The Maine Wind Energy Act... In a Time of Change

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Abstract.—The 2008 Maine Wind Energy Act (WEA) established a protocol for assessing potential visual impacts of wind turbines on the Maine landscape (Maine Legislature 2003a). The WEA stipulates that wind project visual impact assessments (VIAs) must consider several factors, including impacts on scenic resources of state or national significance (SRSNS); existing character of the surrounding area; viewer expectations; the extent, nature and duration of public uses of SRSNSs; and potential effect on continued use and enjoyment. The WEA also defined SRSNSs; set a fixed 8-mile limit for viewshed evaluation; and allowed for expedited permitting within large portions of the state, excluding those areas with ecological, recreational, and scenic values. This paper reviews several significant changes to the visual impact assessment protocols of the WEA that have been proposed and/or enacted as a result of public opposition to the law over the past decade. These include:

• A change in the law that allows communities to opt out of expedited permitting review (41 have opted out).
• Amendments to the Site Location Application that address user surveys, public comments, photosimulations, cumulative visual impacts, significance ratings for SRSNS, and burden of proof.
• Limitations of the responsibilities of the State’s peer reviewers who provide an objective evaluation of VIAs.
• Pending legislation to increase the area of potential visual effect to 15 miles for projects located near designated scenic resources (e.g., Acadia National Park).
• Proposed rules that address—among other things—determination of reasonableness of visual impacts.
The State of Maine takes great pride in its scenic character and has passed several key pieces of legislation to guide development and protect these resources.

The Natural Resources Protection Act (NRPA) applies to activities in, on, or over a great pond, coastal wetland, freshwater wetland, significant wildlife habitat, fragile mountain area and river, stream, or brook where the activity includes dredging, bulldozing, removing or displacing sand, soil, vegetation or other materials; draining or dewatering; filling, or any construction, repair, or alteration of a permanent structure (Maine Legislature 2007a).
DEP Site Law requires:

- No adverse effect on the natural environment.
- Developer has made adequate provision for fitting development harmoniously into existing natural environment.
- Development will not adversely affect existing uses, scenic character… or other natural resources.

A permit under the Site Location of Development Law (Site Law) is required of anyone who may “construct or cause to be constructed or operate or cause to be operated or, in the case of a subdivision, sell or lease, offer for sale or lease or cause to be sold or leased, any development requiring approval under this article” (Maine Legislature 2003b).

Portions of the law specifically address visual impact and fitting the development into the existing landscape.
Prior to the enactment of the WEA, development had to demonstrate that wind turbines would fit harmoniously into the landscape, which was difficult at best when the turbines were in excess of 300 feet in height, and visible from scenic resources such as mountains and the Appalachian Trail.

In 2008, the Black Nubble wind project was denied, in part because of its potential impact on nearby scenic resources.
Governor’s task force on wind power development 2008

- Recognized that wind power projects are highly visible.
- Harmonious Fit Test is inappropriate for grid-scale wind power projects.
- Wind energy development should be a permitted use within certain parts of the State's unorganized areas.

Partially in response, then-governor Baldacci appointed a task force to examine wind energy development in Maine and made a series of recommendations that led to the creation of the Wind Energy Act. The Task Force envisioned an approach that was based on three underlying objectives:

- To make Maine a leader in wind power development;
- To protect Maine’s quality of place and natural resources; and
- To maximize the tangible benefits Maine residents receive from wind power development. (State of Maine 2008, p. 9, bulleted in the original).
The WEA established state-wide goals for both on-shore and off-shore wind development:

Because of its size and geography, Maine has as much wind resource potential onshore as the rest of New England combined. The potential for offshore wind power development is also very large, yet the costs of offshore wind power remain high, particularly so in the near-term for deep tidal zones along Maine’s coast. The viability of such projects in shallower waters to our south, closer to areas with large demands for electricity, may be more promising.

With these factors in mind, the Task Force concluded that Maine should seek to host at least 2,000 MW of installed wind power capacity by 2015, and at least 3,000 MW by 2020. The Task Force believes that at least 300 MW of the 2020 goal could be achieved with projects built offshore. The Task Force recognized that achieving these goals is not entirely within Maine’s control, and will depend on factors such as technology developments, future energy costs, federal policies, and more. Further, as the Governor charged the Task Force, these goals should be accomplished without compromising Maine’s special quality of place, and in a fashion that provides tangible benefits for Maine people. (State of Maine 2008, p. 13, bold and underlined in the original).
The WEA created a new process to review wind energy development in Maine, separate from the Site Location Act. From the Governor’s Task Force Report:

“The Legislature recognizes that wind turbines are potentially a highly visible feature of the landscape and will have an impact on views; therefore, the requirement that a development fit harmoniously into the natural environment is eliminated for wind power projects and the test for determining whether a wind power project adversely affects existing uses and scenic character is whether the development significantly compromises views from scenic resources of state or national significance such that it has an unreasonable adverse impact on scenic values and existing uses of those scenic resources.” (State of Maine 2008, p. 79, quotation marks in the original).
The WEA established designated wind energy development as an allowable use. Furthermore, The Governor’s Task Force believed that potential conflicts over the siting of proposed wind power projects would be substantially reduced if the state designated where wind power projects would qualify for expedited permitting. These areas include:

- All organized towns,
- Portions of the unorganized territories that are generally on the fringe of the jurisdiction where unorganized townships are intermingled with plantations and organized towns, but excluding 1) broad areas that encompass concentrations of ecological, recreational and/or scenic values that are among the most significant in the jurisdiction, and) smaller areas (primarily, but not necessarily limited to, P-MA zones) that possess ecological, recreational and scenic values of particular significance.
- Areas within approximately one township (6 miles) of certain public highways and which include potential development sites under active investigation, and which do not qualify for exclusion under the previous bullet. (State of Maine 2008, p. 18, footnote 2, bulleted in the original).
The Governor’s Task Force recommended that “portions of a project located more than eight miles from a scenic resource will be understood to be insignificant from a scenic perspective” (State of Maine 2008, p. 79). This was based on their understanding of visual acuity and the observation that turbine blades are difficult to see at these distances.
SCENIC RESOURCES OF STATE OR NATIONAL SIGNIFICANCE

An area or place owned by the public or to which the public has a legal right of access that is...

The WEA designates publicly accessible “resources of state or national significance” that must be evaluated as part of a VIA (State of Maine 2008, p. 61). These include (see following pages):
“National natural landmarks, federally designated wilderness areas, and other outstanding natural and cultural features” (State of Maine 2008, p. 61, emphasis added). There are 14 National Natural Landmarks in Maine, designated primarily for their scientific (and not scenic) value.

Examples of National Natural Landmarks include the eastern half of Monhegan Island (8 photographs left of center, above); Bigelow Mountain (top right); and Passadumkeag Marsh and Boglands (lower right). While these places are of great scientific value, they often have notable scenic and/or recreational opportunities as well.
“A property on the National Register of Historic Places pursuant to the National Historic Preservation Act of 1966, as amended (e.g., the Rockland Breakwater Light, Fort Knox)” (State of Maine 2008, p. 61, emphasis added). Locations are provided on a kmz file from the National Park Service.

Examples of properties and features on the National Register of Historic Places.
Acadia National Park and the Appalachian National Scenic Trail are two units of the National Park System. The National Park Service recently acquired the Katahdin Woods and Waters National Monument, located to the east of Baxter State Park.

There are 32 designated state parks in Maine.
Lakes and ponds previously identified as having highly significant scenic value—specifically, 66 lakes in the organized townships identified in the Maine’s Finest Lakes study (Parkin et al. 1989), and 280 lakes and ponds in Maine’s Land Use Regulation Commission jurisdiction designated as “outstanding” or “significant” from a scenic perspective in the Wildlands Lakes Assessment report (Maine Department of Conservation 1987).

The scenic classification of the lakes and ponds were done in the late 1980s, and were based on an assessment of Vegetation Diversity, Scenic Features, Topographic Relief, Configuration (shoreline complexity), and Existing Development.

The state has recognized a total of 867 lakes and great ponds in the organized townships. Of these, 66 are considered either significant or outstanding from a scenic perspective.

In the unorganized townships, there are 1,509 lakes and ponds; of these 280 are considered either significant or outstanding from a scenic perspective.
The Maine Rivers Study (State of Maine and National Park Service 1982) evaluated all the rivers in Maine for a variety of resource values. Of the 31,806 miles of rivers in Maine, 1,502 miles of rivers or streams have unique or outstanding scenic attributes.
“The Maine Department of Conservation, in cooperation with DEP [Department of Environmental Protection] and LURC [Land Use Regulation Commission], will determine the location of viewpoints on the state’s public reserved lands that are of state or national significance from a scenic perspective, using criteria set out in [Maine Department of Environmental Protection] Chapter 315 (e.g., significance of resources and number of people who visit from around the state or nation)” (State of Maine 2008, p. 61). A dozen locations were identified.
A trail that is used exclusively for pedestrian use, such as the Appalachian Trail.

The WEA identified publicly accessible trails used exclusively for pedestrian use as scenic resources of state or national significance. The Appalachian Trail is the most notable, extending 267 miles in Maine, terminating on Mount Katahdin in Baxter State Park.
There are 13 designated Scenic Byways in Maine. The WEA requires a VIA to evaluate potential visual impacts only to scenic turnouts located on those highways.
The Governor’s Task Force also included scenic points of state and national significance in Maine’s coastal zone as identified in:

- A Proposed Method for Coastal Scenic Landscape Assessment with Field Results for Kittery to Scarborough and Cape Elizabeth to South Thomaston (Dominie et al. 1987);
- Scenic Inventory Mainland Sites of Penobscot Bay (DeWan and Associates et al. 1990);
- Scenic Inventory Islesboro, Vinalhaven, North Haven and Associated Offshore Islands (DeWan and Associates 1992); or Other inventories conducted using a similar methodology approved of by the Maine State Planning Office.
The Maine Wind Energy Act is based on the following assumption:

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 scenic resources.

The WEA established new criteria to replace the Standard of Scenic Impact that required that a project “fits harmoniously into the existing natural environment in terms of potential effects on scenic character and existing uses related to scenic character” (Maine Legislature 2007b).

The standard under the WEA requires a determination as to “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” (Maine Legislature 2007b).
The WEA (Maine Legislature 2007b) established criteria for the review agencies to consider in making their determination. These criteria include:

“The significance of the potentially affected scenic resource of state or national significance;”
“The existing character of the surrounding area;”
“The scope and scale of the potential effect of views of the generating facilities on SRSNS, including but not limited to issues related to the number and extent of turbines visible from SRSNS, the distance from SRSNS and the effect of prominent features of the development on the landscape.”
“The expectations of the typical viewer.”

“The extent, nature and duration of potentially affected public uses of SRSNS and the potential effect of the generating facilities’ presence on the public’s continued use and enjoyment of the SRSNS.”
Intercept surveys have been used extensively to determine a) the expectation of the typical user of a SRSNS, b) the potential effect that the project would have on the users enjoyment of the resource, and c) the effect that the project may have on their continuing use of the resource and their likelihood to return.

Surveys are prepared by professional survey firms and administered on site by trained personnel. Users are asked to participate and are read a 10-15 minute survey. Part of the survey includes having them rate photographs of the existing scene and then rating a photosimulation of the same scene with the project in place.
Results are tabulated by the survey firm and used in the permitting application to address the evaluation criteria established under the WEA. This is considered a more credible way of addressing the criteria than simply using the professional judgment of the individual writing the visual impact assessment.
The Maine Department of Environmental Protection and the Land Use Planning Commission has qualified three landscape architects to act as peer reviewers for visual impact assessments: Dr. James Palmer, David Raphael, and Terrence DeWan.

The Peer Reviewer’s primary role is to verify the technical accuracy of the VIA, which may involve field evaluation of the resources, replication of the viewshed mapping, and developing sample photosimulations.
The Wind Energy Act has been the target for considerable scrutiny by wind opponents and some legislators ever since its inception nine years ago.
State agencies have gained considerable experience in reviewing applications for wind energy development and the issues related to visual impacts.

Night lighting has emerged as one of the key issues with wind energy development, especially in areas where the turbines are elevated above ridgelines in prominent locations.
A widely circulated image (prepared by Friends of Lincoln Lake) shows the effect of ‘streaking’, where the FAA aviation lights reflect off the surface of the lake. While this particular image is a several-minute time exposure that exaggerates the actual impact, it does convey the effect that the lights may create under certain atmospheric conditions.
In response to criticism of the WEA, state agencies and the legislature have enacted or proposed several changes.

After the peer review process started, the reviewers often provided the agencies with a determination of whether or not the project met the test of no unreasonable adverse effect on SRSNS. In 2014, the state agencies issued an administrative order that limits the responsibilities of the reviewer to just technical issues, and allows the staff and commissioners to make the final determination of reasonableness.
With the advent of radar-activated technology, which eliminates the need for continuous night lighting, the agencies are now requiring it as a condition of approval for new projects, subject to FAA approval.

While the use of these systems has recently been approved by the FAA, they still have to be authorized on a site by site basis. There may be instances where they may not be approved, such as in high aircraft traffic areas (e.g., near airports), areas which are used for low-level flyovers for military training, or areas that are subjected to heavy icing.
In 2015 the legislature passed An Act to Improve Regulatory Consistency, which provided a way for unorganized townships and plantations to opt out of the expedited permitting area (Maine Legislature 2015b). This required a petition to be signed by 10% of the registered voters who voted in the last gubernatorial election, which could be a very low number in townships with populations in the double digits.

In determining whether to approve the petition, the Land Use Planning Commission had to determine if a) the removal would not have an unreasonable adverse effect on State’s goals for wind energy, and b) removal is consistent with values and goals in the Comprehensive Land Use Plan.

If approved and township is withdrawn, old DEP rules take effect… Harmonious fit test.

In 2015 the legislature passed An Act to Improve Regulatory Consistency, which provided a way for unorganized townships and plantations to opt out of the expedited permitting area (Maine Legislature 2015b). This required a petition to be signed by 10% of the registered voters who voted in the last gubernatorial election, which could be a very low number in townships with populations in the double digits.

In determining whether to approve the petition, the Land Use Planning Commission had to determine if a) the removal would not have an unreasonable adverse effect on State’s goals for wind energy, and b) removal is consistent with the values and goals in the Comprehensive Land Use Plan for the Unorganized Territories.

While withdrawal does not mean there will be no wind energy projects approved, it reestablishes the old DEP rule that requires that the project meet the harmonious fit test.
Prior to the enactment of this legislation in 2015, over 3,400,000 acres were included in the expedited permitting area. The petition process removed over 731,000 ac from the expedited area.

- 44 Petitions for withdrawal received
- 41 Approved; 2 invalid; 1 Remains in Expedited Area following substantial review.

Prior to the enactment of this legislation in 2015, over 3,400,000 acres were included in the expedited permitting area. The petition process removed over 731,000 acres in 41 townships, as seen in the green area in the map. The dark gray areas are the townships remaining in the expedited permitting area.

The term ‘expedited’ is perhaps a misnomer, since the WEA establishes a strict protocol for preparing a VIA and determining whether a project meets the criteria.
In 2013 the Maine Department of Environmental Protection made a number of significant changes to the application process for wind energy development.

- The VIA now must identify all SRSNSs plus any potential SRSNS within the 8-mile viewshed.
- Timber harvesting will no longer be considered development, since the forest cover will eventually grow back and eliminate the evidence of cutting patterns.
- The application requires evidence of viewer expectations, and not just professional judgment.
- Both typical and worst-case photosimulations are now required.
- The application must address potential cumulative impacts within the 8-mile study area.

This requirement was based on the Report of OEIS Assessment of Cumulative Visual Impacts from Wind Energy Development (Maine Office of Energy Independence and Security 2012).
CHANGES TO APPLICATION 2013

• User intercept surveys must be conducted in field
• Survey results from other project given little weight
• Department considers testimony of actual users
• Evidence of potential effect on continued use and enjoyment required
• Sworn testimony will be given greater weight than intercept surveys, due to highly subjective nature of any assessment of potential effect.

Additional provisions of the revised application process include:

• Intercept surveys, when used, must be conducted in the field (i.e., no on-line surveys would be considered).
• Intercept surveys from other projects would be given little weight, due to the variability of conditions found in Maine.
• The DEP will also take into consideration written or oral testimony of actual users of the resource submitted directly to the Department.
• Evidence is required regarding potential effect on continued use and enjoyment, including public comments.
• Because of the highly subjective nature of any assessment of potential effect, sworn testimony offered by users of the SRSNS will be given greater weight than data collected from user intercept surveys conducted by the applicant or others.
Required VIAs to go out to 15 miles. There was special concern for iconic locations, such as the summit of Cadillac Mountain in Acadia National Park, where a recent wind project (Bull Hill) was built 25 miles to the north.


The bill, which was supported by conservation groups, was ultimately vetoed by Governor LePage. In his rejection he noted that the bill would have:

- “Create[d] more work for the Maine Department of Environmental Protection and the Maine Land Use Planning Commission by eliminating their discretion in determining if a visual scenic assessment for a scenic resource is necessary...”
- “Offer[ed] no real protection to Mainers...from the increasing visual impact of turbines popping up across our horizon.”
- “Authorize[d] the Legislature to involve itself in the decisions of the agencies to continuously politicize what should be technical and science-based process” (LePage 2017).
New rules proposed by the Maine Department of Environmental Protection are currently under consideration. If passed, they would provide more definitive criteria for determining the significance of a scenic resource.

- **Great ponds rated ‘outstanding’** would have high significance.
- **Evidence of public use** related to the enjoyment of its scenic character would increase a resource’s significance.
- **Significance may be decreased** by evidence of the degradation of the scenic character by incompatible non-wind-energy development in the viewshed.
- **Where remoteness and low levels of public use are integral to the experience of the typical user, low use levels may be found to increase the significance of the SRSNS.**
If passed, the new rules would provide more definitive criteria for making the determination of whether a project is unreasonable. For example:

- A High or Medium scenic impact to a SRSNS rated High will be considered an unreasonable adverse effect.
- A High impact to a Moderate SRSNS will be considered unreasonable.
- A Medium or Low impact to a SRSNS rated Low will not be unreasonable.
- One unreasonable adverse effect on a SRSNS will be grounds for denial.
Summary/Conclusion
The Maine Wind Energy Act has been in effect for ten years. Over that time the state has seen more than a dozen major wind energy projects built, with varying degrees of visibility. While the general public still supports wind energy, there is a very vocal component of the population that would like to eliminate wind energy, or strictly limit its application. The result of this concern has been a continuous attempt to weaken the law and create stricter standards for visual impact assessments. While this has had a chilling effect for some developers, the overall effect has been to increase the level of diligence in site selection and evaluation, making the role of the landscape architect much more critical throughout the planning and approval process.

Post script: The tempo of change continues. In 2018, the Maine Legislature considered but did not pass LD 1810, which would have set the limit for a VIA at 40 miles, and eliminated expedited permitting in most of the remaining townships (except in far northern Maine).
LITERATURE CITED


Maine Legislature 2015b. *An Act to Improve Regulatory Consistency within the Jurisdiction of the Maine Land Use Planning Commission.*


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