic quality, this is just a fear. There is convincing evidence that the existing Stetson wind farm has not reduced scenic quality of nearby Baskahegan Lake nor has it reduced the quality of recreation experiences or recreational use. I would expect a similar pattern of results after the Bowers wind farm is constructed.

2. Boyle Credentials

I am currently a Professor in the Department of Agricultural and Applied Economics at Virginia Tech. From September 2005 through March 2012 I served as Department Head.

Prior to September 2005 I was a Distinguished Maine Professor in the Department of Resource Economics and Policy at the University of Maine. I also served as a Professor of Wildlife Ecology and of Professor of Ecology and Environmental Sciences, and was the Founding Director of the Center for Tourism Research and Outreach at the University of Maine. I served on the faculty at the University of Maine from 1986-2005.

I received my B.A. in Economics with Distinction from the University of Maine and M.S. in Agricultural and resource Economics from Oregon State University where I received the Savery Masters Student of Excellence award. I received my Ph.D. in Agricultural Economics from the University of Wisconsin.

I have a long personal relationship with the State of Maine. I grew up in Presque Isle, went to college in Orono, and have spent most of my professional career working with natural resource issues in Maine.

I have designed and conducted scores of surveys to elicit the public's preferences for Maine's natural resources. Most of these studies have dealt with hunting, fishing and nonconsumptive uses of Maine's wildlife, forest management, lake and river use, and water quality. For these applications I have used mail, telephone and on-site surveys to collect the necessary data. I have served as a technical advisor for national survey efforts such as the national Survey of Fishing, Hunting and Wildlife Associated Recreation conducted periodically by the U.S. Fish and Wildlife Service.

Using the results of my research I have advised State officials in the Governor's office, Department of Agriculture, Conservation and Forestry, Department of Attorney General, Baxter State Park Authority, Maine Center for Disease Control, Department of Environmental Protection, Office of Fiscal and Program Review, Department of Inland Fisheries and Wildlife, Land Use Regulation Commission, Department of Marine Resources, various committees of the Maine House of Representatives, the Maine Senate, and various other groups.

I have done over a score of studies that investigate how lake quality affects lake-user preferences. I have done numerous studies of fishing (open water and ice) and boating on Maine lakes, studied the economic effects of eutrophication and Eurasian milfoil in Maine, New Hampshire and Vermont lakes. I have also done studies of fishing, hunting and boating guides who cater to users of lakes and forests. Exhibit 1 provides a list of many of the studies that I have conducted.

The first study of public preferences I conducted, as part of my PhD dissertation, investigated scenic beauty along the Wisconsin River as perceived by recreational boaters and anglers (Boyle and Bishop, 1984). The State of Wisconsin says that:

> *"The Wisconsin River valley is a scenic marvel comprised of stately bluffs, mysterious wooded bottomlands and over 500 miles of sandy shoreline. Numerous islands provide camping and outdoor recreational opportunities free from crowds"* (http://lwr.state.wi.us/docview.asp?docid=11222).

This area is one of the most important scenic assets in Wisconsin, and my research was used to support the passage of Wisconsin Act 31 (1989) that created the Lower Wisconsin State Riverway.

Currently, I am the co-Principal Investigator of a national study for the National Park Service of public preferences for reducing human-caused haze in Class I visibility areas (national parks and wilderness areas) to background (natural) levels. Here we are using visual simulations of what national park and wilderness areas would look like as haze levels are being reduced. A pilot survey is currently being administered by mail in the southeastern U.S. and the southwest. When the final survey is implemented the results will be used by the National park Service and the U.S. EPA to assist in meeting U.S. EPA's Regional Haze rule (http://www.epa.gov/visibility/pdfs/20120530finalrule.pdf).

3. Boyle Experience with Bowers Wind Project, Baskahegan Lake and Wind Power

On July 9, 2012, I made a visit to the Bowers Mountain area with Neil Kiely and Marcia Phillips. We approached the area along Route 6 from Lincoln, passing through and observing the Rollins project turbines.

Our first stop was at the boat launch at the eastern edge of Baskahegan Lake to view the Stetson project turbines from the lake shore. It was a fairly clear day and most turbines were clearly visible. From the vantage point where we viewed the lake my view was of a natural shore line with the wind turbines on the horizon in the distance.

Our second stop was at the camping/public access area on the southern edge of Pleasant Lake. Here we viewed simulated photos of the Bowers project wind turbines from this point on the shore in the same manner that participants in Kleinschmidt's user survey would view the photo simulations. Here I observed cuts in the shoreline forest for a few camps and several areas on the ridges towards the north and northwest where logging had occurred. Even in a scenic location such as this there were clear signs of human development on the horizon from timber harvesting.

Our third stop was at Junior Lake where we took a boat tour of Junior and Scraggly Lakes. We visited the southern end of Junior Lake to observe the Junior Stream outlet. I viewed simulated photos of the Bowers project wind turbines from the lake in the same manner that participants in Kleinschmidt's user survey would view the photo simulations. My observations were of a northern shore that had numerous camps along the shore, mostly on Junior Lake. The camps had aluminum docks that reflected the sun, red roofs and other features that disrupted the view of a natural shore line. I also noticed large areas of timber harvesting on the ridges to the north and northeast. My perspective is that development along the lake shore is likely more intrusive to a natural scene than would be the Bowers project.

After visiting Junior Lake I drove into the Rollins wind farm and observed the turbines operating.

I have also reviewed numerous documents related to the Bowers project, other wind projects in Maine, and other documents related to wind farms in general. I have a Masters student who is doing her thesis on wind farm siting in the mid-Atlantic area and I have reviewed literature with her as she designs her study. I have also attended sessions at conferences in the U.S. and Europe where researchers have discussed the potential effects of the development of wind farms on local populations.

4. Credibility of Kleinschmidt User Surveys

Kleinschmidt's user surveys were designed and implemented using best practices that are consistent with established survey-research procedures. These procedures ensure that high quality data are collected that represent users of Baskahegan, Junior, Pleasant, Scraggly and Shaw Lakes.

Bowers Project Survey Design and Implementation

The survey was designed to elicit lake-users' perceptions of how the Bowers Wind Project might affect their use and enjoyment of Junior, Pleasant, Scraggly and Shaw Lakes.

- Kleinschmidt used their knowledge of the lakes, the area and recreational uses of the lakes from prior work with Domtar on the local hydro-power relicensing project to customize the study to local conditions.

- Kleinschmidt visited with local people, and the game warden and fishery biologist who would be familiar with the use of Junior, Pleasant, Scraggly and Shaw lakes to include local knowledge in the design and implementation of the survey.

- The Bowers survey was designed to provide data that are complementary to previous surveys of public perceptions/preferences for wind power projects in Maine.

- Several drafts of the Bowers survey were provided to me as a survey design expert to review and critique. The final survey reflects the recommendations I made for improving the survey. The survey was designed to be short to entice participation and questions worded clearly so that respondents could easily respond

- The survey was pretested on Kleinschmidt employees and project members to ensure that questions and answer categories were clear and understandable.

- The survey was administered using on-site interviews from a roving boat on the lakes. This was the appropriate and cost effective approach because of multiple access points on the lakes and the ability to access users on the water and on the shore. Figure 8 in Kleinschmidt's report (2012b) demonstrates that the interviews were distributed throughout the lakes.

- Interviews were conducted on Fridays and Saturdays when most recreational use occurs. This is the heaviest time of recreational use and has been observed by Kleinschmidt and me in all of our previous work relating to recreational uses of Maine's lakes.

- Kleinschmidt trained the interviewers prior to fielding the survey, observed their interview practices and made recommendations for improvements for approaching potential interviewees, requesting their participation and administering the survey.

- Interviewers were provided with an interview manual to reference if they had questions on survey protocol.

- Kleinschmidt used feedback from the first fielding of the survey to make improvements in the survey design and implementation (e.g., moving to an electronic survey instrument with a paper back-up). These changes enhanced the effectiveness of the survey implementation but did not modify the substance of the survey.

- One person was selected at random to interview from each party intercepted. Since the interview is verbal and party members can hear the responses of other party members, interviewing one party member avoids undesirable anchoring and sequencing effects in survey responses from people in the party who might be interviewed subsequently.

- People were interviewed once so that no single person could unduly influence survey results.

- Kleinschmidt checked all survey data before statistical analyses were conducted and summary statistics were produced.

Baskahegan Survey Design and Implementation

This survey was specifically design to elicit lake-users perceptions of how the Stetson Wind Project affects the quality of their experiences during visits to Baskahegan Lake. The survey design and implementation procedures were the same as the Bowers survey with a few appropriate exceptions.

- Kleinschmidt drafted the Baskahegan survey to provide complementary data to the Bowers surveys. The Bowers survey was already drafted and being effectively implemented in the field and the Bowers survey was the model for drafting the Baskahegan survey.

- The survey was administered through on-site interviews using an interviewer at the public boat launch at the east side of the lake. This was the appropriate and cost effective approach because there is a single access point to this lake.

- Kleinschmidt used feedback from the first fielding of the survey to make improvements in the survey design and implementation (e.g., moving from an electronic survey instrument to a paper instrument). These changes enhanced the effectiveness of the survey implementation but did not modify the substance of the survey.

Junior Stream Boater Observations

This survey was specifically design to observe boaters entering and leaving Junior Lake from Junior Stream. This survey supplemented data gathered by Stantec in 2011 using a similar methodology.

- Observers were located in an inconspicuous location to easily record boats passing into Junior Lake from Junior Stream and vice versa.

- All boats and the number of individuals in the boats were recorded.

- Boats were photographed to avoid double counting of boats that enter Junior Lake from Junior Stream and then return to Junior Stream.

5. Bowers Project User Survey – Key Results

A total of 70 users were interviewed while visiting Junior, Pleasant and Scraggly Lakes. These surveys were conducted at a wide variety of locations on Junior, Pleasant and Scraggly Lakes (Figure 9, Kleinschmidt 2012b). The locations of the interviews were determined by the

locations where people were recreating on the lakes, and represent locations where a few to nearly all of the turbines would be visible. Thus, the sample provides a good spatial representation of lake use.

The survey results indicate some respondents believe the Bowers wind farm will lower scenic quality, but a majority (55%) believes that the presence of the wind farm will have no effect or increase their enjoyment of visits to the lakes (Table 1). Most users are still very likely to visit Junior, Pleasant and Scraggly Lakes with conditions described in the simulations showing the Bowers wind farm.

Table 1. Key Results from the 2012 Bowers Project User Survey

Statistics	Description
70	People **interviewed**
86%	**Repeat** visitors
100%	Expect a **high quality** experience
90%	Rated scenic value with current conditions as **high**
33%	Rated scenic value with simulated conditions as **high**
55%	Stated the Bowers wind farm would have **no effect** or a **positive effect** on their enjoyment of a visit
99%	Are **likely to return** with current conditions
80%	Said wind farm simulated conditions would have **no effect** on decision to visit in the future or their **likelihood to return**

Source: Kleinschmidt, 2012b.

All respondents expected a high quality experience when they visited Junior, Pleasant and Scraggly Lakes (Table 1). It is also helpful to examine results for individual lakes, and the percentages expecting a very high quality experience are the same across these three lakes (Table2).

Table 2. Key Results from the 2012 Bowers Project User Survey Stratified by Lake

Junior	Pleasant	Scraggly	Description
26	31	13	People **interviewed**
100%	100%	100%	Expected a **high quality** experience
81%	93%	100%	Current conditions have **high** scenic value
23%	46%	23%	Simulated conditions have **high** scenic value
40%	70%	50%	Simulated conditions would have **no effect** or **positive effect** on enjoyment of visit
100%	97%	100%	Are **likely to return** with current conditions
74%	87%	77%	Simulated conditions would have **no effect** on decision to visit in the future or they are **likely to return**

Source: Kleinschmidt, 2012b.

Note, lake-specific sample sizes range from 13 (Scraggly) to 31 (Pleasant) (Table 2). These differences are due to the intensity of public use of the lakes, not differing intensities of sampling effort. The sample sizes for Junior and Pleasant Lakes are sufficient to have confidence in the statistics reported in Table 2. The sample size for Scraggly Lake is less than desired for statistical confidence, but a practical review of the survey results indicate that the data for this lake make sense. Scraggly and Junior Lakes are connected so boaters can pass from one lake to the other. Thus, one might expect that evaluations of Scraggly Lake would be more similar to those of Junior Lake than those for Pleasant Lake and this is generally the case. In addition, the ratings of scenic value for Pleasant and Scraggly Lakes exceed the rating for Junior Lake. I believe these relative ratings follow the extent of shoreline development on each lake; Junior Lake has the most development and the lowest scenic rating (Figure 2, Kleinschmidt 2012b).

When asked to rate scenic value of the lakes with current conditions 90% of respondents rated the current conditions as high (Table 1). Scraggly Lake has the highest evaluation with 100% of respondents giving it a high scenic value, followed by Pleasant Lake and then Junior Lake (Table 2).

When asked to rate the scenic value of the lakes with the wind farm simulations, 33% rated the scene as high scenic value (Table 1). However, the results by lake indicate 46% of Pleasant Lake respondents indicated that the scenic value of the lake would continue to be high, and this is the lake where there is the greatest potential visibility (Figure 2, Kleinschmidt 2012b). As I will discuss below, the lower evaluations for Junior and Scraggly Lakes may be biased downward by local opposition to the wind farm, not an objective evaluation of the scenes. In any event, lake users indicate the lower evaluations of scenic quality under the simulated conditions will have less of an adverse impact on enjoyment, and nearly all will continue to use the lakes for recreation.

A majority of respondents said the presence of the wind farm would have no effect or a positive effect on the enjoyment of their visits to the lake (Table 1). This rating, and the similar ratings for each of the three lakes, are higher than the scenic value ratings; for Pleasant Lake 70% of respondents indicated that the Bowers wind farm would have no effect or a positive effect on their visit (Table 2). These ratings help to identify the opposition bias in the scenic value ratings because larger percentages of respondents at each lake indicate the wind farm will have no effect or positive effect than those who rate the scenic value as high, 33% versus 55% overall.

When asked about the likelihood of a return visit to the lakes with the current conditions, 99% of respondents indicated they are likely to return and 80% said the simulated conditions will have no effect or they are likely to return (Table1). Thus, the likelihood of returning is

higher for each of the individual lakes than the percentages for the scenic values of the lakes with simulated conditions (Table 2). Additional data collected by Kleinschmidt (2012a) helps to understand this comparison. The primary activities when visiting the lakes are relaxing (40%), fishing (32%) and camping (13%), and only 3% reported viewing scenery as their primary activity. Thus, while most visitors to the lakes report viewing scenery as an activity when they visit the lakes, this is not a primary reason for visitation.

One additional lake is within eight miles of the proposed Bowers Mountain wind farm, Shaw Lake. Kleinschmidt attempted to conduct intercept surveys on this lake, but ceased this effort due to no users being present on survey dates. The sampling effort from Shaw Lake was redirected to sampling on Junior, Pleasant and Scraggly Lakes to increase sample sizes for these lakes. I believe the general results from Junior, Pleasant and Scraggly Lakes can be used to infer what the responses might be for users of Shaw Lake. All four lakes are in the same geographic region and likely have Shaw lake visitors like visit Junior, Pleasant and Scraggly Lakes. I believe preferences of Shaw Lake users would be most like those of Pleasant Lake users. Shaw and Pleasant Lakes are physically separated from the other two lakes and both have low levels of shoreline development. In addition, Shaw Lake users may actually be less concerned about the wind farm than Pleasant Lake users because fewer wind turbines will be visible (Figure 2, Kleinschmidt 2012b).

Below I place these results in context. In the next section I show that the results from the Bowers project survey are similar to or better than what has been reported for user surveys associated with other wind farms in Maine. In the subsequent section the results from the Baskahegan user surveys indicate that visibility of turbines is not adversely impacting recreational use and enjoyment of a lake that shares important attributes with the lakes within eight miles of the Bowers project. Therefore, it can be concluded that pre-project fears are not likely to translate to unreasonable adverse impacts on continued recreational use and enjoyment of lakes within eight miles of the Bowers project.

6. Comparison of Bowers Project Results with Other Wind Farm Surveys Conducted in Maine

As wind farms are developed in Maine a number of surveys have been conducted that ask recreational users of the areas to evaluate simulated scenes of what conditions will look like with the wind farm in place. The surveys are typically intercept surveys where people are contacted during their recreational experiences and the simulated scenes are designed to portray worst-case conditions. Intercept surveys are appropriate because this is often the only efficient way to contact users as there are generally no lists of users with contact information.

Considering worst case conditions is a standard approach to evaluating environmental changes. The Bowers survey followed these established practices.

The Bowers survey was administered to the third largest sample, only exceeded by Bull Hill and Highland Winds survey administrations, and covered the largest period of time of any of the survey efforts (Table 3).

The proportion of the respondents to the Bowers survey who reported a positive impact of seeing a wind farm while recreating (19%) is similar to the results from the Nicatous, Mattawamkeag and Pleasant (Oakfield II) Lake intercept surveys as well as the Highland, Saddleback and Spruce Mountain surveys (Table 3). The Bowers survey result for the proportion of respondents who indicated the wind farm will have a negative effect on their experiences is similar to the proportions reported for Saponac Pond and Bull Hill, and is not much different from the proportions reported for Lower Pistol and Pleasant (Oakfield II) Lakes. Thus, the impact of observing the Bowers Mountain wind farm is not that different from what has been observed in a number of other *ex ante* surveys of recreational users near wind farm sites in Maine. However, The Bowers survey results demonstrate the smallest percentage of neutral responses in terms of the impact of seeing a wind farm.

I believe that this bifurcation between expected positive effects and expected negative effects is a consequence of the significant negative publicity and outreach that occurred during the public review process on the original Bowers project proposal and that continues today. The Partnership for the Preservation of the Downeast Lakes Watershed (PPDLW) was an active and vocal opponent of the originally proposed project (DP 4889) reviewed by the Land Use Regulation Commission (LURC). PPDLW submitted written and oral testimony prior to, during and after the public hearing for the proposal held on June 27 and 28, 2011. An April 2010 press release by PPDLW's states that this group was organized

> *"... to oppose the construction of an industrial wind project on Bowers Mountain"* (http://www.ppdlw.org/articles/Press_Release_041510.pdf).

To my knowledge, none of the other surveys for wind projects in Maine were conducted following a lengthy negative campaign regarding the potential impacts of the projects. To influence public opinion, PPDLW posts media stories (http://www.ppdlw.org/pressrel.htm), communicates through a mailing list (http://www.ppdlw.org/form_add2list.htm) and other activities.

Table 3. Comparison of Results of User Surveys at Proposed Wind Projects in Maine

		Passadumkeag			Oakfield II						
	Bowers	Saponac Pond	Nicatous Lake	Lower Pistol Lake	Mattawamkeag Lake	Pleasant Lake	Bull Hill	Highland Wind	Highland Wind	Saddleback Ridge	Spruce Mountain
Date	Summer 2012	August/ Sept. 2011	August/ Sept. 2011	August/ Sept. 2011	August/ Sept. 2011	August/ Sept. 2011	October 2010	Summer/Fall 2010	August 2010	Sept. 2010	May 2010
Method	Intercept	Intercept	Intercept	Intercept	Intercept	Intercept	Intercept	Intercept	Web	Intercept	Intercept
Sample Size	70		29		20	40	81	58	304	22	15
Impact of seeing wind farms on enjoyment											
Positive	19%	0%	20%	0%	23%	20%	9%	8%	21%	23%	20%
Neutral	36%	59%	48%	62%	43%	42%	45%	73%	61%	45%	47%
Negative	44%	41%	31%	37%	34%	37%	47%	19%	18%	32%	27%
Refused	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%
Likelihood of returning if respondent saw wind farms											
			Boating			*Boating*					
Likely	61%	0%	7%	0%	13%	13%	6%	14%	15%	27%	13%
No Change	19%	73%	81%	78%	58%	60%	75%	73%	68%	50%	73%
Unlikely	21%	28%	11%	22%	28%	27%	20%	14%	17%	23%	7%
Refused	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%

Source: With the exception of data collected by Bowers (Kleinschmidt, 2012b), Passadumkeag (Robertson and MacBride, 2011a) and Oakfield II (Robertson and MacBride, 2011b), all data presented is from the May 23, 2011 response by Portland Research Group to the "review of the Bowers Wind Project Visual Impact Assessment" by James F. Palmer, dated April 28, 2011. Note, the Passadumkeag and Oakfield II reports present results by activity for likelihood of return and I replicate the recreational boating results here, and results were quite similar across activities.

The negative publicity and outreach by PPDLW was occurring PRIOR to implementation of the survey administered by Kleinschmidt and likely created a publicity bias that reduced scenic quality ratings of scenes with the simulated wind farm present. A publicity bias arises when information presented to the public raises unfounded fears that unnecessarily affect opinions expressed in the survey. The evidence of publicity bias is that respondents said the simulated scene reduced enjoyment, but at the same time they are likely to visit the lakes in the future; 44% indicated a negative impact on enjoyment versus 61% likely to visit in the future.

The surprising outcome, in the face of such opposition, is that the Bowers project has the one of the largest percentages (61%) indicating they are likely to visit in the future. The higher percentage of respondents indicating they are likely to visit Junior, Pleasant and Scraggly Lakes in the future is likely to be attributable to factors other than viewing scenery being the primary purpose of visits (relaxing, fishing and camping) and the small percentage who indicated that viewing scenery was their primary activity (3%). These considerations indicate that while people fear that scenic value will be decreased, this will not have an unreasonable impact on the quality of their visits or the likelihood that they will visit the lakes in the future.

Thus, the lower scenic value evaluations, likely caused by the publicity bias, are not manifested in the likelihood of visiting in the future, which is probably more indicative of future behavior and evaluations. This outcome is demonstrated in the Baskahegan survey results reported in the next section; long-term Baskahegan Lake users are not adversely impacted by the visibility of the Stetson wind farm and the construction of the wind farm did not cause them to stop visiting the lake.

7. Baskahegan User Surveys – Key Results

Baskahegan Lake provides an important comparable for drawing insights on how users of lakes near the Bowers wind farm would react after the farm is constructed. Baskahegan Lake is located in the same geographic region as Junior, Pleasant and Scraggly Lakes and all four lakes have common users. Thus, insights from the Baskahegan Lake survey provide important insight for predicting what user evaluations would be after the Bowers wind farm is constructed

The 2010 and 2012 Baskahegan surveys indicate that the Stetson wind farm has a minimal impact on recreational users of the lake. The Stetson project was completed in March 2010, prior to the 2010 and 2012 user surveys, and includes 55 wind turbines (http://www.firstwind.com/projects/stetson-wind). The 2010 survey was administered between May 30th and September 5th, 2010, shortly after construction completion. The 2012 survey was conducted in August, 2012, about two years after construction completion. The

collective results of the two studies indicate that the wind farm has not adversely impacted recreational use nor has it caused users of Baskahegan Lake to shift their recreation to other lakes without views of wind turbines. Importantly, the 2012 survey demonstrates that for almost all users (93%), the visibility of turbines has no effect (89%) or a positive effect (4%) on the quality of their recreational experience (Table 4).

The 2010 Baskahegan user survey found that 94% of those surveyed were repeat visitors and had been visiting the lake for 19 years on average (Table 4). Thus, construction of the Stetson wind farm did not cause long-term users of Baskahegan Lake to stop visiting the lake. In addition, the vast majority of surveys were conducted at the Brookton boat launch where nearly all of the 55 turbines are visible (Figure 8 in Ednie, Everett and Daigle, 2010) and none of the respondents mentioned the existence of the wind farm as a problem for recreation on Baskahegan Lake. In addition over 50% of the boating use was observed in the southwest area of Baskahegan Lake (Figure 8 in Ednie, Everett and Daigle, 2010), where there is significant visibility of the Stetson turbines. These results reveal that the Stetson wind farm did not diminish recreation quality and did not cause users of Baskahegan Lake prior to the construction of the wind farm to stop visiting the lake. Because respondents were not asked about and did not comment on the impact of the wind farm visibility on recreational use, the 2012 survey was conducted to specifically answer that question.

Table 4. Key Results from the 2010 Baskahegan User Survey

Statistics	Description
48	People Surveyed
51-55	Number of turbines visible from the interview site
94%	Repeat visitors
19	Average years of visitation
0%	No one mentioned Stetson wind farm as a problem for recreation

Source: Ednie, Everett and Daigle, 2010.

The 2012 Baskahegan user survey was undertaken to assess directly what impact, if any, the Stetson wind farm has on recreational use and enjoyment of Baskahegan Lake. It provides even stronger evidence that the Stetson wind farm does not diminish recreation or scenic quality of Baskahegan Lake. First, the results again indicate that the vast majority of users are repeat visitors (86%) and have visited for an average of 21 years (Table 5). Given that two years elapsed between the 2010 and 2012 surveys and average years of use increased by two years, this is strong evidence that people are not stopping using Baskahegan Lake due to the construction of the Stetson wind farm.

The second strength is that the 2012 Baskahegan user survey found that 59% of users also visit Pleasant, Shaw, Scraggly and Junior Lakes that do not currently have wind observable from

these locations (Table 5). This means that visitors to Baskahegan Lake visit lakes without wind turbines visible and still also choose to visit Baskahegan Lake. This finding supports the presence of publicity bias in the scenic ratings collected in the Junior, Pleasant and Scraggly intercept surveys. Fifty-nine percent of Baskahegan users also visit Pleasant, Scraggly, Junior and Shaw Lakes, and 93% of these respondents rate the scenic quality of Baskahegan Lake as high with 80% giving it a very high rating.

Table 5. Key Results from the 2012 Baskahegan User Survey

Statistics	Description
27	People **Interviewed**
51-55	Number of **turbines visible** from the interview site
86%	**Repeat** visitors
21	Average **years** of visitation
59%	**Also visit** Pleasant, Scraggly, Junior and Shaw Lakes
81%	Rated experience as **high quality** and **59%** of these individuals rated experience **very high quality**
93%	Rated views as **high scenic quality** and **80%** of these individuals rated views **very high quality**
100%	**Likely** to visit again and **93%** are **very likely**
85%	**Aware** of wind turbines before visit
81%	Turbines had **no effect or positive effect** on scenic quality and **69%** of these individuals said **no effect**
93%	Turbines will have **no effect** on return
93%	Turbines had **no effect or positive effect** on quality of visits

Source: Kleinschmidt, 2012a.

To make this distinction even sharper, the Stetson wind farm has 55 wind turbines and nearly all are visible from the Brookton boat launch where the vast majority of the intercept surveys were conducted. The current Bowers Mountain proposal will have only 16 wind turbines. The old adage that "the proof of the pudding is in the eating" is analogous here. The proof is that with 55 turbines visible at Baskahegan Lake 93% of users' rate scenic quality as high. It is illogical, therefore, that only 33% of visitors to Junior, Pleasant and Scraggly Lakes rate scenic quality as high in evaluating the photo simulations when there will only be 16 turbines and there is a common core of visitors to all four lakes.

8. Fear of Change

The publicity bias concern raised above suggests that users' concerns about the potential Bowers wind farm are exaggerated. For example, a study of wind farms in Scotland found 40 percent of respondents anticipated problems, but only nine percent experienced problems after the farms were constructed (http://www.scotland.gov.uk/Publications/2008/03/07113554/7). Likewise, Palmer (1997) in a study of a Vermont wind farm found that post construction evaluations of scenic value are higher than preconstruction evaluations of simulated images of the wind farm. Pasqualetti, Gipe and Righter (2002) find that public acceptance of wind projects decline after first announcement, reach a low point during project development, and then increase post construction. This pattern of public opinion would appear to describe the pre- and post construction examples just cited.

9. Junior Stream Boat Counts Key Results

Kleinschmidt staff conducted boat counts of trips entering Junior Lake from Junior Stream. The results are the same as those observed by Stantec in 2011, 2 people per boat and 8-9 boats per day (Table 2, Kleinschmidt 2012b). The Kleinschmidt and Stantec boat observations in 2011 and 2012 followed best practice, and provide little evidence of guided trips entering Junior Lake through this passage or of paddlers following a water trail through this passage.

10. Downeast Lakes User Survey

The Partnership for the Preservation of the Downeast Lakes Watershed (PPDLW) conducted an internet survey in February/March 2012 to survey lake users about their expectations of the Bowers Wind Project. This survey cannot be deemed to provide credible data for a number of reasons.

- The report makes no mention of the procedures used to design and pretest the survey instrument.

- The report does not present the survey instrument so that the information presented to respondents, other than questions asked, cannot be reviewed and evaluated.

- A representative sampling frame was not used. The PPDLW report states;

"The availability of the survey was announced to the following groups:

- PPDLW membership
- Those who own property on the lakes
- Owners of sporting camps on the lakes
- Licensed Guides who work the area

In addition, PPDLW members and local property owners were asked to share the survey with anyone else they know to have used the Lakes. Similarly, sporting camp owners and guides were asked to share the survey with their guests and clients to the extent they feel comfortable doing so."

For an internet survey to be credible, the standard approach is to randomly select people from an established panel such as maintained by internet provider Knowledge Networks (http://www.knowledgenetworks.com/). The PPDLW survey is a sample of convenience that appears to have been distributed to opponents of the Bowers wind farm project.

- In addition, internet surveys preclude people from responding that do not have internet access. Knowledge Networks provides internet access to the people who do not have such service so that internet surveys can be administered to representative samples.

- As compared to the intercept surveys, there is no way to identify if the person answering an internet survey is actually a user of Junior Lake, Pleasant Lake, Scraggly Lake or Shaw Lake or just stated they were a user. Intercept surveys on-site allow confirmation that those interviewed are actually users.

Thus, because of reporting and survey sampling limitations, the PPDLW survey and the resultant data cannot be deemed reliable or scientifically credible. The survey results represent responses from a sample of convenience with no way to ensure credible survey responses. Therefore, the PPDLW survey results cannot be used to make any generalizations about the potential impacts of the proposed Bowers Mountain wind farm.

11. Portland Research Group Telephone Survey

The Portland Research Group (2011) telephone survey provides credible information to inform decisions regarding the Bowers Mountain wind farm proposal. The telephone survey randomly recruited respondents from a known sampling area. As noted by Kleinschmidt (2012b), and confirmed by me, on-site user surveys over sample those who use the sites most frequently. This seems appropriate in the current permitting process as user surveys will contact those most impacted by the wind farm through their repeated use. The telephone

survey allows all users of lakes within eight miles of the project lakes to have an equal probability of participation. Furthermore, as compared to the internet survey conducted by PPDLW, an adversarial group in this process, there is no incentive for respondents to misrepresent themselves as users of lakes near the Bowers project in their responses to the telephone survey due to opposition to the Bowers wind farm proposal.

Of the 31 respondents who use the "study area", 16% said seeing energy facilities such as wind farms have a positive effect on their enjoyment of their visits, 36% indicated a neutral effect, and 48% indicated a negative effect. These figures are nearly identical to those for the Bowers project reported in Table 3 where 19% indicate a positive effect, 36% indicated a neutral effect, and 44% indicated a negative. This similarly of findings provides what survey researchers refer to as convergent validity; two different surveys provide similar results. This finding confirms the credulity of the intercept survey of users conducted by Kleinschmidt on Junior, Pleasant and Scraggly Lakes during the summer 2012.

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Robertson, B., and J. MacBride. 2011b. "Pleasant Lake/Mattawamkeag Lake Wind Power Project Intercepts." Report to Terrence J. DeWan & Associates by Market Decisions, Portland, ME.

Exhibit 1. Example Studies I have Designed and/or Conducted

- National study of public preferences for visibility improvements in Class I visibility areas, national parks and wilderness areas.
- Georgia, Virginia, Maryland and Pennsylvania residents' preferences for horticulture products grown with disease free and water conserving production practices.
- Overweight and obese Virginia residents' preferences for weight loss incentive programs.
- Maine residents' preferences for low impact timber harvesting on small woodlots.
- Maine women's responses to fish consumption advisories.
- Australians' preferences for restoring Murray River flows.
- Atlanta residents' preferences for the Trees Atlanta program.
- Canadian smokers' preferences for smoking cessation therapies.
- National study of preferences for policies to reduce global warming.
- Public preferences for alternative timber harvesting practices in Maine.
- National study of public preferences for food safety.
- Bangladeshi households' preferences for avoiding well water contaminated with arsenic.
- National study of public preferences for farmland protection.
- Public preferences for farmland protection in Ohio, Maine and Ohio.
- National study of public values for farmland conservation policies that increase grassland bird populations.
- User preferences for Fort Sumter National Monument.
- User preferences for South Padre Island National Seashore.
- Maine residents' opinions on wolves.
- Maine residents' preferences for an environmental license plate (led to the chickadee plates).
- Vermont hunters' preferences for lifetime licenses.
- Maine hunters' preferences for lifetime licenses.
- Vermont lake users' preferences for avoiding lake eutrophication and invasive Eurasian milfoil.
- New Hampshire lake users' preferences for avoiding lake eutrophication.
- Maine lake users' preferences for avoiding lake eutrophication.
- Recreational users and camp owners' preferences for Flagstaff Lake levels.
- White water boater preferences for Dead River flows.
- Maine residents' opinions on Bald Eagle restoration.
- Doughty County, Georgia and Aroostook County, Maine residents' preferences for protection of groundwater.
- Maine wildlife managers' opinions on nongame and endangered species management.
- Maine deer hunting effort and hunter preferences.
- Maine upland bird hunting effort and hunter preferences.
- Angler preferences for Atlantic salmon restoration in Maine.
- Angler responses to Maine's fish consumption advisories.
- Maine migratory waterfowl hunting effort and hunter preferences.

Exhibit 1. Example Studies I have Designed and/or Conducted -- CONTINUED

- Public preferences for reducing bird deaths in waste oil holding ponds.
- Maine ice fishing effort and angler preferences.
- Maine bear hunting effort and hunter preferences.
- Angler preferences for removal of Edwards Dam on the Kennebec River.
- Nonconsumptive uses of Maine's wildlife surveys.
- National Survey of Fishing, Hunting and Wildlife--Associated Recreation, economic valuation section and consultant on other sections.
- Maine salt water fishing effort and angler preferences.
- Maine open water fishing effort and angler preferences.
- Maine turkey hunting effort and hunter preferences.
- Maine trapping effort survey.
- Maine fishing effort surveys.
- Maine hunting effort surveys.
- Maine moose hunter preferences for season timing and other hunting regulations.
- Maine residents' preferences for reducing black fly populations.
- Wisconsin anglers' preferences for enhanced brown trout fishing.
- Wisconsin residents' preferences for protecting endangered species, striped shiner and Bald Eagle.
- Angler preferences for perch restoration in Green Bay, Wisconsin.
- White water boater and white water guides preferences for Colorado River flows through the Grand Canyon.
- Wisconsin deer hunter preferences for hunting in the Sandhill Preserve.
- Public preferences for protecting the Illinois Beach State Nature Preserve.
- Boater preferences for scenic vistas along the Lower Wisconsin River.

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October 29, 2012

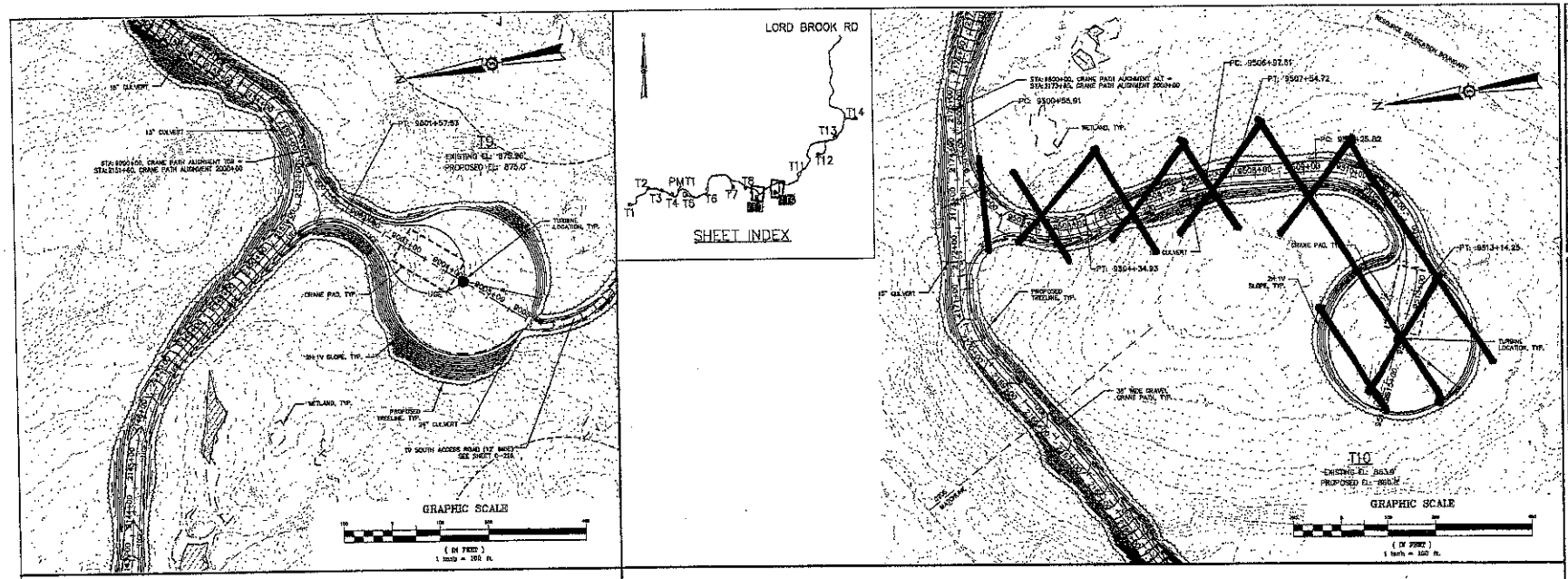
TO: Brooke Barnes / Stantec
FR: Terry DeWan / TJD&A
RE: Passadumkeag Wind Project
Field of View from Route 188 at Saponac Pond

This memo is in response to your request to evaluate the visibility of the proposed Passadumkeag Wind Project from vicinity of the informal boat launch at the north end of Saponac Pond, as a follow-up to our meeting with DEP staff on October 23, 2012.

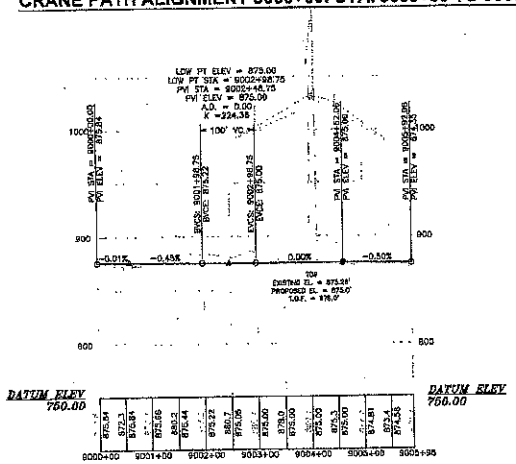
Photosimulation 5 in the Passadumkeag VIA was based on photographs taken between the informal boat launch and the Route 188 bridge over Thompson Brook, at the northern end of Saponac Pond. This location was selected because it appeared to be where most of the public activity at the northern end of the pond took place, based upon personal observations and the number of footprints and tire tracks along the roadside – meaning that this is the most common view of the Project by members of the public.

Walking to the west (toward the sawdust-covered beach at the northwestern corner of the pond) the view over the pond opens up, exposing a few more turbines to view. Depending upon the observer's position along Route 188, turbines would be seen over an arc that ranges from 30° to 52°. To an observer on Route 188, the viewing arc, which includes water in the foreground, will vary from approximately 140° (nearest the beach) to 120° (nearest the boat launch). Within these views, the turbines would be included in 37% (near the beach) to 25% (near the boat launch) of the horizontal arc.

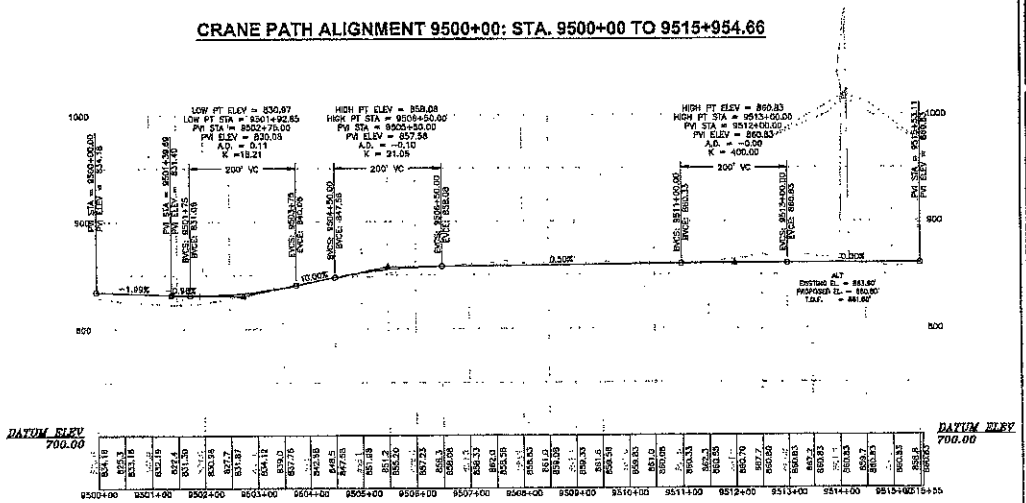
Since this supplement and the QuickTime movie were created, the Applicant has amended its application to remove the easternmost turbine visible from Route 188. This is in direct response to concern raised by the DEP stating that the Project is too visible because of the percent of the horizontal field of view in which turbines will be visible. Removing this turbine will decrease the arc of project visibility near the boat launch/Route 188, the most common public viewpoint, from 30° to 27°. It would also decrease the amount of the horizontal arc where turbines would be visible from 25% to 22.5%. A revised Photosimulation 5 showing nine turbines visible from the boat launch is attached, along with the original photosimulation with ten turbines.



CRANE PATH ALIGNMENT 9000+00: STA. 9000+00 TO 9005+97.53



CRANE PATH ALIGNMENT 9500+00: STA. 9500+00 TO 9515+954.66



PRELIMINARY FOR AGENCY REVIEW

PASSADUMKEAG WIND PROJECT

ALIGNMENT 9000+00
ALIGNMENT 9500+00

SEWALL

PERMIT

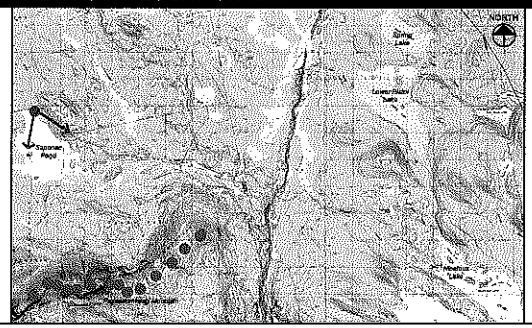
C-214

Photosimulation 5: Panoramic view looking southeast from Saponac Pond in Burlington toward the proposed Passadumkeag Wind Project.

LEGEND

- Passadumkeag Wind Project Turbines
- Viewpoint location and direction of view

VIEWPOINT LOCATION MAP



PHOTOSIMULATION INFORMATION

Turbine Model:	Vestas V112
Hub Height:	84m (276 ft)
Rotor Diameter:	112m (367 ft)
View Coordinates:	Latitude: 45.188782°, Longitude: -68.387895°
Viewer Elevation:	59m (195 ft)
Direction of View:	Southeast
Focal Length:	Digital equivalent to 50mm normal lens
Closest Turbine:	4.0 miles
Closest Visible Turbine:	4.0 miles
Furthest Turbine:	4.9 miles
Furthest Visible Turbines:	4.9 miles
Turbines Visible:	10±
Date of Photo:	07.28.11
Time of Photo:	9:49 am

Photosimulation 5
Saponac Pond

Passadumkeag Wind Project
Visual Impact Assessment

tjd&a
Terrence J. DeWan & Associates
Landscape Architects & Planners

01.30.12

Page 1

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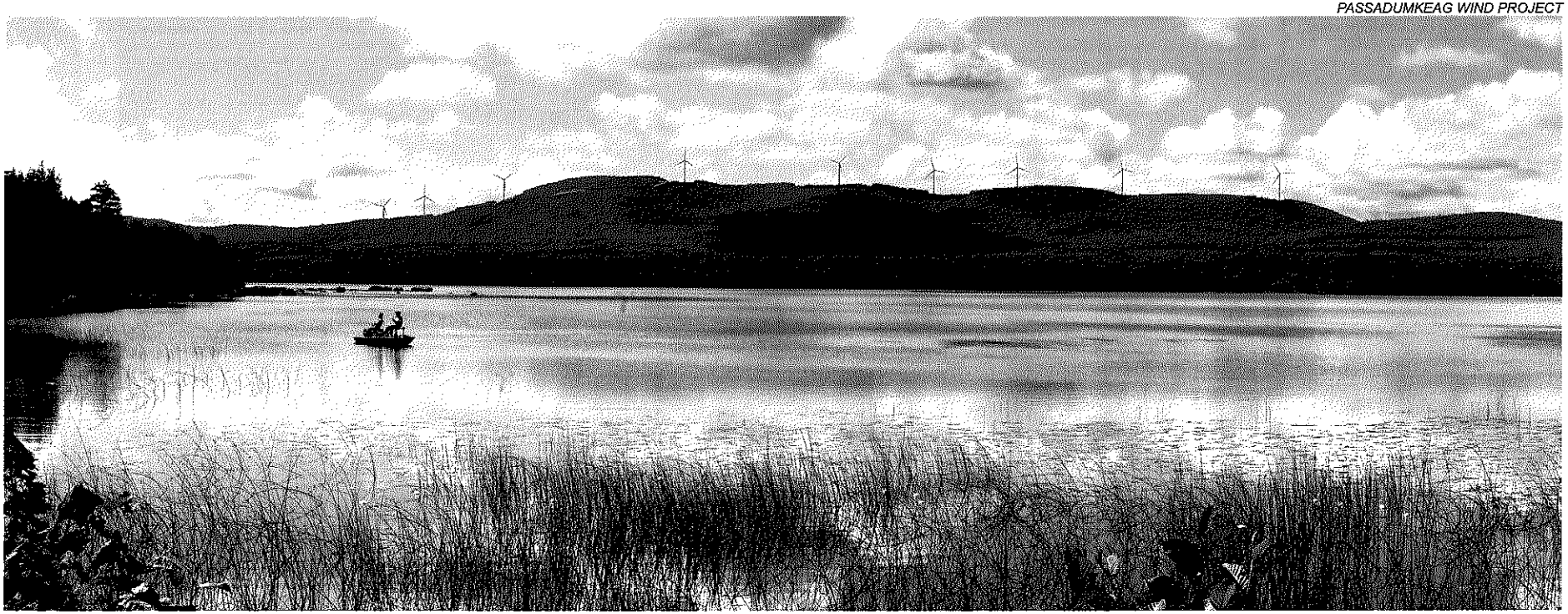
Photosimulation 5A: Normal view looking southeast from Saponac Pond toward the proposed Passadumkeag Wind Project. Approximately ten turbines would be visible from this location at distances of 4.0 to 4.9 miles. Viewer should hold this image, when printed at 11" x 17", approximately 21" from eye to replicate actual view.

Saponac Pond	Page
Photosimulation 5A	2

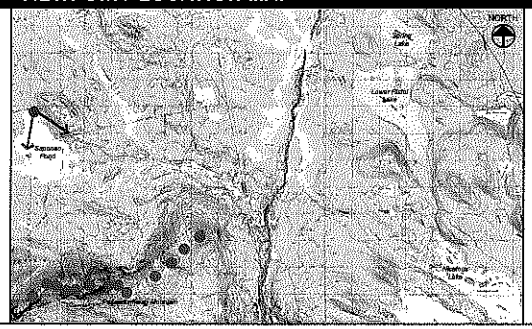


Photosimulation 5 - Revised: Panoramic view looking southeast from Saponac Pond in Burlington toward the proposed Passadumkeag Wind Project.

LEGEND

- Passadumkeag Wind Project Turbines
- Viewpoint location and direction of view

VIEWPOINT LOCATION MAP



PHOTOSIMULATION INFORMATION

Turbine Model:	Vestas V112
Hub Height:	84m (276 ft)
Rotor Diameter:	112m (367 ft)
View Coordinates:	Latitude: 45.188782°, Longitude: -68.387895°
Viewer Elevation:	59m (195 ft)
Direction of View:	Southeast
Focal Length:	Digital equivalent to 50mm normal lens
Closest Turbine:	4.0 miles
Closest Visible Turbine:	4.0 miles
Furthest Turbine:	4.8 miles
Furthest Visible Turbines:	4.8 miles
Turbines Visible:	9
Date of Photo:	07.28.11
Time of Photo:	9:49 am

Photosimulation 5 Revised
Saponac Pond

Passadumkeag Wind Project
Visual Impact Assessment

tjd&a
Terence J. DeWan & Associates
Landscape Architects & Planners

10.30.12

Page 3

475

Photosimulation 5A - Revised: Normal view looking southeast from Saponac Pond toward the proposed Passadumkeag Wind Project. Nine turbines would be visible from this location at distances of 4.0 to 4.8 miles. Viewer should hold this image, when printed at 11" x 17", approximately 21" from eye to replicate actual view.

Saponac Pond	Page
Photosimulation 5A - Revised	4

From: Bergeron, Mark <Mark.Bergeron@maine.gov>
Sent: Tuesday, October 30, 2012 4:08 PM
To: Barnes, Brooke; MBeckner@quantumug.com
Cc: Beyer, Jim R; Bensinger, Peggy; Kuhns, Mick
Subject: RE: Passadumkeag: additional visual information

Follow Up Flag: Follow up
Flag Status: Flagged

This message has been archived.

Hi Brooke-

After consultation with the AG's office, the Department has determined that we will not be reviewing the additional visual information you submitted today. We will continue to work on issuing the draft order by tomorrow or Thursday, so that we can meet the project deadline of 11/9.

Thank you.

Mark Bergeron, P.E.

Director, Division of Land Resource Regulation

Maine Department of Environmental Protection

(207) 215-4397

mark.bergeron@maine.gov

From: Beyer, Jim R
Sent: Tuesday, October 30, 2012 12:56 PM
To: Bensinger, Peggy; Bergeron, Mark
Subject: FW: Passadumkeag: additional visual information

Now what?

James R. Beyer

Regional Licensing and Compliance Manager

Division of Land Resources Regulation

Eastern Maine Regional Office

Maine Department of Environmental Protection

(207) 446-9026

From: Barnes, Brooke [mailto:brooke.barnes@stantec.com]
Sent: Tuesday, October 30, 2012 12:54 PM
To: Beyer, Jim R
Cc

1/25/12

Passadumkeag Wind Public Meeting

Sign in sheet:

Name

Mr + Mrs William A Damien
James Alexander
Eldridge Cooper
Rep. Beth Turner
Larry S. York
Jeffrey Harrison
Herbert E Buckle
Chris Ohm
Mike Gilbert
Heather Jackson
Bob & Susan Bulay
Gene Buck
Jim Lutz
Mellissia Richards
Len Rice
Matt Borden
Chris Hersey
Arthur Buck

Sign In Sheet

Name	Address	Phone	e-mail
Bill Wilson ✓	40 Mountain Rd ~~John Rothwell~~	443-5135 ~~Teagan Slone~~	bill.wilsone.biw
CHRIS O'NEIL ✓	21 SHEILA CIR SACO	(207) 590-3842	cponeil22@gmail
Mike DiCeaw ✓	50 Taylor St. Lincoln	207 794 2107	zeus52@207me.com
Gordon Mott ✓	12 Dawn Pastur Ln Lakeville	207-738-180	Forestw@Alexandria.us
Stephen Craven ✓	154 Pine Grove Ln	207-943-8771 - 478-4048	
~~Fea~~ John Rothwell ✓	Princess Pt Road Brunswick, me	729-8055	
Teagan Slone ✓	Jacksonville Fla.	207-449-7677	crystal.slone@gmail
Dr. Donald Wilson ✓	11 Indian Woods Rd. Scarborough, ME 04074	207-883-3545	donwilson@aol.com
Rep. Beth Turner ✓	74 Main Rd. Burlington ME	732-4425	RepBethTurner@gmail.com
Jeffrey Harriman ✓	Box 700 Burlington Me	356 7506	
Peter R Roy ✓	P.O. Box 723 Ellsworth 04605	207-667-7121	peter@rbwglaw.com
ELIZABETH JOHNS ✓	122 Forest Ave, Orono	866-4539	elizjohns@gmail.com
Dan Gay Steinberg ✓	Lincoln Me.	222 Bagley Mtn Rd	
Brad Blake ✓	Lake Elizabeth		
Chris Jackson ✓	Bordeaux		
Katie Donovan ✓		207 949 0128	rkdgreenlake@

Chris Hessey 9 Canterbury Rd Brewer, ME 735-3613

CHARLES TODORICH 57 DREW RD. S. PORTLAND 04106 7673932

Peter Beckford 123 Rebel Hill Rd, Clifton, ME 04428

DAN REMIAN 640 PLEASANT PT. RD., CUSHING, ME 04563 NYCDeGW.NET

David Corrigan 82 Little Houston Pk Rd. Concord ME 04920 672-4879 mainegrade@live.com

Robert L Buley 118 7th St Old Town ME 827-6136

HART DALEY 7 Hidden Meadow Lane Dixfield, ME 04224 562-9234

MARK Buchanan Spring Bridge Rd. Green Bush

Michael Gilbert Crocker Turn Rd Greenfield 04418 827 8378

John Maddaus 122 Forest Ave., Orono 04473 866-4339

Donald Moore 13 Old Kelley Ave Orono 04473 9449545

Bill Desclene 184 Bryant Ridge Rd GRAND FALLS PLT 04417 794-4361

Rowalie Murphy 26 Partridge Ridge Greenfield TWP. 827-8534

Esu Anahata 10 N West Lake T3 ND 413 446 7466

INA ANAHATA " " 413 446 7700

Michael Williams 779 Fuller Rd Carmel, me 04419 207-848-2224

MARK McGillvray P.O. Box 245 Lincoln, ME 04457 207-794-6580

~~[illegible] 140 [illegible] Rd Burlington ME~~ ~~207-[illegible]~~

~~mailing address PO Box 1836 Bangor, ME 04403-1836~~

Alexander Cropsak 140 Quarrel Rd, Burlington ME

APPLICATION FOR A NATURAL RESOURCES PROTECTION ACT PERMIT

➔PLEASE TYPE OR PRINT IN *BLACK INK ONLY*

1. Name of Applicant:	Passadumkeag Windpark LLC Attn: Michael Beckner	4.Name of Agent:	Stantec Attn: Brooke Barnes
2. Applicant's Mailing Address:	5 Houston Center 1401 McKinney Street, Ste. 1800 Houston, TX 77010	5. Agent's Mailing Address:	30 Park Drive Topsham, ME 04086
3. Applicant's Daytime Phone #:	(860) 339-5886	6. Agent's Daytime Phone #:	207-729-1199
7. Applicant's Email Address (if applicant requests decision by email:	mbeckner@quantumug.com		
8. Agent's Email Address (if agent requests to receive decision by email	brooke.barnes@stantec.com		

9. Location of Activity: (Nearest Road, Street, Rt.#)	Greenfield Road	10. Town:	Greenbush to Grand Falls	11. County:	Penobscot

12. Type of Resource: (Check all that apply)	River, stream or brook ☐ Great Pond ☐ Coastal Wetland x Freshwater Wetland x Wetland Special Significance x Significant Wildlife Habitat ☐ Fragile Mountain	13. Name of Resource:	Unnamed wetlands
		14. Amount of Impact: (Sq.Ft.)	9800 sq.ft. of upland clearing along Greenfield Road in two IWWH Veg Removal: 1.22 acres of forested wetland conversion

15. Type of Wetland: (Check all that apply)	x Forested Scrub Shrub Emergent Wet Meadow ☐ Peatland ☐ Open Water ☐ Other_____	FOR FRESHWATER WETLANDS *Tier 1* ☐ 0 - 4,999 sq ft. ☐ 5,000-9,999 sq ft ☐10,000-14,999 sq ft	*Tier 2* ☐ 15,000 – 43,560 sq. ft.	*Tier 3* X > 43,560 sq. ft. or smaller than 43,560 sq. ft., not eligible for Tier 1

16. Brief Activity Description	**Construction of a 42 MW wind project, collector line, operations and maintenance building, and substation.**

17. Size of Lot or Parcel & UTM Locations:	x *See Application Sec.2* ☐ _____acres ___square feet, or	UTM Northing: 532338.0269 51	UTM Easting: 4987126.8002 6

18. Title, Right or Interest:	☐ own ☑ lease x purchase option ☑ written agreement *See Application Section 2*

19. Deed Reference Numbers:	Book#: Page: *See Application Section 2*	20. Map and Lot Numbers:		Map #: *See Application Section 2*	Lot #:
21. DEP Staff Previously Contacted:	Robin Clukey	22. Part of a larger project:	☐ Yes ☒ No	After-the-Fact:	☐ Yes ☑No
23. Resubmission of Application?	☐ Yes➔ ☑ No	If yes, previous application #		Previous project manager:	
24. Written Notice of Violation?	☐ Yes ➔ ☑ No	If yes, name of DEP enforcement staff involved:		25. Previous Wetland Alteration:	☐ Yes ☑ No

26. Detailed Directions to the Project Site:	Route 2 North from Old Town, Greenfield Road is approximately 5 miles, on the right.

27. TIER 1	TIER 2/3 AND INDIVIDUAL PERMITS	
☐ Title, right or interest documentation ☐ Topographic Map ☐ Narrative Project Description ☐ Plan or Drawing (8 1/2" x 11") ☐ Photos of Area ☐ Statement of Avoidance & Minimization ☐ Statement/Copy of cover letter to MHPC	☑ Title, right or interest documentation ☑ Topographic Map ☑ Copy of Public Notice/Public Information Meeting Documentation ☑ Wetlands Delineation Report (Attachment 1) that contains the Information listed under Site Conditions Alternatives Analysis (Attachment 2) including description of how wetland impacts were Avoided/Minimized	☑ Erosion Control/Construction Plan ☑ Functional Assessment (Attachment 3), if required Compensation Plan (Attachment 4), if required ☑ Appendix A and others, if required ☑ Statement/Copy of cover letter to MHPC ☐ Description of Previously Mined Peatland, if required

28. FEES Amount Enclosed:	To be billed

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

03/07

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following :

DEP SIGNATORY REQUIREMENT

PRIVACY ACT STATEMENT

Authority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nr a permit be issued.

CORPS SIGNATORY REQUIREMENT

USC Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry shall be fines not more than $10,000 or imprisoned not more than five years or both. I authorize the Corps to enter the property that is subject to this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

DEP SIGNATORY REQUIREMENT

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Michael D. Behm _____ Date: 2-2-12

SIGNATURE OF APPLICANT

NOTE: Any changes in activity plans must be submitted to the DEP and the Corps in writing and must be approved by both agencies prior to implementation. Failure to do so may result in enforcement action and/or the removal of the unapproved changes to the activity.

"I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the address located on the front page of this application (see #4 for the applicant and #9 for the agent. Do not sign if you elect to "opt out" or receive the decision via regular mail.

Signed (Applicant) Michael D. Behm **Date:** 2-2-12

Signed (Agent) Brooke Barnes **Date:** 2/2/12

Brooke Barnes

SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION 38 M.R.SA. §§481-490

PLEASE TYPE OR PRINT IN *INK ONLY*

This application is for: (CHECK THE ONE THAT APPLIES)	20 acre development ☐ Planning Permit ☐ Metallic Mining	☐ Marine Oil Terminal X Structure ☐ Subdivision	Major Amendment ☐ Minor Amendment
1. Name of Applicant:	Passadumkeag Windpark LLC Michael Beckner	6. Name of Agent: (if applicable)	Stantec Consulting Brooke Barnes
2. Applicant's Mailing Address:	5 Houston Center 1401 McKinney Street, Ste. 1800 Houston, TX 77010	7. Agent's Mailing Address:	30 Park Dr. Topsham, ME 04086
3. Applicant's Daytime Phone #:	(860) 339-5886	8. Agent's Daytime Phone # :	207.729.1199
4. Applicant's Fax #: (if available)		9. Agent's Fax # :	207.729.2715
5. Applicant's *e-mail address*: (license will be sent via e-mail)	mbeckner@quantumug.com	10. Agent's *e-mail address* (license will be sent via e-mail	Brooke.Barnes@stantec.com

PROJECT INFORMATION

11. Name of Development:	Passadumkeag Wind Project						
12. Map and Lot #'s:	Map #: See App. Sec. 2	Lot #:	13. Deed Reference #'s:		Book #: See Application Sec. 2	Page #:	
14. Location of Project City/Town:	Greenbush to Grand Falls	15. County:	Penobscot	16. UTM Northing	532338.026951	17. UTM Easting	4987126.80026
18. Brief Description of Project including total parcel size:	Construction of a 42 MW wind project, collector line, operations and maintenance building , and substation.						
19. Type of Direct Watershed: (Check all that apply)	x Lake not most at risk ☐ Lake most at risk ☐ Lake most at risk, severely blooming	☐ River, stream or brook ☐ Urban impaired stream x Freshwater wetland	☐ Coastal wetland ☐ Wellhead or public water				
19. Name of Waterbody Project Site drains to:	See Section 12						
21. Amount of Developed Area:	Total acres: 97.38						
22. Amount of Impervious Area:	Total acres: 21.47						
23. Development started prior to obtaining a license?:	☐ Yes ☒ No						
24. .Development or any portion of the site subject to enforcement action?	☐ Yes ☒ No	If yes, name of enforcement staff involved?					
25. Common scheme of development?:	☐ Yes ☒ No	26. Title, Right or Interest:	☐ own ☒ lease	☐ purchase option ☒ written agreement			
27. Natural Resources Protection Act permit required?:	☒ Yes ☐ No	If yes:	☒ PBR	☐ Tier 1 ☒ Full Permit ☐ Tier 2			
28. Existing DEP Permit number (if applicable):							
29. Names of DEP staff person(s) present at the pre-application meeting:	Robin Clukey						
30. Does agent have an interest in project? If yes, what is the interest?	☐ Yes ☒ No						

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following :

CERTIFICATIONS / SIGNATURES

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

Signed: Michael D. Barker Title VP, Renewables Date: 2-2-12

Notice of Intent to Comply with Maine Construction General Permit	With this Site Law application form and my signature, I am filing notice of my intent to carry out work which meets the requirements of the Maine Construction General Permit (MCGP). I have read and will comply with all of the MCGP standards. If this form is not being signed by the landowner or lessee of the property, attach documentation showing authorization to sign. Signed Michael D. Barker Date: 2-2-12

NOTE: You must file a MCGP Notice of Termination (Form K) within 20 days of completing permanent stabilization of the project site.

CERTIFICATION

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for development approval is complete and accurate to the best of his/her knowledge.

Signature: [signature]

Name (print): Brooke Barnes

Date: 2/2/12

Re/Cert/Lic No.: _____
Engineer _____
Geologist _____
Soil Scientist _____
Land Surveyor _____
Site Evaluator _____
Active Member of the Maine Bar 3347
Professional Landscape Architect _____
Other _____

"I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the address located on the front page of this application (see #5 for the applicant and #10 for the agent). ***Do not sign if you elect to "opt out" or receive the decision via regular mail.***

Signed (Applicant) Michael D. Barker **Date:** 2-2-12

and/or

Signed (Agent) [signature] **Date:** 2-2-12

Brooke Barnes

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

DRAFT DEP STAFF ANALYSIS
of applications for
SITE LOCATION OF DEVELOPMENT ACT and
NATURAL RESOURCES PROTECTION ACT PERMITS
for
THE PASSADUMKEAG WIND FARM
by
PASSADUMKEAG WIND PARK, LLC
(L-25597-24-A-N/L-25597-TH-B-N/L-25597-IW-C-N)
July 5, 2012

1. PROJECT DESCRIPTION:

A. Summary: The applicant proposes to construct an industrial wind turbine project consisting of 14 Vestas 112, 3.0 MW turbines. This project qualifies as an expedited wind energy development as defined in the Wind Energy Act (38 M.R.S. §3451(4)). Each turbine is 84 meters (approximately 276 feet tall) to the center of the hub and a total of 140 meters (approximately 459 feet) to the tip of a fully extended blade. The area of land proposed to be used for the turbine portion of the project is located wholly within property currently used for commercial forestry operations. The site contains developed logging roads that would be upgraded and used to minimize clearing and wetlands impacts. In addition to the turbine farm, the project would include an operations and maintenance (O&M) building as well as associated facilities. The O&M building would be located in the Town of Greenbush, an organized town. The development of the O&M building would result in approximately 3.54 acres of impervious area. The proposed project overall includes 21.47 acres of impervious area and 97.38 acres of developed area.

The turbines would be located on top of Passadumkeag Ridge in Grand Falls Township. Power from the turbines would be collected in a 34.5 kV collector line that would run approximately 17 miles from the ridge along the Greenfield Road through Summit Township, Greenfield Township and Greenbush. Nearly all of this line is an existing distribution line right-of-way immediately adjacent to an existing road.

The applicant is also proposing 1.22 acres of wetland conversion by clearing trees associated with the collector line and altering 9,800 square feet of moderate value inland waterfowl and wading bird habitat (IWWH) in two locations adjacent to the Greenfield Road.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 760-3143

web site: www.maine.gov/dep

B. Public Interest: The department received multiple requests for the Board of Environmental Protection to assume original jurisdiction over these applications and hold a public hearing. However, the Board's authorizing statute, 38 M.R.S. § 341-D(2), does not allow the Board to assume jurisdiction over applications for approval of expedited wind energy developments as defined in the Wind Energy Act (38 M.R.S. §3451(4)). As set forth in the Department's Rules, Chapter 2 § 7 (B), the holding of public hearings on applications is discretionary. In this case the Commissioner determined that there was not sufficient credible conflicting technical information submitted and a public hearing was not warranted in order to assist her in understanding the evidence. Therefore, a public hearing was not held. The Department held one public meeting on April 25 at the Greenfield town office. The Department sent letters to all abutters of the project notifying them of the meeting as well as to all town offices and it published a notice in a local newspaper. The Department received many emails and letters from interested persons expressing concerns about the proposed project. The letters and emails describing concerns about the proposed project that were related to standards that are reviewed as part of the Site Location of Development Act and NRPA were considered in the review of the proposal.

Interested persons contend that a series of statements by the applicants concerning greenhouse gas emissions and global warming in the Project Need section of the applications were not substantiated with scientific facts. The applications include a statement that renewable energy demands are increasing and that this project would address concerns about reducing greenhouse gases and particulates from combustion. The Legislature made findings in its adoption of the Wind Energy Act, in 35-A M.R.S.A.§3402, that it is in the public interest to encourage the construction and operation of community wind power generation facilities because wind energy "is an economically feasible, large-scale energy resource that does not rely on fossil fuel combustion or nuclear fission, thereby displacing electrical energy provided by these other sources and avoiding air pollution, waste disposal problems and hazards to human health from emissions, waste and by-products". Further 35-A M.R.S. §3454 directs the Department to presume that an expedited wind energy development provides energy and emissions-related benefits. The Department defers to the Legislature's findings and also utilizes its knowledge and expertise in this area to evaluate the statements. The policy considerations of the Legislature in enacting the Wind Energy Act are relevant in the Department's interpretation of its statutes, but the Department is required to focus on the statutory licensing criteria set forth by the Legislature. The amount of potential climate benefit from the proposed project is not a factor under the licensing criteria.

While the applications were being reviewed, the Department received comments from some interested persons in the surrounding towns regarding how the proposal would negatively impact tourism. The Department also received some comments about the shortcomings of the Wind Energy Act. These concerns are noted but are only considered to the extent they address permitting criteria and are thus within the scope of the Department's review of the proposed project.

The project is shown on a series of plans included with the application, the first of which is entitled "Predevelopment Drainage Plan", prepared by the James W Sewall Company dated January 30, 2012.

C. Current Use of Site. The site of the proposed project is currently undeveloped fields and woodlands and is currently used extensively as commercial forest. There are no structures on the property; except for the structures on two leased camp lots.

2. FINANCIAL CAPACITY AND TITLE RIGHT OR INTEREST:

The applicant estimates the total cost of the project to be $79 million.

Passadumkeag Wind Park, LLC is a legal entity authorized to do business in the State of Maine and is a wholly owned subsidiary of Quantum Utility Generation, LLC (Quantum). Passadumkeag Wind Park, LLC was established to develop and own the Passadumkeag wind project. The application states that Quantum intends to provide all of the funding for the project.

The applicant submitted a letter dated February 1, 2012 from Quantum indicating that it intends to finance the project. In addition the applicant submitted a letter from Price Waterhouse Coopers LLP, dated April 27, 2011, which contains a report of independent auditors indicating total assets of more than $355 million.

To demonstrate title, right or interest in the property proposed for development, as required in Chapter 2 §11(D) and Chapter 372 § 9 of the Department's rules, the applicant submitted copies of deeds, leases and lease options between the applicant and the property owners for the proposed project site. The applications include deeds which show that the property owners who are leasing to the applicants have ownership over the parcels which are the subject of the leases. The duration and the terms of the leases for the proposed project area are sufficient for the processing of these applications. The applicant also submitted easements for certain adjacent parcels of land pertaining to noise, shadow flicker effects and safety setbacks.

The applicant's financial filings appear to show adequate capacity to fund the project and the deeds and leases appear to be adequate for the area which would be occupied by the project.

3. NOISE:

To address the Site Law standard pertaining to the control of noise, 38 MRSA §484 (3), and the applicable rules, Chapter 375 §10, the applicant submitted a Noise Impact Study entitled "Sound Level Assessment for the Passadumkeag Wind Park Project," completed by Stantec Consulting, Ltd and dated January 2012 and April 2012. The sound level study was conducted to model expected sound levels from the proposed project, and to compare the model results to the applicable requirements of Chapter 375 § 10.

The Passadumkeag Wind Farm project must comply with Department regulations applicable to sound levels from construction, routine operation and routine maintenance. Chapter 375 §10 applies hourly sound level limits ($L_{Aeq\text{-}Hr}$) at facility property boundaries and at nearby protected locations. Chapter 375§10 (G)(16) defines a protected location as "[a]ny location accessible by foot, on a parcel of land containing a residence or planned residence or approved subdivision near the development site at the time a Site Location of Development application is submitted…". In addition to residential parcels, protected locations include, but are not limited to, schools, state parks, and designated wilderness areas.

The hourly sound level resulting from routine operation of a development is limited to 75 decibels (dBA) at any development property boundary as outlined in Chapter 375 §10(C)(1)(a)(i). The hourly equivalent sound level limits at any protected location vary depending on local zoning or surrounding land uses and existing (pre-development) ambient sound levels.

Due to the rural nature of the area for which the project is proposed, Department standards require that the applicant meet the "Quiet Location" limits, the Department's most restrictive sound limits. The applicant proposes to operate the project in compliance with these limits as set forth in Chapter 375 §10 (H)(3)(1). In Quiet Locations, nighttime limits at a protected location apply at the property line of the protected location, or up to 500 feet from sleeping quarters when the property line is greater than 500 feet from a dwelling. For this project there are three protected locations. Pursuant to Chapter 375 § 10 (5)(s) sounds from a regulated development received at a protected location are exempt from the regulations when the owner of the property conveys a noise easement for that location to the generator of the sound. The owners of all three protected locations have entered into noise easements with the applicant.

To assist with the review of the application, the Department retained a noise expert, Peter Guldberg of Tech Environmental, Inc., to review the applicant's prediction model and associated data as well as other evidence received on the issue of noise.

A. Sound Level Modeling. The applicant's noise consultant, Stantec Consulting, Ltd., developed a sound level prediction model to estimate sound levels from the operation of the proposed project. The sound model for the project was created using Cadna/A software developed by DataKustik of Germany. Cadna/A allows the consultant to construct topographic surface models of area terrain for calculating sound attenuation from multiple sound sources such as wind turbines. The locations of the proposed turbines, roads, parcels,

land uses and waterbodies have been entered into Cadna/A in order to calculate sound levels at various points within the proposed project area. Sound level predictions are calculated in accordance with ISO 9613-2, which is an international standard for calculating outdoor sound propagation.

This computerized model is capable of predicting sound levels at specific receiver positions originating from a variety of sound sources. Applicable national or international standards can also be included in the analysis as described above. Cadna/A accounts for such factors as:

- Distance attenuation (i.e. geometrical distortion of sound was distance);
- Geometrical characteristics of the source and receivers;
- Atmospheric attenuation (i.e. the rate of sound absorption by atmospheric gases in the air between sound sources and receptors);
- Ground attenuation (effect of sound absorption by the ground as sound passes over various terrain and vegetation types between source and receptor);
- Screening effects of surrounding terrain; and
- Meteorological conditions and effects.

Conservative modeling assumptions were applied when analyzing the sound impacts of the project to allow for uncertainties in the sound power output from the turbines and inherent uncertainties in mathematical modeling of the sound propagation. To be conservative, a factor of three dBA was added to the manufacturer's sound power level of the turbines. Two dBA were added to account for uncertainty in the mathematical modeling.

Sound associated with the operational phase of the project was modeled excluding other existing sound sources. Modeling the sound generated from the operation of the 14 turbines was conducted by first obtaining the manufacturer's sound power level specifications (106.5 dBA) and then applying factors to account for the manufacturer's uncertainty and the modeling uncertainty for a total sound level of 111.5 dBA from each turbine.

Although substation transformers emit sound, they were not considered significant sound sources by the applicant's consultant due to the low sound output and relatively large distance from protected locations and were not included in the model. The Department and Peter Guldberg found this appropriate and acceptable.

B. Short Duration Repetitive Sound. Chapter 375 §10(G)(19) defines short duration repetitive sound (SDRS) as "a sequence of repetitive sounds which occur more than once within an hour, each clearly discernible as an event and causing an increase in the sound level of at least 6 dBA on the fast meter response above the sound level observed immediately

before and after the event, each typically less than ten seconds in duration, and which are inherent to the process or operation of the development and are foreseeable." Chapter 375 requires that if any defined SDRS results from routine operation of a development, 5 dBA must added to the observed level of sound.

The January 2012 report submitted by the applicant summarized measurements of operating wind turbines in Maine and data from published literature that indicate that sound level fluctuations during the blade passage of wind turbines typically range from 2 to 5 dBA with an occasional event reaching 6 dBA or more. However, the applicant's report concludes that the occurrence of these higher fluctuations would be so infrequent that they are not expected to meet the Department's definition of SDRS or affect the predicted sound levels. The Department's consultant, Tech Environmental reviewed this study and stated, "Since the 5-dBA penalty for SDRS is applied only to the SDR sounds and not the entire measurement interval, the infrequent occurrence of SDR sound events are not expected to significantly affect the project's sound levels and no adjustment to the acoustic model predictions for 1-hour LeqA levels is necessary." Based on the applicant's January 2012 report and the assessment of the Department's consultant, it appears the proposed project is unlikely to generate short duration repetitive sounds. Compliance testing for SDRS which will be incorporated into the post-construction noise monitoring program (discussed later in this section) after project completion would provide insurance that SDRS is not occurring.

C. Tonal Sound. As defined in Chapter 375 §10(G) (24), a regulated tonal sound occurs when the sound level in a one-third octave band exceeds the arithmetic average of the sound levels in the two adjacent one-third octave bands by a specified dBA amount based on octave center frequencies. Chapter 375 requires that 5 dBA be added to the observed level of any defined tonal sounds that results from routine operation of a development.

The applicant's January 2012 report states that the turbines proposed for use, Vestas V112, carry Sound Level Performance Standard warranties that they will not produce a tonal sound as it is defined by Maine's Noise Regulations. In its review of the applicant's study on behalf of the Department, Tech Environmental confirmed that an analysis of the sound power octave band spectrum for the Vestas V112 reveals that it has no potential for creating a tonal sound as defined in the Department's Regulations.

D. Generation Lead Line. The proposed generator lead line is anticipated to produce a minor noise impact during operation.

E. Department Analysis. The Department's independent noise expert, Peter Guldberg of Tech Environmental, assisted the Department in its review of potential noise impacts. Tech Environmental reviewed all of the materials submitted by the applicant and by members of the public.

Tech Environmental reviewed the original January 2012 Sound Level Assessment and submitted a Peer Review of the Sound Level Assessment, dated April 13, 2012 and May 1, 2012. Tech Environmental's assessment is that the turbine maximum sound power level with a conservative total uncertainty factor was used in the analysis; the acoustic model and its

assumptions are appropriate; the sound receiver locations are appropriate; the decibel contour maps adequately cover the potential impact area; and the Department's Noise Regulations have been properly interpreted and applied by the applicant.

F. Post construction Monitoring Program. To ensure that the modeling and predictions submitted by the applicant and deemed reasonable by the Department correctly predicted sound levels, and that the project continues to meet the noise standards over time, the applicant must conduct post-construction sound level monitoring. The applicant proposed a monitoring program which was reviewed by the Department's noise expert, Peter Guldberg of Tech Environmental, Inc.. Mr. Guldberg's review indicates that the monitoring plan appears acceptable given the low noise impact expected from this project.

G. Sound Complaint Response and Resolution Protocol. If noise limits are exceeded or are reasonably suspected to have been exceeded, the applicant proposes to perform a timely investigation to determine if the wind energy facility is properly operating or has been properly maintained, and determine if any applicable sound limits have been exceeded, including but not limited to the Department's interpretation and application of any tonal or SDRS penalties. If tonal sounds cause an exceedence of applicable sound limits, the applicant would promptly notify the Department. The applicant would expedite an investigation of the sound level exceedence and the associated tonal sound, and develop a mitigation plan and a schedule to achieve compliance with applicable sound level limits. The applicant would provide copies of the mitigation plan and provide a written report describing the action(s) taken and new measurement results that demonstrate compliance. Mitigation options could include reduction of the overall sound levels and/or the tonal sound component.

5. SCENIC CHARACTER:

In order to demonstrate that its proposal would have no unreasonable impact on scenic resources of state and/or national significance (SRSNS), the applicant submitted a visual impact assessment (VIA) for the proposed project prepared by Terrence J. DeWan and Associates (TJD&A), entitled *Visual Impacts of a Generation Facility*. The assessment examines the potential scenic impact of the generating facility and associated facilities on SRSNS within eight miles of the proposed project using the evaluation criteria contained in the Wind Energy Act. In addition, a user intercept survey authored by Market Decisions and dated October 2011 was submitted for evaluation by the applicant. The Department hired a third party expert, David Raphael of Landworks, to review the Scenic Character section of the applications. Mr. Raphael provided the Department with comments dated June 19, 2012.

The Wind Energy Act, 35-A M.R.S.A. § 3452 (1), provides in pertinent part that:

In making findings regarding the effect of an expedited wind energy development on scenic character and existing uses related to scenic character pursuant to ...[the Site Law,]Title 38, section 484, subsection 3 or [the Natural Resources Protection Act,]section 480-D, the

[Department] 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 . . . 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...[the Site Law],Title 38, section 484, subsection 3.

With regard to the facilities associated with an expedited wind energy development, such as substations, buildings, access roads and generator lead lines, the Wind Energy Act, Title 35-A § 3452 (2), provides in pertinent part that:

The [Department] shall evaluate the effect of associated facilities of a wind energy development in terms of potential effects on scenic character and existing uses related to scenic character in accordance with ...[the Site Law,]Title 38, section 484, subsection 3, in the manner provided for development other than wind energy development if the [Department] determines that application of the standard subsection 1 to the development may result in unreasonable adverse effects due to the scope, scale, location or other characteristics of the associated facilities. An interested party may submit information regarding this determination to the [Department] for its consideration. The [Department] shall make a determination pursuant to this subsection within 30 days of its acceptance of the application as complete for processing.

The Wind Energy Act, Title 35-A § 3452 (3), further provides that:

A finding by the [Department] that the development's generating facilities are a highly visible feature in the landscape is not 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 [Department] 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.

The proposed wind project contains "generating facilities" including wind turbines and towers as defined by 35-A M.R.S.A. § 3451 (5) and "associated facilities" such as buildings, access roads, and substations, as defined by 35-A M.R.S.A. § 3451 (1). The proposed project is subject to the expedited wind energy development standards outlined above and, to the extent applicable, 38 M.R.S.A. § 484 (3). The project also contains a generator lead line which is replacing an existing line almost in its entirety.

As provided in the Wind Energy Act, 35-A M.R.S.A. § 3452 (2), the Department made a determination within 30 days of the receipt of the application that the potential effects of the generator lead transmission line on the scenic character and existing uses would be reviewed under the standards set forth in the Wind Energy Act and would not be reviewed under the Site Law or the Natural Resources Protection Act.

The applicant conducted a visual impact assessment within an eight-mile radius of the proposed generation facility portion of the project. The applicant's VIA for the generating facility and associated facilities addresses the following criteria, as set forth in 35-A § 3452(3):

> (A) The significance of the potentially affected scenic resource of state or national significance;
> (B) The existing character of the surrounding area;
> (C) The expectations of the typical viewer;
> (D) The 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. APPLICANT'S STUDY

The applicant's study area is the area within eight miles of the project, as illustrated in Figure 2 in Appendix B of the application. The regional character is described by the existing landforms, water resources, vegetative patterns, and cultural character. The Study Area is a largely natural landscape with several areas of significant human alteration.

> **Landform**. The Study Area is located in the Maine-New Brunswick Lowlands Subsection biophysical region, an extensive area of lowlands west of the St. Croix River. Elevations typically range from 400' to 600' except for a series of hills in the West Grand Lake area. The landscape to the south and west of the project area is generally flat to rolling, with relatively few hydrologic features. The landscape to the north and east is much more varied, with rolling to hilly terrain, extensive wetland systems, and numerous lakes and ponds with highly configured shorelines.
>
> Two distinctive eskers are found at the edges of the Study Area. The Passadumkeag Esker, also known as the Enfield Horseback, parallels the east side of the Penobscot River. The second esker, known as The Horseback, is on the east side of Passadumkeag Mountain, extending north to the 1000-Acre Heath. Both eskers are heavily wooded with gravel roads running their length.

Passadumkeag Mountain is the most prominent landform in the Study Area, rising 1,200 feet above Saponac Pond. The main ridge is approximately 1.5 miles in length, which then extends easterly in a series of lower hills for another 2.7 miles. At its peak, Passadumkeag Mountain is 1,471 feet in elevation.

Water Resources. The Study Area contains 19 lakes and ponds, ranging in size from 5,165 acres (Nicatous Lake) to small unnamed ponds less than ten acres. Two ponds (Saponac Pond and Trout Pond) are located within three miles of the project. Nicatous Lake, 5.5 miles east of the project, is rated "Outstanding" for scenic character by the Maine Wildlands Lake Assessment (Assessment). Three of the lakes within the Study Area (Saponac Pond, Spring Lake, and Lower Pistol Lake) are rated as 'Significant' for scenic character by the Assessment. The Passadumkeag River drains the northern half of the Study Area, flowing for 41 miles west to its confluence with the Penobscot River. While most of its length is a relatively smooth meandering stream, the section above Grand Falls drops 25 feet in a significant waterfall. Saponac Pond, with a maximum depth of 14 feet, is a large shallow flowage in the Passadumkeag River. The Passadumkeag River has been rated as a 'C' river by the Maine Rivers Study. While the river is noted for its geologic-hydrologic, anadromous fishery, and canoe touring resources, it is not recognized for its scenic value in the Maine Rivers Study.

An extensive series of wetlands are found on the north side of Saponac Pond, extending from the town of Passadumkeag on the Penobscot River on the west to Upper Sysladobsis Lake on the east. This area, known as the Passadumkeag River – 1,000 Acre Heath, has been designated by the Maine Natural Areas Program as a "Focus Area." Focus Areas are landscape areas that contain exceptionally rich concentrations of at-risk vegetation species, natural communities, and significant wildlife habitats, and they include the intersection of such places with large blocks of undeveloped habitat. These designated areas are intended as a planning tool for landowners, conservation entities, and local municipalities. Focus Areas are not designated as scenic areas of state or national significance by definition, but may otherwise qualify as such.

The Passadumkeag River – 1,000 Acre Heath Focus Area contains the 1000-Acre Heath in Twombly (T3 R1) and the 6,100-acre Passadumkeag Marsh and Boglands, a National Natural Landmark east of the town of Passadumkeag. At its closest point, the 1000-Acre Heath is over 8 miles northeast of the closest turbine. As noted below, at its closest point the Passadumkeag Marsh and Boglands is just 8 miles from the nearest turbine.

Vegetative Patterns. The predominant vegetative cover in the Study Area is a mixture of second growth forestland, freshwater wetlands, and old field growth. The vegetative patterns within the immediate area of the project are typical of forestland that has been commercially harvested over the past several generations.

Cultural Character. Cultural features within eight miles of the project are concentrated in and around the town of Burlington, 5.8 miles northwest of the project, and on the shores of the lakes to the east and southeast. Burlington, which had a population of 351 in the 2000 census, features a small village center with several historic buildings, including the Old Tavern, which is on the National Register of Historic Places. While there are no other population centers within the Study Area, there are a number of small named villages with a few related buildings scattered throughout: e.g., Lowell, East Lowell, Saponac, and Greenfield. Concentrations of lakeside cottages within the Study Area are found on Saponac Pond, West Lake, the northern end of Nicatous Lake, Middle Oxhead Pond, and Brandy Pond. Scattered rural residential development is found along many of the local roads. The northwest end of Nicatous Lake has several year-round resorts, with facilities for boating, fishing, ATV's, and seasonal lodging. Additional recreational development in the Study Area consists of boat landings on Nicatous Lake, Saponac Pond, and West Lake; several informal campsites on Nicatous Lake and Lower Pistol Lake; and a Boy Scout shelter on Nicatous Lake. Passadumkeag Mountain was once considered for a ski area with an 800-foot vertical drop in the late 1990's, but the plans have not been implemented. A temporary meteorological tower erected by Passadumkeag Wind Park and a 574' lit communications tower used to broadcast WHCF-88.5 FM are the only structures on the mountain.

Scenic Resources of State or National Significance

1. A national natural landmark (NNL) is a federally designated wilderness area or other comparable outstanding natural and cultural feature, such as the Orono Bog or Meddybemps Heath.

According to the NNL website there is one National Natural Landmark within eight miles of the Passadumkeag Wind Project, the 6,100-acre Passadumkeag Marsh and Boglands that starts on the east side of the town of Passadumkeag. The southeast tip of the area designated as NNL touches the 8-mile line that circumscribes the Study Area. The National Park Service (NPS) website describes the Passadumkeag Marsh and Boglands NNL as: *One of the largest, unspoiled wetlands in the state of Maine, Passadumkeag Marsh and Boglands contains a unique blend of bog and marsh communities. The marsh is partially bounded by eskers, including the classic Passadumkeag Esker, or Enfield Horseback, known world-wide as an example of glacial geology.* The description of the Passadumkeag Marsh and Boglands from the Maine Department of Conservation notes that this particular NNL was owned by 13 private owners in 1973. According to the Maine Department of Conservation's *Conservation Lands in Maine* file for Google Earth, the Passadumkeag Marsh and Boglands are now part of the Cold Stream/Ayers Brook Preserve, which is a series of interconnected tracts of land held by The Nature Conservancy in fee. The area is open for public

use, although access is limited due to the nature of landscape. There are no developed trails and access by road is limited to small areas of frontage on Gould's Ridge Road and Enfield Road. Public use of the area is therefore limited primarily to canoeing and hunting waterfowl. The applicant concludes that the presence of the turbines should not have any visual impact on the Passadumkeag Marsh and Boglands. The applicant states that at most, the top of one turbine may be visible from the preserve and it would appear as a very small object on a relatively flat horizon.

2. A property listed on the National Register of Historic Places pursuant to the National Historic Preservation Act of 1966, as amended, such as the Rockland Breakwater Light and Fort Knox.

The National Register of Historic Places lists one property within eight miles of the Passadumkeag Wind Project, the Old Tavern in Burlington, built in 1844. The Tavern is a 2.5 story wooden frame structure with a gable roof, clapboard siding, and a veranda (covered porch) that wraps around the front façade. The National Register nomination form, submitted in 1986, describes the tavern as a popular headquarters for hunters and fishermen in the area in its later years. It was first built to serve as a hotel for lumber crews and others who were working in the area. The building sits on a corner lot in a small town setting. There is no mention made in the registration form about its relationship to the surrounding landscape. The setting is a classic cross-road village, with a church with a white-steeple across the street, and private residences, open fields/greens, and additional (formerly) commercial buildings nearby. The integrity of the immediate setting is important to the tavern. The applicant states that, even if the turbines were to be visible (which they are not), their relatively small size would not detract from the historic context. The building is 5.9 to 7.2 miles northwest of the project and separated by a dense stand of second growth vegetation. The primary function of the Tavern occurs inside the structure, and is not related to the scenic quality of the surrounding landscape. The applicant's field investigation has determined that the project would not be visible from the Tavern and the presence of the turbines should not have any visual impact on the Old Tavern.

3. A national or state park.

There are no national or state parks within eight miles of the project.

4. A great pond that is:

(a) 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; or

(b) One of the 280 great ponds in the State's unorganized or de-organized areas designated as outstanding or significant from a scenic perspective in the "Maine Wildlands Lakes Assessment".

No great ponds listed in the "Maine's Finest Lakes" study are involved. The scenic resources of three great ponds within eight miles of the project have been designated as significant in the Maine Wildlands Lakes Assessment (Assessment): Saponac Pond, Spring Lake, and Lower Pistol Lake. One great pond within the Study Area, Nicatous Lake, has been designated as outstanding from a scenic perspective in the Assessment.

SAPONAC POND

Saponac Pond (922 acres, elevation 190 feet above sea level) is two miles east of Burlington on Route 188 (Main Road). The pond is the second largest waterbody in the Study Area and the closest SRSNS. The northern third of the pond is located in Burlington; the southern portion is located in Grand Falls Township. Most of the shoreline is either private timberland or developed for house lots. The entire pond is within eight miles of the project. The landscape within two miles of the pond consists of gently rolling wooded hills that are drained by boggy meandering streams and rivers. Folsom Ridge, on the northeast side of Route 188, rises approximately 300 feet above the level of the pond. The most distinctive landform in the vicinity is Passadumkeag Mountain, a broad U-shaped series of ridges to the south that rise over 1,250 feet above the pond.

The applicant's VIA concludes that based on the survey results, photo-simulation, viewshed maps, and roadway plans, the turbines, seen in profile on the ridgeline of Passadumkeag Mountain, and portions of the access road would have an adverse effect on the scenic value of Saponac Pond. The pond apparently sees relatively few recreational users; the users are primarily there for fishing and boating. The results of the user intercept survey indicate that most people will continue to return to the lake to enjoy boating, fishing, and similar recreational pursuits even with turbines in view.

NICATOUS LAKE

Nicatous Lake (5,165 acres, elevation 347 feet above sea level) is the largest waterbody within eight miles of the project, although the most of the lake is outside the 8-mile Study Area. The lake is located southeast of Passadumkeag Mountain in T4 ND, T40 MD, and T 41 MD. Most of the shoreline (with the exception of several sporting camps and private homes) is privately owned with conservation easements held by the Maine Bureau of Parks and Lands (BPL); most of the islands in the lake are owned in fee by BPL. Nicatous Lake is a narrow waterbody approximately nine miles in length with a highly configured

shoreline surrounded by low rolling hills. The northern third of the lake, which falls within eight miles of the project, is between 0.2 and 0.9 miles in width, significantly narrower than the southern portion. The axis of the northern portion generally runs northwest/southeast, although the islands make it difficult to achieve a long view except along the western shoreline. The closest turbine in the project is located 5.6 miles west of this portion of the lake. The landforms surrounding the northern end of the lake rise up to 150 to 225 feet above the surface of the water. One of the most noteworthy features of Nicatous Lake is the number of wooded islands found throughout its length. The islands, in combination with the surrounding hills, are effective in limiting turbine visibility within the Study Area. There are no named mountains or other distinctive focal points within the foreground or midground in this portion of the lake.

The applicant's VIA states that based on the survey results, photo-simulation, and the viewshed maps, the project would have an adverse effect on the scenic value of the northern third of Nicatous Lake, which is recognized for its outstanding scenic resources. However, there are several moderating factors that affect the overall scenic impact. The distance of the project (5 to 8 miles) from the lake would make the turbines appear as relatively small to medium-sized objects on the horizon and the low hills and wooded islands between the project and the viewer would provide intermittent screening so the entire project would never be visible from any one point on the lake. According to the user survey, most people would continue to return to the lake for boating, fishing, and similar recreational pursuits even with turbines in view.

LOWER PISTOL LAKE

Lower Pistol Lake (979 acres, elevation 323 feet above sea level) is in T3 ND, ten miles east of Burlington and between 4.9 and 6.2 miles from the project. The majority of the land surrounding the lake is part of the Passamaquoddy Indian Territory. Lower Pistol Lake is the westernmost waterbody in a chain of lakes that includes Upper, Middle, and Side Pistol Lakes and Spring Lake. The landscape surrounding the lake consists of gently rolling wooded hills that are drained by boggy meandering streams. An unnamed hill to the southwest rises 300 feet above the lake. Logging operations have created a network of woods roads that approach the lake from Pistol Green, a break in a distinct esker two miles west of the lake. Access to the lake is over very rough woods roads. An informal boat put-in and campsite is located in an opening at the northwestern end of the lake. The lake appears to be undeveloped, with no camps evident from field evaluation or aerial photographs. The Maine Atlas and Gazetteer locates an informal campsite on one of the islands in the middle of the lake.

The applicant's VIA states that based on the survey results, photo-simulation, and the viewshed maps indicate that the turbines, seen in profile on the ridgeline of

Passadumkeag Mountain, would have an adverse effect on the scenic value of Lower Pistol Lake. However, there are several moderating factors that affect the overall scenic impact. The project would be visible in the background, which would make the turbines appear as relatively small to medium-sized objects on the horizon. According to the user survey, the majority of the small number of users of the lake would continue to return to the lake to enjoy boating, fishing, and similar recreational pursuits even with turbines in view.

SPRING LAKE

Spring Lake (435 acres, elevation 336 feet above sea level) is in T3 ND, ten miles east of Burlington and between 4.9 and 6.2 miles from the project. Spring Lake is the westernmost waterbody in a series of lakes that includes Lower, Upper, Middle, and Side Pistol Lakes. The landscape surrounding the lake consists of gently rolling wooded hills rising 200± feet above the lake, interconnected by boggy meandering streams. A small solitary island is found at the southern end, near the put-in point. Logging operations have created a discontinuous network of woods roads that approach the lake from Pistol Green on the west. Access is over a very rough woods road on the south side of the lake, where there is an informal hand-carry put-in. The lake appears to be largely undeveloped, with only one camp evident from field evaluation or aerial photographs.

The applicant's VIA states that based on the photo-simulation, viewshed maps, and field investigation indicate that the blades and tips of four turbines would be scarcely visible from Spring Lake, and therefore would have a very slight adverse effect on the scenic value of the lake.

WEST LAKE

A comprehensive visual analysis was not conducted by the applicant for West Lake, as it is not listed as significant or outstanding in the Assessment. Nonetheless, it is clear that there would be visual impacts to West Lake, which has a large number of camps. Camp orientation on each of the extensive southwest and northeast facing shorelines is not, for the most part, in the direction of the project. The intervening vegetation and topography, coupled with the distance from project (5 miles to the nearest turbine at the closest point of visibility from the lake), would limit overall visual impact. Owners on the north shore would not be able to see the project.

5. 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."

There are no rivers or streams identified in the Maine Rivers Study as having unique or outstanding scenic attributes within eight miles of the proposed project.

6. 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 Title 35-A section 3457 of the Wind Energy Act.

There are no scenic viewpoints located on state public reserved land within eight miles of the proposed project. There are no trails exclusively for pedestrian use within eight miles of the proposed project.

7. A scenic turnout on a scenic highway constructed by the Department of Transportation.

There are no scenic turnouts on any designated scenic highways constructed by the Department of Transportation within eight miles of the proposed project.

8. Scenic viewpoints located in the coastal area.

There are no scenic viewpoints located in coastal areas within 8 miles of the proposed project.

B. DEPARTMENT REVIEW

David Raphael of Landworks, the Department's consultant, ranked six resources in his review document entitled 'Summary of Overall Scenic Impact'. The six resources were evaluated based on the statutory requirements of context, character significance, uniqueness, level of use, viewer expectations, visual impact and effect on public use. Additionally, they were evaluated for proximity, distance from the project, duration and extent of the views and visual absorption. Each criterion is rated, in an evaluation matrix, for a maximum point value of three, which is equal to high potential impact on the resource, down to zero, which indicates no potential impact on the resource.

In addition to the matrix evaluation, Mr. Raphael provided the following comments to the Department on the six scenic or historic resources within the 8 mile study area radius;

1. Passadumkeag marsh and bog lands, a historic natural landmark

   Only a very small portion of this area, 0.6 acres (the most southeasterly section of the bog land parcel) is within the 8 mile radius. Based on the viewshed analysis of both the applicant's VIA and the Landworks analysis of aerial photography for land cover, it is expected that there would be no visibility of the project from this resource.

2. Old Tavern in Burlington, on the national historic register

The tavern faces Main Road and is oriented in a manner that the view of its external architectural qualities as well as access to the building's interior is from the west. From this direction the project would not be visible. Any potential views of the project would be in the southerly to south easterly direction. It appears as though the western end of Passadumkeag Mountain is potentially visible along the road corridor, but it is most likely a portion of the mountain for which turbines are not proposed. The tavern is surrounded to the south by mature trees and other structures through which views of the project could be possible but for the most part only in winter. It is unlikely that these views are possible, however, due to the intervening vegetation and structures.

3. Saponac Pond located in the Burlington and Great Falls Township area, rated as significant by the Assessment

Saponac Pond is recognized for its bass and perch fishery, and has been developed with camps primarily along its northeastern and northwestern shores. There are up to 50 camps and year-round homes on the shores or in the vicinity of the pond. The pond shoreline is wooded with hardwoods and softwoods with the exception of clearing for camps and the short section where Route 188 Main Rd. follows the shoreline. Located short distances beyond the southern shoreline are openings in the forest cover as result of logging activity.

From Route 188 Main Rd., the closest turbines would be at a distance of between 4 and 4.8 miles; from the South Shore of Saponac Pond the closest turbine would be at a distance of 2.3 miles. Saponac Pond, due to its proximity to the project site and the fact that there would be visibility of the project from nearly all of the surface area of the pond, would be adversely impacted by this project. Many users who are boating or fishing on the lake would have the project potentially in view, with some exceptions due to the north facing shorelines that would benefit from vegetative screening. There is currently what is considered to be some inharmonious development as identified in the rating set forth in the publication "Scenic Lake Character Evaluation in Maine's Unorganized Towns", but the overall scenic rating may be attributable to the presence and prominence of the Passadumkeag Mountain itself. Saponac Pond is by no means a pristine water body, and the logging activity and existing mountaintop development with roads and radio towers contributes to the sense of the pond being in a developed area that has been used historically as a working landscape.

From Saponac Pond the turbine array would be readily visible against the backdrop of sky and atmosphere. Given the horizontal extent of the project and the fact that it would be visible from most of the lake and that the view would comprise anywhere from 31° of the panorama at the simulation site up to 62° in the middle of the lake, this project would dominate the views that many users

would experience. The project would change the mountain landscape with clearings for the turbine pads and the service roads that would connect the turbine sites. It would add a distinct and unnatural form to this mountain landscape. The key question is whether the project visibility would greatly diminish the use and enjoyment of the primary user group on the water.

The user survey results indicate that 59% of people surveyed indicate that if the project were built it would not change their sense of enjoyment; 41% indicated it would have a negative impact. Additionally, a number of users indicated that, for several different recreational activities such as swimming, boating, canoeing kayaking, and ice fishing they would still be likely to return to the pond for those activities. Almost 3/4 of those surveyed (71 to 74%) indicated that they would still be likely to return to the pond to recreate after the project is developed.

Landworks concluded that this project would most definitely result in an adverse impact to the scenic quality of Saponac Pond. While the project would not directly affect the physical form and character of the pond itself, the project would be prominent and alter the visual quality and sense of place for the users and camp owners. There are mitigating factors however and these include:

1. The fact that the area already has been developed and the mountain environments are not pristine,
2. The relative high number of respondents who indicated the project would not have a substantial impact on enjoyment and their willingness to return; and
3. The result of the evaluation matrix, which takes into account a range of factors, yields a rating of 2.1, indicating a moderate impact to scenic quality.

4. Nicatous Lake located in T-3 MD and T 40 MD Hancock County, rated as outstanding by the Assessment.

Approximately 1/2 of this 9 mile long lake is within the project's 8 mile view shed. The applicant's VIA indicates that the visibility of the project would be limited on the lake. Any visibility would be of only a few turbines in a narrow angle of view of approximately 10.2° when compared to an overall 360° panorama. Turbines range in distance from between 6.9 miles for the distance of the closest visible turbine and 9.5 miles for the distance of the most distant visible turbines from the simulation view location. The developed area at the northern end of the lake and Porter Cove is unlikely to have any visibility of the turbines due to the intervening vegetation and topography. Additionally the view shed analysis undertaken by both the applicant's visual consultant and Landworks indicates limited visibility of the project from points on the lake which are within the eight mile project radius. The distance to the nearest visible turbine is such

that these turbines would be neither dominant nor serve as a focal point to draw the eye.

Passadumkeag Mountain can be discerned from viewing points within the broad lake area and beyond the 8 mile project radius but one needs to be looking for it, as it appears as a distant land form just above the tree line. Atmospheric conditions and landscape qualities associated with the lake and shoreline would diminish the presence of the project both within and beyond the 8 mile radius, lessening the potential effects on the user with regard to visual impact. The wind project, if built, has the potential to result in adverse impact of the scenic qualities and values present on the lake. The visibility of the project is limited by distance, but would still add in an unnatural element to the view and horizontal line when and if seen from the shoreline or on the lake vantage points. Any change in the view and the sense that there is a major, utility scale wind project in the distance would affect the user sense of landscape and scenery in a potentially negative manner. This is sufficient to conclude that the project would have some adverse effects but the extent of the visibility of the project on the horizon is limited overall and the visibility in many portions of the lake would be limited or nonexistent. In the user survey 68% of the respondents indicated that the project would not change, or would have a positive impact, on their level of enjoyment. The scale of the project's potential visual presence is not so large as to be disconcerting and unsettling. The evaluation matrix indicates that the project's impact on scenic qualities and values would be moderate, attaining a composite rating of 1.9.

5. Lower Pistol Lake located on Passamaquoddy Trust Lands, Hancock County, rated as significant by the Assessment.

The general context for this particular lake is one of an undeveloped, remote pond however there is evidence of surrounding timber harvesting and forest resource management. With the surrounding low relief of this pond and the wooded nature of the shoreline this area is not particularly unique nor does it rise to the level of being distinctive with regard to other similar lakes in the region. The lake is considered generally remote as it is only reachable by four-wheel drive or in the winter by snowmobile. The distance to the nearest turbine from this lake is over 5 miles at the northern end of the lake. On those portions of the lake where the turbines are visible, the range of view is approximately 8.5° when compared to an overall 360° panorama.

In the user survey 62% of respondents indicated that their enjoyment of the pond would not be affected by the turbines.

This project would be visible from portions of lake with the presence of turbines in the distance and thus would result in an adverse impact on the scenic quality of

this lake. This would not be a substantial change to the experience of an unfettered, undeveloped lake. There is a limited extent of potential project visibility on this lake, a small percentage of the panorama would be occupied by the project and it would not impact the quiet and solitude that the lake provides. This is a supported by the results of the evaluation matrix which, when the various impacts were rated, resulted in a 1.4 rating which is between low and moderate impact.

6. Spring Lake located in T-3 NDE Hancock County rated as significant by the Assessment.

Spring Lake is another seemingly remote, undeveloped pond but it is surrounded by both wetland systems and timber harvest operations. The shoreline is wooded with spruce, pine and northern hardwoods, and much like Lower Pistol Lake the topography around the lakes is comprised of low lands and low ridges with elevation differences of about 200 to 250 feet above the lake surface. The lake is primarily accessible with four-wheel drive or in the winter by snowmobiles. When topography and vegetation is taken into account, the view shed analysis yields the conclusion that only a small portion of the lake, approximately 15% of the surface and shoreline area, would have visibility of the proposed project turbines from hub height and above.

The visual impacts to Spring Lake resulting from this project would be minimal, if discerned at all. Users would need to be, for the most part, looking in the right direction and would need to know what they're looking for in order to see the project. There were no specific user survey results for Spring Lake other than two people surveyed indicated that they have visited the lake. Given the distance to the project, the minimal visibility, the lack of users and difficult access, as well as the fact that the lake is not an outstanding scenic landscape, it appears that the project's impacts would barely be adverse and the overall impact to scenic quality would be low. The findings of the evaluation matrix yielded a score of 1.1 and confirm this conclusion.

C. NIGHT SKY IMPACTS

Some members of the public raised concern over the visual impacts from the warning lights required by the Federal Aviation Administration that would be placed on the top of some turbines. An interested person submitted a photograph of another wind power project in the state which showed the reflection of such lights on a lake. The Department acknowledges that there may be some light reflected on the lake surface under rare occasions, however the FAA lights are required and such a requirement factors into the reasonableness of the impacts to scenic quality.

Although there are some adverse effects on the scenic character of scenic resources of state or national significance, under the provisions of the Wind Energy Act, the Department must determine whether a project significantly compromises the view from SRSNS and that the project unreasonably affects the continued use and enjoyment of the SRSNS. The Wind Energy Act provides that an applicant need not demonstrate that a project fit harmoniously into the existing natural environment, however, a proposed project must not have an unreasonable effect on the existing character or uses related to scenic character. This determination is made utilizing the factors listed in Title 35-A § 3451(3A-F) above. Based on the Department's review of the VIA and user surveys, it appears that the project would not have an unreasonable adverse impact on any SRSNS or unreasonable adverse effect on the continued use of the SRSNS by a typical user.

6. WILDLIFE AND FISHERIES:

The applicant submitted the results of a series of ecological field surveys conducted by Stantec Consulting (Stantec), including wildlife surveys; wetland delineations; rare, threatened, and endangered plant and animal species surveys; and vernal pool surveys within the project area, including the area affected by the 13 mile generation lead line. During the preparation of the surveys and other material in support of the application, Stantec consulted with the Department and other natural resource review agencies.

A. Significant Vernal Pools . Stantec conducted vernal pool surveys within the project area in the spring of 2011. Stantec identified one vernal pool within the transmission line portion of the project area which would be being impacted by clearing. The clearing would impact less than 25% of the critical terrestrial habitat of the vernal pool and those impacts have been approved under PBR #53622.

B. Inland Waterfowl and Wading Bird Habitat. The turbine portion of the project would not impact any Inland Waterfowl and Wading Bird Habitat (IWWH).

The proposed collection line would cross three sections of IWWH. Two of the crossings resulted in an increase of more than 10% of the developed area and result in a total impact of 9,800 square feet adjacent to existing cleared area and a road. The applicant proposes to construct the transmission line to be compliant with the U.S Fish and Wildlife Department's Avian Protection Plan (APP) Guidelines. This would include cutting only vegetation that could grow to within 15 feet of a conductor in the next three to four years. If possible the applicant would leave two to three snags within the transmission corridor to provide nesting habitat. The applicant would also locate poles in upland areas whenever possible in order to minimize impacts to the IWWHs. The Department's analysis is that the impacts to IWWHs would be minimized by the proposed vegetation management plan and the effort to locate poles in upland areas.

The impacts to a third area of IWWH, which result in an increase of less than 10% of the developed area, meet the standards of Chapter 305 Permit by Rule Standards and are permitted under PBR #53671.

C. Deer Wintering Area. Neither the turbine nor transmission line portions of the project would impact any Deer Wintering Areas as defined under the Natural Resources Protection Act.

D. Rare, Threatened, and Endangered Species. Stantec conducted a survey of the area within two miles of the project for plant and animal species that are state or federally listed as Rare, Threatened, and Endangered. No Rare, Threatened or Endangered plant or animal species were found.

E. Salmon Habitat Streams. The project as proposed would not impact any locations of Critical Habitat for Atlantic Salmon as defined by the Department of Marine Resources.

F. Birds and Bats. The applicant retained Stantec to conduct bird and bat surveys to identify which species occurred in the area of the proposed project, the extent of the use of the site by such species, and potential impacts of the proposed project. Stantec conducted specific avian surveys including raptor migration surveys and eagle use surveys. It also compiled a list of bird species observed on the site. In the spring of 2011, Stantec conducted 20 nights of nocturnal radar, acoustic bat and raptor migration surveys. In the summer of 2011, breeding bird surveys were done. In the fall of 2011, 12 days of raptor surveys were conducted. In addition to the fall surveys, 12 survey days were conducted in late August/early September and mid-October/early November to document eagle activity and migration.

The majority of the bat calls identified were in the *Hoary* bat family (957out of 1133 calls) followed by unknown calls (76 out of 1133), and *Myotis* species (48out of 1133). A total of 171 observations of raptors were documented. Three Bald Eagles were observed.

MDIFW recommends that, to minimize potential impacts to bat species found at the project site, operational control measures should be established for the proposed project. MDIFW recommends that the applicant be required to curtail the cut-in speed for all turbines to 5.0 meters/second (m/s) between April 20 and October 15 from one-half hour before sunset to one-half hour after sunrise. Under this recommendation, during times when the winds are less than the 5.0 m/s threshold, turbine blades would not rotate, thus reducing risk of fatality for bats. If at any point during this time period the wind speed increases to greater than 5.0 m/s, the turbine blades would be free to rotate. These curtailment measures are intended to be in place from day one of operation for the life of the project.

After consultation with MDIFW regarding curtailment and the potential for bat mortality, the applicant agreed to seasonal curtailment of the turbine cut-in speed to 5.0 m/s on all turbines starting one half hour before sunset to one-half hour after sunrise for the life of the project. The applicant proposes that this curtailment be required from May 1 to September 30, and only when the ambient temperature is above 50 degrees F from June 1 to August 31, and when above 32 degrees F in May and September. If at any point during this time period the

wind speed increases to >5.0 m/s the turbine blades would be free to rotate. MDIFW has commented that this level of curtailment would be adequate.

Regarding post-construction monitoring of bird and bat mortality, MDIFW further stated that assuming an April 20 to October 15 search window, MDIFW would consider it adequate for searches to take place weekly between April 20 and May 31 and daily between June 1 and September 30, with a return to a weekly schedule from October 1 through October 15. The applicant responded that because post-construction monitoring at wind power projects is an evolving science, they will work with MDIFW to finalize a monitoring methodology prior to the start of operation. MDIFW agreed to work with the applicant to develop a final monitoring methodology.

No fisheries impacts are anticipated from the proposed project.

The project should not result in an unreasonable impact on fisheries and wildlife provided turbine operation is curtailed as outlined above. If post construction monitoring indicates an unreasonable impact on birds, bats and raptors, the Department, in conjunction with MDIFW, maintains the ability to modify operation of the wind project as necessary. Post construction monitoring at other operating wind projects in Maine has not indicated any unreasonable impact on birds and raptors.

7. HISTORIC SITES AND UNUSUAL NATURAL AREAS:

The Maine Historic Preservation Commission reviewed the proposed project and stated that it will have no effect upon any structure or site of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966.

The Maine Natural Areas Program database does not contain any records documenting the existence of rare or unique botanical features on the project site and, as discussed in Section 6, MDIFW did not identify any unusual wildlife habitats located on the project site.

8. SOILS:

The applicant submitted a soil survey map and report and a geotechnical report based on the soils found at the project site. This report was prepared by a certified soils scientist and reviewed by staff from the Department's Division of Environmental Assessment of the Bureau of Land and Water Quality (DEA). DEA also reviewed the applicant's Blasting Plan (dated February 2012) which outlines the proposed procedures for removing rock and ledge.

Based on this review, it appears the project site presents no limitations to the proposed project that cannot be overcome through standard engineering practices.

9. STORMWATER MANAGEMENT:

The proposed project includes approximately 21.47 acres of impervious area and 97.38 acres of developed area. It lies within the watersheds of the Passadumkeag River, Saponac Pond and Great Pond. The applicant submitted a stormwater management plan based on the basic, general, phosphorus, and flooding standards contained in Department Rules, Chapter 500. The proposed stormwater management system consists of vegetated buffers for the turbine site and underdrained soil filters at the O&M building.

A. Basic Standards:

(1) Erosion and Sedimentation Control: The applicant submitted an Erosion and Sedimentation Control Plan (Section 14 of the application) that is based on the performance standards contained in Appendix A of Chapter 500 and the Best Management Practices outlined in the Maine Erosion and Sediment Control BMPs, which were developed by the Department. This plan and plan sheets containing erosion control details were reviewed by, and revised in response to the comments of, the Division of Watershed Management (DWM) of the Bureau of Land and Water Quality.

(2) Inspection and Maintenance: The applicant submitted a maintenance plan that addresses both short and long-term maintenance requirements. This plan was reviewed by, and revised in response to the comments of, DWM. The maintenance plan is based on the standards contained in Appendix B of Chapter 500. The applicant would be responsible for the maintenance of all common facilities including the stormwater management system.

B. General and Phosphorus Standards: The General Standards must be met for the portion of the project which drains to the Passadumkeag River.

The applicant's stormwater management plan includes general treatment measures that will mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater, and mitigate potential temperature impacts. The proposed portion of the project which drains to the Passadumkeag River is a road and meets the definition of "a linear portion of a project" in Chapter 500. For that area, the applicant is proposing to control runoff volume from no less than 75% of the impervious area and no less than 50% of the developed area

The forested, no disturbance stormwater buffers are proposed to be protected from alteration through the execution of a deed restriction. The applicant proposes to use the deed restriction language contained in Appendix G of Chapter 500.

The portions of the project which drain to Saponac Pond and Great Pond are required to meet the Phosphorus Standards.

Because of the proposed project's location in the watersheds of Saponac Pond and Great Pond, the applicant proposes to treat stormwater runoff from the project site to meet the phosphorus standard outlined in Chapter 500(4)(C). The applicant's phosphorus control plan was developed using methodology developed by the Department and outlined in "Phosphorus Control in Lake Watersheds: A Technical Guide for Evaluating New Development". For this project, the Permitted Phosphorus Export is 18.0123 pounds of phosphorus per year for Saponac Pond and 7.0650 pounds of phosphorus per year for Great Pond. The applicant proposes to remove phosphorus from the project's stormwater runoff by utilizing buffers and underdrained soil filters, as shown on the set of plans referenced in Finding 1. The predicted phosphorus export for the project site based on the applicant's model is 17.8462 pounds per year of phosphorus for Saponac Pond and 7.0626 pounds per year of phosphorus for Great Pond. The proposed stormwater treatment should be able to reduce the export of phosphorus in the stormwater runoff below the maximum permitted phosphorus export for the site.

C. Flooding Standard:

The applicant is proposing to utilize a stormwater management system based on estimates of pre- and post-development stormwater runoff flows obtained by using Hydrocad, a stormwater modeling software that utilizes the methodologies outlined in Technical Releases #55 and #20, U.S.D.A., Soil Conservation Service and retains stormwater from 24-hour storms of 2-, 10-, and 25-year frequency. Based on the analysis and the Department's experience with it, the post-development peak flow from the site is not expected to exceed the pre-development peak flow from the site and the peak flow of the receiving waters would not be increased as a result of stormwater runoff from the development site.

DWM commented that the proposed system is designed in accordance with the Chapter 500 Basic, General, Phosphorus and Flooding Standards.

11. GROUNDWATER:

The project site is not located over a mapped sand and gravel aquifer. The proposed project does not propose any withdrawal from, or discharge to (except for a single septic system described in Finding 13) the groundwater.

12. WATER SUPPLY:

Water for the development would be supplied by an individual well at the O&M building. The applicant submitted an assessment of groundwater supplies that are available on the project site. This assessment was prepared by a certified geologist and was reviewed by, and revised in response to comments from, the BLWQ's Division of Environmental Assessment (DEA).

The applicant's revised assessment indicates that there would be adequate provision for securing and maintaining a sufficient and healthful water supply.

13. WASTEWATER DISPOSAL:

Wastewater would be disposed of by an individual subsurface wastewater disposal system located at the O&M building. The applicant submitted the soil survey map and report discussed in Section 11. The individual system would be required to be designed to meet the requirements of the Maine State Plumbing Code. Based on a review of the information submitted by DEA, it appears that a subsurface wastewater disposal system capable of handling septic waste from the O&M building can be constructed on this site.

14. SOLID WASTE:

When completed, the proposed project would be anticipated to generate minor amounts of general solid waste per year. All general solid wastes from the proposed project would be disposed of at Penobscot Energy Recovery Company (PERC), which is currently in substantial compliance with the Maine Solid Waste Management Rules.

All marketable timber will be removed from the project site. A single 1 acre stump dump may be located on the parcel. All stumps and grubbings generated will be disposed of on site, either chipped or burned, with the remainder to be worked into the soil, in compliance with the Maine Solid Waste Management Rules.

The proposed project would generate approximately 465 cubic yards of construction debris and demolition debris. All construction and demolition debris generated will be disposed of at Juniper Ridge which is currently in substantial compliance with the Maine Solid Waste Management Rules.

15. FLOODING:

The proposed project is not located within the 100-year floodway of any river or stream.

16. WETLAND IMPACTS:

The applicant retained Stantec Consulting to locate wetlands and waterbody resources on the proposed project site. The results of the applicant's surveys for wetlands and waterbodies which may be affected by the turbine sites, access roads and collector lines are summarized as follows:

- 173 wetlands were identified along the proposed access roads and the electrical collector line.
- 35 jurisdictional streams were identified, including 23 perennial streams. No streams are proposed to be crossed;

- 67 vernal pools were identified, including 3 significant vernal pools, and 4 potentially significant vernal pools, only one of which would be impacted, as discussed in Section 7.
- 34 wetlands were identified that meet the definition of wetlands of special significance.

Freshwater Wetland Impacts.

The applicant is proposing 1.2 acres of vegetation conversion in wetland areas for the turbine sites, access roads and collector lines. No permanent loss of freshwater wetland through filling is proposed.

The Department's Wetlands and Waterbodies Protection Rules, Chapter 310, provide the framework for the Department's analysis of whether a proposed project's impacts to the protected resources would be unreasonable as that term is used in the NRPA, and whether the project meets the NRPA licensing criteria. A proposed project's impacts may be found to be unreasonable if the project would cause a loss in wetland area, functions and values for which there is a practicable alternative that would be less damaging to the environment. For this aspect of the Department's review an applicant must provide an analysis of alternatives to the project.

A. Avoidance. The applicant submitted an alternatives analysis for the wetland and stream impacts of the proposed project completed by Stantec Consulting dated February 2012. The applicant states that the proposed project was designed to avoid wetlands to the greatest extent possible and the applicant proposes to site the proposed turbines and associated access roads in predominantly upland areas. The applicant used existing roads when possible to avoid any new impacts to natural resources. Any new roads that were necessary were designed to avoid wetlands if practical. The construction and maintenance of the electrical transmission line would primarily result in a permanent change in vegetation cover type in wetland areas.

B. Minimal Alteration. In the determination of whether any adverse impacts from a project are unreasonable, the Department looks at whether the amount of wetland and waterbodies to be altered have been kept to the minimum amount necessary for meeting the overall purpose of the project. The applicant is proposing construction practices to reduce erosion, maintain stream and vernal pool buffers and reduce habitat fragmentation by the proposed co-locating of the majority of the generator lead transmission line.

C. Compensation. Compensation may be required to achieve the goal of no net loss of wetland functions and values. The applicant submitted an assessment of the functions and values of wetlands impacted by the proposed project prepared by Stantec. The assessment determined that the primary functions and values of the impacted wetlands were wildlife habitat, with some levels of floodwater alteration, sediment/toxicant retention, and production export. In this case, it

appears that the conversion of the vegetative cover type in wetlands affected by the project will not result in a loss of functions and values so compensation should not be required.

The applicant's design of its proposed roads and turbines avoided any wetland impacts. The transmission line minimized wetland impacts, resulting in just 1.2 acres of impacts, all of which are vegetation changes. No wetland would be lost due to filling. The Department considers whether the proposal is the least environmentally damaging alternative that meets the overall purpose of the project. The proposed project has siting restraints in terms of alternatives due to the need to locate in an area of appropriate wind and outside of major residential areas.

17. SHADOW FLICKER:

In accordance with 38 M.R.S.A. § 484 (10), an applicant must demonstrate that the proposed wind energy development has been designed to avoid unreasonable adverse shadow flicker effects. Shadow flicker caused by wind turbines is defined as alternating changes in light intensity caused by the moving blade casting shadows on the ground and stationary objects. Shadow flicker is the sun seen through a rotating wind turbine rotor. Shadow flicker does not occur when the sun is obscured by clouds or fog or when the turbine is not rotating. The spatial relationships between a wind turbine and receptor, as well as wind direction which cause the turbines to rotate, are key factors relating to shadow flicker occurrence and duration. At distances of greater than 1,000 feet between wind turbines and receptors, shadow flicker usually occurs when the rotor plane is in-line with the sun and receptor (as seen from the receptor), the cast shadows would be very narrow (blade thickness) and of low intensity, and the shadows would move quickly past the stationary receptor. When the rotor plane is perpendicular to the sun-receptor "view line," the cast shadow of the blades would move within a circle equal to the turbine rotor diameter.

The applicant submitted a shadow flicker analysis with its application. The applicant used WindPRO, a wind modeling software program, to model expected shadow flicker effects on adjacent properties from the 14 proposed turbine locations. The applicant assumed a worst case scenario, that all receptors have a direct in-line view of the incoming shadow flicker sunlight, and did not take into account any existing vegetative buffers.

The Department generally recommends that an applicant conduct a shadow flicker model out to a distance of 1,000 feet or greater from a residential structure, and the applicant's model did so. The applicant modeled two receptors, A and B, which are located within 1 mile of the project and which would potentially receive shadow flicker. Maine currently has no numerical regulatory limits on exposure to shadow flicker, however, the industry commonly uses 30 hours per year as a limit to reduce nuisance complaints. Receptor A would have approximately 46.54 hours of flicker per year and receptor B would have

approximately 4.37 hours per year. The applicant has a lease agreement with Receptor A allowing shadow flicker greater than 30 hours per year. Based on the WindPRO analysis, there are no other receptors within one mile of the project.

The shadow flicker modeling conducted by the applicant is credible. The proposed project would cause only limited shadow flicker to occur over one receptor, Receptor B, which is not subject to an easement allowing for shadow flicker.

18. PUBLIC SAFETY:

The proposed project would use Vestas V-112 3.0-megawatt (MW) wind turbine generators. The turbines' conformity with International Electrotechnial Commission standards has been certified by Det Norske Veritas and included in the applications in Appendix 27-2 dated March 19, 2010.

The Department recognizes that locating wind turbines a safe distance away from any occupied structures, public roads or other public use areas is extremely important. In establishing a recommended safety setback, the Department considered industry standards for wind energy production in climates similar to Maine, as well as the guidelines recommended by certifying agencies such as Det Norske Veritas. Based on these sources, the Department requires that all wind turbines be set back from the property line, occupied structures or public areas a minimum of 1.5 times the maximum blade height for the wind turbine. Based on the Department setback specifications, the minimum setback distance to the nearest property line should be 688.5 feet for the Vestas turbines. A review of the application indicates that all turbines are setback at least 688.5 from occupied structures and public areas.

19. DECOMMISSIONING PLAN:

In order to facilitate and ensure appropriate removal of the wind generation equipment when it reaches the end of its useful life or if the applicant ceases operation of the turbines, the Department requires an applicant to demonstrate, in the form of a decommissioning plan, the means by which decommissioning would be accomplished. The applicant's decommissioning plan includes a description of the trigger for implementing the decommissioning, a description of work required, an estimate of decommissioning costs, a schedule for contributions to its decommissioning fund and a demonstration of financial assurance.

A. Trigger for implementation of decommissioning. The proposed wind turbine generators are designed and certified by independent agencies for a minimum expected operational life of 20 years, however other factors may also trigger the requirement for decommissioning. The applicant's proposal is that the wind generation facility would be decommissioned when it ceases to generate electricity for a continuous period of twelve months. In the case of a force majeure event which is the cause of the project not generating electricity for 12 months, the applicant proposes that it be allowed to submit to

the Department for review and approval reasonable evidence in support of a request that they not be required to decommission the project at that time.

An exception to the requirement that decommissioning begin if twelve months of no generation occurs would be allowed for a force majeure event, however the Department's view is that the applicant's proposed definition of "force majeure" is exceedingly broad. The Department considers a force majeure to mean fire, earthquake, flood, tornado, or other acts of God and natural disasters; strikes or labor disputes; war, civil strife or other similar violence.

B. Description of work. The applicant's proposal for the manner in which the turbines and other components of the proposed project would be dismantled and removed from the site includes the removal of subsurface components to a minimum of 24 inches below grade, the removal and salvaging of other facilities, and the re-vegetating of disturbed areas.

C. Financial Assurance. The current, estimated cost for decommissioning the project is $504,600. The applicant proposes that financial assurance for the decommissioning costs would be fully established by year 15 of operation. The applicant proposes to reserve $33,640 each year from the year the project commences through calendar year 7. The first year's payment would be in place prior to the start of construction. At the end of the seventh year the estimated cost of decommissioning would be reassessed. Based on the new assessment in years 8 through 15 the applicant would make annual contributions of an equal amount each year to fully fund the decommissioning reserve by the end of the 15th year. On or prior to the end of calendar year 15 of the project's operation, the estimated cost of decommissioning (minus the salvage amount) would be reassessed and a copy would be submitted to the Department. The amount that is equal to the remaining balance would be reserved at that time for decommissioning and site restoration.

20. TANGIBLE BENEFITS:

In its application the applicant described tangible benefits that the project would provide to the State of Maine and to the host communities, including economic benefits and environmental benefits.

The applicant states that its proposal would benefit the host communities and surrounding areas through construction-related employment opportunities. These would include tree clearing and excavation jobs, and jobs in businesses that support construction such as lodging, restaurant, fuel and concrete supply.

Communities Benefits Agreement. The Penobscot County Commissioners are scheduled to vote on the Community Benefits Agreement on July 10, 2012. The Department is still evaluating this portion of the application.

STATE OF MAINE

Department of Environmental Protection

PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

November 2012

Passadumkeag Wind Park, LLC
5 Houston Center
1401 McKinney Street, Ste. 1800
Houston, TX 77010
ATTN: Mike Beckner

RE: Site Location of Development Act Application, Greenbush, Summit Mountain Twp., Grand Falls Twp., Greenfield Twp., #L-25597-24-A-N/L-25597-TH-B-N/Denial

Dear Mr. Beckner:

Please find enclosed a signed copy of your Department of Environmental Protection denial of your applications for a Site Location of Development and a Natural Resources Protection Act permit. You will note that the permit includes a description of your project, findings of fact that relate to the denial criteria the Department used in evaluating your project. The Department reviews every application thoroughly and strives to formulate reasonable findings of fact within the context of the Department's environmental laws. You will also find attached some materials that describe the Department's appeal procedures for your information.

If you have questions or concerns, I can be reached at (207) 446-9026 or at jim.r.beyer@maine.gov.

Sincerely,

Project Manager
Division of Land Resource Regulation
Bureau of Land & Water Quality

pc: File

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
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BANGOR, MAINE 04401
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PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 764-3143

WEB SITE: WWW.MAINE.GOV/DEP

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION
AUGUSTA, ME 04333

DRAFT DEPARTMENT ORDER

IN THE MATTER OF

PASSADUMKEAG WIND PARK, LLC	) SITE LOCATION OF DEVELOPMENT ACT
Greenbush, Grand Falls Township,	) NATURAL RESOURCES PROTECTION ACT
Summit Mountain Township, Greenfield	) WATER QUALITY CERTIFICATION
Township	) FINDINGS OF FACT AND ORDER
Penobscot County	)
PASSADUMKEAG WIND PARK	)
L-25597-24-A-N (denial)	)
L-25597-TH-B-N (denial)	)

Pursuant to the provisions of 35-A M.R.S.A. Sections 3401-3457, 38 M.R.S.A. Sections 480-A et seq. and 481 et seq. and Section 401 of the Federal Water Pollution Control Act, the Department of Environmental Protection has considered the application of PASSADUMKEAG WIND PARK, LLC with the supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. PROJECT DESCRIPTION:

A. Summary: The applicant proposes to construct a wind turbine project consisting of 14 turbines. This project qualifies as an expedited wind energy development as defined in the Wind Energy Act (38 M.R.S. §3451(4)). The area of land proposed to be used for the turbine portion of the project is located in Grand Falls Township on property currently used for commercial forestry operations. The site contains logging roads that would be upgraded and used to minimize clearing and wetlands impacts. In addition to the turbines, the project would include an operations and maintenance (O&M) building as well as associated facilities. The generator lead line would run approximately 17 miles from the ridge along the Greenfield Road through Summit Township, Greenfield Township and Greenbush. Nearly all of this line would be adjacent to an existing distribution line right-of-way immediately and an existing road. The O&M building would be located in the Town of Greenbush, an organized town. The proposed project overall includes 21.47 acres of impervious area and 97.38 acres of developed area. The development of the O&M building would result in approximately 3.54 acres of impervious area.

1) Wind Turbines. The applicant proposes to construct 14 Vestas 112, 3.0 megawatt (MW) for a total of 42 MW of capacity. Each turbine is 84 meters (approximately 276 feet tall) to the center of the hub and a total of 140 meters (approximately 459 feet tall) to the tip of a fully extended blade. The turbines would be located on top of Passadumkeag Mountain.

2) Turbine Pads. The turbines would be constructed on 14 pads, each approximately 2.0 acres in size for a total impervious area associated with the turbine pads of 17.93 acres.
3) Access Roads and Crane Path. The applicant proposes to upgrade existing logging for access and for the crane path.
4) Electrical Collector Substation and O&M Building. The applicant proposes to construct an electrical substation and O&M. The total new impervious area from these two structures would be 3.54 acres and a total new developed area of 3.69 acres. The proposed substation and O&M Building would be adjacent to Hydro Electric Company's (BHE) transmission line, Line 64.
5) Meteorological Towers. The applicant is proposing to construct one meteorological tower on the site to monitor turbine performance.
6) Generator Lead Line. The applicant is proposing to collect power from the turbines in a 34.5 kilovolt (KW) generator lead line. The generator lead line would run approximately 17 miles from the turbines on the ridge along the Greenfield Road through Summit Township, Greenfield Township and Greenbush. Nearly all of this line would be adjacent to an existing distribution line right-of-way immediately and an existing road. This existing distribution line runs from the existing communications tower on Passadumkeag Mountain to Greenbush along the Greenfield Road. The distribution line ROW will be widened and the existing poles replaced.

The applicant's proposal includes 1.22 acres of wetland conversion by clearing trees associated with the collector line and altering 9,800 square feet of moderate value inland waterfowl and wading bird habitat (IWWH) in two locations adjacent to the Greenfield Road.

B. Public Interest: The department received multiple requests for the Board of Environmental Protection (Board) to assume jurisdiction over these applications and hold a public hearing. However, the Board's authorizing statute, 38 M.R.S. §341-D(2), does not allow the Board to assume original jurisdiction over applications for approval of expedited wind energy developments as defined in the Wind Energy Act (38 M.R.S. §3451(4)). With regard to the potential for a public hearing as set forth in the Department's Rules, Chapter 2 §7(B), the holding of public hearings on applications is discretionary. In this case the Commissioner determined that there was not sufficient credible conflicting technical information submitted and a public hearing was not warranted in order to assist her in understanding the evidence. Therefore, a public hearing was not held. The Department held the first of two public meetings on April 25, 2012 at the Greenbush town office. The Department sent letters to all abutters of the project notifying them of the meeting, notified the respective town offices, and published a notice in a local newspaper. The Department received many emails and letters from interested persons expressing concerns about the proposed project. The letters and emails describing concerns about the proposed project that were related to standards that are reviewed as part of the Site Location of Development Act and NRPA were considered in the review of the proposal. On July 12, 2012, the Department held the second public meeting at the Helen S. Dunn School in Greenbush. The second public meeting was attended by the Commissioner.

Several interested persons contend that the 20,000 acres included in a conservation easement between Robbins Lumber, Inc. and the State of Maine should be considered a Scenic Resource of State or National Significance (SRSNS) pursuant to the Wind Energy Act. As discussed below in Finding #6, the Department ultimately determined that the easement area was not a SRSNS. Interested persons contend that a series of statements by the applicant concerning greenhouse gas emissions and global warming in the Section 28, Tangible Benefits, of the application was not substantiated with scientific facts. The application includes a statement that renewable energy demands are increasing and that this project would address concerns about reducing greenhouse gases and particulates from combustion. The Legislature made findings in its adoption of the Wind Energy Act, in 35-A M.R.S. §3402, that it is in the public interest to encourage the construction and operation of community wind power generation facilities because wind energy "is an economically feasible, large-scale energy resource that does not rely on fossil fuel combustion or nuclear fission, thereby displacing electrical energy provided by these other sources and avoiding air pollution, waste disposal problems and hazards to human health from emissions, waste and by-products". Further 35-A M.R.S. §3454 directs the Department to presume that an expedited wind energy development provides energy and emissions-related benefits. The Department defers to the Legislature's findings and also utilizes its knowledge and expertise in this area to evaluate the statements. The policy considerations of the Legislature in enacting the Wind Energy Act are relevant in the Department's interpretation of its statutes, but the Department is required to focus on the statutory licensing criteria set forth by the Legislature. The amount of potential climate benefit from the proposed project is not a factor under the licensing criteria.

While the application was being reviewed, the Department received comments from some interested persons in the surrounding towns regarding how the proposal would negatively impact tourism. Other interested persons commented that the threat of a forest fire was extreme and the cost of fire suppression should be borne by the applicant. The Department also received some comments about the shortcomings of the Wind Energy Act. These concerns are noted but are only considered to the extent they address permitting criteria and are thus within the scope of the Department's review of the proposed project.

The project is shown on a series of plans included with the application, the first of which is entitled "Predevelopment Drainage Plan", prepared by the James W Sewall Company dated January 30, 2012.

On October 30, 2012, the applicant submitted a proposed project modification to remove one turbine from the project. In order for the Department to meets its statutory time frame for processing the application, the Department did not entertain the proposed project modification, and the information was not reviewed or considered for the preparation of this Order.

C. Current Use of Site. The site of the proposed project is undeveloped fields and woodlands and is currently used as commercial forest. There is one existing communication tower, another communication tower under construction, and two leased camps on the property.

2. TITLE RIGHT OR INTEREST:

To demonstrate title, right or interest in the property proposed for development, as required in Chapter 2 §11(D) and Chapter 372 §9 of the Department's rules, the applicant submitted copies of deeds, leases and lease options between the applicant and the property owners for the proposed project site. The applications include deeds which show that the property owners who are leasing to the applicants have ownership over the parcels which are the subject of the leases. The duration and the terms of the leases for the proposed project area are sufficient for the processing of these applications. The applicant also submitted easements for certain adjacent parcels of land pertaining to noise, shadow flicker effects and safety setbacks.

The Department finds the applicant has demonstrated sufficient title, right or interest for the area which would be occupied by the project.

3. FINACIAL CAPACITY:

The applicant estimates the total cost of the project to be $79 million.

Passadumkeag Wind Park, LLC is a legal entity authorized to do business in the State of Maine and is a wholly owned subsidiary of Quantum Utility Generation, LLC (Quantum). Passadumkeag Wind Park, LLC was established to develop and own the Passadumkeag wind project. The application states that Quantum intends to provide all of the funding for the project. The application also states that Quantum may elect to find third party financing.

The applicant submitted a letter dated February 1, 2012 from Quantum indicating that it intends to finance the project. In addition the applicant submitted a letter from Price Waterhouse Coopers LLP, dated April 27, 2011, which contains a report of independent auditors indicating total assets on the part of Quantum of more than $355 million.

The Department finds the applicant has adequate capacity to fund the project, provided that prior to construction, the applicant shall submit evidence that it has been granted a line of credit or a loan by financial institution authorized to do business in this State, or evidence of any other form of financial assurance determined by Department Rules, Chapter 373(1), to be adequate to the BLWQ for review and approval.

4. TECHNICAL ABILITY:

The applicant operates several other energy projects with a generation capacity of 866 MW in Virginia and Mississippi and is in the process of developing solar and wind projects across the country. In addition the applicant retained the services of the following companies to prepare the application.

- Stantec Consulting – natural resource assessment, permitting
- James W. Sewall Company– engineering and storm water
- Albert Frick Associates, Inc. – soil assessment
- Terrence DeWan Associates – visual impact analysis
- Public Archeology Lab – historic archaeological resources
- TRC/Northeast Cultural Resources – prehistoric archaeological resources
- Independent Archaeological Consulting – historic archaeological resources

Based on the experience and expertise of the applicant and its retained consultants, the Department finds that the applicant has demonstrated adequate technical ability to comply with Department standards.

5. NOISE:

To address the Site Law standard pertaining to the control of noise, 38 M.R.S. §484 (3), and the applicable rules, Chapter 375 §10, the applicant submitted a Noise Impact Study entitled "Sound Level Assessment for the Passadumkeag Wind Park Project," completed by Stantec Consulting, Ltd and dated January 2012 and April 2012. The sound level study was conducted to model expected sound levels from the proposed project, and to compare the model results to the applicable requirements of Chapter 375 §10.

The Passadumkeag Wind Park project must comply with Department regulations applicable to sound levels from construction activities, routine operation and routine maintenance. Chapter 375 §10 applies hourly sound level limits (LAeq-Hr) at facility property boundaries and at nearby protected locations. Chapter 375§10 (G)(16) defines a protected location as "[a]ny location accessible by foot, on a parcel of land containing a residence or planned residence or approved subdivision near the development site at the time a Site Location of Development application is submitted…". In addition to residential parcels, protected locations include, but are not limited to, schools, state parks, and designated wilderness areas.

The hourly sound level resulting from routine operation of a development is limited to 75 decibels (dBA) at any development property boundary as outlined in Chapter 375 §10(C)(1)(a)(i). The hourly equivalent sound level limits at any protected location vary depending on local zoning or surrounding land uses and existing (pre-development) ambient sound levels.

The hourly sound level resulting from routine operation of a development is limited to 75 decibels (dBA) at any development property boundary as outlined in Chapter 375 §10(C)(1)(a)(i). The hourly equivalent sound level limits at any protected location vary depending on local zoning or surrounding land uses and existing (pre-development) ambient sound levels. At protected locations within commercially or industrially zoned areas, or where the predominant surrounding land use is non-residential, the hourly sound limits for routine operation are 70 dBA in the daytime (7:00a.m. to 7:00 p.m.) and 60 dBA in the nighttime (7:00 p.m. to 7:00 a.m.). At protected locations within residentially zoned areas or where the predominant surrounding land use is residential, the hourly sound level limits for routine operation are 60 dBA daytime and 50 dBA for nighttime. Where the daytime pre-development ambient hourly sound level is equal or less than 45 dBA and/or nighttime ambient hourly sound level is equal to or less than 35 dBA, the Department's strictest "Quiet Location" limits of 55 dBA daytime and 45 dBA nighttime apply.

Due to the rural nature of the area for which the project is proposed, Department standards require that the applicant meet the "Quiet Location" limits, the Department's most restrictive sound limits. The applicant proposes to operate the project in compliance with these limits as set forth in Chapter 375 §10(H)(3)(1). In Quiet Locations, nighttime limits of 45 decibels (dBA), at a protected location

apply at the property line of the protected location, or up to 500 feet from sleeping quarters when the property line is greater than 500 feet from a dwelling. For this project there are three protected locations. Pursuant to Chapter 375 §10(5)(s) sounds from a regulated development received at a protected location are exempt from the regulations when the owner of the property conveys a noise easement for that location to the generator of the sound. The owners of all three protected locations have entered into noise easements with the applicant.

To assist with the review of the application, the Department retained an independent noise expert, Peter Guldberg of Tech Environmental, Inc., to review the applicant's prediction model and associated data as well as other evidence received on the issue of noise.

A. Sound Level Modeling. The applicant's noise consultant, Stantec Consulting, Ltd., developed a sound level prediction model to estimate sound levels from the operation of the proposed project. The sound model for the project was created using Cadna/A software developed by DataKustik of Germany. Cadna/A allows the consultant to construct topographic surface models of area terrain for calculating sound attenuation from multiple sound sources such as wind turbines. The locations of the proposed turbines, roads, parcels, land uses and waterbodies have been entered into Cadna/A in order to calculate sound levels at various points within the proposed project area. Sound level predictions are calculated in accordance with ISO 9613-2, which is an international standard for calculating outdoor sound propagation.

This computerized model is capable of predicting sound levels at specific receiver positions originating from a variety of sound sources. Applicable national or international standards can also be included in the analysis as described above. Cadna/A accounts for such factors as:

- Distance attenuation;
- Geometrical characteristics of the source and receivers;
- Atmospheric attenuation (i.e. the rate of sound absorption by atmospheric gases in the air between sound sources and receptors);
- Ground attenuation (effect of sound absorption by the ground as sound passes over various terrain and vegetation types between source and receptor);
- Screening effects of surrounding terrain; and
- Meteorological conditions and effects.

The applicant states that conservative modeling assumptions were applied when analyzing the sound impacts of the project to allow for uncertainties in the sound power output from the turbines and inherent uncertainties in mathematical modeling of the sound propagation. To be conservative, a factor of three dBA was added, by the applicant's consultant, to the manufacturer's sound power level of the

turbines, and two dBA were added to account for uncertainty in the mathematical modeling, resulting in a total adjustment factor of five dBA.

Sound associated with the operational phase of the project was modeled excluding other existing sound sources. Modeling the sound generated from the operation of the 14 turbines was conducted by first obtaining the manufacturer's sound power level specifications (106.5 dBA) and then applying factors to account for the manufacturer's uncertainty and the modeling uncertainty for a total sound level of 111.5 dBA from each turbine. The model was run as if all 14 turbines were operating at full sound power output. No noise reduction operations are proposed for this project.

Although substation transformers emit sound, they were not considered significant sound sources by the applicant's consultant due to the low sound output and the relatively large distance from protected locations and were not included in the model. The Department and Peter Guldberg found this appropriate and acceptable.

B. Short Duration Repetitive Sound. Chapter 375 §10(G)(19) defines short duration repetitive sound (SDRS) as "a sequence of repetitive sounds which occur more than once within an hour, each clearly discernible as an event and causing an increase in the sound level of at least 6 dBA on the fast meter response above the sound level observed immediately before and after the event, each typically less than ten seconds in duration, and which are inherent to the process or operation of the development and are foreseeable." Chapter 375 requires that if any defined SDRS results from routine operation of a development, 5 dBA must added to the observed level of sound.

The January 2012 report submitted by the applicant summarized measurements of operating wind turbines in Maine and data from published literature that indicate that sound level fluctuations during the blade passage of wind turbines typically range from 2 to 5 dBA, with an occasional event reaching 6 dBA or more. However, the applicant's report concludes that the occurrence of these higher fluctuations would be so infrequent that they are not expected to meet the Department's definition of SDRS or affect the predicted sound levels. The Department's consultant, Tech Environmental reviewed this study and stated, "Since the 5-dBA penalty for SDRS is applied only to the SDR sounds and not the entire measurement interval, the infrequent occurrence of SDR sound events are not expected to significantly affect the project's sound levels and no adjustment to the acoustic model predictions for 1-hour LeqA levels is necessary." Based on the applicant's January 2012 report and the assessment of the Department's noise expert, it appears the proposed project is unlikely to generate short duration repetitive sounds. Compliance testing for SDRS which will be incorporated into the post-construction noise monitoring program (discussed in section 5.F. below) after project completion would provide assurance that SDRS is not occurring.

C. Tonal Sound. As defined in Chapter 375 §10(G) (24), a regulated tonal sound occurs when the sound level in a one-third octave band exceeds the arithmetic average of the sound levels in the two adjacent one-third octave bands by a specified dBA amount based on octave center frequencies. Chapter 375 requires that 5 dBA be added to the observed level of any defined tonal sounds that results from routine operation of a development.

The applicant's January 2012 report states that the turbines proposed for use, Vestas V112, carry Sound Level Performance Standard warranties that they will not produce a tonal sound as it is defined by Maine's Noise Regulations. In its review of the applicant's study on behalf of the Department, Mr. Guldberg confirmed that an analysis of the sound power octave band spectrum for the Vestas V112 reveals that it has no potential for creating a tonal sound as defined in the Department's Regulations.

D. Generation Lead Line. The proposed generator lead line is anticipated to produce a minor noise impact during operation.

E. Department Analysis. Mr. Guldberg reviewed all of the materials submitted by the applicant. He reviewed the original January 2012 Sound Level Assessment and submitted a report entitled *Peer Review of the Sound Level Assessment* dated April 13, 2012 and May 1, 2012. Mr. Guldberg concluded that the turbine maximum sound power level with a conservative total uncertainty factor was used in the analysis; the acoustic model and its assumptions are appropriate; the sound receiver locations are appropriate; the decibel contour maps adequately cover the potential impact area; and the Department's Noise Regulations have been properly interpreted and applied by the applicant.

F. Post construction Monitoring Program. The applicant did not propose to conduct post construction noise monitoring due to the lack of receptors in the area, unless there was a complaint. However, Mr. Guldberg recommended the Department require limited post construction monitoring at receptor R2 (the only protected location within one mile of any turbine) following the test methodology in the Saddleback Ridge Wind project Permit. The Saddleback Ridge Wind compliance monitoring program consisted of:

1. Post construction operation compliance testing representative of two separate regions around the project completed within the first year of operation. However, for Passadumkeag this can be reduced to a single location at receptor R2.
2. Compliance must be demonstrated based on the following outlined conditions for twelve, 10-minute measurement intervals per monitoring location meeting as set forth in Chapter 375.10 requirements. All data submittals must be accompanied by concurrent time stamped audio recordings.
    a. Compliance will be demonstrated when the required operating/test conditions have been met for twelve 10-minute measurement intervals at each monitoring location.
    b. Measurements must be obtained during weather conditions when wind turbine sound is most clearly noticeable, when the measurement location is downwind of the development, and maximum surface wind speeds less than or equal to 6 mph with concurrent turbine hub-elevation wind speeds sufficient to generate the maximum continuous rated sound power from the five nearest wind turbines to the measurement location. Measurement intervals affected by increased biological activities, leaf rustling, traffic, high water flow or other extraneous ambient noise sources that affect the ability to demonstrate compliance may be excluded from reported data. A downwind location is defined as within 45° of the direction between a specific measurement location and the acoustic center of the five nearest wind turbines.

c. Sensitive receiver sound monitoring locations must be positioned to most closely reflect the representative protected locations for purposes of demonstrating compliance with applicable sound level limits, subject to permission from the respective property owner(s). Selection of monitoring locations will require concurrence from the Department.
d. Meteorological measurements of wind speed and direction should be collected using anemometers at a 10-meter height above ground at the center of large unobstructed areas and generally correlated with sound level measurement locations. Results should be reported based on 1-second integration intervals, and be reported synchronously with hub level and sound level measurements at 10 minute intervals. The wind speed average and maximum should be reported from surface stations. Department concurrence on meteorological site selection is required. One second data should be available on request, as required.
e. Sound level parameters reported for each 10-minute measurement period should include A-weighted equivalent sound level, 10/90% exceedence levels, and ten 1-minute 1/3 octave band linear equivalent sound levels (dB). Short duration repetitive events should be characterized by event duration and amplitude. Amplitude is defined as the peak event amplitude minus the average minima sound levels immediately before and after the event, as measured at an interval of 50 ms or less, A-weighted and fast time response, i.e. 125 ms. For each 10-minute measurement period short duration repetitive sound events should be reported by percentage of 50 ms or less intervals for each observed amplitude integer above 4 dBA. Reported measurement results should be confirmed to be free of extraneous noise in the respective measurement intervals to the extent possible and in accordance with section (b) above.
f. Compliance data collected in accordance with the assessment methods outlined above for representative locations selected in accordance with this protocol must be gathered and submitted to the Department at the earliest possible opportunity after the commencement of operation, with consideration for the required weather, operations, and seasonal constraints, but no later than twelve months after commencement of operation. Subsequently, compliance data for each location must be submitted to the Department for review and approval once every successive fifth year until the project is fully decommissioned.
g. All operational, sound and meteorological data shall be retained by the applicant for a period of one year from the date of collection. All audio data collected shall be retained by the applicant for period of four weeks from the date of collection unless subject to a complaint filed in accordance with the complaint protocol outlined below, in which case the audio data shall be retained for a period of one year from the date of collection. All operational, sound, audio and meteorological data is subject to inspection by the Department and submission to the Department upon request.

G. Sound Complaint Response and Resolution Protocol. The applicant did not propose a formal complaint response protocol due to the lack of receptors in the area. The application does state that if a complaint is received, the applicant will investigate it and if it is determined to that the project may have been the cause, an ambient monitoring program will be proposed. The applicant must notify the

Department of any complaints within three business days of receiving them and must notify the Department of the outcome of its investigation within three business days of completion.

Based on the applicant's submissions, and the review of those submissions by the Department's expert, the Department finds that the proposed project will meet all applicable standards of Chapter 375 (10), including tonal sound and SDRS, and that the applicant has made adequate provisions for the control of excessive environmental noise from the proposed project. To ensure that the project operates in compliance with the permit and the Department's regulations, the Department finds that the applicant must implement the post-construction monitoring program, including the complaint response protocol. The applicant must investigate all complaints and must notify the Department of any complaints within three business days of receiving them and must notify the Department of the outcome of its investigation within three business days of completion; and the applicant must submit sound level monitoring reports in accordance with the post-construction monitoring program described above. Upon any finding of non-compliance by the Department, the applicant must take short-term action immediately to adjust operations to reduce sound output to applicable limits under Chapter 375(10). Within 60 days of a determination of non-compliance by the Department, the applicant must submit, for review and approval, a compliance plan that proposes actions to bring the project into compliance. The Department will review any such compliance plan and may require additional mitigation or alternative measures. If immediate actions to bring the project into compliance with the applicable noise standards are not taken or not successful while the process of generating and obtaining approval of a longer term plan is taking place, the Department may take such enforcement action as it finds appropriate to ensure compliance with the Site Law, applicable provisions of Chapter 375(10), and this permit.

6. SCENIC CHARACTER:

The Site Law and the NRPA both have standards pertaining to scenic impacts that must be satisfied in order to obtain a permit. The Site Law requires an applicant to demonstrate that a proposed project would fit harmoniously into the natural environment and would not adversely affect existing uses or scenic character. Pursuant to the NRPA an applicant must demonstrate that a proposed project would not unreasonably interfere with existing scenic, aesthetic or recreational uses of a protected natural resource. The Wind Energy Act further specifies those standards and declares that when expedited wind energy developments are being evaluated:

> [T]he [Department] 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 . . . 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...Title 38, section 484, subsection 3. 35-A M.R.S. §3452(1).

With regard to the facilities associated with an expedited wind energy development, such as substations, buildings, access roads and generator lead

lines, the Wind Energy Act, 35-A M.R.S. §3452(2), provides in pertinent part that:

> The [Department] shall evaluate the effect of associated facilities of a wind energy development in terms of potential effects on scenic character and existing uses related to scenic character in accordance with ...Title 38, section 484, subsection 3, in the manner provided for development other than wind energy development if the [Department] determines that application of the standard subsection 1 to the development may result in unreasonable adverse effects due to the scope, scale, location or other characteristics of the associated facilities. An interested party may submit information regarding this determination to the [Department] for its consideration. The [Department] shall make a determination pursuant to this subsection within 30 days of its acceptance of the application as complete for processing.

The Wind Energy Act, 35-A M.R.S. §3452(3), further provides that:

> A finding by the [Department] that the development's generating facilities are a highly visible feature in the landscape is not 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 [Department] 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.

The proposed wind project contains "generating facilities" including wind turbines and towers as defined by 35-A M.R.S. §3451(5) and "associated facilities" such as buildings, access roads, and substations, as defined by 35-A M.R.S. §3451(1). The proposed project is subject to the expedited wind energy development standards outlined above and, to the extent applicable, 38 M.R.S. §484(3). The project also contains a generator lead line which is replacing an existing line almost in its entirety.

As provided in the Wind Energy Act, 35-A M.R.S. §3452(2), the Department made a determination within 30 days of the receipt of the application that the potential effects of the generator lead transmission line on the scenic character and existing uses would be reviewed under the standards set forth in the Wind Energy Act (35-A M.R.S. §3452).

To address the scenic impact criteria, the applicant submitted a visual impact assessment (VIA) for the proposed project prepared by Terrence J. DeWan and Associates (TJD&A), entitled *Visual Impacts of a Generation Facility*. The assessment examines the potential scenic impact of the generating facility and associated facilities on Scenic Resources of State or National Significance (SRSNS) within eight miles of the proposed project using the evaluation criteria contained in the Wind Energy Act. The applicant also submitted a user intercept survey authored by Market Decisions and dated October 2011.

The applicant conducted a visual impact assessment within an eight-mile radius of the proposed generation facility portion of the project. The applicant's VIA for the

generating facility and associated facilities addresses the criteria set forth in 35-A M.R.S. §3452(3):

(A) The significance of the potentially affected scenic resource of state or national significance;
(B) The existing character of the surrounding area;
(C) The expectations of the typical viewer;
(D) The 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. SCENIC RESOURCES OF STATE OR NATIONAL SIGNIFICANCE

Scenic Resources of State or National Significance (SRSNS) are defined in 35-A M.R.S. §3451(9). The following is a description of what constitutes an SRSNS and the applicant's summary of potential impacts to SRSNS within eight miles of the proposed generating facilities:

1) National Natural Landmarks. National natural landmarks (NNL) are federally designated wilderness areas or other comparable outstanding natural and cultural features, such as the Orono Bog or Meddybemps Heath.

According to the National Park Service , there is one National Natural Landmark within eight miles of the Passadumkeag Wind Project: the 6,100-acre Passadumkeag Marsh and Boglands. The southeast tip of the area designated as a NNL touches the line that circumscribes area within eight miles of the generating facilities. The National Park Service's website describes the Passadumkeag Marsh and Boglands NNL as:

One of the largest, unspoiled wetlands in the state of Maine, Passadumkeag Marsh and Boglands contains a unique blend of bog and marsh communities. The marsh is partially bounded by eskers, including the classic Passadumkeag Esker, or Enfield Horseback, known world-wide as an example of glacial geology.

According to the Maine Department of Conservation's publication, *Conservation Lands in Maine*, the Passadumkeag Marsh and Boglands are now part of the Cold Stream/Ayers Brook Preserve, which is a series of interconnected tracts of land held by The Nature Conservancy in fee. The area is open for public use, although access is limited due to the nature of landscape. There are no developed trails and access by road is limited to small areas of frontage on Gould's Ridge Road and Enfield

Road. Public use of the area is primarily canoeing and hunting waterfowl. The applicant states that, at most, the top of one turbine may be visible from the preserve and it would appear as a very small object on a relatively flat horizon. The applicant concludes that the presence of the turbines should not have any visual impact on the Passadumkeag Marsh and Boglands.

The applicant did not identify any other NNL, federally designated wilderness areas, or other comparable outstanding natural and cultural features.

In response to questions raised by an interested person, the Department considered whether potential scenic impacts involving the portion of the Robbins Lumber Easement that is located within eight miles of the generating facilities should be evaluated as a SRSNS. The Department concluded that the features within the Robbins Lumber Easement are not comparable to NNL or federally designated wilderness areas, and did not require the applicant to submit information on potential impacts there.

2) Historic Resources. Historic Resources are properties 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.

The Old Tavern in Burlington, built in 1844, is listed on the National Register of Historic Places, and is within eight miles of the Passadumkeag Wind Project. The Old Tavern is a 2.5 story wooden frame structure with a gable roof, clapboard siding, and a covered porch that wraps around the front façade. The National Register nomination form, submitted in 1986, describes the tavern as a popular headquarters for hunters and fishermen in the area in its later years. It was first built to serve as a hotel for lumber crews and others who were working in the area. The building sits on a corner lot in a small town setting. In the nomination for its inclusion on the National Register, the building's relationship to the surrounding landscape is not mentioned as a significant factor; however, the integrity of the immediate setting is important to the Old Tavern. The setting around the Old Tavern is a classic cross-road village, with a church with a white-steeple across the street, and private residences, open fields/greens, and additional (formerly) commercial buildings nearby. The applicant states that the turbines would not be visible presently from this site due to intervening vegetation and that even if the turbines were to be visible, their relatively small size would not detract from the historic context. The building is 5.9 to 7.2 miles northwest of the project and separated by a dense stand of second growth vegetation. The primary function of the Old Tavern occurs inside the structure, and is not related to the scenic quality of the surrounding landscape. Based on its field investigation showing that the project would not be visible from the Old Tavern, the applicant states that the presence of the turbines should not have any visual impact on the Old Tavern.

3) National or state parks. There are no national or state parks within eight miles of the project.

4) Great ponds. A great pond are SRSNS if they are:

(a) 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
(b) One of the 280 great ponds in the State's unorganized or de-organized 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.

There are no great ponds within eight miles of the generating facilities listed in the "Maine's Finest Lakes" study. The scenic resources of three great ponds within eight miles of the project have been designated as significant in the Maine Wildlands Lakes Assessment (Assessment): Saponac Pond, Spring Lake, and Lower Pistol Lake. One great pond within eight miles of the generating facilities, Nicatous Lake, has been designated as outstanding from a scenic perspective in the Assessment.

SAPONAC POND

Saponac Pond (922 acres, elevation 190 feet above sea level) is two miles east of Burlington on Route 188 (Main Road). The pond is the second largest waterbody within eight miles of the generating facilities and the SRSNS closest to the project. The entire pond is within eight miles of the project. The northern third of the pond is located in Burlington; the southern portion is located in Grand Falls Township. The applicant's description of the shoreline is that it is mostly either private timberland or developed for house lots. The landscape within two miles of the pond consists of gently rolling wooded hills that are drained by boggy meandering streams and rivers. Folsom Ridge, on the northeast side of Route 188, rises approximately 300 feet above the level of the pond. The most distinctive landform in the vicinity is Passadumkeag Mountain, a broad U-shaped series of ridges to the south that rise over 1,250 feet above the pond.

The applicant's VIA indicates that there will be 10 to 14 turbines visible from Saponac Pond. The applicant concludes that based on the user intercept survey results, photo-simulations, viewshed maps, and roadway plans, the turbines, seen in profile on the ridgeline of Passadumkeag Mountain, and portions of the access road would have an adverse effect on the scenic value of Saponac Pond. However the applicant reports that there are relatively few recreational users of the pond. The applicant describes the users as primarily there for fishing and boating. The applicant concludes from its user intercept survey that most people would continue to return to the lake to enjoy boating, fishing, and similar recreational pursuits even with the turbines in view.

NICATOUS LAKE

Nicatous Lake (5,165 acres, elevation 347 feet above sea level) is the largest waterbody within eight miles of the project, although most of the lake is located greater than eight miles from the project. The lake is located southeast of Passadumkeag Mountain in T3 ND, T40 MD, and T 41 MD. Most of the shoreline (with the exception of several sporting camps and
private homes) is privately owned with conservation easements held by the Maine Bureau of Parks and Lands (BPL). Most of the islands in the lake are owned in fee by BPL. Nicatous Lake is a narrow waterbody approximately nine miles in length with a highly configured shoreline surrounded by low rolling hills. The northern third of the lake, which falls within eight miles of the project, is between 0.2 and 0.9 miles in width, somewhat narrower than the southern portion. The applicant states that although the axis of the northern portion generally runs northwest/southeast, the islands make it difficult to achieve a long view except along the western shoreline. The closest turbine in the project is located 5.6 miles west of this portion of the lake. The landforms surrounding the northern end of the lake rise up to 150 to 225 feet above the surface of the lake. One of the most noteworthy features of Nicatous Lake is the number of wooded islands found throughout its length. The applicant states that the islands, in combination with the surrounding hills, limit turbine visibility. There are no named mountains or other distinctive focal points within the foreground or midground in this portion of the lake.

The applicant's VIA states that between 1 and 9 turbines would be within 8 miles, and approximately 8 would be visible from portions of Nicatous Lake. The applicant states that based on the user intercept survey results, photo-simulation, and the viewshed maps, the project would have an adverse effect on the scenic value of the northern third of Nicatous Lake, which is recognized for its outstanding scenic resources. However, the applicant contends there are moderating factors that would affect the overall scenic impact. The applicant states that the distance of the project (5 to 8 miles) from the lake would make the turbines appear as relatively small to medium-sized objects on the horizon, and the low hills and wooded islands between the project and the viewer would provide intermittent screening so the entire project would never be visible from any one point on the lake. The applicant concludes from its user intercept survey that most people would continue to return to the lake for boating, fishing, and similar recreational pursuits even with the turbines in view.

LOWER PISTOL LAKE

Lower Pistol Lake (979 acres, elevation 323 feet above sea level) is in T3 ND, ten miles east of Burlington and between 4.9 and 6.2 miles from the project. Most of the land surrounding the lake is within the Passamaquoddy Indian Territory. Lower Pistol Lake is the westernmost waterbody in a chain of lakes that includes Upper, Middle, Side Pistol Lakes and Spring Lake. The landscape surrounding the lake consists of

gently rolling wooded hills that are drained by boggy meandering streams. An unnamed hill to the southwest rises 300 feet above the lake. Logging operations have created a network of woods roads that approach the lake from Pistol Green, a break in a distinct esker two miles west of the lake. Access to the lake is over woods roads. An informal boat put-in and campsite is located in an opening at the northwestern end of the lake. The lake is undeveloped, with no camps evident from field evaluation or aerial photographs. The Maine Atlas and Gazetteer indicates the presence of a campsite on one of the islands in the middle of the lake.

The applicant states that all 14 turbines will be visible from Lower Pistol Lake at a distance of 5 to 8 miles. The applicant's VIA states that based on its user intercept survey results, photo-simulations, and the viewshed maps, the turbines, seen in profile on the ridgeline of Passadumkeag Mountain, would have an adverse effect on the scenic value of Lower Pistol Lake. However, the applicant states that moderating factors would affect the overall scenic impact. The project would be visible in the background, which would make the turbines appear as relatively small to medium-sized objects on the horizon. The applicant concludes from its user intercept survey, the majority of the small number of users of the lake would continue to return to the lake to enjoy boating, fishing, and similar recreational pursuits even with turbines in view.

SPRING LAKE

Spring Lake (435 acres, elevation 336 feet above sea level) is in T3 ND, ten miles east of Burlington and between 4.9 and 6.2 miles from the project. Spring Lake is a waterbody in a series of lakes that includes Lower, Upper, Middle, and Side Pistol Lakes. The landscape surrounding the lake consists of gently rolling wooded hills rising about 200 feet above the lake, interconnected by boggy meandering streams. A small island is found at the southern end near the boat launch. Logging operations have created a discontinuous network of woods roads that approach the lake from Pistol Green on the west. Access is over a woods road on the south side of the lake, where there is a hand-carry boat launch site. The lake appears to be largely undeveloped, with only one camp evident from field evaluation or aerial photographs.

The applicant's VIA states that based on the photo-simulations, viewshed maps, and field investigation, the blades and tips of four turbines would be scarcely visible from Spring Lake, and therefore would have a very slight adverse effect on the scenic value of the lake.

WEST LAKE

A comprehensive visual analysis was not conducted by the applicant for West Lake, as it is not listed as significant or outstanding in the Assessment. The applicant states that there would be visual impacts to West Lake, which has a large number of camps. Camp orientation on the extensive southwest and northeast facing shorelines is not, for the most part, in the direction of the project. The applicant states that intervening vegetation and topography, coupled with the distance from project (5

miles to the nearest turbine at the closest point of visibility from the lake), would limit overall visual impact. The applicant concludes that owners on the north shore would not be able to see the project.

5) Scenic Rivers. A segment of a scenic river or stream is a SRSNS if it is identified as having unique or outstanding scenic attributes in Appendix G of the "Maine Rivers Study" published by the Department of Conservation in 1982. There are no rivers or streams within eight miles of the proposed project that are identified in the Maine Rivers Study as having unique or outstanding scenic attributes.

6) Scenic viewpoints on public land or trails. A scenic viewpoint is a SRSNS if it is 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 Agriculture, Conservation and Forestry designates by rule. The applicant states that there are no scenic viewpoints located on state public reserved land within eight miles of the proposed project, and there are no trails used exclusively for pedestrian use within eight miles of the proposed project.

7) Scenic turnouts. A scenic turnout is an SRSNS if it has been 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, subparagraph 1, paragraph G as a scenic highway. The applicant states that there are no scenic turnouts on any designated scenic highways constructed by the Department of Transportation within eight miles of the proposed project

8) Scenic viewpoints in the coastal area. To qualify as an SRSNS scenic viewpoints located in the coastal area, as defined by Title 38, section 1802, subsection 1, must be ranked as having state or national significance in terms of scenic quality in:

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

The applicants states that there are no scenic viewpoints located in coastal areas within eight miles of the proposed project.

B. SUPPLEMENTAL VISUAL IMPACT ANALYSIS

Following the second public meeting and at the request of the Department, the applicant submitted additional information concerning the impacts to the scenic character of Saponac Pond, as well as on the public use of the pond. One of the

submissions was a movie, created from near the middle of Saponac Pond, where the viewer could see a panoramic, 360 degree view of the pond. The movie also included simulations of the proposed turbines. The applicant also conducted further user intercept studies on the amount, nature and duration of the use of Saponac Pond by the public. The applicant conducted additional user intercept surveys on 13 days from August 8, 2012 to September 3, 2012. During the 86.25 hours of surveying, 24 boats, 42 boaters, and 9 incidental on-shore users were documented. The average time spent on the pond was 1.8 hours. The applicant concludes that the movie demonstrates that the pond is developed; the pond is lightly used; the extent of the use is limited; and that the 14 visible wind turbines will not have an unreasonably adverse impact on the scenic character of Saponac Pond.

C. PUBLIC COMMENT

The Department received numerous comments from the public concerning the scenic impact of the project. The Natural Resources Council of Maine (NRCM) commented that, "Passadumkeag Mountain is a stunning visual feature that dominates and greatly accentuates the scenic quality of the resource. On the other there is a single existing radio tower on the mountain. We find visible evidence of working forest use in general, and in this case, to be of much less consequence than the applicant—this use is nearly ubiquitous within the unorganized territories and can hardly be used in all of those cases to indicate a significant scenic detraction. It is also not a permanent scenic impact." NRCM also commented that, "The fact that 40% of users felt the project would have a negative impact and 25-30% of users thought they were less likely to return indicates a substantial impact on usage."

Several interested persons raised concern over the adverse visual impacts from the warning lights required by the Federal Aviation Administration (FAA) that would be placed on the top of some turbines. One interested person submitted a photograph of another wind power project in the state which showed the reflection of such lights on a lake. One interested person submitted written comments stating, "the pulsating, flashing, incessant night lighting required for safety by FAA is a very large part of the unacceptable, intrusive visual scenic impact." The interested person went on to request the Department require the applicant to install an Audio Visual Warning System (AVWS). These systems are designed to turn on the warning lights as a plane approaches the turbines. At other times, the warning lights are not lit. AVWS's are not yet approved for use on wind turbines by the FAA. To address these concerns, the applicant modified its application to propose, "If the FAA finalizes the standards for these systems prior to the construction of the Passadumkeag project, the Applicant will evaluate the use of such a system for the project. If it is both technically and economically feasible and approved by the FAA, the Applicant will install a radar controlled system for this project."

One interested person submitted a petition with over 300 signatures urging the Department to deny the project based on, among other things, the negative visual impacts on the surrounding area.

D. PEER REVIEW

The Department hired David Raphael of Landworks, an independent scenic consultant, to assist in its review of the scenic character section of the application. Mr. Raphael provided the Department with comments dated June 19, 2012 and September 7, 2012. Mr. Raphael, ranked six SRSNS in his review document entitled *Summary of Overall Scenic Impact* dated June 19, 2012. The six SRSNS were evaluated based on the statutory requirements of context, character significance, uniqueness, level of use, viewer expectations, visual impact and effect on public use. Mr. Raphael's analysis factored in proximity, distance from the project, duration and extent of the views, and visual absorption. Mr. Raphael rated each factor in an evaluation matrix, with a maximum point value of three, which is equal to high potential impact on the resource, down to zero, which indicates no potential impact on the resource.

In addition to the matrix evaluation, Mr. Raphael provided the following comments to the Department on the six SRSNS within eight miles of the proposed project:

1. Passadumkeag Marsh and Bog Lands:

   Only a very small portion of this area, 0.6 acres (the most southeasterly section of the bog land parcel) is within the eight miles of the project. Based on the viewshed analysis of both the applicant's VIA and the Landworks analysis of aerial photography for land cover, Mr. Raphael agrees with the applicant that it is expected that there would be no visibility of the project from this resource.

2. Old Tavern:

   The Old Tavern faces Route 188 (Main Road) and is oriented in a manner that the view of its external architectural qualities as well as access to the building's interior is from the west. From this direction the project would not be visible. Mr. Raphael concludes that any potential views of the project would be in the southerly to south easterly direction; however, it is unlikely that these views are possible due to the intervening vegetation and structures.

3. Saponac Pond:

   Saponac Pond has been developed with camps primarily along its northeastern and northwestern shores. There are up to 50 camps and year-round homes on the shores or in the vicinity of the pond. The pond shoreline is wooded with hardwoods and softwoods with the exception of clearing for camps and the short section where Route 188 (Main Road) follows the shoreline. Located short distances beyond the southern shoreline of the pond are openings in the forest cover as a result of logging activity.

   From Route 188, the closest turbines would be at a distance of between 4 and 4.8 miles; from the south shore of Saponac Pond the closest turbine would be at a distance of 2.3 miles. Mr. Raphael concludes that Saponac Pond, due to its proximity to the project site and the fact that there would be

visibility of the project from nearly all of the surface area of the pond, would be adversely impacted by this project. He states that many users who are boating or fishing on the pond would have the project potentially in view, with some exceptions due to the north-facing shorelines that would benefit from vegetative screening. He notes there is currently what is considered to be some inharmonious development, namely the communication tower, the sawdust pile and the timber harvesting activities, but the overall scenic rating may be attributable to the presence and prominence of the Passadumkeag Mountain itself. He acknowledges that Saponac Pond is not a pristine waterbody, the logging activity and existing mountaintop development contribute to the sense of the pond being in a developed area that has been used historically as a working landscape.

He states that from Saponac Pond the turbine array would be readily visible against the backdrop of sky and atmosphere. Given the horizontal extent of the project and the fact that it would be visible from most of the pond and that the view would comprise anywhere from 31° of the panorama at the simulation site up to 62° in the middle of the pond, he concludes that this project would dominate the views that many users would experience. The project would change the mountain landscape with clearings for the turbine pads and the service roads that would connect the turbine sites. It would add a distinct and unnatural form to this mountain landscape.

Mr. Raphael reviewed whether the project visibility would greatly diminish the use and enjoyment of the primary user group on the water. The applicant's user intercept survey results indicate that 41% of people surveyed indicate that if the project were built it would have a negative impact on their sense of enjoyment; 59% indicated it would not change their sense of enjoyment. Additionally, a number of users indicated that, for several different recreational activities such as swimming, boating, canoeing, kayaking, and ice fishing they would still be likely to return to the pond for those activities and they would still be likely to return to the pond to recreate after the project is developed.

Landworks concluded that this project would most definitely result in an adverse impact to the scenic quality of Saponac Pond. While the project would not directly affect the physical form and character of the pond itself, the project would be prominent and alter the visual quality and sense of place for the users and camp owners. Mr. Raphael noted mitigating factors including: the fact that the area already has been developed; the mountain environments are not pristine; and the relatively high number of respondents in the applicant's survey who indicated the project would not have a substantial impact on enjoyment and their willingness to return.

4. Nicatous Lake:

Approximately one half of this 9-mile long lake is within eight miles of the proposed project. The applicant's VIA indicates that the visibility of the project would be limited on the lake. Any visibility would be of only a few turbines in a narrow angle of view of approximately 10° when compared to an overall 360° panorama. Turbines range in distance from between 6.9 miles for the distance of the closest visible turbine and 9.5 miles for the

distance of the most distant visible turbines from the applicant's simulation view location. Mr. Raphael concludes that the developed area at the northern end of the lake and Porter Cove is unlikely to have any visibility of the turbines due to the intervening vegetation and topography. Mr. Raphael states that while there will be some visibility of the project from other points on the lake within the eight mile project radius, the distance to the nearest visible turbine is such that these turbines would be neither dominant nor serve as a focal point to draw the eye.

Passadumkeag Mountain can be discerned from viewing points within the eight mile project radius. Mr. Raphael comments that while atmospheric conditions and landscape qualities associated with the lake and shoreline would diminish the presence of the project, the project would have the potential to result in adverse impact of the scenic qualities and values present on the lake. He comments that although visibility of the project is limited by distance, the project would still add in an unnatural element to the view and horizontal line when seen from the shoreline or on the lake vantage points. After consideration of the applicant's user survey which says that 68% of the respondents indicated that the project would not change, or would have a positive impact, on their level of enjoyment, Mr. Raphael's states that the scale of the project's potential visual presence on this lake is not so large as to be disconcerting and unsettling. The evaluation matrix developed by Mr. Raphael indicates that the project's impact on scenic qualities and values for this lake would be a composite rating of 1.9, or a moderate impact.

5. Lower Pistol Lake:

Mr. Raphael observes that the general context for this particular lake is one of an undeveloped, remote pond; however, there is evidence of surrounding timber harvesting and forest resource management. With the surrounding low relief of this pond and the wooded nature of the shoreline, this area is not particularly unique nor does it rise to the level of being distinctive with regard to other similar lakes in the region. The lake is considered generally remote as it is only reachable by four-wheel drive or in the winter by snowmobile. The distance to the nearest turbine from this lake is over 5 miles at the northern end of the lake. Mr. Raphael concludes that on those portions of the lake where the turbines are visible, the range of view is approximately 8° when compared to an overall 360° panorama.

Mr. Raphael considered the applicant's user survey which stated that 62% of respondents indicated that their enjoyment of the pond would not be affected by the turbines.

Based on the limited extent of potential project visibility on this lake; the fact that a small percentage of the panorama would be occupied by the project; and consideration of a lack of impact on the quiet and solitude that the lake provides, Mr. Raphael's matrix result was a 1.4 and he concludes that there will be a low and moderate impact.

6. Spring Lake:

Mr. Raphael comments that Spring Lake is another seemingly remote, undeveloped pond, this one surrounded by both wetland systems and timber harvest operations. The shoreline is wooded with spruce, pine and northern hardwoods, and much like Lower Pistol Lake the topography around the lakes is comprised of low lands and low ridges with elevation differences of about 200 to 250 feet above the lake surface. The lake is primarily accessible with four-wheel drive or in the winter by snowmobiles. When topography and vegetation are taken into account, Mr. Raphael's viewshed analysis yields the conclusion that only a small portion of the lake, approximately 15% of the surface and shoreline area, would have visibility of the proposed project turbines from hub height and above. He concludes that visual impacts to Spring Lake resulting from this project would be minimal, if discerned at all. He commented that users of this lake would need to be, for the most part, looking in the right direction and would need to know what they were looking for in order to see the project.

Mr. Raphael's evaluation matrix yielded a score of 1.1, and given the distance to the project, the minimal visibility, the lack of users and difficult access, as well as the fact that the lake is not an outstanding scenic landscape, he concludes that it appears that the project's impacts would barely be adverse and the overall impact to scenic quality would be low.

The applicant's VIAs determined that the access roads, crane paths, turbine pads and Operation and Maintenance (O&M) building have a minimal possibility of being seen from any SRSNS or other public area. The applicant's study concluded that these associated facilities will not have an unreasonable adverse effect on scenic character and existing uses. Mr. Raphael and the Department reviewed this portion of the VIA and concur with the applicant's analysis.

E. PEER REVIEW OF THE SUPPLEMENTAL VISUAL IMPACT ANALYSIS

Mr. Raphael also reviewed the additional information provided by the applicant on the visual impacts to Saponac Pond. In that review, Mr. Raphael states, "Given the local recognition of Passadumkeag Mountain as an important regional landmark, a consideration that was not readily understood until the public [meetings], it is possible that one could reach the conclusion that the impact to this landmark could be considered unreasonable." However, Mr. Raphael notes that Passadumkeag Mountain itself is not a SRSNS and that Saponac Pond is lightly used.

F. DEPARTMENT ANALYSIS AND FINDINGS

The Department has considered the evidence on scenic impacts submitted by the applicant and by members of the public; information gathered during two public meetings; the comments of its independent consultant; observations made during site visits, and the evidence gathered by staff. Department staff conducted three site visits over the course of the evaluation of this application, with two of those site visits specifically including Saponac Pond.

1. Saponac Pond. During the course of its analysis of the evidence, on July 23, 2012, the Department requested the applicant to supplement the original VIA

submitted with additional information on potential scenic impacts of the proposed project to Saponac Pond. The Department specifically requested an additional photo-simulation be made from the pond near the southern shore which would be representative of views of users on the pond. In the original application, the applicant included a photo-simulation taken from the northern shore of the pond, near the boat launch on Route 188. The Route 188 location is approximately 4 to 4.8 miles from the closest turbine; ten turbines would be visible from that location and they would span approximately 52 degrees of the panorama. The south shore of Saponac Pond is approximately 2.3 miles from the closest turbine. Instead of an additional photo-simulation from near the southern shore, the applicant submitted as part of the Supplemental VIA a movie simulation from a location near the middle of Saponac Pond, approximately three miles from the nearest turbines. From this location in the middle of Saponac Pond, all fourteen turbines would be visible and they would span approximately 62 degrees of the panorama. Based on the applicant's movie, it appears that closer to the south shore of the pond the full height of all fourteen turbines would still be in view. The turbines would appear larger and they would span an even greater angle of view.

Department staff visited Saponac Pond on July 12, 2012, and September 6, 2012. During these site visits, Department staff observed the viewsheds from the pond, and the level of existing development around the shoreline of Saponac Pond. From the boat launch on Route 188 the view of Passadumkeag Mountain does not include views of the developed portions of the pond. In order to view the developed portions of the pond one has to be on the pond and looking away from the mountain. The applicant's scenic consultant and the Department's independent scenic consultant considered the developed portion of the shoreline and the mountain to be inharmonious development, and a mitigating factor for the scenic impact of the project. Both commented that the developed area would lessen the impact of the proposed development as it is not a pristine pond. The Department's analysis, however, takes into account that the view from Saponac Pond looking south toward the ridge of Passadumkeag Mountain is essentially void of any residential structures. Moreover, the existing radio tower on the ridge is a very minor visual impact and takes up only a very small percentage of the horizon. While the northern slope of Passadumkeag Mountain shows some logging activities, the Department does not consider these indications of logging activities as having a significant impact on the scenic character of the viewshed from Saponac Pond. The Department finds that these factors create a more natural setting than is portrayed by the applicant's VIA and Mr. Raphael's comment on development, and that the predominant existing scenic character of the viewshed from Saponac Pond is undeveloped.

In its analysis of the proposed project's potential effect on scenic character and related uses, the Department considered the six criteria in 35-A M.R.S. §3452 (A) through (F) and made the following findings regarding Saponac Pond:

(A) Significance of the SRSNS: The Department received comments from many people throughout the review process of this application that Saponac Pond is a valued and regionally significant scenic resource based on its boating, fishing and recreational uses, all of which are enhanced by the scenic quality of the views to the south. The Department finds that this lake is distinctive for its views of Passadumkeag Mountain in an area that does not have many comparable views.

(B) Existing character of surrounding area: Based on two site visits to Saponac Pond, the applicant's VIA and supplemental VIA, and aerial photographs of the area surrounding the pond, the Department concludes that the viewshed from Saponac Pond to Passadumkeag Mountain is undeveloped. The Department agrees with its scenic consultant's conclusion that the turbine array would be readily visible against the backdrop of sky and would dominate the views that many users would experience. The project's turbines, clearings for the turbine pads and service roads connecting the turbine sites would change the mountain landscape. It would add a distinct and unnatural form to this primarily natural mountain landscape. Therefore, the Department finds that the construction of this project on Passadumkeag Mountain would result in a significant change to the existing scenic character of Saponac Pond.

(C) User expectations: In the applicant's user intercept survey for Saponac Pond, respondents were asked to evaluate their expectations for 1) the number of people that may also use the lake, and 2) the level of development they will see along the pond. Most respondents expressed the view that they expect the lake to be uncrowded, and that they expect the pond to be undeveloped. The Department concludes that the proposed project will have a substantial effect on users' expectations of Saponac Pond, since the proposed project will dramatically change the level of development as viewed from the pond.

(D) Project purpose and context: The purpose of the project is to produce electricity through the construction of wind turbines on Passadumkeag Mountain. The setting around the proposed project is a mostly undeveloped mountain that dominates the view from Saponac Pond that includes minimal development in the views to Passadumkeag Mountain.

(E) Nature of uses and effects on public use and enjoyment: Based on the user surveys submitted by the applicant, the typical users are boaters and people that are fishing. The Department finds that the number of people using a resource should not be determinative, as in many cases, a small number of users heighten the users' enjoyment of the resource, especially in regard to the enjoyment of the aesthetics of a place. The fact that the pond may not be used by a large number of people does not diminish the importance of the limited users of the pond. The applicant's materials demonstrate that a majority of the turbines will be visible from 97% of Saponac Pond. Thus, users of the pond would have views of the turbines for the duration of their visits. Upon review of the applicant's user intercept surveys, the Department finds that the 41% of respondents that indicated that the proposed project would have a negative impact on their enjoyment of the pond is a substantial percentage.

(F) Scope and scale: Passadumkeag Mountain is the dominant visual feature as viewed from Saponac Pond. As stated above, the Department finds that all 14 turbines would be visible from a majority of the views on Saponac Pond. Some of the turbines will be as close as 2.5 miles to the pond, making these prominent features of the development large aspects of the views from the pond. The extent of the view will range from 52 degrees to 62 degrees of the total panorama. Based on the topography of the area and the dominance of Passadumkeag Mountain in the most scenic aspect of the landscape, the Department finds that the construction of the proposed project on the mountain's ridge would have a large scale adverse effect on the scenic character of Saponac Pond.

2. Other SRSNS. The Department finds that the generating facilities portion of the project will not have an unreasonable adverse effect on scenic character or

existing uses related to scenic character of the other SRSNS; specifically, the Passadumkeag Marsh and Boglands, the Old Tavern, Nicatous Lake, Lower Pistol Lake, Spring Lake, or West Lake.

The Department finds that the applicant has made reasonable accommodations to fit the associated facilities portion of the development into the natural environment and that this aspect of the project alone will not have an unreasonable adverse effect on scenic character or existing uses related to scenic character of scenic resources of state or national significance, or other existing uses in the area.

In enacting the NRPA and the Site Law, the Legislature found that Maine's great ponds have great scenic beauty and unsurpassed recreational and environmental value to citizens of the State. The Legislature voiced its concern about the substantial threat posed by the potential cumulative effect of frequent minor and occasional major impacts to these resources. The Department considers existing impacts to a resource in assessing whether the additional impacts of a proposed project affecting the resource would be unreasonable. The review of topographical maps and a staff site visit to Saponac Pond showed that 9 turbines from the Rollins Wind project are clearly visible from Saponac Pond. These turbines are visible to the north to users of the resource. The applicant's proposed project would add another 14 turbines which would be visible, making a total of 23 turbines visible from most of Saponac Pond. This results in a substantial increase in the degree of the panorama that would contain wind turbines on a pond of significant scenic beauty. In the Wind Energy Act, the Legislature includes the number of wind turbines visible from a SRSNS as a factor in an assessment of visual impacts. In this case Saponac Pond has already sustained an impact to its scenic character from the construction of wind turbines nearby. The cumulative impact of the addition of 14 turbines visible on the opposite side of the pond on the scenic character and the uses related to scenic character would be an unreasonable adverse impact given the nature and scenic qualities of Saponac Pond.

The Department finds that the generating facilities portion of the project would have an unreasonable adverse effect on the scenic character and the existing uses related to the scenic character of Saponac Pond. As set forth above, the Department has not based this determination that the proposed project has an unreasonable adverse effect on the scenic character of Saponac Pond solely on a finding that the generating facilities are a highly visible feature in the landscape. The resource's significance to its users, the predominant role of the mountain itself in the value of the scenic resource, the expectations of the viewers, and the nature of the affected uses all form the basis of the finding of an unreasonable adverse impact.

7. WILDLIFE AND FISHERIES:

Applicants for Site Law and NRPA permits are required to demonstrate that the project would not unreasonably harm wildlife and fisheries, any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life. The applicant submitted the results of a series of ecological field surveys conducted by Stantec Consulting (Stantec), including wildlife surveys; wetland delineations; rare, threatened, and endangered plant and animal species surveys; and vernal pool surveys within the project area, including the area affected by the 13 mile generation lead line. During the preparation of the

surveys and other material in support of the application, Stantec consulted with the Department and other natural resource review agencies.

A. Significant Vernal Pools. Stantec conducted vernal pool surveys within the project area in the spring of 2011. Stantec identified one vernal pool within the transmission line portion of the project area which would be being impacted by clearing. The clearing would impact less than 25% of the critical terrestrial habitat of the vernal pool and those impacts have been approved under Permit-By-Rule (PBR) #53622.

B. Inland Waterfowl and Wading Bird Habitat. The turbine portion of the project would not impact any Inland Waterfowl and Wading Bird Habitat (IWWH).

The proposed collection line would cross three sections of IWWH. Two of the crossings would result in an increase of more than 10% of the developed area and will result in a total impact of 9,800 square feet adjacent to existing cleared area and a road. The impacts to a third area of IWWH, which result in an increase of less than 10% of the developed area, meet the standards of Chapter 305 Permit by Rule Standards, and were permitted under PBR #53671.

The applicant proposes to construct the collection line to be compliant with the U.S Fish and Wildlife Department's Avian Protection Plan (APP) Guidelines. This would include cutting only vegetation that could grow to within 15 feet of a conductor in the next three to four years. If possible the applicant would leave two to three snags within the collection line corridor to provide nesting habitat. The applicant would also locate poles in upland areas whenever possible in order to minimize impacts to the IWWHs.

The Department finds that the impacts to IWWHs have been minimized by the proposed vegetation management plan and the effort to locate poles in upland areas.

C. Deer Wintering Area. Neither the generating facilities nor the collection line portions of the project would impact any Deer Wintering Areas as defined under the Natural Resources Protection Act.

D. Rare, Threatened, and Endangered Species. Stantec conducted a survey of the area within two miles of the proposed project for plant and animal species that are state or federally listed as Rare, Threatened, and Endangered. No Rare, Threatened or Endangered plant or animal species were found.

E. Salmon Habitat Streams. The proposed project would not impact any locations of Critical Habitat for Atlantic Salmon as defined by the Department of Marine Resources.

F. Birds and Bats. The applicant retained Stantec to conduct bird and bat surveys to identify which species occurred in the area of the proposed project; the extent of the use of the site by such species; and potential impacts of the proposed project. Stantec conducted specific avian surveys, including raptor migration surveys and eagle use surveys. It also compiled a list of bird species observed on the site. In the spring of 2011, Stantec conducted 20 nights of nocturnal radar, acoustic bat and raptor migration surveys. In the summer of 2011, breeding bird surveys were done.

In the fall of 2011, 12 days of raptor surveys were conducted. In addition to the fall 2011 surveys, 12 survey days were conducted in late August/early September and mid-October/early November to document eagle activity and migration.

The majority of the bat calls identified were in the *Hoary* bat family (957 out of 1133 calls) followed by unknown calls (76 out of 1133), and *Myotis* species (48 out of 1133). A total of 171 observations of raptors were documented. Three Bald Eagles were observed.

MDIFW recommends that, to minimize potential impacts to bat species found at the project site, operational control measures should be established for the proposed project. MDIFW recommends that the applicant be required to curtail the cut-in speed for all turbines to 5.0 meters/second (m/s) between April 20 and October 15 from one-half hour before sunset to one-half hour after sunrise. Under this recommendation, during times when the winds are less than the 5.0 m/s threshold, turbine blades would not rotate, thus reducing risk of fatality for bats. If at any point during this time period the wind speed increases to greater than 5.0 m/s, the turbine blades would be free to rotate. These curtailment measures are intended to be in place from day one of operation for the life of the project.

After consultation with MDIFW regarding curtailment and the potential for bat mortality, the applicant agreed to seasonal curtailment of the turbine cut-in speed to 5.0 m/s on all turbines starting one-half hour before sunset to one-half hour after sunrise for the life of the project. The applicant proposes that this curtailment be required from May 1 to September 30, and only when the ambient temperature is above 50 degrees F from June 1 to August 31, and when above 32 degrees F in May and September. If at any point during this time period the wind speed increases to greater than 5.0 m/s the turbine blades would be free to rotate. MDIFW has commented that this level of curtailment would be adequate.

Regarding post-construction monitoring of bird and bat mortality, MDIFW further stated that assuming an April 20 to October 15 search window, MDIFW would consider it adequate for searches to take place weekly between April 20 and May 31 and daily between June 1 and September 30, with a return to a weekly schedule from October 1 through October 15. The applicant responded that because post-construction monitoring at wind power projects is an evolving science, they will work with MDIFW to finalize a monitoring methodology prior to the start of operation. MDIFW agreed to work with the applicant to develop a final monitoring methodology.

The Department finds that impacts to birds and bats have been minimized provided the applicant complies with the curtailment requirements above and submits a final mortality monitoring methodology to the Department for review and approval prior to the commencement of operation.

No fisheries impacts are anticipated from the proposed project.

The Department finds the project will not result in an unreasonable impact on fisheries and wildlife, or habitat protected by the NRPA provided turbine operation is curtailed as outlined above. If post construction monitoring indicates an unreasonable impact on birds, bats and raptors, the Department, in conjunction with

MDIFW, may require modified operation of the wind project, including the curtailment of turbines, as necessary.

8. HISTORIC SITES AND UNUSUAL NATURAL AREAS:

The Maine Historic Preservation Commission (MHPC) reviewed the proposed project and stated that it will have no effect upon any structure or site of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966.

The Maine Natural Areas Program (MNAP) database does not contain any records documenting the existence of rare or unique botanical features on the project site and, as discussed in Section 6, MDIFW did not identify any unusual wildlife habitats located on the project site.

Based on information in the application, MHPC's review, and MNAP's review, the Department finds that the proposed project will not have an unreasonably adverse effect on the preservation of any historic sites or unusual natural areas either on or near the project site.

9. BUFFER STRIPS:

The applicant proposes six basic buffer strip types around access roads, turbine pads and the generator lead line for storm water management, habitat protection, phosphorus control and waterbody protection. Buffers for the proposed development include no disturbance buffers around roads and turbines, stream buffers, Atlantic Salmon stream buffers, Significant Vernal Pool buffers, and Inland Waterfowl and Wading Bird Habitat buffers. The generator lead line ROW will be continuously vegetated with grass and shrubs, and several methods will be used to maintain buffers along the corridor. The applicant will maintain these buffers according to the proposed Vegetation Management Plan. All buffer strips will be clearly marked prior to construction.

1. Access Road, Crane Path and Turbine Buffers. The applicant proposes to maintain forested buffers along the access road and around the turbines. Those buffers provide both a visual screen and storm water and phosphorus treatment. The storm water and phosphorus treatment measures are more fully described in Finding 11. Most of the area of the turbine pads will be revegetated after construction is complete providing additional buffering.
2. Stream Buffers. There are 18 streams along the generator lead line, 5 of which have standard stream buffers proposed. These buffers are 25-feet wide, measured from the top of the bank of the stream. No poles are proposed to be located in the stream buffer area. During initial construction, any vegetation that must be removed would be done by hand-cutting or traveling or reaching into the buffer using low ground pressure mechanized harvesting equipment. Following construction, any disturbed areas would be graded to the original contour and stabilized with permanent seeding.
3. Salmon Stream Buffers. There are 13 streams which contain, or may contain, habitat for Atlantic Salmon. Buffers around these streams are 100-feet wide and only trees that are capable of growing within 15 feet

of the conductor within the next 3 years would be removed. The applicant has attempted to plan the placement of poles as close to the edge of these buffers as is practical, thereby elevating the line above the stream to the greatest extent and reducing the number of trees that must be removed. Topping of trees is the preferred method of vegetation maintenance unless the tree is dead or dying. No other vegetation would be removed. Removal of capable species would be by hand-cutting or with low ground pressure tree harvesting equipment. No refueling, including chain saws, would be allowed in the Salmon Stream Buffers.

4. Significant Vernal Pool (SVP) Buffers. One SVP would be impacted by the generator lead line. The applicant proposed to maintain a minimum 100-foot vegetated buffer around this pool. Due to the limited reach of harvesting equipment, access ways may be needed to remove capable vegetation. Low ground pressure harvesting equipment would enter the buffer in a manner to minimize disturbance. Mats would be utilized if necessary to prevent excessive rutting or other soil disturbance. No equipment would travel within the SVP depression. Only capable species greater than 8 to 10 feet tall would be removed. Clearing would not take place between April 1 and June 30 of any calendar year within 25 feet of the vernal pool depression or with any wheeled or tracked equipment.
5. Inland Waterfowl and Wading Bird Habitat (IWWH). The generator lead line would cross three IWWHs along its proposed route. During initial construction, the applicant proposes to only remove capable species. Topping of trees is the preferred method of vegetation maintenance unless the tree is dead or dying. No other vegetation would be removed. Removal of capable species would be by hand-cutting or with low ground pressure tree harvesting equipment. Where possible, the applicant would leave two to three snags per 500 linear feet of corridor to provide nesting habitat for waterfowl. Initial ROW clearing would be done during frozen conditions whenever practical. No clearing would take place between April 15 and July 15 in any calendar year, unless approved by the Department and MDIF&W.
6. Vegetation Management Plan (VPM). The applicant proposes to utilize a Post Construction Vegetation Plan, prepared by Stantec Consulting, for the Passadumkeag Wind Project, dated October 2011, which includes routine maintenance along the ROW to prevent vegetation from getting too close to the conductor. These plans summarize vegetation management maintenance methods and procedures that would be utilized by the applicants for transmission line corridor and collector lines. These plans describe restrictive maintenance requirements for natural resources and significant wildlife habitats. The plans also include procedures for managing or removing osprey nests built on power line structures, describe a system for identifying restricted areas, and summarize training requirements for construction personnel.

The Department finds that the applicant has made adequate provision for buffer strips based on the post-construction VMP and the proposal to clearly mark on the ground, prior to construction, all visual screening buffers, stream buffers and other resource buffers, and the stormwater buffers. Additionally, prior to operation the

applicant must record all deed restrictions for stormwater buffers and submit the deed recordings along with plot plans to the Department within 60 days of the recordings.

10. SOILS:

The applicant submitted a soil survey map and report and a geotechnical report based on the soils found at the project site. This report was prepared by a certified soils scientist and reviewed by staff from the Department's Division of Environmental Assessment (DEA) of the Bureau of Land and Water Quality (BLWQ). DEA also reviewed the applicant's Blasting Plan (dated February 2012) which outlines the proposed procedures for removing rock and ledge and submitted the following comments:

> The copy of the blasting plan received for review does not include a standard for ground vibration, although the proposed standards for air overpressure, flyrock control, and record keeping are generally consistent with those required by the Department. Prior to construction, the applicant must revise and submit for review and approval a revised plan including the Department blasting standards in 38 MRSA 490-Z(14), and specifically stating that ground vibration at offsite structures may not exceed the limits shown in Figure B-1 of Appendix B, U.S. Bureau of Mines Report of Investigations 8507.

DEA also stated that the application does not contain a procedure to deal with any potentially reactive rock that may be encountered during construction, but based on a site visit, did not expected large volumes of this material to be encountered. Small amounts of reactive rock may be managed successfully by segregating the potentially reactive rock types from other rock types that are acceptable for use in well-drained fill slopes or road beds, and burying the reactive rock in other areas of the site that do not discharge to nearby surface waters.

Based on the applicants' soils reports and blasting plan, and DEA's review comments, the Department finds that the soils on the project site present no limitations to the proposed project that cannot be overcome through standard engineering practices provided that prior to construction, the applicant must submit a revised blasting plan to the BLWQ for review and approval.

11. STORMWATER MANAGEMENT:

The proposed project includes approximately 21.47 acres of impervious area and 97.38 acres of developed area. It lies within the watersheds of the Passadumkeag River, Saponac Pond and Great Pond. The applicant submitted a stormwater management plan based on the Basic, General, Phosphorus, and Flooding standards contained in Department Rules, Chapter 500. The proposed stormwater management system consists of vegetated buffers for the turbine site and underdrained soil filters at the O&M building.

A. Basic Standards:

(1) Erosion and Sedimentation Control: The applicant submitted an Erosion and Sedimentation Control Plan (Section 14 of the application) that is based on the performance standards contained in Appendix A of Chapter 500 and the Best Management Practices outlined in the Maine Erosion and Sediment Control BMPs, which were developed by the Department. This plan and plan sheets containing erosion control details were reviewed by, and revised in response to the comments of, the Division of Watershed Management (DWM) of the Bureau of Land and Water Quality.

Erosion control details must be included on the final construction plans and the erosion control narrative must be included in the project specifications to be provided to the construction contractor.

(2) Inspection and Maintenance: The applicant submitted a maintenance plan that addresses both short and long-term maintenance requirements. This plan was reviewed by, and revised in response to the comments of, DWM. The maintenance plan is based on the standards contained in Appendix B of Chapter 500. The applicant will be responsible for the maintenance of all common facilities including the stormwater management system.

(3) Housekeeping: The applicant states that the proposed project will comply with the performance standards outlined in Appendix C of Chapter 500.

Based on DWM's review of the applicant's erosion and sedimentation control plan and the maintenance plan, the Department finds that the proposed project would meet the Basic Standards contained in Chapter 500(4)(A), provided the applicant conducted a pre-construction meeting and retained a third-party inspector to oversee project construction.

B. General and Phosphorus Standards:

The General Standard must be met for the portion of the project which drains to the Passadumkeag River.

The applicant's stormwater management plan includes general treatment measures to mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater, and mitigate potential temperature impacts. The proposed portion of the project which would drain to the Passadumkeag River is a road that meets the definition of "a linear portion of a project" in Chapter 500. For that area, the applicant is proposing to control runoff volume from no less than 75% of the impervious area and no less than 50% of the developed area

The forested, no-disturbance stormwater buffers are proposed to be protected from alteration through the execution of a deed restriction. The applicant proposes to use the deed restriction language contained in Appendix G of Chapter 500 and submitted a draft deed restriction that meets Department standards. The Declaration of Restrictions must be recorded prior to the start of operation, and the applicant must submit a copy of the recorded deed restriction including the plot plan to the Department within 60 days of its recording. Prior to beginning

construction in an area, the location of forested buffers must be permanently marked on the ground. Methods of marking on the ground must include, but are not limited to, a combination of field flagging and clearly marked permanent signage.

The following minor adjustments may be made during construction without advance notice to the Department provided they do not impact protected resources and are reflected in the final as-built drawings: changes that result in a reduction in impact and/or footprint (such as a reduction in clearing or impervious area, and elimination of structures or a reduction in structure size); location of a structure within the identified clearing limits; the type of foundations used; additional drainage culverts, level spreaders or rock sandwiches; changes to culvert size or type provided that the culvert does not convey a regulated stream and that the hydraulic capacity of the substitute culvert is greater than or equal to that of the original; and changes of up to 10 feet in the base elevation of a turbine vertically as long as the change in elevation does not result in increased visual impacts or changes to the stormwater management plan.

Additionally, the following minor adjustments may be made upon prior approval by the third party inspector or Department staff, and do not require a revision or modification of the permit but must be reflected in the final as built drawings: minor changes that do not increase overall project impacts or project footprint and which do not impact any protected resources as long as any new areas of impact have been surveyed for environmental resources and do not affect other landowners. These changes include adjustments to horizontal or vertical road geometry that do not result in changes to the stormwater management plan; a shift of up to 100 feet in a turbine clearing area; and adjustments to culvert locations based on field topography.

The portions of the project which would drain to Saponac Pond and Great Pond are required to meet the Phosphorus Standards.

Because of the proposed project's location in the watersheds of Saponac Pond and Great Pond, the applicant proposes to treat stormwater runoff from the project site to meet the phosphorus standard outlined in Chapter 500(4)(C). The applicant's phosphorus control plan was developed using methodology developed by the Department and outlined in "Phosphorus Control in Lake Watersheds: A Technical Guide for Evaluating New Development". For this project, the Permitted Phosphorus Export is 18.0123 pounds of phosphorus per year for Saponac Pond and 7.0650 pounds of phosphorus per year for Great Pond. The applicant proposes to remove phosphorus from the project's stormwater runoff by utilizing buffers, as shown on the set of plans referenced in Finding 1. The predicted phosphorus export for the project site based on the applicant's model is 17.8462 pounds per year of phosphorus for Saponac Pond and 7.0626 pounds per year of phosphorus for Great Pond. The Department finds that the proposed stormwater treatment would be able to reduce the export of phosphorus in the stormwater runoff below the maximum permitted phosphorus export for the site.

The stormwater management system proposed by the applicant was reviewed by, and revised in response to comments from, DWM. After a final review, DWM commented that the proposed stormwater management system is designed in accordance with the Chapter 500 General and Phosphorus Standards provided that

prior to beginning construction in an area, the location of forested buffers must be permanently marked on the ground and the deeds for the forested, no disturbance buffers are recorded in the registry of deeds prior to the start of operation and submitted to the Department within 60 days of recording.

Based on the stormwater system's design the Department finds that the applicant has made adequate provision to ensure that the proposed project will meet the Chapter 500 General and Phosphorus Standards.

C. Flooding Standard:

The applicant is proposing to utilize a stormwater management system based on estimates of pre- and post-development stormwater runoff flows obtained by using Hydrocad, a stormwater modeling software that utilizes the methodologies outlined in Technical Releases #55 and #20, U.S.D.A., Soil Conservation Service and retains stormwater from 24-hour storms of 2-, 10-, and 25-year frequency. The post-development peak flow from the site would not exceed the pre-development peak flow from the site and the peak flow of the receiving waters would not be increased as a result of stormwater runoff from the development site.

DWM commented that the proposed system is designed in accordance with the Flooding Standard contained in Chapter 500(4)(E) .

Based on the system's design and DWM's review, the Department finds that the applicant has made adequate provision to ensure that the proposed project will meet the Chapter 500, Flooding Standard for peak flow from the project site, and channel limits and runoff areas.

The Department further finds that the proposed project would meet the Chapter 500 standards for: (1) easements and covenants; (2) management of stormwater discharges; (3) discharge to freshwater or coastal wetlands; and (4) threatened or endangered species.

12. GROUNDWATER:

The project site is not located over a mapped sand and gravel aquifer. The proposed project does not propose any withdrawal from, or discharge to (except for a single septic system described in Finding 13) the groundwater.

The applicant submitted a Spill Prevention, Control and Countermeasures plan (SPCC) detailing steps to be taken to prevent groundwater contamination during construction, however the applicants did not submit an SPCC plan for on-going operation of the project. The applicant stated that potential contamination during construction would be fuel and hydraulic and lubricating oils used in operation vehicles and construction equipment. The SPCC plan includes general operational requirements, storage and handling requirements, and training requirements to prevent spilling of oil, hazardous materials or waste. The plan also sets out spill reporting and cleanup requirements should such an event occur. No herbicides would be used, stored, mixed or transferred between containers within designated buffers or within 25 feet of streams or wetlands with standing water. Designated buffers, areas within 25 feet of streams and wetlands with standing water would be flagged prior to construction.

Prior to operation of the development, the applicant must submit an operational SPCC Plan for the on-going operation of the project to the Department for review and approval.

The Department finds that the proposed project would not have an unreasonable adverse effect on ground water quality provided the applicant flag designated buffers, areas within 25 feet of streams and wetlands with standing water and submit, prior to operation, the operational SPCC Plan to the Department for review and approval.

13. WATER SUPPLY:

Water for the development would be supplied by an individual well at the O&M building. The applicant submitted an assessment of groundwater supplies that are available on the project site. This assessment was prepared by a certified geologist and was reviewed by, and revised in response to comments from, the Department's Division of Environmental Assessment (DEA).

The applicant also proposes to use up to 20,000 gallons of water per day for dust control. DEA reviewed this portion of the application and stated that this water could be drawn from one or more of the lakes in the project vicinity without affecting the affecting the water level of the lake of lakes, but the applicant would be required to identify, prior to construction, the access points for trucks to obtain water from the site, in order to ensure that all points are stable locations, suitable for repeated access by large vehicles without creating excessive erosion or issues with bank stability, such as boat ramps or bridges.

The Department finds the applicant has made adequate provision for securing and maintaining a sufficient and healthful water supply, provided the applicant identifies locations for water withdrawal for dust control prior to use.

14. WASTEWATER DISPOSAL:

Wastewater would be disposed of by an individual subsurface wastewater disposal system located at the O&M building. The applicant submitted the soil survey map and report discussed in Section 10. The individual system would be required to be designed to meet the requirements of the Maine State Plumbing Code. Based on a review of the information submitted by DEA, a subsurface wastewater disposal system capable of handling septic waste from the O&M building could be constructed on this site.

The Department finds the applicant has made adequate provisions for wastewater disposal.

15. SOLID WASTE:

The proposed project is anticipated to generate minor amounts of general solid waste per year. All general solid wastes from the proposed project would be disposed of at Penobscot Energy Recovery Company (PERC), which is currently in substantial compliance with the Maine Solid Waste Management Rules.

All marketable timber would be removed from the project site. A single 1-acre stump dump may be located on the project site. All stumps and grubbings generated would be disposed of on site, either chipped or burned, with the remainder to be worked into the soil, in compliance with the Maine Solid Waste Management Rules.

The proposed project would generate approximately 465 cubic yards of construction debris and demolition debris. All construction and demolition debris generated would be disposed of at Juniper Ridge, which is currently in substantial compliance with the Maine Solid Waste Management Rules.

The Department finds the applicant has made adequate provisions for solid waste disposal.

16. FLOODING:

The applicants do not propose any structure other than two poles within a flood zone. As discussed in Finding 11, the Department has reviewed the applicant's plans for stormwater management and found that the project would be unlikely to have an adverse impact on downstream flooding. Based on the nature of the project and the minimal structures in the flood zone, the Department finds that the proposed project would be unlikely to cause or increase flooding or cause an unreasonable flood hazard to any structure.

17. WETLAND IMPACTS:

The applicant retained Stantec Consulting to locate wetlands and waterbody resources on the proposed project site. The results of the applicant's surveys for wetlands and waterbodies which may be affected by the turbine sites, access roads and collector lines are summarized as follows:

- 173 wetlands were identified along the proposed access roads and the electrical collector line.
- 35 jurisdictional streams were identified, including 23 perennial streams. No streams are proposed to be crossed;
- 67 vernal pools were identified, including 3 significant vernal pools, and 4 potentially significant vernal pools, only one of which would be impacted, as discussed in Section 7.
- 34 wetlands were identified that meet the definition of wetlands of special significance.

Freshwater Wetland Impacts.

The applicant is proposing 1.2 acres of vegetation conversion in wetland areas for the turbine sites, access roads and collector lines. No permanent loss of freshwater wetland through filling is proposed.

The Department's Wetlands and Waterbodies Protection Rules, Chapter 310, provide the framework for the Department's analysis of whether a proposed project's impacts to the protected resources would be unreasonable as that term is used in the NRPA, and whether the project meets the NRPA licensing criteria. A proposed project's impacts may be found to be unreasonable if the project would

cause a loss in wetland area, functions and values for which there is a practicable alternative that would be less damaging to the environment. For this aspect of the Department's review an applicant must provide an analysis of alternatives to the project.

A. Avoidance. The applicant submitted an alternatives analysis for the wetland and stream impacts of the proposed project completed by Stantec Consulting dated February 2012. The applicant states that the proposed project was designed to avoid wetlands to the greatest extent possible and the applicant proposes to site the proposed turbines and associated access roads in predominantly upland areas. The applicant used existing roads when possible to avoid any new impacts to natural resources. Any new roads that were necessary were designed to avoid wetlands if practical. The construction and maintenance of the electrical transmission line would primarily result in a permanent change in vegetation cover type in wetland areas.

B. Minimal Alteration. In the determination of whether any adverse impacts from a project are unreasonable, the Department looks at whether the amount of wetland and waterbodies to be altered has been kept to the minimum amount necessary for meeting the overall purpose of the project. The applicant is proposing construction practices to reduce erosion, maintain stream and vernal pool buffers and reduce habitat fragmentation by the proposed co-locating of the majority of the generator lead transmission line. Prior to the start of construction, the location of stream buffers, wetlands, IWWH, and vernal pool buffers must be marked on the ground.

C. Compensation. Compensation may be required to achieve the goal of no net loss of wetland functions and values. The applicant submitted an assessment of the functions and values of wetlands impacted by the proposed project prepared by Stantec. The assessment determined that the primary functions and values of the impacted wetlands would be wildlife habitat, with some levels of floodwater alteration, sediment/toxicant retention, and production export. In this case, it appears that the conversion of the vegetative cover type in wetlands affected by the project would not result in a loss of functions and values so compensation would not be required.

The Department finds the applicant has avoided and minimized wetland and water body impacts to the greatest extent practicable, and that the proposed project represents the least environmentally damaging alternative that meets the overall purpose of the project provided that prior to the start of construction, the location of stream buffers, wetlands, IWWH, and vernal pool buffers must be marked on the ground.

18. SHADOW FLICKER:

In accordance with 38 M.R.S. §484(10), an applicant must demonstrate that the proposed wind energy development has been designed to avoid unreasonable adverse shadow flicker effects. Shadow flicker caused by wind turbines is defined as alternating changes in light intensity caused by the moving blade casting shadows on the ground and stationary objects. Shadow flicker is the sun seen through a rotating wind turbine rotor. Shadow flicker does not occur when the sun

is obscured by clouds or fog or when the turbine is not rotating. The spatial relationships between a wind turbine and receptor, as well as wind direction which cause the turbines to rotate, are key factors relating to shadow flicker occurrence and duration. At distances of greater than 1,000 feet between wind turbines and receptors, shadow flicker usually occurs when the rotor plane is in-line with the sun and receptor (as seen from the receptor), the cast shadows would be very narrow (blade thickness) and of low intensity, and the shadows would move quickly past the stationary receptor. When the rotor plane is perpendicular to the sun-receptor "view line," the cast shadow of the blades would move within a circle equal to the turbine rotor diameter.

The applicant submitted a shadow flicker analysis with its application. The applicant used WindPRO, a wind modeling software program, to model expected shadow flicker effects on adjacent properties from the 14 proposed turbine locations. The applicant assumed a worst case scenario, that all receptors have a direct in-line view of the incoming shadow flicker sunlight, and did not take into account any existing vegetative buffers.

The Department generally recommends that an applicant conduct a shadow flicker model out to a distance of 1,000 feet or greater from a residential structure, and the applicant's model did so. The applicant modeled two receptors, A and B, which are located within 1 mile of the project and which would potentially receive shadow flicker. Maine currently has no numerical regulatory limits on exposure to shadow flicker; however, the industry commonly uses 30 hours per year as a limit to reduce nuisance complaints. Receptor A would have approximately 46.54 hours of flicker per year and receptor B would have approximately 4.37 hours per year. The applicant has a lease agreement with Receptor A allowing shadow flicker greater than 30 hours per year. Based on the WindPRO analysis, no other property is calculated to receive flicker in excess of 30 hours per year.

The Department finds the shadow flicker modeling conducted by the applicant is credible. Based upon the proposed project's location and design, the distance to the nearest shadow flicker receptor, and results of the shadow flicker analysis, the Department finds that the proposed project would not unreasonably cause shadow flicker to occur over adjacent properties which would not be subject to an easement allowing for shadow flicker.

19. PUBLIC SAFETY:

The proposed project would use Vestas V-112 3.0-megawatt (MW) wind turbine generators. The turbines' conformity with International Electrotechnial Commission standards has been certified by Det Norske Veritas and included in the applications in Appendix 27-2 dated March 19, 2010.

The Department recognizes that locating wind turbines a safe distance away from any occupied structures, public roads or other public use areas is extremely important. In establishing a recommended safety setback, the Department considered industry standards for wind energy production in climates similar to Maine, as well as the guidelines recommended by certifying agencies such as Det Norske Veritas. Based on these sources, the Department requires that all wind turbines be set back from the property line, occupied structures or public areas a minimum of 1.5 times the maximum blade height for the wind turbine. Based on

the Department setback specifications, the minimum setback distance to the nearest property line should be 688.5 feet for the Vestas turbines. A review of the application indicates that all turbines are proposed to be setback at least 688.5 from occupied structures and public areas.

The Department finds that the applicant provided documentation in the form of standard compliance by the manufacturer that the wind generation equipment has been designed to conform to applicable industry safety standards and has demonstrated that the proposed project would be sited such that it would not present an unreasonable safety hazard to adjacent properties or adjacent property uses. The Department further finds that the applicant has submitted sufficient evidence which demonstrates that the proposed project would be sited with appropriate safety setbacks from adjacent properties and existing uses.

20. DECOMMISSIONING PLAN:

In order to facilitate and ensure appropriate removal of wind generation equipment when it reaches the end of its useful life or if an operator ceases operation of turbines, the Department requires permit applicants to demonstrate, in the form of a decommissioning plan, the means by which decommissioning would be accomplished. Here the applicant's decommissioning plan includes a description of the trigger for implementing the decommissioning, a description of work required, an estimate of decommissioning costs, a schedule for contributions to its decommissioning fund and a demonstration of financial assurance.

A. Trigger for implementation of decommissioning. The proposed wind turbine generators are designed and certified by independent agencies for a minimum expected operational life of 20 years, however other factors may also trigger the requirement for decommissioning. The applicant's proposal is that the wind generation facility would be decommissioned when it ceases to generate electricity for a continuous period of twelve months. In the case of a force majeure event which is the cause of the project not generating electricity for 12 months, the applicant proposes that it be allowed to submit to the Department for review and approval reasonable evidence in support of a request that it not be required to decommission the project at that time.

An exception to the requirement that decommissioning begin if twelve months of no generation occurs would be allowed for a force majeure event, however the Department finds that the applicant's proposed definition of "force majeure" is exceedingly broad, and the following would constitute a force majeure allowing greater than twelve months before decommissioning is required. The Department considers a force majeure to mean fire, earthquake, flood, tornado, or other acts of God and natural disasters; strikes or labor disputes; war, civil strife or other similar violence. In the event of a force majeure event which results in the absence of electrical generation for twelve months, by the end of the twelfth month of non-operation the applicant would be required to demonstrate to the Department that the project would be substantially operational and producing electricity within twenty-four months of the force majeure event. If such a demonstration was not made to the Department's satisfaction, the decommissioning would be required to be initiated eighteen months after the force majeure event.

B. Description of work. The description of work contained in the application outlines the applicant's proposal for the manner in which the turbines and other components of the proposed project would be dismantled and removed from the site. Subsurface components would be removed to a minimum of 24 inches below grade, generating facilities would be removed and salvaged and disturbed areas would be re-seeded. At the time of decommissioning, the applicant must submit a plan for continued beneficial use of any wind energy development component proposed to be left on-site to the Department for review and approval.

C. Financial Assurance. The applicant estimates that the current cost for decommissioning the project would be $504,600. The applicant proposes that financial assurance for the decommissioning costs would be in the form of (i) cash, (ii) a letter of credit, or (iii) a combination of cash and a letter of credit for the total cost of decommissioning. The applicant proposes to have the financial assurance mechanism in place prior to construction and to re-evaluate the decommissioning cost at the end of years 8 and 15.

Based on the applicants' proposal outlined above, and in consideration of the public comments, the Department finds that the applicant's proposal would adequately provide for decommissioning, provided the applicant implemented the decommissioning plan as proposed.

21. TANGIBLE BENEFITS:

In its application the applicant described tangible benefits that the project would provide to the State of Maine and to the host communities, including economic benefits and environmental benefits.

The applicant states that its proposal would benefit the host communities and surrounding areas through construction-related employment opportunities. These would include tree clearing and excavation jobs, and jobs in businesses that support construction such as lodging, restaurant, fuel and concrete supply. In addition, the applicant has signed an agreement with the Forest Society of Maine (FSM), in which the applicant has agreed to provide $4,000.00 per turbine per year for 20 years. The agreement requires FSM to utilize these funds for land and natural resource conservation. Preference would be given to projects in the vicinity of Passadumkeag Mountain by FSM when utilizing the funds. Staff from the Governor's Office of Policy and Management reviewed the Tangible Benefit agreement between Passadumkeag Wind Park, LLC and FSM and commented that the agreement met the requirements of the Wind Energy Act.

Based the employment opportunities, the tax revenue and the Community Benefits Agreement proposed by the applicant, the Department finds that the applicant has demonstrated that the proposed project would provide significant tangible benefits to the host communities and surrounding area pursuant to 35-A M.R.S.§3454, provided that annual payments were made to FSM as described above.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S. Sections 480-A et seq. and Section 401 of the Federal Water Pollution Control Act:

A. The proposed activity would not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses.

B. The proposed activity would not cause unreasonable erosion of soil or sediment.

C. The proposed activity would not unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

D. The proposed activity would not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life.

E. The proposed activity would not unreasonably interfere with the natural flow of any surface or subsurface waters.

F. The proposed activity would not violate any state water quality law including those governing the classifications of the State's waters.

G. The proposed activity would not unreasonably cause or increase the flooding of the alteration area or adjacent properties.

H. The proposed activity would not be on or adjacent to a sand dune.

I. The proposed activity would not be located on an outstanding river segment as noted in 38 M.R.S. Section 480-P.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S.A. Sections 481 et seq.:

A. The applicant has provided adequate evidence of financial capacity and technical ability to develop the project in a manner consistent with state environmental standards.

B. The applicant has not made adequate provision for fitting the generating facility portion of the development harmoniously into the existing natural environment and the development will have an unreasonable adverse effect on existing uses and the scenic character of Saponac Pond, a SRSNS. The applicant has made adequate provision for fitting the associated facilities portion of the development harmoniously into the existing natural environment. The applicant has made adequate provisions for air quality, water quality or other natural resources in the municipality or in neighboring municipalities.

C. The proposed development would be built on soil types which are suitable to the nature of the undertaking and would not cause unreasonable erosion of soil or sediment nor inhibit the natural transfer of soil.

D. The proposed development would meet the standards for storm water management in Section 420-D and the standard for erosion and sedimentation control in Section 420-C.

E. The proposed development would not pose an unreasonable risk that a discharge to a significant groundwater aquifer will occur provided that the applicant submits an SPCC plan as described in Finding 12.

F. The applicant made adequate provision of utilities, including water supplies, sewerage facilities and solid waste disposal required for the development and the development would not have an unreasonable adverse effect on the existing or proposed utilities in the municipality or area served by those services.

G. The activity would not unreasonably cause or increase the flooding of the alteration area or adjacent properties nor create an unreasonable flood hazard to any structure.

H. The proposed development would not unreasonably cause shadow flicker effects to occur over adjacent properties.

I. The activity would not present an unreasonable safety hazard to adjacent properties or adjacent property.

J. The applicant made adequate provisions to achieve decommissioning of the wind power facility.

K. The activity would provide significant tangible benefits to the host community and surrounding area.

THEREFORE, the Department DENIES the application of PASSADUMKEAG WIND PARK, LLC to construct a wind turbine project consisting of 14 turbines.

DONE AND DATED IN AUGUSTA, MAINE, THIS____ DAY OF _____, 2012.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
Patricia W. Aho, Commissioner

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES…

JB/L25597ANBN/ATS#74371&74372

QUANTUM UTILITY GENERATION

Commissioner Patricia Aho
Maine Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017
VIA EMAIL

November 8, 2012

Re: Applicant Comments on DEP Draft Order
Passadumkeag Wind Park, LLC/L-25597-24-A-N & I-25597-TH-B-N

Commissioner Aho,

This letter and the attached documents constitute our comments on the Draft Order issued on the above referenced project. As you will see in these submissions, we have a number of concerns with the Draft Order. While a listing of individual comments is provided in the attached, we want to bring to your attention some themes that we found particularly troubling. Specifically, there are a multitude of places in the Draft Order in which significant relevant facts are omitted, partially stated, or misstated. In addition, the Draft Order appears in several instances to rely upon the incorrect legal standard in its evaluation of the scenic impacts.

We are concerned that the tone and content of the Draft Order is a departure from the usual balanced discussion and analysis of the critical permitting standards that the DEP has included in previously issued orders. The typical analysis provided by the DEP, and consideration of the analyses of the experts, is absent from this Draft Order. It appears that critical elements of an objective evaluation have been supplanted by a simple, unsupported conclusion that the project should be denied simply because it is highly visible from Saponac Pond. In particular, the portion of the Draft Order identifying the basis for denial as visual impact to Saponac Pond presents a series of conclusory statements that ignore pertinent facts and evidence submitted to the record by both the Applicant and the DEP's visual consultant. The presentation is a very selective picture drawn to support a conclusion that is contrary to a fair reading of the evidence. Facts in the record, but not mentioned or discussed in the Draft Order include:

- The DEP's expert peer reviewer, after site visits and independent analysis found:
  - the significance of the resource is "Low;"
  - the existing character of the area is "Medium;"
  - the level of use of Saponac Pond is "Low;"
  - the user expectations are "Low;"

- the effect on public use and enjoyment is "Low;"
- the overall visual impact to Saponac Pond to be "Medium;"
- **in its conclusion that the project will not have an unreasonable adverse visual impact.**

- 71%-74% of respondents to the survey said the project would not affect their likelihood to return to Saponac Pond for recreational pursuits.
- The views from Saponac Pond toward Passadumkeag Mountain include development on the shoreline of the pond and clearings and infrastructure for commercial logging operations on Passadumkeag Mountain.
- The percentage of the 180 degree view from Route 188 that was deemed an acceptable amount of visibility in the DEP Draft Technical Analysis was 52%; in contrast, the percentage of the 360 degree view from Black Island that is being deemed an unacceptable amount of visibility in this Draft Order is 17%.
- The DEP did not perform a complete expert peer review of the Applicant's visual impact submissions related to Saponac Pond (including those the DEP *did* accept for consideration) at the time it issued the Draft Order.
- The DEP did not review or consider the precedent set in prior wind project approvals relating to the degree of visibility that has been deemed acceptable.
- The DEP's time constraints, on which the Draft Order relies to justify a refusal to consider additional substantive material the Applicant submitted to address DEP's October 23 comments on Saponac, was imposed at DEP's discretion, and was not a mandatory time limit.

In addition to the absence of these critical facts from the analysis, there were procedural issues that troubled us, which we raise in the event that such issues influenced the conclusions reflected in the Draft Order. For example, the DEP not only did not have, but did not *seek* to obtain, a full peer review of the supplemental visual impact information on Saponac Pond submitted on September 26, 2012. In addition, the DEP expressly refused to consider the additional factual information we filed that directly addressed DEP's stated concerns (expressed to us as feedback on our submissions in our October 23, 2012 meeting with DEP staff) about visual impacts to Saponac Pond (October 29, 2012, DeWan memo). The Order also relies upon visual impact standards that the Legislature has stated do not apply to wind projects, which standards have never been included in an order for other wind projects since the enactment of the Wind Energy Act.

We have invested $4.5 million in bringing this project forward, and responding to DEP's additional information requests that appear to have been ignored or, in the case of our supplemental VIA on the Robbins Lumber Company Easement, rendered obsolete by DEP changing its mind. This is a project that would benefit the state and local communities by creating significant tax revenue, job creation, additional investments in local/state businesses, building transmission reliability in Greenbush, and funding for development within the vicinity of the project.

While we understand that this investment was at our risk, what we do not understand is how or why all of the facts and expert analysis in the record, which uniformly support a finding that there is no unreasonable adverse visual impact to any Scenic Resource of State or National Significance within eight miles of the project, including Saponac Pond, have seemingly been disregarded in the DEP's draft denial of the application. We do not understand why this regulatory process has been so completely unpredictable, with DEP asking questions of the applicant and then either rejecting or ignoring the answers. Finally we do not understand how the DEP has justified making findings that directly contradict what experts have concluded (both the Applicant's and DEP's) – not once, but twice.

While it is clear from DEP's statements to the press in conjunction with your issuance of the Draft Order that the DEP will not be changing its position in this Draft Order regardless of any comments it receives, we respectfully request that you consider our comments and draft a reasonable order that carefully evaluates all of the facts pursuant to the appropriate legal standards.

Regards,

Michael D. Beckner
Vice President, Renewables
Quantum Utility Generation, LLC

Enclosures

Cc: Michael Kuhns
Mark Bergeron
James Beyer

Applicant Comments on DRAFT ORDER
Passadumkeag Wind Park, LLC/L-25597-24-A-N & I-25597-TH-B-N

p.2, Section "1.A.2)" It would be more accurate to state that the turbine pads average 1.3 acres in size.

p.2, Section "1.A.6)" "(KW)" should be (Kv).

p. 2-3, Section "1.B" This section on public interest mentions only negative comments, and fails to mention supportive comments, including those from the Town of Greenbush, Randall Madden, Sprague. This section states that DEP considered those negative comments that were pertinent to a regulatory standard, and does not reflect that DEP considered any positive comments at all.

p.3, Section "1.B" The Order quotes one of the few inapplicable provisions of the Legislative findings (i.e. the finding related to community wind), and fails to quote the following applicable language from the same statutory provision: "The Legislature finds that it is in the public interest to explore opportunities for and encourage the development, where appropriate, of wind energy production in the State in a manner that is consistent with all state and federal environmental standards and that achieves reliable, cost-effective, sustainable energy production on those sites in the State that will attract investment and permit the development of viable wind energy projects."

p.3, Section 1.B, middle of the page – The Order fails to note that the Applicant responded to issues raised about fire suppression by committing to paying for costs incurred in the fighting of a fire caused by the project.

p. 3, Section 1.B, final paragraph in that section – The Order fails to mention that the tightness of the statutory timeframe was created by DEP's refusal to grant the applicant's request for a 30 day extension to address issues remaining once the DEP shared its response to several supplemental submissions. The Order also fails to mention that in addition to refusing to consider the proposed revision, the DEP also refused to consider the <u>other</u> visual analysis information that was submitted in response to an October 23, 2012 conversation with DEP, which related to the impact of the project as originally proposed. This information goes directly to the visual impact issue DEP has identified as the basis for its denial, and is resubmitted with these comments.

p. 3, Section1.C – It is factually incorrect to state that there are fields in the proposed project area. The Order fails to mention that the project area has a substantial developed logging road infrastructure.

p.4, Section 3 – the word "Financial" is misspelled in the heading of the section.

p.5, Section 5 – The third full paragraph in this section is identical to the first 2 sentences of the fourth paragraph in this section.

p. 6, end of first paragraph – The three owners have not entered into easements with the applicant. "The one location within one mile of the project that modeling indicated may exceed regulatory limits has a license agreement with the underlying landowner making the licensee subject to sound emissions from the wind project."

p. 8, Section 5.F – Mr. Guldberg modified the Saddleback protocol in his comments of May 1, 2012 regarding item 2b of the protocol (see Guldberg May 1 comments, page 5). The order does not reflect those modifications.

p. 10 Section 6, Paragraph 1 – The Site Law standard requiring projects to fit harmoniously into the natural environment are not applicable to this project; the Wind Energy Act standard does not "further specify" this Site Law standard, but replaces the "fit harmoniously standard" entirely; this confusion about the applicable standard appears to have resulted in an incorrect analysis of the application.

pp. 10-11, Section 6 – The statutory quotes setting forth the applicable legal standard should be placed all together, rather than mixing them in with analysis and submissions. There already appears to be confusion about the applicable legal standard (see directly previous comment), and this mixed narrative suggests that DEP is not clear on the applicable standard. The Oakfield and Rollins orders recited the appropriate standard in a comprehensible way.

p.13, Section6.A.1) end of third paragraph on the page – "The Department... did not require the applicant to submit information on potential impacts there." This is a factual misrepresentation. The DEP issued a memo saying the Robbins easement was a SRSNS and instructed the Applicant to amend its VIA. "As you can see from the memo the Department's position is that the Robbins Lumber easement area is considered a SRSNS. **As such you will need to evaluate the scenic impact of the project on that resource....**" (Email of September 14, 2012, Beyer to Barnes, emphasis added). That request prompted the Applicant to ask the DEP to put the application on hold for an additional two weeks in order to complete the work the DEP requested. The supplemental VIA was completed and submitted to the DEP, after a significant investment of time and money. The next day, the DEP reversed its position and issued a "revised" memorandum that reached the opposite conclusion as the original memo, finding that the Robbins Lumber Easement was not a SRSNS. The Applicant was, in fact, required by DEP to submit information on impacts to the Robbins Lumber Company Easement, and did submit that information in response to a DEP directive.

p. 14, Section 6.A.4) in the heading – "A great pond is a SRSNS if it is..."

p. 16, Section 6.A.4), under West Lake – The first sentence should be revised to read "A comprehensive visual analysis was not conducted by the applicant for West Lake, as it is not a SRSNS." The section should also note that impacts to West Lake are outside of DEP's scope of review.

p. 17, Section 6.A.5), 6), 7), and 8). Under paragraph 5) the Order affirmatively states "There are no rivers or streams within eight miles of the proposed project that are identified in the Maine Rivers Study as having unique or outstanding scenic attributes." Paragraphs 6), 7) and 8) are missing such a statement, limiting the findings to what the applicant stated. These sections should present DEP's findings as to the presence or absence of these SRSNS within 8 miles of the project.

pp. 17-18, Section 6.B, Supplemental Visual Impact Analysis – the supplemental material did not contain an actual filmed movie, but rather a QuickTimeVR movie created from a series of high-definition photographs taken from a point in the middle of Saponac Pond. This paragraph also fails to note the fact that the Applicant provided additional supplemental visual analysis for Saponac Pond that the DEP chose to not review prior to issuing this order (October 29, 2012 memo from Terry DeWan to Brooke Barnes RE: Passadumkeag Wind Project: Visual Impact on Saponac Pond, and associated studies, submitted to DEP on October 30, 2012). These documents are resubmitted for DEP's consideration.

p. 18, Section 6.B, middle of the last paragraph before Public Comment - the applicant did not submit additional user intercept surveys, but rather use surveys of boating and other recreational activity at Saponac Pond. The survey work involved direct observation of boating and shoreline activities over 13 days between 8/8 and 9/12; no direct contact was made with users.

p. 18, Section 6.C – As with the public interest section of the Draft Order, the public comment section does not note supportive comments.

p. 18, Section 6.C, last paragraph on the page – It is unclear what significance the DEP is giving this petition.

p.19, Section 6.D – The extensive nature of Landworks' peer review that was commissioned by DEP, which involved site visits and a full, second visual impact assessment, is inaccurately characterized as "comments."

p. 19, Section 6.D – The first paragraph should be revised as follows: "Mr. Raphael provided the Department with comments dated June 19, 2012 and September 7, 2012. Mr. Raphael ranked....dated June 19, 2012, and again in his memo of September 7, 2012.

p. 19, Section 6.D, First Paragraph – The term 'uniqueness' is not mentioned in the Maine Wind Act, and is not a statutory criterion for the visual impact assessment or review for Saponac Pond. Mr. Raphael subsequently reframed his initial numerical-based matrix in his report of September 7, 2012 to follow the six evaluation criteria included in the Maine Wind Power Act. The revised matrix substituted the numerical ratings (0 – 3) with descriptors (NA, Low, Medium, and High). The reframing did not alter any of the findings that were part of the June 19, 2012 peer review, which findings concluded that the impact to Saponac was medium, and that the impact was not unreasonably adverse. In the September 7, 2012 report, LandWorks removed uniqueness as a separate consideration, and incorporated the concept of uniqueness into their interpretation of the one of the criteria under the Wind Act.

p. 19, Section 6.D, First Paragraph – for accuracy and clarity regarding the purpose and results of Landworks peer review, please add to the end of same paragraph "In both of his memos he ranked the impact on Saponac Pond as "medium", and found the project did not have an unreasonable adverse impact on scenic resources of state or national significance. "

p. 20, Section 6.D.3, the paragraph that starts on page 19 and runs onto page 20, states of Mr. Raphael that, "He notes there is currently what is considered to be some inharmonious development, namely the communication tower, the sawdust pile and the timber harvesting activities, but the overall scenic rating may be attributable to the presence and prominence of the Passadumkeag Mountain itself." To be clear, the presence of inharmonious development is not Mr. Raphael's opinion, but is in fact expressly identified in the publication "Scenic Lake Character Evaluation in Maine's Unorganized Towns," as noted in the Applicant's VIA. This paragraph also fails to note or discuss the fact that Saponac Pond is rated in LURC's 2010 Comprehensive Land Use Plan as Management Class 3, Potentially Suitable for Development.

p.20, Section 6.D.3, third paragraph on the page – What Landworks stated is the inverse of what DEP wrote in the Order. In Mr. Raphael's review, he stated: "Based solely on the results of the intercept survey, the report suggests that most people (70%) will continue to return to the lake, but on average the Project would have a slightly negative effect. Additionally, the Project would result in no change to their enjoyment of the pond for over half of the respondents (59%), but on average would have a somewhat negative effect on the enjoyment of their visit." The Draft Order turns this analysis on its head and distorts the meaning and intent of Landworks' comment. In addition, the last sentence that currently reads: "Additionally, a number of users indicated that..." should say "Additionally, 71-74% of users surveyed said that...

p. 20, last paragraph in the Saponac Pond discussion – in each of the other lake sections, the Draft Order includes the ranking from Mr. Raphael's matrix; the Saponac discussion does not. Like the others, this should end with a sentence "Mr. Raphael's matrix result was a 2.1 for overall scenic impact (on a 0-3 point scale), and he concludes it would be a moderate impact to scenic quality, and "the Project does not rise to the level of an unreasonable, adverse effect on scenic quality."

p. 20, last paragraph in Saponac discussion – the Draft Order notes that, in addition to impacts on users, Mr. Raphael's conclusions stated that the project would "alter the visual quality and sense of place for... camp owners." Mr. Raphael actually stated: "It is important to note that while it is clear that many local residents and camp owners will be potentially impacted by this project, and will have a varying extent of project visibility depending upon location and other factors, this review requires that the potential for impacts to the identified, statutorily defined scenic resources be the focus of the analysis. Thus the charge is to conduct an analysis focused on those resources, rather than a general review of the project's impact to roads, open spaces, individual camps and other locations not listed as or considered to be scenic resources."

p. 20, last paragraph in Saponac discussion – The reference to the Wind Energy Act criteria for assessing scenic impact as "mitigating factors" is legally inaccurate, and raises a question whether DEP's application of the scenic standard in this way has resulted in an inappropriate application of the criteria as "mitigating" the scenic impact, when they are in fact determinative of the scenic impact in the first instance. Please note that Landworks also refers to mitigating factors, including "1) the fact that the area has already been developed and the mountain and environs are not pristine, 2) the relatively high number of respondents who indicated the project will not have a substantial impact on enjoyment and their willingness to return; and 3) the results of the evaluation matrix, which takes into account a range of factors, which yielded a rating of 2.1, indicating a moderate impact to scenic quality." – from June 19, 2012 Landworks report. In addition, in their revised matrix in September, Landworks concluded that the overall scenic impact was Medium, based upon their review of the Wind Energy Act criteria. In this revised matrix, they evaluated the scenic significance of Saponac Pond as Low, based upon an evaluation of "indicators (that) include but are not limited to the state or national designation; unique, distinctive or exceptional character (is the resource typical of the region, or does it have special, memorable qualities unlike others in the area); vividness; intactness, and scenic attractiveness (does the landscape contain intrusive or uncharacteristic elements or does it promote a sense of order and balance that makes is memorable)." The Order leaves these pertinent details out, and instead summarizes Landworks' lengthy analysis and findings with the following misleading quote: "Landworks concluded that this project would most definitely result in an adverse impact to the scenic quality of Saponac Pond." In fact, Landworks concluded, twice, that the project would have a "medium" scenic impact on Saponac Pond, and that there was not an unreasonable adverse impact.

p. 22, Section 6.E, first sentence – For clarity (because elsewhere the Order notes only June and September submissions from Landworks), please add —"In an October 3, 2012 memo, Mr. Raphael also reviewed...." That same memo stated that Landworks review was not complete. The Order should reflect that DEP did not receive a full third party expert evaluation of the information submitted regarding visual impact to Saponac Pond.

p. 22, Section 6.E – The quote provided from Mr. Raphael in this section is not relevant to the application or the visual impact assessment, in that it addresses a feature in the landscape that is not a SRSNS, and does not make clear that DEP understands that this is outside of its jurisdiction. Further, the truncated quote provided in the Order is misleading – the rest of the Landworks quote reads as follows:

"However, given that the mountain has not in and of itself been identified as a SRSNS, nor is it considered a tourism or recreational destination, it is difficult, from a purely statutory perspective with regard to the visual assessment process required, to reach this conclusion. This is coupled with the fact that the pond appears to not have a high level of use, or visitation from beyond the region, and thus the project 's possible impacts will not affect a large number of individuals."

p. 22, Section 6.F, first paragraph in that section – The independent consultant on visual issues did considerably more than make "comments": LandWorks visited the site, evaluated the documents provided by the applicant, developed their own computer mapping to verify the results of the viewshed analyses, analyzed the conclusions presented by the applicant, and came to their own conclusion regarding the overall scenic impact on Saponac Pond and the other SRSNS. The peer review process is a significant part of the State's review of wind projects, since neither DEP nor LUPC (LURC) has personnel who are trained in visual impact assessment. The Draft Order should reflect the analysis done by the DEP's independent consultant, and that the analysis was not complete when the DEP issued the order.

p. 23, Section 6.F.1, paragraph that starts on p. 22, but ends on p. 23 – the Draft Order correctly states that the Applicant did not submit an additional photo-simulation from the south shore. However, the Applicant's expert reviewed possible viewpoints, and concluded that the visibility in the vicinity of Black Island would be greater than from the south shore of Saponac Pond, where the view of Passadumkeag Mountain would be obscured by shoreline vegetation and topography. That photosimulation was submitted in a QuickTime VR movie, i.e. a composite of existing condition photographs and a photosimulation of the proposed project.

p. 23, Section 6.F.1, paragraph that starts on p. 22, but ends on p. 23 – This paragraph states "The Route 188 location is approximately 4 to 4.8 miles from the closest turbine and ten turbines would be visible from that location and they would span approximately 52 degrees of the panorama." The distances are correct. However, from the viewpoint selected (near the boat launch on Route 188), the turbines are seen over an arc of approximately 30º, not 52º. If the viewer were to move to the west toward the sawdust-covered beach, the full range of turbines would be visible over an arc of 52º.

p. 23, Section 6.F.1, paragraph that starts on p. 22, but ends on p. 23, in the last 2 sentences – Please note that from the southern end of the pond, the turbines at the eastern end of the string are much lower to the horizon and thinner, due to the greater distance from the observer, than the 6 on the ridge of Passadumkeag. As a result their visual impact is diminished compared to the turbines on Passadumkeag Mountain.

p. 23, Section 6.F.1, first full paragraph on the page, first two sentences – On the first DEP site visit, staff informed us that they did not go on the water, but rather looked at the pond from the boat launch at the northern end and from a new subdivision on Folsom Ridge, north of the pond (private property). There is no record of where the staff went on the pond to 'observe the viewshed.' The Department's 'analysis' should follow the protocol established in the Wind Energy Act, and not just a review of visibility of the project.

p. 23, Section 6.F.1, first full paragraph on the page, third sentence – The Order states that the view from the boat launch does not include views of the developed portions of the pond. This is not true - as noted in the VIA and supplemental information, from the boat launch an observer will be aware of the following signs of development: approximately 850 feet of highway fronting on Saponac Pond; the bridge over Thompson Brook; a local distribution line paralleling Route 188; the informal boat launch and widened gravel shoulders for parking, a sawdust pile that appears to be the remnant of an earlier

wood processing operation, and at least one lakeside cottage and its driveway to the east. Moreover, Route 188 is not a scenic byway, nor is the boat launch a designated scenic overlook, nor is it on the list of viewpoints that have to be considered in a windpower application. We considered it to be a characteristic viewpoint that is representative of what most people who travel by Route 188 would see. Under NRPA Ch. 315, the boat launch, beach, and the pond would be considered 'Scenic Resources;' however, the definition of a Scenic Resource of State or National Significance is controlled by the Wind Act for this project. The DEP's reference to the "harmonious" standard at several locations in the Draft Order, and now NRPA's Chapter 315 scenic resources (which are not applicable) confuses the applicable legal standards.

p. 23, Section 6.F.1, first full paragraph on the page, fourth sentence – "In order to view the developed portions of the pond one has to be on the pond and looking away from the mountain." This statement is not accurate, and is a surprising statement to someone who been on the pond. The eastern shoreline, where most of the development is located, is oriented in a generally northwest/southeasterly direction. To someone entering the pond from the boat launch at the northern end of the pond and traveling south near the eastern shoreline, the view will include upwards of three dozen structures in the foreground with Passadumkeag Mountain and the low hills that surround it in the midground. The greatest concentration of camps is located in a cove at the southeastern end of the pond. Someone approaching this group from the boat launch on the water will see up to a dozen camps set against the backdrop of the mountain. It should be noted that the majority of the properties on the pond are oriented away from Passadumkeag Mountain and will not have views of the turbines from inside the camp buildings. These views and photographs of the camps are included in the record in the supplemental information provided to the DEP, dated September 26, 2012.

p. 23, Section 6.F.1, first full paragraph on the page, fifth sentence – The inharmonious development identified is not the opinion of the visual experts; the Scenic Lakes Assessment identifies the development as inharmonious. This existing inharmonious development is mischaracterized in this paragraph as a mitigating factor – by virtue of the Wind Act, this is considered as part of the criteria (existing character, expectation of viewers) for determining the scenic impact in the first instance. It is legally incorrect to apply the "fits harmoniously" standard, and then apply the statutory criteria as "discounts."

p. 23, Section 6.F.1, first full paragraph on the page, seventh sentence – The sentence "The Department's analysis, however, takes into account that the view from Saponac Pond looking south toward the ridge of Passadumkeag Mountain is essentially void of any residential structures." We have not seen the Department's "analysis," only conclusory statements. This sentence implies that the two expert analyses did not take that view into account, which is clearly incorrect. TJD&A conducted a thorough analysis of development patterns along the shoreline of Saponac Pond, as noted above. Documentation (in the form of photographs and a location map) of 48 structures, associated out-buildings, clearing, docks, and other types of development activity located on or very near the shoreline of the pond has been submitted to the Department. These views and supporting analyses are reflected in the reports of the two experts.

p. 23, Section 6.F.1, first full paragraph on the page, ninth sentence – "While the northern slope of Passadumkeag Mountain shows some logging activities, the Department does not consider these indications of logging activities as having a significant impact on the scenic character of the viewshed from Saponac Pond." - The logging activity on the north side of Passadumkeag Mountain is highly visible, especially at those times of the day (early morning and late afternoon) when the sun is low to the

horizon. While the presence of the clearcuts does not have a significant negative impact on the mountain, it does signify that this is a working forest, and that commercial activity is to be expected in the region, and goes to the expectations of a user of the Pond.

p. 23, Section 6.F.1, first full paragraph on the page, tenth sentence – "The Department finds that these factors create a more natural setting than is portrayed by the applicant's VIA and Mr. Raphael comment on development, and that the predominant existing scenic character of the viewshed from Saponac Pond is undeveloped." This conclusion ignores that camps, roads, and other forms of development can be seen from most parts of the pond (measured from a point near Black Island where the QuickTime VR movie was photographed). We documented (with photographs and location map) the presence of at least 48 camps and other structures along the shoreline. In addition to Route 188, there are five named roads that provide access to residential development on Saponac Pond, plus a series of unnamed roads. The shoreline of the pond is approximately 7 miles in length. According to our measurements of existing conditions, development occurs on approximately 28% of that length. Close to two miles of the shoreline is 'developed' by cottages, highway, boat launches, etc. At the point where the movie was taken, development will appear in a total of approximately 120º of the 360º panorama.

p23, Section 6.F.1(A) - While the Applicant characterized Saponac Pond as a scenic resource of state or national significance based on its listing status as of 1987, we agree with the Draft Order that the Pond would be more appropriately considered a resource of regional significance. The Order references an analysis, and notes the lack of 'comparable views,' but does not provide its analysis, any reason to reject the expert analyses, or justification for the stated conclusion that this is a unique resource.

p. 24, Section 6.F.1(B) – DEP's conclusion appears to treat the Saponac viewshed as only including the view towards Passadumkeag Mountain, and entirely ignores the remainder of the visual experience that makes up the character of the surrounding area. Please note that whether the "surrounding area" is interpreted as the area surrounding the project, or the area surrounding the SRSNS, both are developed. This "conclusion" disregards the facts - the applicant's VIA (on p. 20) includes a southerly-facing view of the pond with Passadumkeag Mountain in the midground. The image (from GoogleEarth) clearly shows camps along the eastern shoreline, access roads, parking areas, and large blocks of clear-cuts on the north side of the mountain.

p. 24, Section 6.F.1(B) – DEP states that its conclusion regarding the existing character of the surrounding area that the "project's turbines, clearings for the turbine pads and service roads connecting the turbine sites would change the mountain landscape. It would add a distinct and unnatural landform to this primarily natural mountain landscape." This appears to conflate the Wind Energy Act criterion with the "fits harmoniously" Site Law standard applicable to non-wind projects, which is not applicable to this project, where associated facilities have been found acceptable.

p. 24, Section 6.F.1(C) – LandWorks rated user expectations for Saponac Pond as 1/Low. Landworks stated "While scenery and undeveloped lakeshores are valued, these qualities do not appear to be as important as water quality, fresh air, lack of shoreline development and the overall fishing experience. A resource that is well known and promoted for its scenic attributes would contribute to a high value for viewer expectations of scenic quality. However, this value would be diminished based on the level of development experienced by the viewer using or visiting the resource." In addition, when the public is contemplating its expectations for a resource, it is relevant that Saponac Pond has been assigned to Management Class 3: "Potentially Suitable for Development" which means that, through a consideration of existing water quality, potential water quality impacts, location, access, conflicting uses, available

shoreline, water level fluctuation, regional considerations, and special planning needs, the Pond was found by the LUPC to be a potentially suitable location for shoreland development.
p. 24, Section 6.F.1(D) – The description of the setting around the proposed project, and the extent of development visible in the views to Passadumkeag Mountain is inaccurate. Please see comments regarding Section 6.1(B) for an accurate representation.

p. 24, Section 6.F.1(E), sentence 2 – "The Department finds that the number of people using a resource should not be determinative, as in many cases, a small number of users heighten the users enjoyment of the resources, especially in regard to the enjoyment of the aesthetics of the place." This is a finding that would apply to remote ponds, in a context in which the remoteness of the experience is part of its value. Saponac Pond, however, is not remote or pristine – the limited use of this resource is not due to its remoteness, but is a function of the fact that there are no public facilities and has poor water quality.

p. 24, Section 6.F.1(E), sentences 3 and 4 "The fact that the pond may not be used by a large number of people does not diminish the importance of the limited users of the pond. The applicant's materials demonstrate that a majority of the turbines will be visible from 97% of Saponac Pond." This percentage of visibility over the surface of the pond is correct. At the place on the Pond from which the turbines will be most visible, turbines will be seen on the water over a horizontal arc of 62% (from a point near Black Island). This represents 17% of the 360º view that a boater has available while on the pond. This is a lesser percentage of the view from Route 188 that was represented in the original VIA, and deemed acceptable in DEP's technical analysis issued in July.

p. 24, Section 6.F.1(E), last sentence in the Section – "Upon review of the applicant's user intercept surveys, the Department finds that the 41% of respondents that indicated that the proposed project would have a negative impact on their enjoyment of Saponac Pond is a substantial percentage." The Order finds that when a minority of users find visibility of the turbines even "slightly negative," there is an unreasonable adverse impact. Market Decisions drew the following conclusion, based upon these responses: "On average, respondents indicate that the proposed wind project would have somewhat of a negative effect on the enjoyment of their visit; a rating of 3.0. Fifty-nine percent of respondents indicated that the proposed wind project would result in no change to their enjoyment of the pond." Forty-one percent of respondents indicated that the proposed wind project would have a negative effect on their visit to Saponac Pond (rating as 1, 2, or 3)." It may be informative to break down the 41%: 24% rated the impact as a 1; 7% rated it as a 2; and 10% rated it as a 3 (slightly negative). This is comparable with the survey on Pleasant Lake done for the Oakfield Wind Project, where 20% rated it a 1; 7% rated it a 2; and 10% rated it a 3. 63% said that the project would have no effect or a positive effect on their enjoyment of the lake.

p. 24, Section 6.F.1(F) – This Section states "Some of the turbines will be as close as 2.5 miles to the pond, making these prominent features of the development large aspects of the views from the pond. The extent of the view will range from 52 degrees to 62 degrees of the total panorama." However, the extent of the view is 30º at the boat launch; this would have been reduced to 27º if DEP had been willing to entertain the Applicant's proposal of dropping the number of turbines to 13. This is the description in the VIA: "The turbines will appear to be moderate in size when compared with the height of the underlying mountain and should not present an unacceptable contrast in scale. The presence of the turbines will not have an effect on the pond's relief or its physical features, characteristics that accounted for the majority of points it received in the Scenic Lakes Character Evaluation."

p. 25, Section 6.F.2, first full paragraph in the page – The Department again applies the incorrect legal standard, this time in evaluating the the visual impact of the project's associated facilities.

p. 25, Section 6.F.2, second full paragraph on the page – "The review of topographical maps and a staff site visit to Saponac Pond showed that 9 turbines from the Rollins Wind project are clearly visible from Saponac Pond. These turbines are visible to the north to users of the resource. The applicant's proposed project would add another 14 turbines which would be visible, making a total of 23 turbines visible from most of Saponac Pond. This results in a substantial increase in the degree of the panorama that would contain wind turbines on a pond of significant scenic beauty. In this case Saponac Pond has already sustained an impact to its scenic character from the construction of wind turbines nearby. The cumulative impact of the addition of 14 turbines visible on the opposite side of the pond on the scenic character and the uses related to scenic character would be an unreasonable adverse impact given the nature and scenic qualities of Saponac Pond."

Three photographs of the Rollins turbines, as seen from various points on Saponac Pond, have been submitted to DEP as part of the inventory of visible development on the pond. Based upon our computer model, of the 9 turbines that may be visible from the center of the pond (where the turbines seem to be most visible), only 4 are located within 8 miles; the closest turbine is 7.5 miles to the north. These 4 turbines are seen over a horizontal viewing arc of approximately 3º. The Rollins turbines within eight miles, therefore, are visible in less than 1% of the 360º panorama that a viewer can see from the pond (see QuickTime VR movie).

In his VIA for the Rollins project, David Raphael/LandWorks made the following statement regarding the visual impact of the Rollins turbines on Saponac Pond:

> Saponac Pond is not a pristine environment, with the existing shoreline development visible from most parts of the pond. The views of the proposed turbines are so far distant that they will not significantly alter the visual quality or the ambience of the pond. Additionally, most if not all of the private camp locations on the pond are on either the eastern or western shore, outside of the viewshed area. These camps are not oriented to the view towards the wind project location; rather, they face across the pond, and not in a northerly direction. Thus, the distance from the turbines, the scale of the turbines at that distance and the limited presence of the turbines within the overall context of the views one has from the pond mitigate the potential for adverse visual impacts to boaters and all those recreating on the pond or its shoreline.

The application of a cumulative impact analysis as a basis for denial in this order is not supported by the facts. The Passadumkeag project would occupy slightly more than 17% of the 360º view from the lake. The DEP was comfortable with a 30 to 52 degree view from the road, which would constitute 16-28% of the 180 degree view from that point. Even if considered in combination with the Rollins project, turbines would be seen over 18% of the possible view.

The OEIS cumulative visual impact report included in the record identified three types of cumulative impacts. This situation is an example of a successive cumulative visual impact. In this model the viewer would see multiple projects from a particular viewpoint, but not within the same viewing arc, i.e., viewers would have to turn their heads and/or bodies a minimum number of degrees to see another wind project. The Draft Order states that 23 turbines would be visible; however, only 4 turbines of the existing Rollins turbines are considered under the Wind Energy Act, and 13 turbines are now being

proposed for the Passadumkeag project. Therefore, 17 turbines within 8 miles would be seen. **However, the Rollins turbines and the Passadumkeag turbines would never be seen at the same time.**

It should also be noted that the Rollins turbines are seen from a relatively small wedge-shaped area in the middle of the pond, and not over its entire surface. As the observer moves to the north, the turbines are partially screened by intervening vegetation on the north side of Route 188, which greatly diminishes their visibility.

p. 25, Section 6.F.2, final paragraph of the Section: "As set forth above, the Department has not based this determination that the proposed project has an unreasonable adverse effect on the scenic character of Saponac Pond solely on a finding that the generating facilities are a highly visible feature in the landscape. The resource's significance to its users, the predominant role of the mountain itself in the value of the scenic resource, the expectations of the viewers, and the nature of the affected uses all form the basis of the finding of an unreasonable adverse impact." The Order does not consider the following evidence in the record:

- The significance of the resource:
  - LandWorks rated significance as Low
  - Very limited number of users
  - No/limited facilities dedicated to public use
  - DEP itself describes Saponac as a regional, not statewide, resource
  - There is no evidence in the record that identifies Saponac as a significant or unique resource, just DEP's conclusory finding
- The existing character of the area:
  - The Scenic Lakes Character Evaluation in Maine's Unorganized Towns gave the lake a 20 out of a possible 30 for Relief; and 15 out of 25 for Physical Features. These are translated as medium values in the rating system used to determine scenic value.
  - LUPC has designated Saponac as Management Class 3: Potentially Suitable for Development.
  - Landworks rated the existing character as Medium.
  - There is no evidence in the record that identifies the existing character of the area as pristine or undeveloped.
- The purpose and context of the proposed activity
  - The purpose of the proposed activity is to generate electricity from a project that is sited to have the least impacts possible to SRSNS's.
  - The project is not sited near national landmarks, historic resources, national or state parks, scenic viewpoints, scenic turnouts or scenic viewpoints in the coastal area.
  - The evidence in the record identifies both the mountain and the pond include development visible in the views from the Pond to Passadumkeag Mountain.
- The expectations of the typical viewer
  - LandWorks rated Viewer Expectation as Low.
  - There is no evidence in the record that the expectations of the typical viewer are different that those represented by Landworks, TJD&A, or Market Decisions.
- The nature of the affected uses and impact on continued use and enjoyment
  - LandWorks rated Effect on Public Use as Low.
  - 59% indicate it would not change their sense of enjoyment.
  - 71-74% indicate they would still be likely to return to recreate.

- There is no evidence in the record to support a finding that the nature of the affected uses is special or unique.

The final remaining criterion is that of scope and scale, which Landworks refers to as "Visual Impact" (not to be confused with Scenic Impact). Landworks describes this criterion as addressing "the number of turbines visible, and the extent of visibility" Landworks determined that visibility from Saponac is high, and the applicant agrees. However, the Wind Energy Act states that "[a] finding... that the development's generating facilities are a highly visible feature in the landscape is not solely sufficient basis for determination that an expedited wind energy project has an unreasonable adverse impact..."

p. 25, last line – "13" should be "17."

p. 35, "Flooding" "The applicants do not propose any structure other than ~~two~~ three utility poles within a FEMA flood zone at Oloman Stream, and two poles in a LUPC P-FP district associated with Little Buffalo Stream. The Applicant provided Floodproofing Certificates for these pole locations. As discussed in Finding 11, the Department has reviewed the applicant's plans for stormwater management and found that the project would be unlikely to have an adverse impact on downstream flooding. Based on the nature of the project and the minimal structures in the flood zone, the Department finds that the proposed project would be unlikely to cause or increase flooding or cause an unreasonable flood hazard to any structure.

P. 40, "Conclusion B" near the bottom of the page: This conclusion is based on the improper application of the Site Law "fits harmoniously" scenic impact standard applicable to non-wind project.

STATE OF MAINE
Department of Environmental Protection

PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

November 2012

Passadumkeag Wind Park, LLC
5 Houston Center
1401 McKinney Street, Ste. 1800
Houston, TX 77010
ATTN: Mike Beckner

RE: Site Location of Development Act Application,
Greenbush, Summit Mountain Twp., Grand Falls Twp., Greenfield Twp.,
#L-25597-24-A-N/L-25597-TH-B-N/Denial

Dear Mr. Beckner:

Please find enclosed a signed copy of the denial of your Department of Environmental Protection applications for permits under the Site Location of Development Act and the Natural Resources Protection Act. You will note that the denial includes a description of your project, and findings of fact that relate to the criteria the Department used in evaluating your project. The Department reviews every application thoroughly and strives to formulate reasonable findings of fact within the context of the Department's environmental laws. You will also find attached some materials that describe the Department's appeal procedures for your information.

If you have questions or concerns, I can be reached at (207) 446-9026 or at jim.r.beyer@maine.gov.

Sincerely,

Jim R. Beyer, Project Manager
Division of Land Resource Regulation
Bureau of Land & Water Quality

pc: File

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STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION
AUGUSTA, ME 04333

DEPARTMENT ORDER

IN THE MATTER OF

PASSADUMKEAG WIND PARK, LLC	) SITE LOCATION OF DEVELOPMENT ACT
Greenbush, Grand Falls Township,	) NATURAL RESOURCES PROTECTION ACT
Summit Mountain Township, Greenfield	) WATER QUALITY CERTIFICATION
Township	)
Penobscot County	)
PASSADUMKEAG WIND PARK	)
L-25597-24-A-N (denial)	)
L-25597-TH-B-N (denial)	) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of 35-A M.R.S.A. Sections 3401-3457, 38 M.R.S.A. Sections 481 et seq. and 480-A et seq., and Section 401 of the Federal Water Pollution Control Act, the Department of Environmental Protection (Department) has considered the application of PASSADUMKEAG WIND PARK, LLC with the supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. PROJECT DESCRIPTION

A. Summary: The applicant proposes to construct a wind turbine project consisting of 14 turbines. This project qualifies as an expedited wind energy development as defined in the Wind Energy Act (38 M.R.S.A. §3451(4)). The area of land proposed to be used for the turbine portion of the project is located wholly within property currently used for commercial forestry operations. The site contains logging roads that would be upgraded and used for project access to minimize clearing and wetlands impacts. In addition to the turbine farm, the project would include an operations and maintenance (O&M) building as well as associated facilities. The O&M building would be located in the town of Greenbush, an organized town. The proposed project overall includes 21.47 acres of impervious area and 97.38 acres of developed area. The development of the O&M building would result in approximately 3.54 acres of impervious area.

1) Wind Turbines. The applicant proposes to construct 14 Vestas V112, 3.0 megawatt (MW) turbines for a total of 42 MW of generation capacity. Each turbine would be 84 meters (approximately 276 feet tall) to the center of the hub and a total of 140 meters (approximately 459 feet) to the tip of a fully extended blade. The turbines would be located on top of Passadumkeag Mountain in Grand Falls Township.

2) Turbine Pads. The turbines would be constructed on 14 pads, each approximately 1.3 acres in size, for a total impervious area associated with the turbine pads of 17.93 acres.

3) Access Roads and Crane Path. The applicant proposes to upgrade existing logging roads for access and the crane path.

4) Electrical Collector Substation and O&M Building. The applicant proposes to construct an electrical substation and an O&M building in the town of Greenbush. The total new impervious area from these two structures is 3.54 acres and the total new developed area would be 3.69 acres. The proposed substation and O&M building would be adjacent to Bangor Hydro Electric Company's (BHE) transmission line, Line 64.

5) Meteorological Towers. The applicant is proposing to construct one meteorological tower on the site to monitor turbine performance.

6) Generator Lead Line. The applicant is proposing to collect power from the turbines in a 34.5 kilovolt (kV) generator lead line. The generator lead line would run approximately 17 miles from the ridge along the Greenfield Road through Summit Township, Greenfield Township and Greenbush. Nearly all of this line would be adjacent to an existing distribution line right-of-way (ROW) and an existing road. The existing distribution line ROW runs from the existing communications tower on Passadumkeag Mountain to Greenbush along the Greenfield Road. The distribution line ROW would be widened and the existing poles replaced.

The applicant's proposal includes the conversion of 1.22 acres of forested wetland to scrub-shrub wetland associated with the widening of the collector line ROW, and the alteration of 9,800 square feet of moderate value inland waterfowl and wading bird habitat (IWWH) in two locations adjacent to the Greenfield Road.

The project is shown on a series of plans included with the application, the first of which is entitled "Predevelopment Drainage Plan", prepared by the James W. Sewall Company, and dated January 30, 2012.

On October 30, 2012, the applicant submitted a proposal to remove one turbine from the project. In order to allow the Department to meet its statutory time frame for processing the application, this information was not reviewed or considered in the preparation of this Order.

B. Public Interest: The department received multiple requests for the Board of Environmental Protection (Board) to assume jurisdiction over these applications and hold a public hearing. However, the Board's authorizing statute, 38 M.R.S.A. §341-D(2), does not allow the Board to assume jurisdiction over applications for approval of expedited wind energy developments as defined in the Wind Energy Act (38 M.R.S.A. §3451(4)). As set forth in the Department's Rules, Chapter

2(7)(B), the holding of a public hearing on applications is discretionary. In this case the Commissioner determined that there was not sufficient credible conflicting technical information submitted and a public hearing was not warranted in order to assist her in understanding the evidence. Therefore, a public hearing was not held. The Department held the first of two public meetings on April 25, 2012 at the Greenbush town office. The Department sent letters to all abutters of the project notifying them of the meeting, notified the respective town offices, and published notice in a local newspaper. The Department received many emails and letters from interested persons expressing concerns about the proposed project. Those letters and emails describing issues related to standards that are reviewed under the Site Location of Development Act (Site Law) or under the Natural Resources Protection Act (NRPA) were considered in the review of the proposal. On July 12, 2012, the Department held the second public meeting at the Helen S. Dunn School in Greenbush. The second public meeting was attended by the Commissioner.

Several interested persons contend that the 20,000 acres included in a conservation easement between Robbins Lumber, Inc. and the State of Maine should be considered a Scenic Resource of State or National Significance (SRSNS) pursuant to the Wind Energy Act. As discussed below in Finding 6, the Department ultimately determined that the conservation easement was not a SRSNS.

Interested persons contend that a series of statements by the applicant concerning greenhouse gas emissions and global warming in Section 28 of the Site Law application (Tangible Benefits) were not supported by scientific facts. The application includes a statement that renewable energy demands are increasing and that this project would address concerns about reducing greenhouse gases and particulates from combustion. The Legislature made findings in its adoption of the Wind Energy Act, in 35-A M.R.S.A. §3402, that it is in the public interest to encourage the construction and operation of community wind power generation facilities because wind energy "is an economically feasible, large-scale energy resource that does not rely on fossil fuel combustion or nuclear fission, thereby displacing electrical energy provided by these other sources and avoiding air pollution, waste disposal problems and hazards to human health from emissions, waste and by-products". Further 35-A M.R.S.A. §3454 directs the Department to presume that an expedited wind energy development provides energy and emissions-related benefits. The Department defers to the Legislature's findings and also utilizes its knowledge and expertise in this area to evaluate the statements. The policy considerations of the Legislature in enacting the Wind Energy Act are relevant in the Department's interpretation of its statutes, but the Department is required to focus on the statutory licensing criteria set forth by the Legislature. The amount of potential climate benefit from the proposed project is not a factor under the licensing criteria.

While the application was being reviewed, the Department received comments from some interested persons in the surrounding towns expressing concerns that the proposed project would negatively impact tourism. Other interested persons commented that the threat of a forest fire was extreme and the cost of fire suppression should be borne by the applicant. The Department also received some

comments about the shortcomings of the Wind Energy Act. These concerns are noted but are only considered to the extent they address permitting criteria and are thus within the scope of the Department's review of the proposed project.

C. Current Use of Site: The site of the proposed project is undeveloped woodlands and is currently used extensively for commercial forestry operations. Development on the property consists of one communications tower, a second communications tower which is under construction, and two leased camps.

2. TITLE RIGHT OR INTEREST:

To demonstrate title, right or interest in the property proposed for development, as required in Chapter 2(11)(D) and Chapter 372(9) of the Department's rules, the applicant submitted copies of deeds, leases and lease options between the applicant and the property owners for the proposed project site. The submissions include deeds which show that the property owners who are leasing to the applicants have ownership over the parcels which are the subject of the leases. The duration and the terms of the leases for the proposed project area are sufficient for the duration of the proposed project. The applicant also submitted easements for certain adjacent parcels of land pertaining to noise, shadow flicker effects and safety setbacks.

The Department finds the applicant has demonstrated sufficient title, right or interest for the area which would be occupied by the project.

3. FINANCIAL CAPACITY:

The applicant estimates the total cost of the project to be $79 million.

Passadumkeag Wind Park, LLC is a legal entity authorized to do business in the State of Maine and is a wholly owned subsidiary of Quantum Utility Generation, LLC (Quantum). Passadumkeag Wind Park, LLC was established to develop and own the Passadumkeag wind project. The application states that Quantum intends to provide all of the funding for the project. The application also states that Quantum may elect to find third party financing.

The applicant submitted a letter dated February 1, 2012 from Quantum indicating that it intends to finance the project. In addition the applicant submitted a letter from Price Waterhouse Coopers LLP, dated April 27, 2011, which contains a report of independent auditors indicating total assets of more than $355 million.

The Department finds the applicant has adequate capacity to fund the project, provided that prior to construction the applicant shall submit evidence that it has been granted a line of credit or a loan by a financial institution authorized to do business in this State, or evidence of any other form of financial assurance determined by Department Rules, Chapter 373(1), to be adequate to the Bureau of Land and Water Quality (BLWQ) for review and approval.

4. TECHNICAL ABILITY:

The applicant operates several other energy projects with a total generation capacity of 866 MW in Virginia and Mississippi and is in the process of developing solar and wind project across the country. In addition the applicant retained the services of the following companies to prepare the application:

- Stantec Consulting – natural resource assessment, permitting
- James W. Sewall Company– engineering and stormwater
- Albert Frick Associates, Inc. – soil assessment
- Terrence DeWan Associates – visual impact analysis
- Public Archeology Lab – historic archaeological resources
- TRC/Northeast Cultural Resources – prehistoric archaeological resources
- Independent Archaeological Consulting – historic archaeological resources

Based on the experience and expertise of the applicant and their retained consultants, the Department finds that the applicant has demonstrated adequate technical ability to comply with Department standards.

5. NOISE:

To address the Site Law standard pertaining to the control of noise, 38 M.R.S.A. §484(3), and the applicable rules, Chapter 375(10), the applicant submitted a Noise Impact Study entitled "Sound Level Assessment for the Passadumkeag Wind Park Project," completed by Stantec Consulting, Ltd and dated January 2012 and April 2012. The sound level study was conducted to model expected sound levels from the proposed project, and to compare the model results to the applicable requirements of Chapter 375(10).

The Passadumkeag Wind Park project must comply with Department regulations applicable to sound levels from construction activities, routine operation and routine maintenance. Chapter 375(10) applies hourly sound level limits (L_{eqA}-Hr) at facility property boundaries and at nearby protected locations. Chapter 375(10)(G)(16) defines a protected location as "[a]ny location accessible by foot, on a parcel of land containing a residence or planned residence or approved subdivision near the development site at the time a Site Location of Development application is submitted…". In addition to residential parcels, protected locations include, but are not limited to, schools, state parks, and designated wilderness areas.

The hourly sound level resulting from routine operation of a development is limited to 75 decibels (dBA) at any development property boundary as outlined in Chapter 375(10)(C)(1)(a)(i). The hourly equivalent sound level limits at any protected location vary depending on local zoning or surrounding land uses and existing (pre-development) ambient sound levels. At protected locations within commercially or industrially zoned areas, or where the predominant surrounding land use is non-residential, the hourly sound limits for routine operation are 70 dBA in the daytime (7:00a.m. to 7:00 p.m.) and 60 dBA in the nighttime (7:00 p.m. to 7:00 a.m.). At protected locations within residentially zoned areas or where the predominant

surrounding land use is residential, the hourly sound level limits for routine operation are 60 dBA daytime and 50 dBA for nighttime. Where the daytime pre-development ambient hourly sound level is equal to or less than 45 dBA and/or nighttime ambient hourly sound level is equal to or less than 35 dBA, the Department's strictest "Quiet Location" limits of 55 dBA daytime and 45 dBA nighttime apply.

Due to the rural nature of the area for which the project is proposed, Department standards require that the applicant meet the "Quiet Location" limits, the Department's most restrictive sound limits. The applicant proposes to operate the project in compliance with these limits as set forth in Chapter 375(10)(H)(3)(1). In Quiet Locations, nighttime limits of 45 dBA at a protected location apply at the property line of the protected location, or up to 500 feet from sleeping quarters when the property line is greater than 500 feet from a dwelling. For this project there are three protected locations. Pursuant to Chapter 375(10)(5)(s) sounds from a regulated development received at a protected location are exempt from the regulations when the owner of the property conveys a noise easement for that location to the generator of the sound. The owner of one protected location has license agreement with the underlying landowner making the licensee subject to sound emissions
from the wind project.

To assist with the review of the application, the Department retained an independent noise expert, Peter Guldberg of Tech Environmental, Inc., to review the applicant's prediction model and associated data as well as other evidence received on the issue of noise.

A. Sound Level Modeling. The applicant's noise consultant, Stantec Consulting, Ltd., developed a sound level prediction model to estimate sound levels from the operation of the proposed project. The sound model for the project was created using Cadna/A software developed by DataKustik of Germany. Cadna/A allows the consultant to construct topographic surface models of area terrain for calculating sound attenuation from multiple sound sources such as wind turbines. The locations of the proposed turbines, roads, parcels, land uses and waterbodies were entered into Cadna/A in order to calculate sound levels at various points within the proposed project area. Sound level predictions were calculated in accordance with ISO 9613-2, which is an international standard for calculating outdoor sound propagation.

This computerized model is capable of predicting sound levels at specific receiver positions originating from a variety of sound sources. Applicable national or international standards can also be included in the analysis as described above. Cadna/A accounts for such factors as:

* Distance attenuation;
* Geometrical characteristics of sources and receivers;
* Atmospheric attenuation (i.e. the rate of sound absorption by atmospheric gases in the air between sound sources and receptors);

- Ground attenuation (effect of sound absorption by the ground as sound passes over various terrain and vegetation types between source and receptor);
- Screening effects of surrounding terrain; and
- Meteorological conditions and effects.

The applicant states that conservative modeling assumptions were applied when analyzing the sound impacts of the project to allow for uncertainties in the sound power output from the turbines and inherent uncertainties in mathematical modeling of the sound propagation. To be conservative, a factor of three dBA was added by the applicant's consultant to the manufacturer's sound power level of the turbines, and a factor of two dBA was added to account for uncertainty in the mathematical modeling, resulting in a total adjustment factor of five dBA.

Sound associated with the operational phase of the project was modeled excluding other existing sound sources. Modeling the sound generated from the operation of the 14 turbines was conducted by first obtaining the manufacturer's sound power level specifications (106.5 dBA), and then applying the uncertainty factors described above to account for the manufacturer's uncertainty and the modeling uncertainty, for a total sound power level of 111.5 dBA from each turbine. The model was run with all 14 turbines operating at full sound power output. No noise reduction operations are proposed for this project.

Although substation transformers emit sound, they were not considered significant sound sources by the applicant's consultant due to the low sound output and relatively large distance from protected locations, and were therefore not included in the model. The Department and Peter Guldberg found this appropriate and acceptable.

B. Short Duration Repetitive Sound. Chapter 375(10)(G)(19) defines short duration repetitive sound (SDRS) as "a sequence of repetitive sounds which occur more than once within an hour, each clearly discernible as an event and causing an increase in the sound level of at least 6 dBA on the fast meter response above the sound level observed immediately before and after the event, each typically less than ten seconds in duration, and which are inherent to the process or operation of the development and are foreseeable." Chapter 375 requires that if any defined SDRS results from routine operation of a development, 5 dBA must added to the observed level of sound.

The January 2012 sound level study submitted by the applicant summarized measurements of operating wind turbines in Maine and data from published literature that indicate that sound level fluctuations during the blade passage of wind turbines typically range from 2 to 5 dBA, with an occasional event reaching 6 dBA or more. However, the applicant's report concludes that the occurrence of these higher fluctuations would be so infrequent that they are not expected to meet the Department's definition of SDRS or affect the predicted sound levels. The Department's expert, Tech Environmental reviewed this study and stated, "Since the 5-dBA penalty for SDRS is applied only to the SDR sounds and not the entire

measurement interval, the infrequent occurrence of SDR sound events are not expected to significantly affect the project's sound levels and no adjustment to the acoustic model predictions for 1-hour L_{eqA} levels is necessary." Based on the applicant's January 2012 sound level study and the assessment of the Department's noise expert, it appears the proposed project is unlikely to generate short duration repetitive sounds. Compliance testing for SDRS which would have been incorporated into the post-construction noise monitoring program (discussed in Section 5.F. below) after project completion would have provided assurance that SDRS was not occurring.

C. Tonal Sound. As defined in Chapter 375(10)(G)(24), a regulated tonal sound occurs when the sound level in a one-third octave band exceeds the arithmetic average of the sound levels in the two adjacent one-third octave bands by a specified dBA amount based on octave center frequencies. Chapter 375 requires that 5 dBA be added to the observed level of any defined tonal sound that results from routine operation of a development.

The applicant's January 2012 sound level study states that the Vestas V112 turbines proposed for use carry Sound Level Performance Standard warranties certifying that they will not produce a tonal sound as it is defined by the Department's Noise Regulations. In his review of the applicant's sound level study on behalf of the Department, Mr. Guldberg confirmed that an analysis of the sound power octave band spectrum for the Vestas V112 turbine reveals that it has no potential for creating a tonal sound as defined in the Department's Regulations.

D. Generator Lead Line. The proposed generator lead line is anticipated to produce a minor noise impact during operation.

E. Department Analysis. Mr. Guldberg reviewed all of the materials submitted by the applicant and by members of the public. He reviewed the applicant's January 2012 and April 2012 Sound Level Assessments and submitted a report entitled "Peer Review of the Sound Level Assessment for the Passadumkeag Wind Project", dated April 13, 2012 and May 1, 2012. Mr. Guldberg concluded that the turbine maximum sound power level used in the analysis was conservative and tended to overestimate the actual turbine sound levels; the acoustic model and its assumptions are appropriate; the sound receiver locations are appropriate; the decibel contour maps adequately cover the potential impact area; and the Department's Noise Regulations have been properly interpreted and applied by the applicant.

F. Post-construction Monitoring Program. The applicant did not propose to conduct post-construction noise monitoring due to the lack of receptors in the area, unless there was a complaint. However, Mr. Guldberg recommended the Department require limited post-construction monitoring at receptor R2 (the only protected location within one mile of any turbine) following the test methodology in the Saddleback Ridge Wind project Permit. The Saddleback Ridge Wind compliance monitoring program consisted of:

1. Post-construction operation compliance testing representative of two separate regions around the project completed within the first year of operation. However for the Passadumkeag Wind project, this can be reduced to a single location at receptor R2.

2. Compliance must be demonstrated based on the following outlined conditions for twelve 10-minute measurement intervals per monitoring location meeting as set forth in Chapter 375(10) requirements. All data submittals must be accompanied by concurrent time stamped audio recordings.

   a. Compliance will be demonstrated when the required operating/test conditions have been met for twelve 10-minute measurement intervals at each monitoring location.

   b. Measurements must be obtained during weather conditions when wind turbine sound is most clearly noticeable, when the measurement location is downwind of the development and maximum surface wind speeds ≤6 mph (wind speeds for this project must be ≤ 12 mph) with concurrent turbine hub-elevation wind speeds sufficient to generate the maximum continuous rated sound power from the five nearest wind turbines to the measurement location. Measurement intervals affected by increased biological activities, leaf rustling, traffic, high water flow or other extraneous ambient noise sources that affect the ability to demonstrate compliance may be excluded from reported data. A downwind location exists when the wind direction is within 45° of the direction between a specific measurement location and the acoustic center of the five nearest wind turbines.

   c. Sensitive receiver sound monitoring locations must be positioned to most closely reflect the representative protected locations for purposes of demonstrating compliance with applicable sound level limits, subject to permission from the respective property owner(s). Selection of monitoring locations will require concurrence from the Department.

   d. Meteorological measurements of wind speed and direction should be collected using anemometers at a 10-meter height above ground at the center of large unobstructed areas and generally correlated with sound level measurement locations. Results should be reported based on one-second integration intervals, and be reported synchronously with hub level and sound level measurements at 10 minute intervals. The wind speed average and maximum should be reported from surface stations. Department concurrence on meteorological site selection is required. One-second data should be available on request, as required.

   e. Sound level parameters reported for each 10-minute measurement period should include A-weighted equivalent sound level, 10/90% exceedence levels and ten one-minute 1/3-octave band linear equivalent sound levels (dB). Short duration repetitive events should be characterized by event duration and amplitude. Amplitude is defined as the peak event amplitude

minus the average minimum sound levels immediately before and after the event, as measured at an interval of 50 millisecond (ms) or less, A-weighted and fast time response, i.e. 125 ms. For each 10-minute measurement period short duration repetitive sound events should be reported by the percentage of 50 ms or less intervals for each observed amplitude integer above 4 dBA. Reported measurement results should be confirmed to be free of extraneous noise in the respective measurement intervals to the extent possible and in accordance with section (b) above.

f. Compliance data collected in accordance with the assessment methods outlined above for representative locations selected in accordance with this protocol must be gathered and submitted to the Department at the earliest possible opportunity after the commencement of project operation, with consideration for the required weather, operations, and seasonal constraints, but no later than twelve months after commencement of project operation. Subsequently, compliance data for each location must be submitted to the Department for review and approval once every successive fifth year until the project is fully decommissioned.

g. All operational, sound and meteorological data shall be retained by the applicant for a period of one year from the date of collection. All audio data collected shall be retained by the applicant for period of four weeks from the date of collection unless subject to a complaint filed in accordance with the sound complaint protocol outlined below, in which case the audio data shall be retained for a period of one year from the date of collection. All operational, sound, audio and meteorological data is subject to inspection by the Department and submission to the Department upon request.

G. Sound Complaint Response and Resolution Protocol. The applicant did not propose a formal complaint response protocol due to the lack of receptors in the area. The application does state that if a complaint is received, the applicant will investigate it and if it is determined to that the project may have been the cause, an ambient monitoring program will be proposed. The applicant must notify the Department of any complaints within three business days of receiving them and must notify the Department of the outcome of its investigation within three business days of completion.

Based on the applicant's submissions and the review of those submissions by the Department's expert, the Department finds that the proposed project would meet all applicable standards of Chapter 375(10), including tonal sound and SDRS, and that the applicant has made adequate provisions for the control of excessive environmental noise from the proposed project. To ensure that the project operates in compliance with the permit and the Department's regulations, the Department finds that the applicant must implement the post-construction monitoring program described above, including the sound complaint protocol. The applicant must investigate all complaints and must notify the Department of any complaints within three business days of receiving them, and must notify the Department of the outcome of its investigation within three business days of completion; and the

applicant must submit sound level monitoring reports in accordance with the post-construction monitoring program described above. Upon any finding of non-compliance by the Department, the applicant must take short-term action immediately to adjust operations to reduce sound output to applicable limits under Chapter 375(10). Within 60 days of a determination of non-compliance by the Department, the applicant must submit, for review and approval, a mitigation plan that proposes actions to bring the project into compliance. The Department will review any such mitigation plan and may require additional mitigation or alternative measures. If immediate actions to bring the project into compliance with the applicable noise standards are not taken or not successful while the process of generating and obtaining approval of a longer term plan is taking place, the Department may take such enforcement action as it finds appropriate to ensure compliance with the Site Law, applicable provisions of Chapter 375(10), and this Order.

6. SCENIC CHARACTER:

The Site Law and the NRPA both have standards pertaining to scenic impacts that must be satisfied in order to obtain a permit. The Site Law requires an applicant to demonstrate that a proposed project would fit harmoniously into the natural environment and would not adversely affect existing uses or scenic character. Pursuant to the NRPA an applicant must demonstrate that a proposed project would not unreasonably interfere with existing scenic, aesthetic or recreational uses of a protected natural resource. The Wind Energy Act further specifies those standards and declares that when expedited wind energy developments are being evaluated:

> [T]he [Department] 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 . . . 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…Title 38, section 484, subsection 3. 35-A M.R.S.A. §3452(1).

With regard to the facilities associated with an expedited wind energy development, such as substations, buildings, access roads and generator lead lines, the Wind Energy Act, 35-A M.R.S.A. §3452(2), provides in pertinent part that:

> The [Department] shall evaluate the effect of associated facilities of a wind energy development in terms of potential effects on scenic character and existing uses related to scenic character in accordance with …Title 38, section 484, subsection 3, in the manner provided for development other than wind energy development if the [Department] determines that application of the standard in subsection 1 to the development may result in unreasonable adverse effects due to the scope, scale, location or other characteristics of the associated facilities. An interested party may submit information regarding this determination to the [Department] for its

consideration. The [Department] shall make a determination pursuant to this subsection within 30 days of its acceptance of the application as complete for processing.

The Wind Energy Act, 35-A M.R.S.A. §3452(3), further provides that:

> A finding by the [Department] that the development's generating facilities are a highly visible feature in the landscape is not 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 [Department] 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.

The proposed wind project contains "generating facilities" including wind turbines and towers as defined by 35-A M.R.S.A. §3451(5) and "associated facilities" such as buildings, access roads, generator lead lines and substations, as defined by 35-A M.R.S.A. §3451(1). The proposed project is subject to the expedited wind energy development standards outlined above and, to the extent applicable, 38 M.R.S.A. §484(3). The project also contains a generator lead line which would replace an existing line almost in its entirety.

As provided in the Wind Energy Act, 35-A M.R.S.A. §3452(2), the Department made a determination within 30 days of the receipt of the application that the potential effects of the generator lead line on the scenic character and existing uses would be reviewed under the standards set forth in the Wind Energy Act (35-A M.R.S.A. §3452).

To address the scenic impact criteria, the applicant submitted a Visual Impact Assessment (VIA) entitled "Visual Impacts of a Generation Facility", prepared by Terrence J. DeWan and Associates (TJD&A). The VIA examined the potential scenic impact of the generating facility and associated facilities on Scenic Resources of State or National Significance (SRSNS) within eight miles of the proposed project using the evaluation criteria contained in the Wind Energy Act. The applicant also submitted a user intercept survey authored by Market Decisions and dated October 2011.

The applicant conducted a VIA within an eight-mile radius of the proposed generation facility portion of the project. The applicant's VIA for the generating facility and associated facilities addressed the criteria set forth in 35-A M.R.S.A. §3452(3):

(A) The significance of the potentially affected scenic resource of state or national significance;
(B) The existing character of the surrounding area;
(C) The expectations of the typical viewer;
(D) The 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. SCENIC RESOURCES OF STATE OR NATIONAL SIGNIFICANCE

Scenic Resources of State or National Significance (SRSNS) are defined in 35-A M.R.S.A. §3451(9). The following is a description of what constitutes an SRSNS and the applicant's summary of potential impacts to SRSNS within eight miles of the proposed generating facilities:

1) National Natural Landmarks. National natural landmarks (NNL) are federally designated wilderness areas or other comparable outstanding natural and cultural features, such as the Orono Bog or Meddybemps Heath.

According to the National Park Service, there is one National Natural Landmark within eight miles of the Passadumkeag Wind Project: the 6,100-acre Passadumkeag Marsh and Boglands. The southeast tip of the area designated as a NNL touches the line that circumscribes area within eight miles of the generating facilities. The National Park Service's website describes the Passadumkeag Marsh and Boglands NNL as:

One of the largest, unspoiled wetlands in the state of Maine, Passadumkeag Marsh and Boglands contains a unique blend of bog and marsh communities. The marsh is partially bounded by eskers, including the classic Passadumkeag Esker, or Enfield Horseback, known world-wide as an example of glacial geology.

According to the Maine Department of Conservation's publication, *Conservation Lands in Maine*, the Passadumkeag Marsh and Boglands are part of the Cold Stream/Ayers Brook Preserve, which is a series of interconnected tracts of land held by The Nature Conservancy in fee. The area is open for public use, although access is limited due to the nature of the landscape. There are no developed trails and access by road is limited to small areas of frontage on Gould's Ridge Road and Enfield Road. Public use of the area is primarily in the form of canoeing and hunting waterfowl. The applicant states that, at most, the top of one turbine may be visible from the preserve and it would appear as a very small object on a relatively flat horizon. The applicant concludes that the presence of the turbines should not have any visual impact on the Passadumkeag Marsh and Boglands.

The applicant did not identify any other NNL, federally designated wilderness areas, or other comparable outstanding natural and cultural features.

In response to questions raised by an interested person, the Department considered whether potential scenic impacts involving the portion of the Robbins Lumber Easement that is located within eight miles of the generating facilities should be evaluated as a SRSNS. The Department concluded that the features within the Robbins Lumber Easement are not comparable to NNL or federally designated wilderness areas, and the Department did not require the applicant to submit information on potential impacts there.

2) Historic Resources. Historic Resources are properties 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.

The Old Tavern in Burlington, built in 1844, is listed on the National Register of Historic Places, and is within eight miles of the Passadumkeag Wind Project. The Old Tavern is a 2.5 story wooden frame structure with a gable roof, clapboard siding, and a covered porch that wraps around the front façade. The National Register nomination form, submitted in 1986, describes the tavern as a popular headquarters for hunters and fishermen in the area in its later years. It was first built to serve as a hotel for lumber crews and others who were working in the area. The building sits on a corner lot in a small town setting. In the nomination for its inclusion on the National Register, the building's relationship to the surrounding landscape is not mentioned as a significant factor; however, the integrity of the immediate setting is important to the Old Tavern. The setting around the Old Tavern is a classic cross-road village, with a church with a white steeple across the street, and private residences, open fields/greens, and additional (formerly) commercial buildings nearby. The building is 5.9 to 7.2 miles northwest of the project and separated by a dense stand of second growth vegetation. The applicant states that the turbines would not be visible presently from this site due to the intervening vegetation and that even if the turbines were to be visible, their relatively small appearance would not detract from the historic context. The primary function of the Old Tavern occurs inside the structure, and is not related to the scenic quality of the surrounding landscape. Based on its field investigation, the applicant states that the presence of the turbines should not have any visual impact on the Old Tavern.

3) National or state parks. There are no national or state parks within eight miles of the project.

4) Great ponds. A great pond is a SRSNS if it is:

a. 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

b. One of the 280 great ponds in the State's unorganized or de-organized 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.

There are no great ponds within eight miles of the generating facilities listed in the "Maine's Finest Lakes" study. The scenic resources of three great ponds within eight miles of the project have been designated as significant in the "Maine Wildlands Lakes Assessment" (Assessment): Saponac Pond, Spring Lake, and Lower Pistol Lake. One great pond within eight miles of the generating facilities, Nicatous Lake, has been designated as outstanding from a scenic perspective in the Assessment.

SAPONAC POND

Saponac Pond (922 acres, elevation 190 feet above sea level) is two miles east of Burlington on Route 188 (Main Road). The pond is the second largest waterbody within eight miles of the generating facilities and the SRSNS closest to the project. The entire pond is within eight miles of the project. The northern third of the pond is located in Burlington; the southern portion is located in Grand Falls Township. The applicant's description of the shoreline is that it is mostly private timberland or developed for house lots. The landscape within two miles of the pond consists of gently rolling wooded hills that are drained by boggy meandering streams and rivers. Folsom Ridge, on the northeast side of Route 188, rises approximately 300 feet above the level of the pond. The most distinctive landform in the vicinity is Passadumkeag Mountain, a broad U-shaped series of ridges to the south that rises over 1,250 feet above the pond.

The applicant's VIA indicates that there would be 10 to 14 turbines visible from Saponac Pond. The applicant concludes that based on the user intercept survey results, photo-simulations, viewshed maps, and roadway plans, the turbines, seen in profile on the ridgeline of Passadumkeag Mountain, along with the visible portions of the access road, would have an adverse effect on the scenic value of Saponac Pond. However, the applicant reports that there are relatively few recreational users of the pond. The applicant describes the primary recreational uses on Saponac Pond as fishing and boating. The applicant concludes from its user intercept survey that most people would continue to return to the pond to enjoy boating, fishing, and similar recreational pursuits even with the turbines in view.

NICATOUS LAKE

Nicatous Lake (5,165 acres, elevation 347 feet above sea level) is the largest waterbody within eight miles of the project, although most of the lake is located further than eight miles from the project. The lake is located southeast of Passadumkeag Mountain in T3 ND, T40 MD, and T41 MD. Most of the shoreline is privately owned, and with the exception of several sporting camps

and private homes, is encumbered by conservation easements held by the Maine Bureau of Parks and Lands (BPL). Most of the islands in the lake are owned in fee by BPL. Nicatous Lake is a narrow waterbody approximately nine miles in length with a highly configured shoreline surrounded by low rolling hills. The northern third of the lake, which falls within eight miles of the project, is between 0.2 and 0.9 miles in width, significantly narrower than the southern portion. The closest proposed turbine to the lake is located 5.6 miles west of this portion of the lake. The landforms surrounding the northern end of the lake rise up to 150 to 225 feet above the surface of the lake. One of the most noteworthy features of Nicatous Lake is the number of wooded islands found throughout its length. The applicant states that although the axis of the northern portion of Nicatous Lake generally runs northwest/southeast, the combination of the surrounding hilly terrain and the presence of several wooded islands in this part of the lake would make it difficult to achieve a long view of the project, except along the western shore. There are no named mountains or other distinctive focal points within the foreground or midground in the viewshed from this portion of the lake.

The applicant's VIA states that between one and nine turbines would be within eight miles, and approximately eight turbines would be visible from portions of Nicatous Lake. The applicant states that based on the user intercept survey results, the photo-simulations, and the viewshed maps, the project would have an adverse effect on the scenic value of the northern third of Nicatous Lake, which is recognized in the Assessment for its outstanding scenic resources. However, the applicant contends there are moderating factors that would affect the overall scenic impact. The applicant states that the distance of the project (five to eight miles) from the lake would make the turbines appear as relatively small to medium-sized objects on the horizon, and the low hills and wooded islands between the project and the viewer would provide intermittent screening so the entire project would never be visible from any one point on the lake. The applicant concludes from its user intercept survey that most people would continue to return to the lake for boating, fishing, and similar recreational pursuits even with the turbines in view.

LOWER PISTOL LAKE

Lower Pistol Lake (979 acres, elevation 323 feet above sea level) is in T3 ND, ten miles east of Burlington and is between 4.9 and 6.2 miles from the project. Most of the land surrounding the lake is within the Passamaquoddy Indian Territory. Lower Pistol Lake is the westernmost waterbody in a chain of lakes that includes Upper Pistol Lake, Middle Pistol Lake, Side Pistol Lake, and Spring Lake. The landscape surrounding the lake consists of gently rolling wooded hills that are drained by boggy meandering streams. An unnamed hill to the southwest rises 300 feet above the lake. Logging operations have created a network of woods roads that approach the lake from Pistol Green, a break in a distinct esker two miles west of the lake. Access to the lake is over woods roads. An informal boat put-in and campsite are located in an opening at the northwestern end of the lake. The lake is undeveloped, with no camps evident

from field evaluation or aerial photographs. The Maine Atlas and Gazetteer indicates the presence of a campsite on one of the islands in the middle of the lake.

The applicant states that all 14 turbines would be visible from Lower Pistol Lake at a distance of five to eight miles. The applicant's VIA states that based on the user intercept survey results, photo-simulations, and viewshed maps, the turbines, seen in profile on the ridgeline of Passadumkeag Mountain, would have an adverse effect on the scenic value of Lower Pistol Lake. However, the applicant states that moderating factors would affect the overall scenic impact. The applicant states that the project would be visible in the background, which would make the turbines appear as relatively small to medium-sized objects on the horizon. The applicant concludes from its user intercept survey that the majority of the small number of users of the lake would continue to return to the lake to enjoy boating, fishing, and similar recreational pursuits even with turbines in view.

SPRING LAKE

Spring Lake (435 acres, elevation 336 feet above sea level) is in T3 ND, ten miles east of Burlington and is between 4.9 and 6.2 miles from the project. Spring Lake is a waterbody in a series of lakes that includes Lower Pistol Lake, Upper Pistol Lake, Middle Pistol Lake, and Side Pistol Lake. The landscape surrounding the lake consists of gently rolling wooded hills rising about 200 feet above the lake, which are drained by boggy meandering streams. A small island is located at the southern end near the boat launch. Logging operations have created a discontinuous network of woods roads that approach the lake from Pistol Green on the west. Access is over a woods road on the south side of the lake, where there is a hand-carry boat launch site. The lake appears to be largely undeveloped, with only one camp evident from field evaluation or aerial photographs.

The applicant's VIA states that based on the photo-simulations, viewshed maps, and field investigation, the blades of up to four turbines would be scarcely visible from Spring Lake, and therefore would have a very slight adverse effect on the scenic value of the lake.

WEST LAKE

A comprehensive visual analysis was not conducted by the applicant for West Lake, as it is not a SRSNS. The applicant states that there would be visual impacts to West Lake, which has a large number of camps. Camp orientation on the extensive southwest and northeast facing shorelines is not, for the most part, in the direction of the project. The applicant states that intervening vegetation and topography, coupled with the distance from project (five miles to the nearest turbine at the closest point of visibility from the lake), would limit overall visual impact. The applicant concludes that owners on the north shore would not be able to see the project.

5) Scenic Rivers. A segment of a scenic river or stream is a SRSNS if it is identified as having unique or outstanding scenic attributes in Appendix G of the "Maine Rivers Study" published by the Department of Conservation in 1982. There are no rivers or streams within eight miles of the proposed project that are identified in the Maine Rivers Study as having unique or outstanding scenic attributes.

6) Scenic viewpoints on public land or trails. A scenic viewpoint is a SRSNS if it is 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 Agriculture, Conservation and Forestry designates by rule. There are no scenic viewpoints located on state public reserved land within eight miles of the proposed project, and there are no trails used exclusively for pedestrian use within eight miles of the proposed project.

7) Scenic turnouts. A scenic turnout is an SRSNS if it has been 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. There are no scenic turnouts on any designated scenic highways constructed by the Department of Transportation within eight miles of the proposed project

8) Scenic viewpoints located in the coastal area. To qualify as an SRSNS, a scenic viewpoint located in the coastal area, as defined by Title 38, section 1802, subsection 1, must be ranked as having state or national significance in terms of scenic quality in:

   a. 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

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

   There are no scenic viewpoints located in coastal areas within eight miles of the proposed project.

B. SUPPLEMENTAL VISUAL IMPACT ANALYSIS

Following the second public meeting and at the request of the Department, the applicant submitted additional information concerning the impacts to the scenic character of Saponac Pond, as well as on the public use of the pond. One of the submissions was a movie, created from near the middle of Saponac Pond, where

the viewer could see a panoramic, 360 degree view of the pond. The movie also included simulations of the proposed turbines. The applicant also conducted further use surveys on the amount, nature and duration of the use of Saponac Pond by the public. The additional use surveys were conducted on thirteen days between August 8, 2012 and September 3, 2012. During the 86.25 hours of surveying, 24 boats, 42 boaters, and 9 incidental on-shore users were documented. The average time spent on the pond by boaters was 1.8 hours. The applicant concludes that the movie and use surveys demonstrate that the pond is developed; the pond is lightly used; the extent of the use is limited; and that the 14 wind turbines visible would not have an unreasonably adverse impact on the scenic character of Saponac Pond.

C. PUBLIC COMMENT

The Department received numerous comments from the public concerning the scenic impact of the project. The Natural Resources Council of Maine (NRCM) commented that, "Passadumkeag Mountain is a stunning visual feature that dominates and greatly accentuates the scenic quality of the resource." They noted that there is a single existing radio tower on the mountain. They also noted visible evidence of working forest use in the project area. NRCM stated that working forests are common within the unorganized territories and it was NRCM's opinion that evidence of a working forest did not detract from the scenic quality of Passadumkeag Mountain or any other feature in the area. NRCM also commented that, "The fact that 40% of users felt the project would have a negative impact and 25-30% of users thought they were less likely to return indicates a substantial impact on usage."

Several interested persons raised concern over the adverse visual impacts from the warning lights required by the Federal Aviation Administration (FAA) that would be placed on the top of some turbines. One interested person submitted a photograph of another wind power project in the state which showed the reflection of such lights on a lake. Another interested person submitted written comments stating, "the pulsating, flashing, incessant night lighting required for safety by FAA is a very large part of the unacceptable, intrusive visual scenic impact." The interested person went on to request the Department require the applicant to install an Audio Visual Warning System (AVWS). These systems are designed to turn on the warning lights as a plane approaches the turbines. At other times, the warning lights are not lit. AVWSs are not yet approved for use on wind turbines by the FAA. To address these concerns, the applicant modified its application to propose, "If the FAA finalizes the standards for these systems prior to the construction of the Passadumkeag project, the Applicant will evaluate the use of such a system for the project. If it is both technically and economically feasible and approved by the FAA, the Applicant will install a radar controlled system for this project."

One interested person submitted a petition with over 300 signatures urging the Department to deny the project based on, among other things, the negative visual impacts on the surrounding area.

D. PEER REVIEW

The Department hired David Raphael of Landworks, an independent scenic expert, to assist in its review of the Scenic Character section of the application. Mr. Raphael provided the Department with comments dated June 19, 2012 and September 7, 2012. Mr. Raphael ranked six SRSNS in his review document entitled "Review of the Passadumkeag Wind Project Visual Impact Assessment" dated June 19, 2012 and again on September 7, 2012. The six SRSNS were evaluated based on the statutory requirements of context, character significance, uniqueness, level of use, viewer expectations, visual impact and effect on public use. Mr. Raphael's analysis factored in distance from the project, duration and extent of the views, and visual absorption. Mr. Raphael rated each factor in an evaluation matrix, with a maximum point value of three, representing high potential impact on the resource, down to zero, representing no potential impact on the resource.

In addition to the matrix evaluation, Mr. Raphael provided the following comments to the Department on the six SRSNS within eight miles of the proposed project:

1) Passadumkeag Marsh and Boglands:

Only a very small portion of this area, 0.6 acres (the most southeasterly section of the bog land parcel), is within the eight miles of the project. Based on the viewshed analysis of both the applicant's VIA and the Landworks analysis of aerial photography for land cover, Mr. Raphael agrees with the applicant that it is expected that there would be no visibility of the project from this resource.

2) Old Tavern:

The Old Tavern faces Route 188 (Main Road) and is oriented in a manner that the view of its external architectural qualities as well as access to the building's interior is from the west. From this direction the project would not be visible. Mr. Raphael concludes that any potential views of the project would be in the southerly to south easterly direction; however it is unlikely that these views are possible due to the intervening vegetation and structures.

3) Saponac Pond:

Saponac Pond has been developed with camps primarily along its northeastern and northwestern shores. There are up to 50 camps and year-round homes on the shores or in the vicinity of the pond. The shoreline is wooded with hardwoods and softwoods with the exception of clearings for camps and the short section where Route 188 (Main Road) follows the shoreline. Located short distances beyond the southern shoreline of the pond are openings in the forest cover as a result of logging activity.

From Route 188, the closest turbines would be at a distance of between 4 and 4.8 miles; from the south shore of Saponac Pond the closest turbine would be at a distance of 2.3 miles. Mr. Raphael concludes that Saponac Pond, due to its proximity to the project site and the fact that there would be visibility of the project from nearly all of the surface area of the pond, would be adversely impacted by this project. He states that users boating or fishing on the pond would have the project potentially in view, with some exceptions due to the north-facing shorelines that would benefit from vegetative screening. He notes there is currently what is considered to be some inharmonious development, namely the communication tower and the timber harvesting activities, but the overall scenic rating may be attributable to the presence and prominence of the Passadumkeag Mountain itself. He acknowledges that Saponac Pond is not a pristine waterbody, and that the logging activity and existing mountaintop development contribute to the sense of the pond being in a developed area that has been used historically as a working landscape.

He states that from Saponac Pond the turbine array would be readily visible against the backdrop of sky and atmosphere. Given the horizontal extent of the project, the fact that it would be visible from most of the pond, and that the view would comprise anywhere from 31° of the panorama when viewed from the simulation site up to 62° when viewed from the middle of the pond, he concludes that this project would dominate the views that many users would experience. The project would change the mountain landscape with clearings for the turbine pads and the service roads that would connect the turbine sites. It would add a distinct and unnatural form to this mountain landscape.

Mr. Raphael reviewed whether the project visibility would greatly diminish the use and enjoyment of the users. The applicant's user intercept survey results specify that 41% of people surveyed indicate that if the project were built it would have a negative impact on their sense of enjoyment; 59% indicated it would not change their sense of enjoyment. Additionally, a number of users indicated that for several different recreational activities, such as swimming, boating, canoeing, kayaking, and ice fishing, they would still be likely to return to the pond for those recreational activities after the project is developed.

Landworks concluded that this project would most definitely result in an adverse impact to the scenic quality of Saponac Pond but not in an unreasonable adverse impact. While the project would not directly affect the physical form and character of the pond itself, the project would be prominent and alter the visual quality and sense of place for the users and camp owners. The evaluation matrix developed by Mr. Raphael indicates that the project's impact on scenic qualities and values for this lake would be a composite rating of 2.1, or a moderate impact. Mr. Raphael noted mitigating factors including: the fact that the area already has been developed; the mountain environments are not pristine; and the relatively high number of respondents in the applicant's survey who indicated the project would not have a substantial impact on enjoyment and their willingness to return.

4) Nicatous Lake:

Approximately one half of this nine mile long lake is within eight miles of the proposed project. The applicant's VIA indicates that the visibility of the project would be limited on the lake. Any visibility would be of only a few turbines in a narrow angle of view of approximately 10° when compared to an overall 360° panorama. The distance to the turbines ranges from 6.9 miles for the closest visible turbine to 9.5 miles for the most distant visible turbines from the applicant's simulation view location. Mr. Raphael concludes that the developed areas at the northern end of the lake and at Porter Cove are unlikely to have any visibility of the turbines due to the intervening vegetation and topography. Mr. Raphael states that while there would be some visibility of the project from other points on the lake within the eight-mile project radius, the distance to the nearest visible turbine is such that these turbines would be neither dominant nor serve as a focal point to draw the eye.

Passadumkeag Mountain can be discerned from viewing points within the eight-mile project radius. Mr. Raphael comments that while atmospheric conditions and landscape qualities associated with the lake and shoreline would diminish the presence of the project, the project would have the potential to result in adverse impact of the scenic qualities and values of the lake. He comments that although visibility of the project is limited by distance, the project would still add an unnatural element to the view and horizon line when seen from the shoreline or on the lake vantage points. After consideration of the applicant's user survey, in which 68% of the respondents indicated that the project would not change, or would have a positive impact on their level of enjoyment, Mr. Raphael stated that the scale of the project's potential visual presence on this lake would not be so large as to be disconcerting and unsettling. The evaluation matrix developed by Mr. Raphael indicates that the project's impact on scenic qualities and values for this lake would be a composite rating of 1.9, or a moderate impact.

5) Lower Pistol Lake:

Mr. Raphael observes that the general context for this particular lake is one of an undeveloped, remote pond; however, there is evidence of surrounding timber harvesting and forest resource management. With the surrounding low relief of this pond and the wooded nature of the shoreline, this area is not particularly unique nor does it rise to the level of being distinctive with regard to other similar lakes in the region. The lake is considered generally remote as it is only reachable by four-wheel drive or by snowmobile in the winter. The distance to the nearest turbine from this lake is over five miles at the northern end of the lake. Mr. Raphael concludes that on those portions of the lake where the turbines are visible, the range of view is approximately eight degrees when compared to an overall 360° panorama.

Mr. Raphael considered the applicant's user survey, which stated that 62% of respondents indicated that their enjoyment of the pond would not be affected by the turbines.

Based on the limited extent of potential project visibility on this lake; the fact that a small percentage of the panorama would be occupied by the project; and consideration of a lack of impact on the quiet and solitude that the lake provides, Mr. Raphael's matrix result was a 1.4 and he concludes that there would be a low to moderate impact.

6) Spring Lake:

Mr. Raphael comments that Spring Lake is another seemingly remote, undeveloped pond, surrounded by both wetland systems and timber harvest operations. The shoreline is wooded with spruce, pine and northern hardwoods, and much like Lower Pistol Lake the topography around the lakes is comprised of low lands and low ridges with elevation differences of about 200 to 250 feet above the lake surface. The lake is primarily accessible with four-wheel drive or by snowmobile in the winter. When topography and vegetation are taken into account, Mr. Raphael's viewshed analysis yields the conclusion that only a small portion of the lake, approximately 15% of the surface and shoreline area, would have visibility of the proposed project turbines from hub height and above. He concludes that visual impacts to Spring Lake resulting from this project would be minimal, if discerned at all. He commented that users of this lake would need to be, for the most part, looking in the right direction and would need to know what they were looking for in order to see the project.

Mr. Raphael's evaluation matrix yielded a score of 1.1, and given the distance to the project, the minimal visibility, the lack of users and difficult access, as well as the fact that the lake is not an outstanding scenic landscape, he concludes that it appears that the project's impacts would barely be adverse and the overall impact to scenic quality would be low.

The applicant's VIA determined that the access roads, crane paths, turbine pads and O&M building have a minimal possibility of being seen from any SRSNS or other public area. The applicant's study concluded that these associated facilities would not have an unreasonable adverse effect on scenic character and existing uses. Mr. Raphael and the Department reviewed this portion of the VIA and concur with the applicant's analysis.

E. PEER REVIEW OF THE SUPPLEMENTAL VISUAL IMPACT ANALYSIS

Mr. Raphael also reviewed the additional information provided by the applicant on the visual impacts to Saponac Pond. In that review, Mr. Raphael states, "Given the local recognition of Passadumkeag Mountain as an important regional landmark, a consideration that was not readily understood until the public [meetings], it is possible that one could reach the conclusion that the impact to this landmark could

be considered unreasonable." However, Mr. Raphael notes that Passadumkeag Mountain itself is not a SRSNS and that Saponac Pond is lightly used.

F. DEPARTMENT ANALYSIS AND FINDINGS

The Department considered the evidence on scenic impacts submitted by the applicant and by members of the public, information gathered during two public meetings, the comments of its independent scenic expert, observations made during site visits and the evidence gathered by staff. Department staff conducted three site visits over the course of the evaluation of this application, with two of those site visits specifically including Saponac Pond.

1) Saponac Pond. During the course of its analysis of the evidence, on July 23, 2012, the Department requested the applicant to supplement the original VIA with additional information on potential scenic impacts of the proposed project to Saponac Pond. The Department specifically requested an additional photo-simulation be made from the pond near the southern shore which would be representative of views of users on the pond. In the original application, the applicant included a photo-simulation taken from the northern shore of the pond, near the boat launch on Route 188. The Route 188 location is approximately 4 to 4.8 miles from the closest turbine; ten turbines would be visible from that location and they would span approximately 52 degrees of the panorama. The south shore of Saponac Pond is approximately 2.3 miles from the closest turbine. Instead of an additional photo-simulation from near the southern shore, the applicant submitted as part of the Supplemental VIA a movie simulation from a location near the middle of Saponac Pond, approximately three miles from the nearest turbines. From this location in the middle of Saponac Pond, all fourteen turbines would be visible and they would span approximately 62 degrees of the panorama. Based on the applicant's movie, it appears that closer to the south shore of the pond all fourteen turbines would still be in view. The turbines would appear larger and they would span an even greater angle of view than as viewed from the boat launch on Route 188.

Department staff visited Saponac Pond on July 12, 2012, and September 6, 2012. During these site visits, Department staff observed the viewsheds from around the pond and on the pond, respectively, and the level of existing development around the shoreline. From the boat launch on Route 188 the view of Passadumkeag Mountain does not include views of the developed portions of the pond. In order to view the developed portions of the pond one has to be on the pond and looking away from Passadumkeag Mountain. The applicant's scenic consultant and the Department's independent scenic expert considered the developed portion of the shoreline and the mountain to be inharmonious development, and a mitigating factor for the scenic impact of the project. Both commented that the developed area would lessen the impact of the proposed development as it is not a pristine pond. The Department's analysis, however, takes into account the fact that the view from Saponac Pond looking south toward the ridge of Passadumkeag Mountain is essentially devoid

of any residential structures. Moreover, the existing radio tower on the ridge is a very minor visual impact and takes up only a very small percentage of the horizon. While the northern slope of Passadumkeag Mountain shows evidence of some logging activities, the Department does not consider these indications of logging activities as having a significant impact on the scenic character of the viewshed from Saponac Pond. The Department finds that these factors create a more natural setting than is portrayed by the applicant's VIA and Mr. Raphael's comments on development, and that the predominant existing scenic character of the viewshed from Saponac Pond in the direction of the proposed project is undeveloped.

In its analysis of the proposed project's potential effect on scenic character and related uses, the Department considered the six criteria in 35-A M.R.S.A. §3452 (A) through (F) and made the following findings regarding Saponac Pond:

(A) Significance of the SRSNS: The Department received comments from many people throughout the review process of this application indicating that Saponac Pond is a valued and regionally significant scenic resource based on its boating, fishing and recreational uses, all of which are enhanced by the scenic quality of the views toward Passadumkeag Mountain. The Department finds that this pond is distinctive for its views of Passadumkeag Mountain in an area that does not have many comparable views.

(B) Existing character of surrounding area: Based on two site visits to Saponac Pond, the applicant's VIA and supplemental VIA, and aerial photographs of the area surrounding the pond, the Department concludes that the viewshed from Saponac Pond to Passadumkeag Mountain is undeveloped. The Department agrees with its scenic expert's conclusion that the turbine array would be readily visible against the backdrop of sky and would dominate the views that many users would experience. The project's turbines, clearings for the turbine pads and service roads connecting the turbine sites would change the mountain landscape. They would add a distinct and unnatural form to this primarily natural mountain landscape. Therefore, the Department finds that the construction of this project on Passadumkeag Mountain would result in a significant change to the existing scenic character of Saponac Pond.

(C) User expectations: In the applicant's user intercept survey for Saponac Pond, respondents were asked to evaluate their expectations for 1) the number of people that may also use the pond, and 2) the level of development they will see along the pond. Most respondents expressed the view that they expect the lake to be uncrowded, and that they expect the pond to be undeveloped. The Department concludes that the proposed project would have a substantial effect on users' expectations of Saponac Pond, since the proposed project would dramatically change the level of development as viewed from the pond.

(D) Project purpose and context: The purpose of the project is to generate electricity through the construction of wind turbines on Passadumkeag Mountain. The setting around the proposed project is a mostly undeveloped mountain that dominates the view from Saponac Pond that includes minimal development in the views of Passadumkeag Mountain.

(E) Nature of uses and effects on public use and enjoyment: Based on the user surveys submitted by the applicant, the primary uses of Saponac Pond are boating and fishing. The Department finds that the number of people using the resource should not be determinative, as in many cases a small number of users heighten the users' enjoyment of the resource, especially in regard to the enjoyment of the aesthetics of the place. The fact that the pond may not be used by a large number of people does not diminish the importance of the limited users of the pond. The applicant's materials demonstrate that a majority of the turbines would be visible from 97% of Saponac Pond. Thus, users of the pond would have views of the turbines for the duration of their visits. Upon review of the applicant's user intercept surveys, the Department finds that the 41% of respondents that indicated that the proposed project would have a negative impact on their enjoyment of the pond is a substantial percentage.

(F) Scope and scale: Passadumkeag Mountain is the dominant visual feature as viewed from Saponac Pond. As stated above, the Department finds that all 14 turbines would be visible from a majority of the views on Saponac Pond. Some of the turbines would be as close as 2.5 miles from the pond; therefore these prominent features of the development would comprise large aspects of the views from the pond. The extent of the view would range from 52 degrees to 62 degrees of the total panorama. Based on the topography of the area and the dominance of Passadumkeag Mountain in the most scenic aspect of the landscape, the Department finds that the construction of the proposed project on the mountain's ridge would have a significant impact on the scenic character of Saponac Pond.

2) Other SRSNS. The Department finds that the generating facilities portion of the project would not have an unreasonable adverse effect on scenic character or existing uses related to scenic character of the other SRSNS; specifically, the Passadumkeag Marsh and Boglands, the Old Tavern, Nicatous Lake, Lower Pistol Lake, Spring Lake or West Lake.

The Department finds that the applicant has made reasonable accommodations to fit the associated facilities portion of the development into the natural environment and that this aspect of the project alone would not have an unreasonable adverse effect on scenic character or existing uses related to scenic character of scenic resources of state or national significance, or other existing uses in the area.

In enacting the Site Law and the NRPA the Legislature found that Maine's great ponds have great scenic beauty and unsurpassed recreational and environmental value to citizens of the State. The Legislature voiced its concern about the substantial threat posed by the potential cumulative effect of frequent minor and occasional major impacts to these resources. The Department considers existing impacts to a resource in assessing whether the additional impacts of a proposed project affecting the resource would be unreasonable. The review of topographical maps and a staff site visit to Saponac Pond showed that nine turbines from the Rollins Wind project, which is located in the towns of Lincoln, Burlington and Lee, are clearly visible from Saponac Pond. These turbines are visible to the north to users of Saponac Pond. The applicant's proposed project would add another 14 turbines which would be visible, making a total of 23 turbines visible from most of Saponac Pond. This would result in a substantial increase in the portion of the panorama that would contain wind turbines as seen from a SRSNS. In the Wind Energy Act the Legislature includes the number of wind turbines visible from a SRSNS as a factor to be considered in an assessment of visual impacts. In this case Saponac Pond has already sustained an impact to its scenic character from the construction of the Rollins Wind project turbines nearby. The cumulative impact on the scenic character and the uses related to scenic character that would result from the addition of 14 turbines visible on the opposite side of the pond would be an unreasonable adverse impact given the nature and scenic qualities of Saponac Pond.

The Department finds that the generating facilities portion of the project would have an unreasonable adverse effect on the scenic character and the existing uses related to the scenic character of Saponac Pond. As set forth above, the Department has not based the determination that the proposed project has an unreasonable adverse effect on the scenic character of Saponac Pond solely on a finding that the generating facilities are a highly visible feature in the landscape. The resource's significance to its users, the predominant role of the mountain itself in the value of the scenic resource, the expectations of the viewers, and the nature of the affected uses all form the basis of the finding of an unreasonable adverse impact.

7. WILDLIFE AND FISHERIES:

Applicants for Site Law and NRPA permits are required to demonstrate that the proposed project would not unreasonably harm wildlife and fisheries; any significant wildlife habitat; freshwater plant habitat; threatened or endangered plant habitat; aquatic or adjacent upland habitat; travel corridor; freshwater, estuarine or marine fisheries; or other aquatic life. The applicant submitted the results of a series of ecological field surveys conducted by Stantec Consulting (Stantec), including wildlife surveys; wetland delineations; rare, threatened, and endangered plant and animal species surveys; and vernal pool surveys within the project area, including the area affected by the 17-mile generator lead line. During the preparation of the surveys and other material in support of the application, Stantec consulted with the Department and other natural resource review agencies.

A. Significant Vernal Pools. Stantec conducted vernal pool surveys within the project area in the spring of 2011. Stantec identified one vernal pool within the transmission line portion of the project area which would be being impacted by clearing. The clearing would impact less than 25% of the critical terrestrial habitat of the vernal pool and those impacts have been approved under Permit-By-Rule (PBR) #53622.

B. Inland Waterfowl and Wading Bird Habitat. The turbine portion of the project would not impact any Inland Waterfowl and Wading Bird Habitat (IWWH).

The proposed transmission line would cross three sections of IWWH. Two of the crossings would result in an increase of more than 10% of the developed area and would result in a total impact of 9,800 square feet adjacent to existing cleared area and adjacent to a road. The impacts to a third area of IWWH, which result in an increase of less than 10% of the developed area, meet the standards of Chapter 305, Section 20, and were permitted under PBR #53671.

The applicant proposes to construct the transmission line to be compliant with the U.S Fish and Wildlife Department's Avian Protection Plan (APP) Guidelines. This would include cutting only vegetation that could grow to within 15 feet of a conductor in the next three to four years. If possible the applicant would leave two to three snags within the collection line corridor to provide nesting habitat. The applicant would also locate poles in upland areas whenever possible in order to minimize impacts to the IWWHs.

The Department finds that the impacts to IWWHs have been minimized by the proposed vegetation management plan and the effort to locate poles in upland areas.

C. Deer Wintering Area. Neither the generating facilities nor the transmission line portions of the project would impact any Deer Wintering Areas as defined under the NRPA.

D. Rare, Threatened, and Endangered Species. Stantec conducted a survey of the area within two miles of the proposed project for plant and animal species that are state or federally listed as Rare, Threatened, or Endangered. No Rare, Threatened or Endangered plant or animal species were found.

E. Salmon Habitat Streams. The proposed transmission line would cross 13 streams that contain, or may contain, habitat for Atlantic Salmon. As described in Finding 9 below, the applicant has proposed buffers adjacent to those streams to minimize any impacts to the habitat.

F. Birds and Bats. The applicant retained Stantec to conduct bird and bat surveys to identify which species occurred in the area of the proposed project; the extent of the use of the site by such species; and potential impacts of the proposed project. Stantec conducted specific avian surveys, including raptor migration surveys and

eagle use surveys. It also compiled a list of bird species observed on the site. In the spring of 2011, Stantec conducted 20 nights of nocturnal radar studies, acoustic bat surveys, and raptor migration surveys. In the summer of 2011, breeding bird surveys were conducted. In the fall of 2011, 12 days of raptor surveys were conducted. In addition to the fall 2011 surveys, 12 survey days were conducted in late August/early September and mid-October/early November to document eagle activity and migration.

The majority of the bat calls identified were of the *Hoary* bat family (957 out of 1133 calls), followed by unknown calls (76 out of 1133), and *Myotis* species (48 out of 1133). A total of 171 observations of raptors were documented. Three bald eagles were observed.

MDIFW recommends that, to minimize potential impacts to bat species found at the project site, operational control measures should be established for the proposed project. MDIFW recommends that the applicant be required to curtail the cut-in speed for all turbines to 5.0 meters per second (m/s) between April 20 and October 15 from one half-hour before sunset to one half-hour after sunrise. Under this recommendation, during times when the winds are less than the 5.0 m/s threshold, turbine blades would not rotate, thus reducing the risk of fatality for bats. If at any point during this time period the wind speed increases to greater than 5.0 m/s, the turbine blades would be free to rotate. MDIFW recommends that these curtailment measures be in place from day one of operation for the life of the project.

After consultation with MDIFW regarding curtailment and the potential for bat mortality, the applicant agreed to seasonal curtailment of the turbine cut-in speed to 5.0 m/s on all turbines from one half-hour before sunset to one half-hour after sunrise for the life of the project. The applicant proposes that this curtailment be required from May 1 to September 30, and only when the ambient temperature is above 50 degrees F from June 1 to August 31, and when above 32 degrees F in May and September. If at any point during this time period the wind speed increases to greater than 5.0 m/s the turbine blades would be free to rotate. MDIFW has commented that this level of curtailment would be adequate.

Regarding post-construction monitoring of bird and bat mortality, MDIFW further stated that assuming an April 20 to October 15 search window, MDIFW would consider it adequate for searches to take place weekly between April 20 and May 31 and daily between June 1 and September 30, with a return to a weekly schedule from October 1 through October 15. The applicant responded that because post-construction monitoring at wind power projects is an evolving science, they will work with MDIFW to finalize a monitoring methodology prior to the start of operation. MDIFW agreed to work with the applicant to develop a final monitoring methodology.

The Department finds that impacts to birds and bats have been minimized provided the applicant complies with the curtailment requirements above and submits a final mortality monitoring methodology to the Department for review and approval prior to the commencement of operation.

No fisheries impacts are anticipated from the proposed project.

The Department finds the project would not result in an unreasonable impact on fisheries and wildlife or habitat protected by the NRPA provided turbine operation is curtailed as outlined above. If post-construction monitoring indicates an unreasonable impact on birds, bats and/or raptors, the Department, in conjunction with MDIFW, may require modified operation of the wind project, including the curtailment of turbines, as necessary.

8. HISTORIC SITES AND UNUSUAL NATURAL AREAS:

The Maine Historic Preservation Commission (MHPC) reviewed the proposed project and stated that it would have no effect upon any structure or site of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966.

The Maine Natural Areas Program (MNAP) database does not contain any records documenting the existence of rare or unique botanical features on the project site and, as discussed in Finding 7, MDIFW did not identify any unusual wildlife habitats located on the project site.

Based on information in the application, MHPC's review, and MNAP's review, the Department finds that the proposed project would not have an unreasonably adverse effect on the preservation of any historic sites or unusual natural areas either on or near the project site.

9. BUFFER STRIPS:

The applicant proposes six basic buffer strip types around access roads, turbine pads and the generator lead line for storm water management, habitat protection, phosphorus control and waterbody protection. Buffers for the proposed development would include no disturbance buffers around roads and turbines, stream buffers, Atlantic Salmon stream buffers, Significant Vernal Pool buffers, and Inland Waterfowl and Wading Bird Habitat buffers. The generator lead line ROW would be continuously vegetated with grass and shrubs, and several methods would be used to maintain buffers along the corridor. The applicant would maintain these buffers according to the proposed Vegetation Management Plan. All buffer strips would be clearly marked prior to construction.

A. Access Road, Crane Path and Turbine Buffers. The applicant proposes to maintain forested buffers along the access road and around the turbines. Forested buffers provide both a visual screen and stormwater and phosphorus treatment. The stormwater and phosphorus treatment measures are more fully described in Finding 11. Most of the area around the turbine pads would be revegetated after construction is completed, providing additional buffering.

B. Stream Buffers. There are 18 streams along the generator lead line, five of which have standard stream buffers proposed. These buffers are 25 feet wide, measured from the top of the bank of the stream. No poles are proposed to be located in the stream buffer areas. During initial construction, any vegetation that must be removed would be removed by hand-cutting or by traveling or reaching into the buffer using low-ground-pressure mechanized harvesting equipment. Following construction, any disturbed areas within the stream buffers would be graded to the original contour and stabilized with permanent seeding.

C. Salmon Stream Buffers. There are 13 streams in the project area which contain, or may contain, habitat for Atlantic Salmon. Buffers around these streams are 100 feet wide and only trees that are capable of growing within 15 feet of the conductor within the next 3 years would be removed. The applicant has attempted to place poles as close to the edge of these buffers as is practical, thereby elevating the line above the stream to the greatest extent and reducing the number of trees that must be removed. Topping of trees is the preferred method of vegetation maintenance unless the tree is dead or dying. No other vegetation would be removed. Removal of capable species would be by hand-cutting or with low-ground-pressure tree harvesting equipment. No refueling, including refueling of chain saws, would be allowed in the Salmon Stream Buffers.

D. Significant Vernal Pool (SVP) Buffers. One SVP would be impacted by the generator lead line. The applicant has proposed to maintain a minimum 100-foot vegetated buffer around this pool. Due to the limited reach of harvesting equipment, access ways may be needed to remove capable vegetation. Low-ground-pressure harvesting equipment would enter the buffer in a manner intended to minimize disturbance. Mats would be utilized if necessary to prevent excessive rutting or other soil disturbance. No equipment would travel within the SVP depression. Only capable species greater than eight to 10 feet tall would be removed. Clearing would not take place between April 1 and June 30 of any calendar year within 25 feet of the vernal pool depression or with any wheeled or tracked equipment.

E. Inland Waterfowl and Wading Bird Habitat (IWWH). The generator lead line crosses three IWWHs along its proposed route. During initial construction, the applicant proposes to only remove capable species. Topping of trees is the preferred method of vegetation maintenance unless the tree is dead or dying. No other vegetation would be removed. Removal of capable species would be by hand-cutting or with low-ground-pressure tree harvesting equipment. Where possible, the applicant would leave two to three snags per 500 linear feet of corridor to provide nesting habitat for waterfowl. Initial ROW clearing would be done during frozen conditions whenever practical. No clearing would take place between April 15 and July 15 in any calendar year, unless approved by the Department and MDIFW.

F. Vegetation Management Plan (VMP). The applicant submitted a Post-Construction Vegetation Plan for the Passadumkeag Wind project, prepared by Stantec Consulting, dated October 2011, which includes routine maintenance along the

ROW to prevent vegetation from getting too close to the conductor. The plan summarizes vegetation management methods and procedures that would be utilized by the applicant for the transmission line corridor and collector lines. The plan describes restrictive maintenance requirements for natural resources and significant wildlife habitats. The plan also includes procedures for managing or removing osprey nests built on power line structures, describes a system for identifying restricted areas, and summarizes training requirements for construction personnel.

The Department finds that the applicant has made adequate provision for buffer strips based on the post-construction VMP and the proposal to clearly mark on the ground, prior to construction, all visual screening buffers, stream buffers and other resource buffers , and the stormwater buffers. Additionally, prior to operation, the applicant must record all deed restrictions for stormwater buffers and submit the recorded deeds along with plot plans to the Department within 60 days of recording.

10. SOILS:

The applicant submitted a soil survey map and report and a geotechnical report based on the soils found at the project site. The report was prepared by a certified soil scientist and reviewed by staff from the Department's Division of Environmental Assessment (DEA) of the Bureau of Land and Water Quality (BLWQ). DEA also reviewed the applicant's Blasting Plan (dated February 2012), which outlines the proposed procedures for removing rock and ledge, and submitted the following comments:

> "The copy of the blasting plan received for review does not include a standard for ground vibration, although the proposed standards for air overpressure, flyrock control, and record keeping are generally consistent with those required by the Department. Prior to construction, the applicant must prepare and submit for review and approval a revised blasting plan including the Department blasting standards in 38 M.R.S.A. §490-Z(14), and specifically stating that ground vibration at offsite structures may not exceed the limits shown in Figure B-1 of Appendix B, U.S. Bureau of Mines Report of Investigations 8507."

DEA also stated that the application does not contain a procedure to deal with any potentially reactive rock that may be encountered during construction, but based on a site visit, did not expected large volumes of this material to be encountered. Small amounts of reactive rock may be managed successfully by segregating the potentially reactive rock types from other rock types that are acceptable for use in well-drained fill slopes or road beds, and burying the reactive rock in other areas of the site that do not discharge to nearby surface waters.

Based on the applicant's soils reports and blasting plan, and DEA's review comments, the Department finds that the soils on the project site present no limitations to the proposed project that cannot be overcome through standard engineering practices provided that prior to construction, the applicant must submit a revised blasting plan to the BLWQ for review and approval.

11. STORMWATER MANAGEMENT:

The proposed project includes approximately 21.47 acres of impervious area and 97.38 acres of developed area. It lies within the watersheds of the Passadumkeag River, Saponac Pond and Great Pond. The applicant submitted a stormwater management plan based on the Basic, General, Phosphorus, and Flooding standards contained in Department Rules, Chapter 500. The proposed stormwater management system consists of vegetated buffers for the turbine sites and underdrained soil filters at the O&M building.

A. Basic Standards:

1) Erosion and Sedimentation Control: The applicant submitted an Erosion and Sedimentation Control Plan (Section 14 of the application) that is based on the performance standards contained in Appendix A of Chapter 500, and the Best Management Practices outlined in the Maine Erosion and Sediment Control BMPs, which were developed by the Department. This plan and plan sheets containing erosion control details were reviewed by, and revised in response to the comments of, the Division of Watershed Management (DWM) of BLWQ.

   Erosion control details must be included on the final construction plans and the erosion control narrative must be included in the project specifications to be provided to the construction contractor.

2) Inspection and Maintenance: The applicant submitted a maintenance plan that addresses both short- and long-term maintenance requirements. This plan was reviewed by, and revised in response to the comments of, DWM. The maintenance plan is based on the standards contained in Appendix B of Chapter 500. The applicant would be responsible for the maintenance of all common facilities including the stormwater management system.

3) Housekeeping: The applicant states that the proposed project would comply with the performance standards outlined in Appendix C of Chapter 500.

Based on DWM's review of the applicant's erosion and sedimentation control plan and maintenance plan, the Department finds that the proposed project would meet the Basic Standards contained in Chapter 500(4)(A), provided the applicant conducted a pre-construction meeting and retained a third-party inspector to oversee project construction.

B. General and Phosphorus Standards:

The General Standards must be met for the portion of the project which drains to the Passadumkeag River.

The applicant's stormwater management plan includes general treatment measures to mitigate for the increased frequency and duration of channel erosive flows due to

runoff from smaller storms, provide for effective treatment of pollutants in stormwater, and mitigate potential temperature impacts. The portion of the proposed project which drains to the Passadumkeag River is a road that meets the definition of "a linear portion of a project" in Chapter 500. For that area, the applicant is proposing to control runoff volume from no less than 75% of the impervious area and no less than 50% of the developed area.

The forested, no-disturbance stormwater buffers are proposed to be protected from alteration through the execution of a deed restriction. The applicant proposes to use the deed restriction language contained in Appendix G of Chapter 500 and submitted a draft deed restriction that meets Department standards. The Declaration of Restrictions must be recorded prior to the start of operation, and the applicant must submit a copy of the recorded deed restriction including the plot plan to the Department within 60 days of its recording. Prior to beginning construction in an area, the location of forested buffers must be permanently marked on the ground. Methods of marking on the ground must include, but are not limited to, a combination of field flagging and clearly marked permanent signage.

The following minor adjustments may be made during construction without advance notice to the Department provided they do not impact protected resources and are reflected in the final as-built drawings: changes that result in a reduction in impact and/or footprint (such as a reduction in clearing or impervious area, and elimination of structures or a reduction in structure size); location of a structure within the identified clearing limits; the type of foundations used; additional drainage culverts, level spreaders or rock sandwiches; changes to culvert size or type provided that the culvert does not convey a regulated stream and that the hydraulic capacity of the substitute culvert is greater than or equal to that of the original; and changes of up to 10 feet in the base elevation of a turbine vertically as long as the change in elevation does not result in increased visual impacts or changes to the stormwater management plan.

Additionally, the following minor adjustments may be made upon prior approval by the third-party inspector or Department staff, and do not require a revision or modification of the permit but must be reflected in the final as built drawings: minor changes that do not increase overall project impacts or project footprint and which do not impact any protected resources as long as any new areas of impact have been surveyed for environmental resources and do not affect other landowners. These changes include adjustments to horizontal or vertical road geometry that do not result in changes to the stormwater management plan; a shift of up to 100 feet in a turbine clearing area; and adjustments to culvert locations based on field topography.

The portions of the project which drain to Saponac Pond and Great Pond are required to meet the Phosphorus Standards.

Because of the proposed project's location in the watersheds of Saponac Pond and Great Pond, the applicant proposes to treat stormwater runoff from the project site

to meet the phosphorus standard outlined in Chapter 500(4)(C). The applicant's phosphorus control plan was developed using methodology developed by the Department and outlined in "Phosphorus Control in Lake Watersheds: A Technical Guide for Evaluating New Development". For this project, the Permitted Phosphorus Export is 18.0123 pounds of phosphorus per year for Saponac Pond and 7.0650 pounds of phosphorus per year for Great Pond. The applicant proposes to remove phosphorus from the project's stormwater runoff by utilizing buffers, as shown on the set of plans referenced in Finding 1. The predicted phosphorus export for the project site based on the applicant's model is 17.8462 pounds per year of phosphorus for Saponac Pond and 7.0626 pounds per year of phosphorus for Great Pond. The Department finds that the proposed stormwater treatment would be able to reduce the export of phosphorus in the stormwater runoff below the maximum permitted phosphorus export for the site.

The stormwater management system proposed by the applicant was reviewed by, and revised in response to comments from, DWM. After a final review, DWM commented that the proposed stormwater management system is designed in accordance with the Chapter 500 General and Phosphorus Standards provided that prior to beginning construction in an area, the location of forested buffers must be permanently marked on the ground and the deeds for the forested, no disturbance buffers are recorded in the registry of deeds prior to the start of operation and submitted to the Department within 60 days of recording.

Based on the stormwater system's design the Department finds that the applicant has made adequate provision to ensure that the proposed project would meet the Chapter 500 General and Phosphorus Standards.

C. Flooding Standard:

The applicant is proposing to utilize a stormwater management system based on estimates of pre- and post-development stormwater runoff flows obtained by using Hydrocad, a stormwater modeling software program that utilizes the methodologies outlined in Technical Releases #55 and #20, U.S.D.A., Soil Conservation Service, and retains stormwater from 24-hour storms of 2-, 10-, and 25-year frequency. The post-development peak flow from the site would not exceed the pre-development peak flow from the site and the peak flow of the receiving waters would not be increased as a result of stormwater runoff from the development site.

DWM commented that the proposed system is designed in accordance with the Flooding Standard contained in Chapter 500(4)(E).

Based on the system's design and DWM's review, the Department finds that the applicant has made adequate provision to ensure that the proposed project would meet the Chapter 500, Flooding Standard for peak flow from the project site, and channel limits and runoff areas.

The Department further finds that the proposed project would meet the Chapter 500 standards for: (1) easements and covenants; (2) management of stormwater discharges;

(3) discharge to freshwater or coastal wetlands; and (4) threatened or endangered species.

12. GROUNDWATER:

The project site is not located over a mapped sand and gravel aquifer. The proposed project does not propose any withdrawal from, or discharge to the groundwater except for a single septic system described in Finding 14.

The applicant submitted a Spill Prevention, Control and Countermeasures plan (SPCC) detailing steps to be taken to prevent groundwater contamination during construction, however the applicants did not submit an SPCC plan for on-going operation of the project. The applicant stated that potential contamination during construction would be fuel and hydraulic and lubricating oils used in operation vehicles and construction equipment. The SPCC plan includes general operational requirements, storage and handling requirements, and training requirements to prevent spilling of oil, hazardous materials or waste. The plan also sets out spill reporting and cleanup requirements should such an event occur. No herbicides would be used, stored, mixed or transferred between containers within designated buffers or within 25 feet of streams or wetlands with standing water. Designated buffers and areas within 25 feet of streams and wetlands with standing water must be flagged prior to construction.

Prior to operation of the development, the applicant must submit an operational SPCC Plan for the on-going operation of the project to the Department for review and approval.

The Department finds that the proposed project would not have an unreasonable adverse effect on ground water quality provided the applicant flags designated buffers and areas within 25 feet of streams and wetlands with standing water and submits, prior to operation, the operational SPCC Plan to the Department for review and approval.

13. WATER SUPPLY:

Water for the development would be supplied by an individual well at the O&M building. The applicant submitted an assessment of groundwater supplies that are available on the project site. This assessment was prepared by a certified geologist and was reviewed by, and revised in response to comments from, the DEA.

The applicants also propose to use up to 20,000 gallons of water per day for dust control. DEA reviewed this portion of the application and stated that this water could be drawn from one or more of the lakes in the project vicinity without affecting the water level of the lake, but the applicant should identify, prior to construction, the access points for trucks to obtain water from the lake(s), in order to ensure that all points are stable locations suitable for repeated access by large vehicles without creating excessive erosion or issues with bank stability, such as boat ramps or bridges.

The Department finds the applicant has made adequate provision for securing and maintaining a sufficient and healthful water supply, provided the applicant identifies locations for water withdrawal for dust control prior to construction.

14. WASTEWATER DISPOSAL:

Wastewater would be disposed of by an individual subsurface wastewater disposal system located at the O&M building. The applicant submitted the soil survey map and report discussed in Finding 10. The individual system would be designed to meet the requirements of the Maine State Plumbing Code. Based on a review of the information submitted by DEA, a subsurface wastewater disposal system capable of handling septic waste from the O&M building could be constructed on this site.

The Department finds the applicant has made adequate provisions for wastewater disposal.

15. SOLID WASTE:

When completed, the proposed project is anticipated to generate minor amounts of general solid waste per year. All general solid wastes from the proposed project would be disposed of at Penobscot Energy Recovery Company (PERC), which is currently in substantial compliance with the Maine Solid Waste Management Rules.

All marketable timber would be removed from the project site. A single one-acre stump dump may be located on the project site. All stumps and grubbings generated would be disposed of on site, either chipped or burned, with the remainder to be worked into the soil, in compliance with the Maine Solid Waste Management Rules.

The proposed project would generate approximately 465 cubic yards of construction debris and demolition debris. All construction and demolition debris generated would be disposed of at Juniper Ridge, which is currently in substantial compliance with the Maine Solid Waste Management Rules.

The Department finds the applicant has made adequate provisions for solid waste disposal.

16. FLOODING:

The applicants do not propose any structure other than three poles within a flood zone. As discussed in Finding 11, the Department has reviewed the applicant's plans for stormwater management and found that the project is unlikely to have an adverse impact on downstream flooding. Based on the nature of the project and the minimal number of structures in the flood zone, the Department finds that the proposed project is unlikely to cause or increase flooding or cause an unreasonable flood hazard to any structure.

17. WETLAND IMPACTS:

The applicant retained Stantec to locate wetlands and waterbody resources on the proposed project site. The results of the applicant's surveys for wetlands and waterbodies which may be affected by the turbine sites, access roads and collector lines are summarized as follows:

- 173 wetlands were identified along the proposed access roads and the electrical collector line.
- 35 jurisdictional streams were identified, including 23 perennial streams. No streams are proposed to be crossed.
- 67 vernal pools were identified, including 3 significant vernal pools, and 4 potentially significant vernal pools, only one of which would be impacted, as discussed in Finding 7.
- 34 wetlands were identified that meet the definition of wetlands of special significance.

Freshwater Wetland Impacts.

The applicant is proposing 1.2 acres of vegetation conversion in wetland areas for the turbine sites, access roads and collector lines. No permanent loss of freshwater wetland through filling is proposed.

The Department's Wetlands and Waterbodies Protection Rules, Chapter 310, provide the framework for the Department's analysis of whether a proposed project's impacts to protected resources would be unreasonable, as that term is used in the NRPA, and whether the project meets the NRPA licensing criteria. A proposed project's impacts may be found to be unreasonable if the project would cause a loss in wetland area, functions and values and for which there is a practicable alternative that would be less damaging to the environment. For this aspect of the Department's review an applicant must provide an analysis of alternatives to the project.

A. Avoidance. The applicant submitted an alternatives analysis for the wetland and stream impacts of the proposed project, completed by Stantec Consulting, and dated February, 2012. The applicant states that the proposed project was designed to avoid wetlands to the greatest extent possible and the applicant proposes to site the proposed turbines and associated access roads in predominantly upland areas. The applicant used existing roads when possible to avoid any new impacts to natural resources. Any new roads that were necessary were designed to avoid wetlands if practical. The construction and maintenance of the electrical transmission line would primarily result in a permanent change in vegetation cover type in wetland areas.

B. Minimal Alteration. In the determination of whether any adverse impacts from a project are unreasonable, the Department looks at whether the amount of wetland and waterbodies to be altered have been kept to the minimum amount necessary for meeting the overall purpose of the project. The applicant is proposing construction practices to reduce erosion, maintain stream and vernal pool buffers, and to reduce

habitat fragmentation by the proposed co-locating of the majority of the generator lead transmission line. Prior to the start of construction, the location of stream buffers, wetlands, IWWH, and vernal pool buffers must be marked on the ground.

C. Compensation. Compensation may be required to achieve the goal of no net loss of wetland functions and values. The applicant submitted an assessment of the functions and values of wetlands impacted by the proposed project, prepared by Stantec. The assessment determined that the primary functions and values of the potentially impacted wetlands were wildlife habitat, with some levels of floodwater alteration, sediment/toxicant retention, and production export. In this case, it appears that the conversion of the vegetative cover type in wetlands potentially affected by the project would not result in a loss of functions and values so compensation would not be required.

The Department finds the applicant has avoided and minimized wetland and water body impacts to the greatest extent practicable, and that the proposed project represents the least environmentally damaging alternative that meets the overall purpose of the project, provided that prior to the start of construction, the location of stream buffers, wetlands, IWWH, and vernal pool buffers must be marked on the ground.

18. SHADOW FLICKER:

In accordance with 38 M.R.S.A. §484(10), an applicant must demonstrate that the proposed wind energy development has been designed to avoid unreasonable adverse shadow flicker effects. Shadow flicker caused by wind turbines is defined as alternating changes in light intensity caused by the moving blade casting shadows on the ground and stationary objects. Shadow flicker is the sun seen through a rotating wind turbine rotor. Shadow flicker does not occur when the sun is obscured by clouds or fog or when the turbine is not rotating. The spatial relationships between a wind turbine and receptor, as well as wind direction which causes the turbines to rotate, are key factors relating to shadow flicker occurrence and duration. At distances of greater than 1,000 feet between wind turbines and receptors, shadow flicker usually occurs when the rotor plane is in-line with the sun and receptor (as seen from the receptor), the cast shadows would be very narrow (blade thickness) and of low intensity, and the shadows would move quickly past the stationary receptor. When the rotor plane is perpendicular to the sun-receptor "view line," the cast shadow of the blades would move within a circle equal to the turbine rotor diameter.

The applicant submitted a shadow flicker analysis with its application. The applicant used WindPRO, a wind modeling software program, to model expected shadow flicker effects on adjacent properties from the 14 proposed turbine locations. The applicant assumed a worst case scenario, that all receptors have a direct in-line view of the incoming shadow flicker sunlight, and did not take into account any existing vegetative buffers.

The Department generally recommends that an applicant conduct a shadow flicker model out to a distance of 1,000 feet or greater from a residential structure, and the applicant's model did so. The applicant modeled two receptors, A and B, which are

located within 1 mile of the project and which would potentially receive shadow flicker. Maine currently has no numerical regulatory limits on exposure to shadow flicker; however, the industry commonly uses 30 hours per year as a limit to reduce nuisance complaints. Receptor A would have approximately 46.54 hours of flicker per year and receptor B would have approximately 4.37 hours per year. The applicant has a lease agreement with Receptor A allowing shadow flicker greater than 30 hours per year. Based on the WindPRO analysis, no other property is calculated to receive flicker in excess of 30 hours per year.

The Department finds the shadow flicker modeling conducted by the applicant is credible. Based upon the proposed project's location and design, the distance to the nearest shadow flicker receptor, and results of the shadow flicker analysis, the Department finds that the proposed project would not unreasonably cause shadow flicker to occur over adjacent properties which are not subject to an easement allowing for shadow flicker.

19. PUBLIC SAFETY:

The proposed project would use Vestas V112 3.0-megawatt (MW) wind turbine generators. The turbines' conformity with International Electrotechnial Commission standards has been certified by Det Norske Veritas and included in the applications in Appendix 27-2 dated March 19, 2010.

The Department recognizes that locating wind turbines a safe distance away from any occupied structures, public roads or other public use areas is extremely important. In establishing a recommended safety setback, the Department considered industry standards for wind energy production in climates similar to Maine, as well as the guidelines recommended by certifying agencies such as Det Norske Veritas. Based on these sources, the Department requires that all wind turbines be set back from the property line, occupied structures, or public areas, a minimum of 1.5 times the maximum blade height for the wind turbine. Based on the Department setback specifications, the minimum setback distance to the nearest property line should be 688.5 feet for the Vestas turbines. A review of the application indicates that all turbines are set back at least 688.5 from property lines, occupied structures and public areas.

The Department finds that the applicant provided documentation of industry standard compliance by the manufacturer that the wind generation equipment has been designed to conform to applicable industry safety standards, and has demonstrated that the proposed project has been sited such that it would not present an unreasonable safety hazard to adjacent properties or adjacent property uses. The Department further finds that the applicant has submitted sufficient evidence which demonstrates that the proposed project would be sited with appropriate safety setbacks from adjacent properties and existing uses.

20. DECOMMISSIONING PLAN:

In order to facilitate and ensure appropriate removal of the wind generation equipment when it reaches the end of its useful life or if the applicant ceases operation of the turbines, the Department requires an applicant to demonstrate, in the form of a decommissioning plan, the means by which decommissioning would be accomplished. The applicant submitted a decommissioning plan which includes a description of the trigger for implementing the decommissioning, a description of the work required, an estimate of decommissioning costs, a schedule for contributions to its decommissioning fund, and a demonstration of financial assurance.

A. Trigger for implementation of decommissioning. The proposed wind turbine generators are designed and certified by independent agencies for a minimum expected operational life of 20 years, however other factors may trigger the requirement for decommissioning before 20 years have passed. The applicant's proposal is that the wind generation facility would be decommissioned when it ceases to generate electricity for a continuous period of twelve months. In the case of a force majeure event which causes the project to fail to generate electricity for 12 months, the applicant proposes that it be allowed to submit to the Department for review and approval reasonable evidence in support of a request that they not be required to decommission the project at that time.

An exception to the requirement that decommissioning begin if twelve months of no generation occurs would be allowed for a force majeure event, however the Department finds that the applicant's proposed definition of "force majeure" is exceedingly broad, and instead provides as follows: The Department considers a force majeure to mean fire, earthquake, flood, tornado, or other acts of God and natural disasters; strikes or labor disputes; and war, civil strife or other similar violence. In the event of a force majeure event which results in the absence of electrical generation for twelve months, by the end of the twelfth month of non-operation the applicant shall demonstrate to the Department that the project would be substantially operational and producing electricity within twenty-four months of the force majeure event. If such a demonstration is not made to the Department's satisfaction, the decommissioning must be initiated eighteen months after the force majeure event.

B. Description of work. The description of work contained in the application outlines the applicant's proposal for the manner in which the turbines and other components of the proposed project would be dismantled and removed from the site. Subsurface components would be removed to a minimum of 24 inches below grade, generating facilities would be removed and salvaged and disturbed areas would be re-seeded. At the time of decommissioning, the applicant must submit a plan for continued beneficial use of any wind energy development components proposed to be left on-site to the Department for review and approval.

C. Financial Assurance. The applicant estimates that the current cost for decommissioning the project would be $504,600. The applicant proposes that financial assurance for the decommissioning costs would be in the form of (i) cash,

(ii) a letter of credit, or (iii) a combination of cash and a letter of credit for the total cost of decommissioning. The applicant proposes to have the financial assurance mechanism in place prior to construction and to re-evaluate the decommissioning cost at the end of years eight and 15.

Based on the applicants' proposal outlined above, and in consideration of the public comments, the Department finds that the applicant's proposal would adequately provide for decommissioning, provided the applicant implemented the decommissioning plan as proposed.

21. TANGIBLE BENEFITS:

In its application the applicant described tangible benefits that the project would provide to the State of Maine and to the host communities, including economic benefits and environmental benefits.

The applicant states that its proposal would benefit the host communities and surrounding areas through construction-related employment opportunities. These would include tree clearing and excavation jobs, and jobs in businesses that support construction such as lodging, restaurant, fuel and concrete supply. In addition, the applicant has signed an agreement with the Forest Society of Maine (FSM), in which the applicant has agreed to provide $4,000.00 per turbine per year for 20 years. The agreement requires FSM to utilize these funds for land and natural resource conservation. Preference would be given to projects in the vicinity of Passadumkeag Mountain by FSM when utilizing the funds. Staff from the Governor's Office of Policy and Management reviewed the Tangible Benefit agreement between Passadumkeag Wind Park, LLC and FSM and concluded that the agreement met the requirements of the Wind Energy Act.

Based on the employment opportunities, the tax revenue and the Community Benefits Agreement proposed by the applicant, the Department finds that the applicant has demonstrated that the proposed project would provide significant tangible benefits to the host communities and surrounding area pursuant to 35-A M.R.S.A. §3454, provided that annual payments were made to FSM as described above.

BASED on the above findings of fact, the Department makes the following conclusions pursuant to 38 M.R.S.A. Sections 480-A et seq. and Section 401 of the Federal Water Pollution Control Act:

A. The proposed activity would not interfere with existing recreational or navigational uses. In that the proposed activity would significantly compromise views from a SRSNS and would have an unreasonable adverse effect on the scenic character and existing uses related to scenic character of the resource, the proposed activity would unreasonably interfere with existing scenic and aesthetic uses.

B. The proposed activity would not cause unreasonable erosion of soil or sediment.

C. The proposed activity would not unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

D. The proposed activity would not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life provided the applicant was to implement turbine curtailment and provide a final mortality monitoring methodology to the Department as described in Finding 7, and all buffers were marked prior to construction as described in Finding 9.

E. The proposed activity would not unreasonably interfere with the natural flow of any surface or subsurface waters.

F. The proposed activity would not violate any state water quality law including those governing the classifications of the State's waters.

G. The proposed activity would not unreasonably cause or increase the flooding of the alteration area or adjacent properties.

H. The proposed activity would not be on or adjacent to a sand dune.

I. The proposed activity would not be on an outstanding river segment as noted in 38 M.R.S.A. Section 480-P.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S.A. Sections 481 et seq.:

A. The applicant has provided adequate evidence of financial capacity and technical ability to develop the project in a manner consistent with state environmental standards provided that, prior to construction, the applicant submits evidence that financing has been secured as outlined in Finding 3.

B. In that the proposed activity would significantly compromise views from a SRSNS and would have an unreasonable adverse effect on the scenic character and existing uses related to scenic character of the resource, the applicant has not made adequate provision for fitting the generating facility portion of the development harmoniously into the existing natural environment. The development would have an unreasonable adverse effect on the existing uses and scenic character of Saponac Pond, a SRSNS. The applicant has made adequate provision for fitting the associated facilities portion of the development harmoniously into the existing natural environment. The applicant has made adequate provisions for air quality, water quality and other natural resources in the municipality or in neighboring municipalities provided that the applicant was to implement turbine curtailment and provide a final mortality monitoring methodology to the Department as described in Finding 7, and all buffers were marked prior to construction as described in Finding 9.

C. The proposed development would be built on soil types which are suitable to the nature of the undertaking and would not cause unreasonable erosion of soil or sediment nor inhibit the natural transfer of soil provided that the applicant submits a revised blasting plan as described in Finding 10, and provided that the SPCC Plan is submitted as described in Finding 12.

D. The proposed development meets the standards for stormwater management in Section 420-D and the standard for erosion and sedimentation control in Section 420-C provided the applicant records the Declaration of Restrictions, submits the recorded deed restrictions, and permanently marks the locations of protected buffers prior to construction, as described in Finding 11.

E. The proposed development would not pose an unreasonable risk that a discharge to a significant groundwater aquifer would occur provided that the applicant submits the SPCC Plan as described in Finding 12.

F. The applicant has made adequate provision of utilities, including water supplies, sewerage facilities and solid waste disposal required for the development, and the development would not have an unreasonable adverse effect on the existing or proposed utilities in the municipality or area served by those services, provided sites used to obtain water used for dust control are as described in Finding13.

G. The activity would not unreasonably cause or increase the flooding of the alteration area or adjacent properties nor create an unreasonable flood hazard to any structure.

H. The proposed development would not unreasonably cause shadow flicker effects to occur over adjacent properties.

I. The activity would not present an unreasonable safety hazard to adjacent properties or adjacent property uses.

J. The applicant has made adequate provisions to achieve decommissioning of the wind power facility provided the decommissioning plan is implemented as described in Finding 20.

K. The activity would provide significant tangible benefits to the host community and surrounding area, provided that the applicant implements the Community Benefit Agreement as discussed in Finding 21.

THEREFORE, the Department DENIES the application of PASSADUMKEAG WIND PARK, LLC to construct a 14-turbine, grid-scale, wind energy development as described in Finding 1.

DONE AND DATED IN AUGUSTA, MAINE, THIS 8th DAY OF November, 2012.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Filed
NOV 9 2012
State of Maine
Board of Environmental Protection

BY: Patricia W. Aho
Patricia W. Aho, Commissioner

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES...

JB/L25597ANBN/ATS#74371&74372