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Landscape Architects & Planners

November 30, 2018

TO: Maine Department of Environmental Protection  
FR: Terry DeWan / Amy Segal / TJD&A

**RE: RESPONSE TO LANDWORKS' REVIEW OF ROXWIND VISUAL  
IMPACT ASSESSMENT**

## **OVERVIEW**

The following document has been prepared in response to the *Review of the RoxWind LLC Project Scenic Resource Impact Assessment by Terrance (sic) J. DeWan & Associates (TJD&A)* prepared by LandWorks, Middlebury, VT for the Maine Department of Environmental Protection, submitted on November 7, 2018. This response is organized to address several specific issues or analysis elements that LandWorks noted in their Summary of Findings. LandWorks' comments are provided in ***bold italics***; TJD&A's response follows.

### ***A. There is inadequate reference or discussion with regard to the scenic resource guidance and information provided in the Roxbury Town Plan.***

As part of the Permit Requirements for a small-scale wind energy development, the applicant must demonstrate that the Project "will not significantly compromise views from a scenic resource of state or national significance, as considered under the criteria and methodologies set forth in Title 35-A, section 3452. [2015, c. 264, §3 (NEW).]" There is no requirement to evaluate locally designated scenic resources, instead only those that are recognized as scenic resources of state or national significance (SRSNS) under Title 35-A, section 3452, require evaluation as part of the State's small-scale wind energy application process.

The Town of Roxbury Comprehensive Plan, dated May 24, 1993, and amended at special Town Meeting on January 15, 2009, contained a two-page discussion of scenic resources within the Town. "A scenic view analysts (sic) conducted as an element of the comprehensive plan identified six locations of significant scenic areas. It is likely that others exist. The analysis employed three valuables and assigned a value of one to three to each valuable."<sup>1</sup> The six locations included views from Route 17 over the Frye Flats near the Mexico/Roxbury Town Line. The summary matrix identified the type of view as "open view of surrounding mountains/farmland." There was no indication of the extent of the view or a map showing its location.

The VIA prepared by TJD&A recognized the views from Route 17 and included three

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<sup>1</sup> Roxbury Comprehensive Plan, May 24, 1993, amended January 15, 2009. P. 38.

panoramic images (Photos 19, 20, and 21) in Appendix C: RoxWind Study Area Photographs. The photographs identify North Twin Mountain as the site of the proposed Project and illustrate its visual relationship with the existing Record Hill Wind Project further to the north in Roxbury. As noted in the VIA, Route 17 is part of the State-designated Rangeley Lakes Scenic Byway. However, there are no scenic turnouts constructed by the Maine Department of Transportation in Roxbury, and therefore no SRSNS along Route 17.

Section III of the Comprehensive Plan identified Policies and Implementation Strategies that represent the direction that the community will take to address issues identified in the inventory and analysis elements of the Plan. Under Economy/Economic Development, the Town has adopted the following policy related to wind energy development: *“It is a policy of the Town to recognize wind energy as a valuable natural resource and to allow reasonable utilization of that resource.”*<sup>2</sup>

Under Natural Resources, the Town has adopted the following Implementation Strategy related to Wind Energy Facilities: *“Local ordinances should contain provisions which require an assessment by the Planning Board of the impact upon scenic sites as identified in the Comprehensive Plan caused by proposed structural development and grant the Board authority to require development which is found to impact identified scenic sites and views to minimize negative impacts caused by such development. In the case of Wind Energy Facilities requiring approval by the Maine Department of Environmental Protection, the Planning Board shall accept the findings of the Maine Department of Environmental Protection under the Maine Department of Environmental Protection Regulations concerning the effect on scenic character.*

*Responsibility: Planning Board*

*Time Frame: 24 months from Plan Adoption*

*Estimated Cost: N.A.”*

As per above, Roxbury has considered the potential for wind turbines. Specifically, Roxbury’s Natural Land Use Ordinance has three designated zoning districts: the Shoreland District, the General District, and the Mountain District. Wind energy development is only allowed within the Mountain District, which is defined as including *“all areas of the mountain ridge comprised of the portions of Record Hill located within the Town of Roxbury, Flathead Mountain, Mine Notch Partridge Peak and North and South Twin Mountains that are located at or above an elevation of fifteen hundred feet (1500 feet) above sea level (excluding those areas between Partridge Peak and North Twin that are at an elevation below 1500 feet).”*<sup>3</sup> RoxWind, proposed on North Twin Mountain and above 1500 feet, is in the Mountain District and therefore is a permitted use. The table of allowable uses in the Ordinance identifies Wind Energy Facilities as being allowed – with a Planning Board Permit – within the Mountain District. *“This use*

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<sup>2</sup> Roxbury Comprehensive Plan, May 24, 1993, amended January 15, 2009. P. 62.

<sup>3</sup> Town of Roxbury Natural Land Use Ordinance. Adopted as of Special Town Meeting 1/15/09. Section 2. Applicability.

*is allowed upon submission to the Planning Board of a Site Location of Development Permit from the Maine Department of Environmental Protection.”<sup>4</sup>*

***B. There is a need for some additional analysis with regard to the potential impacts on users of the Swift River scenic resource.***

LandWorks determined that the RoxWind VIA correctly identified nineteen SRSNS within the 8-mile study area. As noted on p. 9 of their review, the only SRSNSs that drew their concern were Ellis Pond and Whitecap Mountain. On p. 2 of their review, LandWorks requested an analysis of the “effect the proposed project will have on use and enjoyment for users of Ellis Pond...” However, Ellis Pond is not a SRSNS and was not discussed in the VIA. For purposes of this response, we are assuming that LandWorks’ references to Ellis Pond should have been directed to the Swift River.

In a May 21, 2018 data request, Erle Townsend, Maine DEP, inquired about Project visibility along the Swift River, in light of statements made in the VIA:

*The scenic resource assessment lists the Swift River and the West Branch of the Ellis River as SRSNSs within 8 miles of the project, and lists project visibility as “unlikely” (chart, p. 19 of the VIA). There are at least three areas where it appears that project visibility is at least possible, if not probable. On the Swift River there is a large beach or sand bar at 44.36.35N – 70.34.30W with what appears to be an open line of sight towards the project; and the braided channels in the area around 44.41.32N – 70.36.21W appear to be within the “4 turbines visible” area on the Landcover Viewshed For Blades map (Map 4 of 9) in the VIA... Have these areas been checked individually for visibility?*

TJD&A investigated the two locations along the Swift River that were referenced in Mr. Townsend’s letter and determined that the Project will be visible from the sand bar but not from the braided channel on the river. These were documented by TJD&A in a June 15, 2018 submittal that included panoramic photographs from five locations along the river and a June 14, 2018 photosimulation from the sand bar in Mexico. TJD&A also investigated the location on the Ellis River and determined that the Project will not be visible. On page 14 of its review, LandWorks states that there are three locations of “extended visibility” along the Swift River. We believe that this is incorrect, based upon the viewshed mapping and fieldwork. As indicated in Mr. Townsend’s letter, there were only two areas of potential visibility along the river, both of which were evaluated by additional analysis and field investigation.

The first location at a gravelly sand bar along the river in Mexico (44.36.35N – 70.34.30W), was photographed and displayed as VP-1 looking west to north (upstream) toward the proposed RoxWind Project. All four proposed turbines will be visible at distances of 2.2 to 2.4 miles from this viewpoint. Ten turbines from the existing Record Hill Wind Project are currently visible to the northwest at distances of 3.1 to 4.4 miles. A

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<sup>4</sup> Ibid. p. 3.

photosimulation has been completed for this location. The viewpoint selected offered the most potential for visibility of the North Twin Mountain ridgeline.

The photosimulation illustrates the character of the river during low flows, with an extensive sand/gravel bar on the east side of the channel. Since this viewpoint is south of the Project, recreational boaters would have to turn at least 90° to the right to see the turbines. According to the viewshed maps, the area of potential visibility extends approximately two miles along the river. However, riparian vegetation along the south and western shoreline should screen the majority of this route. If boaters were to see the turbines, the view would last for less than a minute at any one area, given the alignment of the river and intervening vegetation in the vicinity of the bar. They would also be seen as a continuation of the existing Record Hill turbines, which have been in place since 2011.

The second location, at the braided channels (at 44.41.32N – 70.36.21W) at the northern end of the river's course in Roxbury, was photographed and displayed as VP-5 looking southeast to southwest (downstream). As seen in the photograph, the Project will not be visible due to intervening vegetation during leaf-on season. In leaf-off conditions the Project may be somewhat visible, but will still be partially screened by the upper branches of the trees along the Swift River. Recreational use of the river is expected to be considerably less due to low water flows at this time of year.

There is very little published information on fishing in the Swift River in the Project area. The following comments and exchanges, taken from MaineFlyFish.com, indicate that a) the river is subject to fluctuations in water level, and b) the river is lightly fished.

<https://www.maine-fly-fish.com/forums/index.php?/topic/27777-the-underrated-swift-river/>

*I took a new route out of Rangeley this holiday weekend - route 17 until Rumford. The road ran next to the Swift river - it looked very fishy though I have never read anybody fishing it. So has anybody fished it? BoxBiz. May 28, 2014.*

*I've fished it once very early in April with no luck (probably too early for up there) but they just recently stocked it (browns/brookies/bows) a few days ago... but it's blown out right now (over 1000cfs) from the rain i'd give it a week at least if you were to try. TightLinesMaine. May 28, 2014.*

*i fished it twice this time of year last year. Looks very fishy indeed, but i came up empty handed. Water is extremely clear. epkomd. May 28, 2014.*

*Hey guys, finally been getting the hang of it. Pulled 6 rainbows out of the swift river, and a nice brown the last couple days. Biggest one 14", on a bead head prince. My buddy Keith pulled in 3 rainbows the other night, one 17" and two 18-19", all on brooke trout streamers. Another friend of mine pulled a 18" brown out of the swift,*

*but with worms. This river is certainly producing and it's nice because not too many people fish it. Nymphingnoob. July 8, 2015.*

*Hmm, ive fished that river once, think i fished it way too early (was in late april) cuz i got a big ol' skunk and no sign of fish. TightLinesMaine. July 8, 2015.*

*Yeah man that river is all about timing, and it can very low at times, or high. Nymphingnoob. July 8, 2015.*

The AMC River Guide offers some insight into the use of the Swift River:

*“The river is perhaps best known as a popular place to pan for gold, although more aluminum than gold is now to be found on some rocks. It is also an excellent whitewater run, best for seasoned paddlers. The river rises and falls quickly, making it difficult to determine the best time for paddling. When low, it is impassable, and when high, it is dangerous in spots. At medium water, it can be run from above Houghton down to Byron, all delightful Class II rapids, but you must take out above Byron to avoid being swept over the falls at Coos Canyon.”<sup>5</sup>*

Maine Department of Inland Fisheries and Wildlife stocks the Swift River in this area with Brook Trout, Brown Trout, and Rainbow Trout. In 2017 the Department stocked the river in Roxbury with 300 8” Brown Trout (on May 18) and 255 7” Rainbow Trout (on June 7). That year the Department also stocked Brook, Brown, and Rainbow Trout at Byron. In addition to the general fishing season, open water fishing is allowed from October 1 to December 31. Fishing is by artificial lures only; all landlocked salmon, trout, and togue must be released at once.

The view of four new turbines should not have a significant adverse effect on recreational boating and fishing on the Swift River. In evaluating the potential impact on use, it is instructive to review the recreational users survey of Baskahegan Lake in Washington County that was designed to determine what effect the presence of the Stetson Mountain Wind Farm had on visitation to and enjoyment of the lake. The Stetson wind project consists of 38 turbines, each 389 feet in height, along a 7-mile ridgeline overlooking Baskahegan Lake. The project, which is visible from 90% of the lake, was approved by the Maine Land Use Regulation Commission (now the Land Use Planning Commission) in 2008.

The applicant in the proposed Bowers Wind project commissioned a survey of recreational users of Baskahegan Lake to determine what effect the presence of the Stetson Mountain turbines had on continued use and enjoyment of the lake. While the primary use of the lake is fishing, interviewees also mentioned scenery, quietness, and camping as important attributes. Results of the survey indicate that the wind farm has not had a negative effect on visitation or enjoyment of the lake. Participants also noted that the lake usage, primarily for fishing and boating, had either remained the same or had slightly increased following the construction of the wind farm. Everyone interviewed said

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<sup>5</sup> AMC River Guide Maine. Fourth Edition. Appalachian Mountain Club. 2008. P. 35.



they were likely to return to visit the lake 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. They were visiting the lake prior to construction of the Stetson Wind Farm and they will continue to visit in its presence. 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% rated 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.<sup>6</sup>

While there are limitations to relying on the results of intercept surveys from other locations to draw conclusions on the potential impact of project visibility of the RoxWind project on scenic character and recreational users of the Swift River, the Baskahegan Survey is important because it is the only survey of this type in Maine that evaluated visibility of existing turbines (as opposed to simulations of proposed turbines). It also evaluated impact of turbine visibility on users focused primarily on fishing. Importantly, LandWorks relied on the Baskahegan Survey, along with other intercept surveys in and beyond Maine, to inform its conclusion that the proposed Bowers Project would not have an unreasonable adverse impact on scenic quality and recreational use and enjoyment of nine SRSNS impacted by that Project.<sup>7</sup>

*C. There is a need for some additional analysis with regard to the visual effects of the associated facilities.*

The RoxWind VIA concluded that the associated facilities will not be visible from any SRSNS. As noted in the VIA “The photosimulations of the proposed Project were prepared by 1) creating a three dimensional DTM model base of the study area landscape using National Elevation Data from USGS, 2) based on turbine information provided by RoxWind and GE, inserting three dimensional models of the turbines generated in 3D Studio Max into the base model, 3) **inserting associated facilities data as an AutoCAD file from Stantec into the model**, 4) aligning the computer model of the Project with GPS located photographs (elevation, latitude, and longitude data) in 3D Studio Max matching the lens focal length, date and time of photograph, digital resolution, and lighting, and 5) rendering a simulated perspective of the Project using 3D Studio Max. Existing visible elements in the landscape (e.g., ridgelines, roads, buildings) were used to register the photographs to actual ground conditions.” (emphasis added.)

As noted in the VIA, TJD&A developed a working computer model of the associated facilities, based upon engineering plans. The model incorporated existing topography,

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<sup>6</sup> Baskahegan Lake Users Survey. Prepared for First Wind. Kleinschmidt. Pittsfield, ME. October 2012.

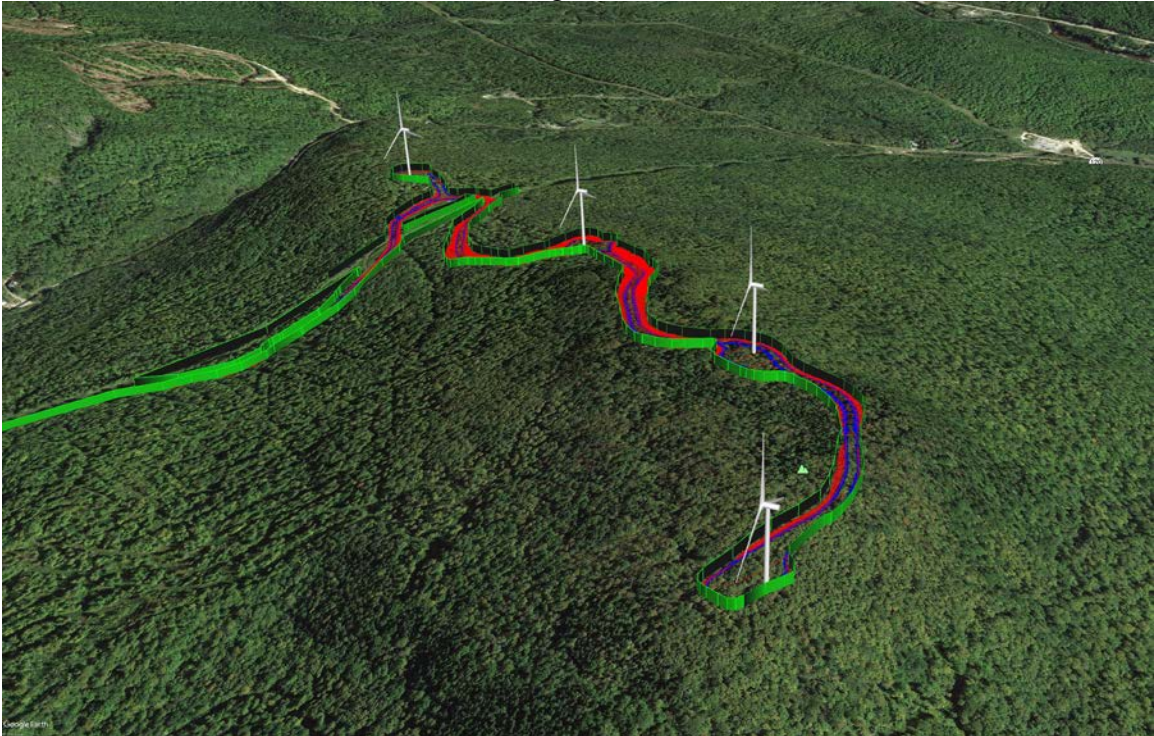
<sup>7</sup> Visual Impact Assessment for the Bowers Wind Project at pp. 47-57. Prepared for Champlain Wind, LLC. LandWorks. October, 2012.

limits of clearing, road plans from Stantec, assumed tree heights (40'), and other data to evaluate whether any of the cleared areas would be visible from SRSNS, and specifically Whitecap Mountain. Based upon this analysis, we determined that the access roads connecting the turbine sites, electrical collection system, crane pads, and crane assembly area will not be visible from any SRSNS.

A sample of the three-dimensional computer model is included below as Figures 1 and 2 to demonstrate how topography and existing vegetation will screen views of the associated facilities. LandWorks' comments on limits of grading, slope stabilization, and related matters are best addressed by the Project's civil engineers (who have considerable experience in dealing with wind energy projects in similar field conditions), as these topics are not typically within the scope of a VIA.

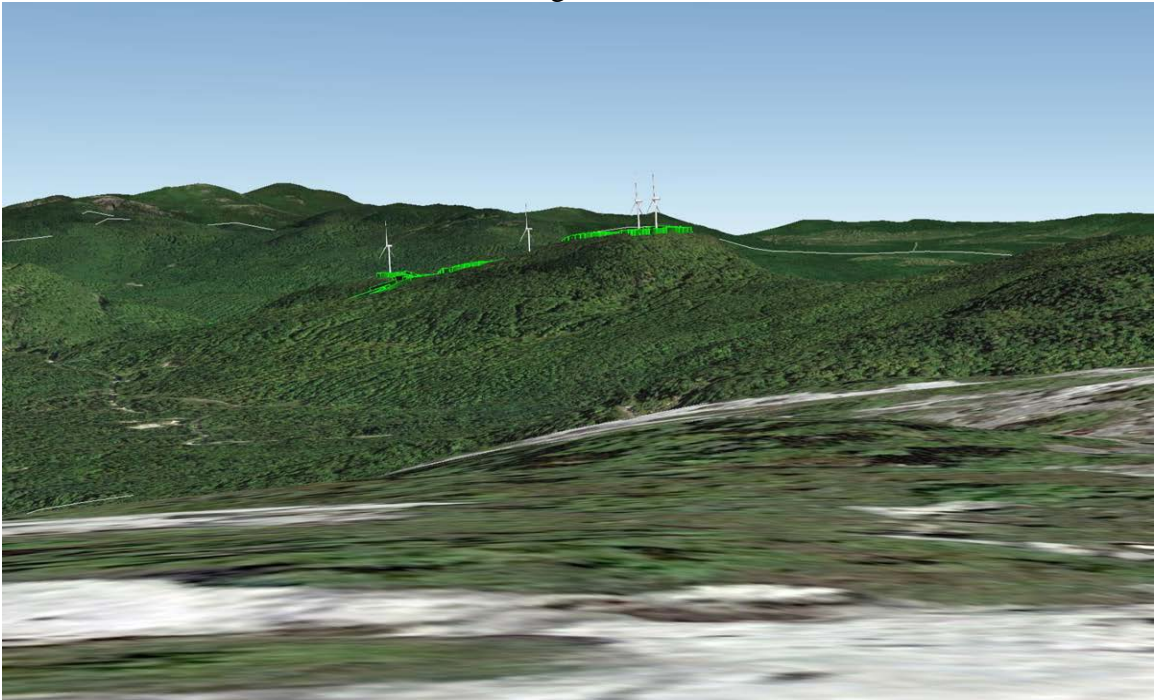
When compared to large wind projects that are more common in Maine, the four turbines being proposed under this small-scale wind energy development will require considerably fewer associated facilities. As noted in the three-dimensional computer model, the associated facilities will be largely screened by topography and existing vegetation. The photosimulation has taken the required clearing into account. The transmission line is mainly adjacent to the existing CMP transmission line. To the extent that clearing associated with the Project is visible, it would not be 'scars on the landscape' (as described on LandWorks review on p. 7), but rather would be consistent with management operations (cutting and roadbuilding) that are commonly found in commercial forests such as this.

Figure 1



This model view shows the proposed 3D turbines, the edge of the proposed gravel access road in blue, the proposed grading in red, and the edge of clearing limits as 40-ft high green 'tree walls'.

Figure 2



This model view shows how the 40-ft high green 'tree walls' will screen the associated facilities from the Rumford Whitecap Mountain summit.



***D. There is insufficient analysis of the potential impacts of the project to users of the Whitecap Mountain scenic resource.***

As discussed in the accompanying memorandum, there has been no determination that Whitecap Mountain is a scenic resource of state or national significance. Assuming for the sake of argument that it is, there is ample evidence to support the conclusion that visibility of the small-scale RoxWind project, which includes only four turbines, will not have an unreasonable adverse impact on scenic quality or use and enjoyment related to scenic quality of Whitecap Mountain.

Importantly, LandWorks' review appears to be premised on 'anecdotal information (gleaned from informal conversations with hikers)' as a basis for suggesting that the RoxWind Project "may exceed a threshold of acceptability and thus change the user's level of enjoyment." Dictionary definitions describe 'anecdotal' as meaning "not necessarily true or reliable, because based on personal accounts rather than facts or research." While informal interviews may provide one data point in making a judgment about continuing use and enjoyment of the resource, they have to be seen in the context of other currently available information about use patterns on and enjoyment of Whitecap Mountain. In this case, LandWorks has provided no evidence of how the information was obtained, who engaged the hikers in discussion, what questions were posed to the hikers, or how the RoxWind Project was described. It also appears that photosimulations were not used to illustrate the location and visual characteristics of the Project. Moreover, the so-called anecdotal evidence is at odds with other evidence that supports the conclusion that visibility of the RoxWind project will not adversely impact scenic quality or recreational use and enjoyment. For these reasons, and because LandWorks provides no support, we do not believe it is appropriate to give much, if any weight to the unsubstantiated anecdotal information referenced by LandWorks.

There is no doubt that Rumford Whitecap is a popular hiking destination. It is a relatively easy hike, offers a 360° panorama of the surrounding mountains, abundant blueberries during late summer, and well-marked trails. The mountain even has its own Facebook page where hikers can post photographs and commentary about their experiences.

In describing the Grafton Notch/Mahoosuc Range Region of Maine, the 9<sup>th</sup> Edition of the AMC Maine Mountain Guide notes that "Rumford Whitecap (2200 ft.) is the most popular of the low range of mountains lying between Andover and Rumford."<sup>8</sup> The Guide notes: "This mountain is a long, bare-topped ridge in the northwestern part of Rumford. It yields excellent views with relatively little effort... From the summit, the antenna on Black Mountain and the satellite station at Andover are visible."<sup>9</sup> The 9<sup>th</sup> edition of the Guide was published prior to the construction of the Record Hill Wind Project. The 11<sup>th</sup> edition the Maine Mountain Guide, published in 2018, omits the passage on the Black Mountain antenna and the Andover satellite station. It also does not

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<sup>8</sup> Maine Mountain Guide 9<sup>th</sup> Edition. Appalachian Mountain Club. 2018. P. 167.

<sup>9</sup> Ibid. p. 192.

mention the Record Hill wind turbines, which are visible from the summit of Whitecap Mountain.<sup>10</sup>

Carey Kish, writing in MaineToday earlier this year, describes six great spring hikes in the 1 to 4 miles, easy to moderate range. Rumford Whitecap Mountain is one of the six, in which he mentions the “far-reaching views in every direction” and the “752-acre Rumford Whitecap Mountain Preserve..., the signature conservation property of Mahoosuc Land Trust.”<sup>11</sup> There is no mention in the article about the existing wind turbines.

TJD&A reviewed user comments on digital media from people who have hiked Whitecap Mountain to determine if the presence of the Record Hill turbines has had a noticeable effect on use patterns or enjoyment of the resource. With a few exceptions, commenters either made no mention of the turbines or simply noted their presence. Most commenters described the beauty of the surrounding landscape and expressed a desire to return.

The following is a summary of the various websites and other information sources that were reviewed as part of the evaluation. Included is a sample of unedited quotes from hikers who visited the mountain. After reviewing this information, it is evident that the 22 turbines on Record Hill have not significantly diminished the use or the experience of people who visit Whitecap Mountain. The incremental increase in the number of turbines visible from the summit should not have an unreasonable impact on people who visit the mountain.

### **Maine Trail Finder**

Maine Trail Finder is a collaborative effort between organizations and funders committed to promoting active recreation in the state of Maine.

<https://www.mainetrailfinder.com/trails/trail/rumford-whitecap-mountain-preserve>

Their website contains a dozen comments from 10 different individuals who have hiked to the Rumford Whitecap Mountain Preserve from Oct 15, 2015 to Sept 9, 2018. No one mentioned the turbines. The description of Whitecap Mountain does not mention the turbines. There is considerable discussion regarding the private aspects of land at the summit.

“During the late summer, Rumford Whitecap is widely known for its blueberries that grow on the upper ledges. Although the trails are not maintained for winter use, the summit area is also a well-known and popular backcountry ski destination.” (Description of Whitecap Mountain from website.)

*This is a beautiful spot...the long, bald ridge line is spectacular, and the 360 views are uplifting. Hiked orange trail up, yellow down. Orange is well marked and should*

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<sup>10</sup> Maine Mountain Guide 11<sup>th</sup> Edition. Appalachian Mountain Club. Compiled and edited by Carey Kish. 2018.

<sup>11</sup> Kish, Carey. 6 Simple Spring Hikes (and Nearby Snacking Spots). MaineToday. May 29, 2018.

*only carry a "moderate" rating - yellow is less well marked as others have mentioned, has a handful of short, "advanced" sections and is a bit longer and (IMO) less scenic though it does spend more time on the ridge line. Netted out, this is a fine hike with an excellent reward for the effort - especially if you stick to the orange trail. moosehill*

### **AllTrails**

<https://www.alltrails.com/trail/us/maine/whitecap-mountain>

AllTrails is an organization with an app that provides what it calls an “outdoors platform” based upon crowdsourced reviews of trails from around the world. Its user base includes 9 million hikers, mountain bikers and trail runners in more than 100 countries. The app provides detailed trail maps and other content for outdoor enthusiasts. Hikers are able to record gps tracking, photographs, as well as comments. Views of the Record Hill turbines were included in half dozen photographs on the site.

“Whitecap Mountain is a 5.2-mile lightly trafficked out and back trail located near Rumford, Maine that offers the chance to see wildlife. The trail is rated as moderate and primarily used for hiking. Dogs are also able to use this trail but must be kept on leash.” (Description of Whitecap Mountain from app.)

58 reviews from May 27, 2015 to within the past month. 32 left comments.

*LOVE this moderate hike, have done it many times with my kids as they grew. Endless granite ledges at the top carpeted with blueberry bushes. The locals come up here with blueberry rakes in mid-August. Views are staggering. I have seldom found so great a payoff and never with such an easy climb. My all-time favorite hike. Susannah Clark. 8 mos ago.*

*It was the perfect fall day hike! An easy incline up with a terrain mix of gravel, leaves, stone stairs, and cairns. As everyone said, the 360 views at the top were amazing! So colorful and close to the wind turbines. No bathroom at the trailhead so plan accordingly in town. Pro tip: “Take the yellow blazed trail up and the orange blazed trail down. Great mountain side views on the way up.” - the friendly greeters who maintain the trail.*

Kim Benjamin. Oct 20, 2017. (This, the only post that mentioned turbines, appears to mention the proximity to the turbines as a positive factor in the review.)

*I would have rated this moderate and not difficult. Kids with hiking experience can do this one. My 3 kids and dog did it with me without any issue. It was a beautiful trail, well groomed and I would definitely do it again. Mandi Brown. Aug 6, 2017.*

*Moderate hike, not very hard. Hiked orange to the summit. Tried to take the yellow trail (Star trail) back down around the other side to complete the loop but the trail markers just stop at one point...I walked around trying to find my way, stood on a ledge and tried to see if I could find the rest of the trail, was out of luck and ended up having to turn around (as you can see from my map). The yellow trail needs to be*

*remarked REAL bad. It's semi dangerous. Just take orange up and back.* Courtney Von Wolfe. Aug 6, 2016.

*Views at the top are spectacular! It's a nice place to have a lunch and enjoy the view. This also isn't a heavily trafficked trail at all. I only saw one party returning on my ascent.* Nick Skidgell, 6 months ago.

*The trail is rated as difficult but I would say it was more on the moderate-hard side. There's a parking lot across the street from the trailhead with maps and the trail is clearly marked with flags and blazes. We went in July and there was an abundance of wild blueberry bushes along the hike. The peak had fantastic panoramic views of the surrounding mountains. It's definitely not a high traffic hike but beautiful and worth while, especially if you like blueberries.* Krysten Reilly: July 14, 2014.

### **Act Out with Aislinn**

Aislinn Sarnacki is a Bangor Daily News reporter for the Outdoors Pages, focusing on outdoor recreation and Maine wildlife. Aislinn hiked Whitecap on February 28, 2017. <https://actoutwithaislinn.bangordailynews.com/2017/02/28/one-minute-hikes/1-minute-hike-rumford-whitecap-mountain-in-rumford/>

She mentions the turbines in her article and includes shots of the turbines in the 3:15 minute video. The final shot of her on top of the mountain includes the turbines in the background.

The article received 7 comments from 6 different people: 3 were by people who decried the presence of the turbines. The others made no mention of them.

*Yay!!! Whitecap is a unique and not well known place. Only rumford diehards go up there. It deserves more acclaim. Thank you.* Doug Watts. 1 year ago.

*Rumford Whitecap is a beautiful experience, such a unique summit environment. It is truly sad that the view is ruined by the wind turbines. I'll never hike there again because of their intrusive presence.* Stephen Watson. 1 year ago. (Mr. Watson passed away in November 2017. He was married to Brad Blake, a frequent critic of wind development.)

### **Hike New England**

HikeNewEngland.com covers hikes in Maine, Vermont, New Hampshire, Massachusetts, Connecticut, and Rhode Island. The goal of this website is to provide free information for people hiking, walking, or snowshoeing in New England. The site currently offers over 200 trail reports – written both by the Webmaster as well as other outdoors lovers. These guides are quite detailed and include a description of the hike, trail distances, a difficulty rating, and driving directions; often photos or trail maps are also provided.

<http://www.hikenewengland.com/RumfordWhitecapME071016.php>



Hiked on 10.16.07; updated 07.04.10 when the Project was under construction. No mention of turbines in extensive review of hike and summit conditions.

### **Second Nature Adventure Challenge**

<https://secondnaturemaine.com/trails/rumford-whitecap/>

The Second Nature Adventure Challenge – a project of Mahoosuc Pathways – is a trails challenge that encourages and rewards hikers of all abilities for exploring the Maine West region. Whether people hike one trail, or all nine, this website is used to log adventures and earn digital badges for each trail.

The website includes Adventurers' Log, completed by people who have taken the challenge. Ten entries were reviewed, all but one was completed in 2018. No one mentioned the turbines.

Typical entries:

*A little hard to find the right trail. Got confused by snowmobile trail. This hike is definitely worth the effort. The 360 degree views are amazing. This is my first badge. Can't wait to do more*

*I donated blood too many hungry mosquitoes today but the view from the summit was well worth it. This is the most amazing hiked I've ever done in my life including the Grand Canyon.*

### **Rumford Whitecap FaceBook Page**

<https://www.facebook.com/pages/Rumford-White-Cap-Mountain/400757016659272>

The Whitecap Mountain Facebook Page offers users a chance to post photographs and commentary from their hikes on the mountain. The earliest post on the page is from Oct 18, 2012; the next one was in 2015. Heaviest use started in 2016. As of this date, 194 people have checked in to the site.

The collection of photographs is quite varied, and shows both typical and atypical uses. While most of the photographs are of small parties, the collection also includes a Martial Arts class and a group from Gould Academy with 75 students. Of the hundreds of photographs reviewed, only a few show turbines. On July 28, 2017, a hiker posted a scrollable panorama from the top of Whitecap; the wind turbines and transmitters on Black Mountain are clearly visible.

*I actually find these (referring to the existing wind turbines) fascinating.....much better to look at these than a nuclear power plant....we either want to save the planet and have power or we don't. I can still see beauty when I look across these mountains. Carole Martin-Timberlake.*

### **Geocaching**

[https://www.geocaching.com/geocache/GC1H98C\\_rumford-whitecap?guid=4d2da647-0285-4aca-b22b-9798ef8b5876](https://www.geocaching.com/geocache/GC1H98C_rumford-whitecap?guid=4d2da647-0285-4aca-b22b-9798ef8b5876)

The summit of Whitecap Mountain contains a geocache hidden on October 16, 2008. As of November 2018, the site recorded 53 logged visits and 18 photographic images. None of the photos included the wind turbines. Comments generally referred to the quality of the hiking experience and the views from the top.

Landworks states that the closest turbine is 2.4 miles from the Whitecap summit (page 12). That is incorrect. As presented in Table 1, Summary of Scenic Resources of Statewide or National Significance within the 8 Mile Study Area, the nearest visible turbine is 3.5 miles from the summit. (The closest turbine to the boundary of the RWMP is 2.4 miles, but there is no visibility from that location.) The Wind Energy Act creates a rebuttable presumption that a VIA is not required to evaluate visibility on SRSNSs greater than three miles from the turbines. Title 35-A section 3452(4). Nonetheless, TJD&A routinely prepares a VIA to evaluate wind turbine visibility on all SRSNSs located within eight miles of a wind energy project. The impact of visibility, however, is greatest at distances less than three miles and when the turbines are prominent in the landscape, which the RoxWind turbines are not.

LandWorks states (page 11) “Currently there are another four wind energy projects in the 360-degree view with a fifth in the distance towards the west in NH – one is beyond the 8 mile radius however. These are readily visible on clear days. The addition of this new project would essentially surround at least 1/2 to 3/4 of the summit view with views of large/grid scale turbine projects so there is a distinct potential that some viewers will find that the RoxWind project with its proximate location adds a level of encroachment that changes the effect (or summit “feel”) and experience of the summit.”

In raising this issue, LandWorks may not recognize that the wind energy projects referenced in their statement are all more than eight miles from the summit of Whitecap Mountain, and therefore the visual effects would be considered insignificant by the Maine Wind Energy Act. Portions of the Spruce Mountain Wind, Saddleback Wind, and Canton Wind Projects are 11.5, 14 and 18 miles respectively from the Whitecap Mountain summit. Additionally, LandWorks is assuming, erroneously, that the view is limited to 180°. The experience of the summit and the literature describing the summit all reference the 360° view.

It is also instructive to note the general lack of recognition of the other wind energy projects in comments and photographs posted on websites. At distances of 11 to 18 miles the individual turbine bases would be perceived as very small objects on the horizon; the blades would be difficult to discern due to their narrow profile. It is clear that the average viewer would not get the sense that they were in a turbine-dominated landscape.

The viewpoint selected for the photosimulation is at or near the boundary with the private property to the north of the Mahoosuc Land Trust lands. From this viewpoint there are 360° views. Portions of the view toward the north is partially obstructed from spruce/fir vegetation growing in scattered clusters around the exposed ledge. The unobstructed panoramic views from the Trust's property are mainly to the south, as seen in Photos 63

and 64 in Appendix C of the VIA: Study Area Photos.

***E. There is insufficient analysis of the cumulative impact posed by the addition of this project to the overall panorama of the summit vista on Whitecap Mountain.***

LandWorks suggests that the VIA should have taken into account the cumulative impacts of other wind energy developments visible from the summit of Whitecap Mountain (page 11). As noted above, except for the Record Hill project, which was considered in the VIA, the other projects referenced by LandWorks are located more than eight miles from the summit. The Wind Energy Act makes clear that scenic impacts, including cumulative scenic impacts, are limited to consideration of the visibility of generating facilities located within eight miles of a SRSNS. Title 35-A section 3451 (1-E) and (10-B). The presence of other more distant wind projects does support, however, a conclusion that this is not a pristine landscape untouched by human hands. In addition to the distant wind projects, the following features are visible from the summit: the communications towers on Black Mountain at a distance of 1.4 miles; several agricultural fields; the Record Hill wind project at a distance of 4.6 to 7.8 miles; the former Telstar radar installation at 4.6 miles; and, emission stacks and plumes from the paper mill in Rumford at 6.4 miles.

According to the LandWorks' review, the VIA should have taken into consideration the four communications towers on nearby Black Mountain in the discussion of cumulative visual impact.

“... there is the potential for an unreasonable (and cumulative) effect on the view from the summit of the mountain (Whitecap). This is due in particular to the change from an intermittent array of summit structures to a continuous panorama from Record Hill to North Twin (the RoxWind site) to the structures visible on Black Mountain. While the structures on Black Mountain are not wind turbines, they are part of the view, and when taken together with Record Hill and the proposed RoxWind Project, the sum of these visible elements will cause a potential adverse effect on the scenic character experienced from the summit of Whitecap. There is no discussion, for example, as to how the scale and extent (scope) of the new project combined with the Record Hill project, as well as the separate structures on Black Mountain, might reach a threshold of unreasonable visual effect – or how it won't exceed that threshold.” (LandWorks, p. 13.)

The RoxWind VIA describes the cumulative effect that the construction of the Project would have on the 360° view from Whitecap Mountain. The 22 existing Record Hill turbines are seen over a horizontal field of view (HFOV) of 11°; the 4 turbines proposed for the RoxWind Project would occupy a HFOV of 6° (approximately 3 thumb widths, seen at arms length)<sup>12</sup>. From Whitecap the two wind projects would appear to be

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<sup>12</sup> As a general rule, the visual angle of the width of the thumb held at arm's length is about 2 degrees. O'Shea R P, 1991, "Thumb's rule tested: visual angle of thumb's width is about 2 degrees" Perception 20(3) 415 – 418.

separated by a horizontal angle of 8°. Thus, the total HFOV that contains wind turbines would be 25°, which is well within a typical human cone of vision (approximately 45°).

The VIA did not consider the presence of the transmission towers on Black Mountain in assessing cumulative impacts for several reasons:

- The towers are not energy generators.
- The towers are not of a similar character, color, or form to the existing or proposed wind turbines.
- The DEP Permit Application and Wind Energy Act specifically call for an evaluation of the cumulative effects of wind energy projects (see below).

By way of background...In March 2012 the Maine Office of Energy Independence and Security (OEIS) issued a *Report of OEIS Assessment of Cumulative Visual Impacts from Wind Energy Development*. The *Report* presented the findings of a study group that was tasked with developing a process to assess cumulative visual impacts from wind power development. Cumulative visual impacts and the content of VIAs were addressed as one of the discussion points from the *Report*:

*6. Require cumulative impact to be addressed in VIAs (and surveys if conducted) for all permitting projects. Include a description or analysis that estimates the cumulative impacts to the scenic resources over time from one or more projects in the surrounding area.*

The study group limited their work to an evaluation of wind energy projects; there was no discussion or findings pertaining to other forms of development (e.g., transmission towers).

Following the issuance of the OEIS Report, the Maine DEP revised the Permit Application for Site

Location of Development projects in September 2013. Included in the DEP instructions are specific requirements for assessing potential Cumulative Visual Impacts from Wind Energy projects (Section 30.G Generating facility – Visual Quality and Scenic Character: Cumulative Impacts). The DEP requires that the Applicant identify other wind projects that may result in a cumulative visual effect on SRSNSs; it does not require that an Applicant discuss potential cumulative effects from non-wind energy developments within the viewshed of a SRSNS. This is consistent with the definition of cumulative impacts that was subsequently added to the Wind Energy Act. Title 35-A section 3451(1-E).

The OEIS *Report* addressed the issue of concentrated wind energy development in the context of cumulative visual impacts. While the Report did not make any specific recommendations regarding this issue, it did note that public comments favored concentrating wind projects in appropriate locations as opposed to an approach that dispersed projects over the larger landscape.<sup>13</sup>

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<sup>13</sup> *Report of OEIS Assessment of Cumulative Visual Impacts from Wind Energy Development. March, 2012.*



Further Observations on Cumulative Visual Impact on the view from Whitecap Mountain:

- The four turbines will be seen in the same Horizontal Field of View as the Record Hill project; i.e., viewers will not have to adjust their position to observe both projects, which would be the case if both projects were widely separated. If that were the case, the cumulative visual impact would be considered Successive, and may change the effect from a landscape with turbines to a turbine-dominated landscape.<sup>14</sup>
- The Project's four wind turbines will result in a slight increase in the affected 360° panoramic view from the summit of Whitecap Mountain. The Record Hill Project is seen over 3% of the view; the RoxWind Project would be seen over 1.6% of the view.
- The photosimulation prepared by TJD&A from the summit of Whitecap Mountain illustrates that the proposed RoxWind turbines are similar in color, form, and siting to the existing Record Hill Project.
- At distances of 3.5 to 4.2 miles from the Whitecap Mountain summit, the turbines will be seen in the midground to background viewing distances and will not dominate the view or the surrounding landscape. North Twin Mountain is one of many small mountains visible from the summit and is not a focal point in the landscape.
- North Twin Mountain, the site of the RoxWind Project, is similar to the landforms that comprise the Record Hill Project. By comparison, Black Mountain, in Rumford, is closer and appears more prominent in the landscape.
- As noted in the response to the potential effect on users to Whitecap Mountain (D, above), a review of comments on digital media indicates that the general public has accepted the presence of the Record Hill turbines. With a few exceptions, commenters either made no mention of the turbines (or the communications towers on Black Mountain) or simply noted their presence. Most commenters described the beauty of the surrounding landscape and expressed a desire to return.
- The Mahoosuc Land Trust (MLT) purchased the Ellis River Conservation Area on East Andover Road in 2017 in an effort to continue to secure public access to the summit of Rumford Whitecap Mountain. Record Hill was operational in 2011, therefore MLT was acquiring land to gain public access to Whitecap Mountain, even though there were turbines visible from the summit. The presence of the Record Hill Wind Project did not appear to reduce the goal of securing public access for the public's continued use and enjoyment.

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P.5.

<sup>14</sup> Ibid, p. 4. See discussion on Turbine-dominated landscapes.

***F. Intercept Surveys. It is recommended that a user survey be conducted to address the effect on scenic character and the viewer's/user's continued use and enjoyment of the resource.***

Intercept surveys can provide valuable information in situations where there is little or no available data on user enjoyment and use patterns. As demonstrated in the numerous data sources referenced above, that is clearly not the case for Whitecap Mountain. The available data demonstrates that the adjacent Record Hill Project does not appear to adversely impact user enjoyment of the mountain or their desire to return to the summit.

The intercept surveys that have been done on other mountains as part of proposed wind energy developments in Maine (e.g., Spruce, Saddleback, Highland) support the conclusions presented here and in the VIA. LandWorks, in the VIA for the proposed Bowers Wind Project, provides a summary of the results of these and other intercept surveys:

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

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

Collectively, these surveys confirm that wind energy projects do change the landscape, but the typical user will still visit the resource and enjoy their experience there. This is critical - it substantiates one of the most important conclusions with regard to visual impacts from wind energy projects, and the Bowers' Wind Project in particular: that the potential (or resultant) impacts are not so significant or extensive to result in an unreasonable, adverse impact on scenic resources and the use and enjoyment of those resources.”<sup>15</sup>

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<sup>15</sup> Visual Impact Assessment for the Proposed Bowers Wind Project. Prepared for Champion Wind LLC. Prepared by LandWorks. October 2012.