

Review of the Roxwind LLC Project Scenic Resource Impact Assessment

by Terrance J. DeWan & Associates (TJD&A)

*Prepared by: LandWorks, Middlebury, VT
Prepared for: Maine Department of Environmental Protection*

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Introduction

Roxwind LLC submitted a permit application for the Roxwind Project located in Roxbury, Maine on North Twin Mountain in Oxford County. The Project will produce 15.2-megawatts (MW) of power, and includes access roads and overhead and underground collection lines.

LandWorks has been retained by the Maine Department of Environmental Protection (DEP) to review the Visual Impact Assessment (VIA) (Section 30) prepared by Terrance J. DeWan & Associates (TJD&A) as part of the Small-Scale Wind Energy Development Certification process. The state's requirements for this review include the following:

1. Peer review of the applicant's VIA to determine whether it is reasonable and technically correct according to standard VIA practices;
2. Review of the scenic resource inventory and the related uses inventory, and assessment of the completeness of those inventories;
3. Review of any additional relevant and timely information concerning the VIA;
4. Attendance at the DEP's public hearing (if one is held), if scenic impact issues are raised during the pre-hearing procedures;
5. Conduct a site visit, and;
6. Appear at any appeal hearing or meeting before the Board of Environmental Protection.

The following report addresses items 1, 2, 3 and 5 above. Any requirement for attendance at subsequent hearings or meetings will be met at that time.

Summary of Findings

Overall, the report appears to be compliant and comprehensive for the broad review of scenic resources and their analysis under the provisions of the Maine Wind Energy Act.

We have identified several issues or analysis elements in the Scenic Resource Impact Assessment and VIA submitted by the applicant, RoxWind LLC, as prepared by their consultant, TJD&A.

Our findings have concluded that: A) there is inadequate reference or discussion with regard to the scenic resource guidance and information provided in the Roxbury Town Plan; B) there is a need for some additional analysis with regard to the potential impacts on users of the Swift River scenic resource; C) there is a need for some additional analysis with regard to the visual effects of the associated facilities; D) there is insufficient analysis of the potential impacts of the project to users of the Whitecap Mountain scenic resource; and 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.

In terms of potential impacts to users of affected Scenic Resources of State or National Significance (SRSNS), the assessment lacks a robust analysis of the number of users; the extent and duration of uses; and the effect the proposed project will have on use and enjoyment for users of Ellis Pond and Whitecap Mountain. This conclusion is based on the overriding assumption of the VIA that “the project is of limited scope and potential effect” (page 25, VIA), which in turn was the rationale for not preparing an intercept survey that would provide insight into potential viewer impacts.

Adequacy of the TJD&A Report

VIAs 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 VIAs can vary depending on location and context, the Maine Wind Energy Act has developed specific criteria that must be addressed in a VIA in order to determine whether a project would have an unreasonable adverse impact on the scenic character or existing uses related to scenic character of SRSNSs. This section reviews whether the TJD&A report adequately responds to these criteria.

1. Introduction and Project Description

The TJD&A report begins with an overview of the Scenic Resource Impact Assessment that provides the state and local standards, assessment approach, and conclusion, as well as an Executive Summary that outlines the details of the project, the resources within the 8-mile study area, and the overall conclusion. The report outlines the various approaches and methodologies used in developing the technical study, which include field investigations, viewshed mapping, photosimulations and study area photography.

All of the information provided in this section is accurate and corresponds with other chapters of the report, however Section 5.2 Local Standards is inadequate. The TJD&A report states “The Town of Roxbury has not enacted a separate review of scenic resources.” (p.5-1). The 2009 Roxbury, Maine Comprehensive Plan has an entire chapter dedicated to Scenic Resources which includes the findings of a scenic view analysis conducted as an element of the plan. The analysis covered variables such as distance of vista or viewshed, uniqueness, and accessibility which yielded six locations of ‘significant scenic areas’. While local scenic resources are not reviewed as part of the criteria set forth for this project it should be noted that the Town has addressed scenic resources within its local plan.

In addition, we note that the inclusion of a Table of Contents in this section would help the reader to locate specific areas of the report and would delineate the items contained in the Appendix. The appendices are referenced throughout the report as Sections A, B, C, however some of the appendices themselves are not labeled in this manner, notably the Visual Simulations (Appendix B).

2. Viewshed Mapping

TJD&A prepared viewshed maps using ESRI ArcMap 10.5, an accepted software technology. Seven analyses were completed, which include:

1. Map 3: Topography Viewshed for Blades
2. Map 4: Landcover Viewshed for Blades

3. Map 5: Landcover Viewshed for Nacelles
4. Map 6A and 6B: Landcover Viewshed for Blades and Nacelles for Halfmoon Pond
5. Map 7A and 7B: Landcover Viewshed for Blades and Nacelles for Joes Pond
6. Map 8: Cumulative Impact, Landcover Viewshed for Blades (8-Mile Study Areas for Roxwind, Record Hill Wind, Spruce Mountain Wind, and Saddleback Ridge Wind Projects)
7. Map 9: Cumulative Impact, Landcover Viewshed for Blades (8-Mile Study Areas for Roxwind, Record Hill Wind, Spruce Mountain Wind, and Saddleback Ridge Wind Projects)

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

LandWorks conducted viewshed analyses for general comparison purposes using ESRI ArcMap 10.1 software, a comparable viewshed generating program, and NLCD 2011 USGS land cover data. Although there is some discrepancy between the viewshed maps created by TJD&A and LandWorks, it can most likely be attributed to the use of different software and land cover data, and does not pose a concern for this review. The LandWorks viewshed analyses are included in the appendix of this report.

3. Photosimulations

TJD&A prepared the following photosimulations for the analysis:

Photosimulation 1: Whitecap Mountain, Carthage

Photosimulation 1A: Whitecap Mountain, Carthage

Photosimulation 2: Joes Pond, Rumford

Photosimulation 2A: Joes Pond, Rumford

Photosimulation 2B: Joes Pond, Rumford

TJD&A used ArcMap 10.1 to create a Digital Terrain Model (DTM) from USGS National Elevation Data, 3D Studio Max for modeling, an AutoCAD file for the associated facilities data, and GPS-located photography to render simulations of the Project. Post-production editing was then used to adjust/edit the appearance of the view as necessary to create realistic simulations (e.g., removing screened portions of the towers). This approach, when properly executed, is consistent with industry standards and should result in reasonably accurate simulations.

4. Character of the Area

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

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 the features and characteristics identified during our field review and analysis of the report.

5. Distance Zones

TJD&A presents the rationale for distance zones, a concept based on the USDA Forest Service Handbook on Scenery Management, which indicates that with increased distance the concern for visual impact diminishes. The zones identified in the VIA report – foreground (0-1/2 mile), midground (1/2-3-5 miles), and background (greater than 3-5 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 Wind Energy Act has determined that the visual impact of wind turbines beyond 8-miles is insignificant.

6. 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.” (Title 35-A, Ch. 34-A, §3452.2)

The TJD&A report summarizes the above regulatory standard and states that “based upon discussions with DEP staff and due to the limited amount [of facilities], the associated facilities...would be reviewed under the Wind Energy Act.” (p9). The TJD&A

report concludes that the associated facilities (access and ridgeline roads, electrical collector lines, crane pads and assembly areas, and a meteorological tower) are “similar in nature, scope, and appearance to similar facilities that are presently found in and near the study area” and determines that “there should not be an unreasonable adverse effect on scenic character and existing uses of the SRSNS due to the scope, scale, location, or other characteristics of these facilities.” In addition, the report goes on to state that “the associated facilities will not have an adverse visual effect on any locally designated scenic resources that would not be reviewed under the Wind Energy Act.” However, there is limited information and supporting materials to validate their conclusions. This is a straightforward analysis of the potential visual effects of the associated facilities with a notable lack of reliable detail. The report provides only that the associated facilities were incorporated into the DTM used for photosimulations via an AutoCAD file from Stantec. There are no location maps, viewshed maps or photo inventories specific to the associated facilities.

In addition, the project plans created by Stantec do not reflect an accurate post-construction delineation of clearing effects from the road construction, nor is there any discussion or representation in the VIA of clearing impacts or potential visibility of the clearing required for the turbines themselves. As part of this review, several sets of plans and maps were reviewed to assess potential visual effects from the impact of tree/vegetation clearing and grading to accommodate the crane path/access roads and turbine pads. Proposed road widths are between 24 and 34 feet for construction, and the turbine pads are estimated at 1-2 acres in clearing. Sheets C-N 1.2 and C-N 1.3, entitled Crane Road Plans and Profiles, as prepared by Stantec for the project application, indicate grading on steep slopes within the direct view of the Whitecap Mountain summit. Road grade as proposed is as steep as 15% or greater in some sections of the project access roads and at the T-3 and T-4 Turbine Pads, westerly slopes expose 25-30 feet of fill slopes to views from the west looking east at the project.

Experience with constructed projects in Maine, New Hampshire and Vermont indicates that grading and clearing impacts are often underestimated, and simulations have been shown to occasionally misrepresent the visible scars left behind from road building and land alteration (see Groton Wind in New Hampshire as an example of unanticipated visual impacts from construction). In the Stantec “Resource Impact Maps,” clearing and grading limits are also shown. The clearing limits appear unrealistic insofar as the canopy line coincides with the edge of grading. Grading steep slopes requires machine operation outside of the limits of the new grading which inevitably leads to the potential loss of more extensive vegetation than anticipated beyond what has been represented in the plans.

There is concern that T3 and T4 clearing may result in visible clearing and potential ongoing erosion from exposure to severe climate conditions including high wind/rain storms and icing events. At over 2,000', and given the site's latitude, exposed summit areas exhibit stress and impacts from extreme weather events, evidenced by thin soils,

exposed bedrock, erosional impacts and dwarf trees. Management strategies need to be in place both before and after construction to address these issues.

Thus, grading and clearing impacts tend to be optimistic and underestimated - particularly on steep sites – and there is a need to confirm the grading and clearing impacts have been accurately modeled and that true and ultimate clearing has been taken into account in both project narratives and simulations.¹

This is particularly critical for the view from Whitecap Mountain where it is possible, if not likely, that the clearing for the turbine locations themselves will be seen and could result in visible scars on the mountainside, given the steep terrain on the western side of North Twin summit. The simulations do not appear to represent or account for the actual extent of any clearing impacts.

Finally, the Executive Summary provides a brief overview of the associated facilities and references Photosimulation 2 in Appendix B (p.3), however, Photosimulation 2 does not note any additional information related to the associated facilities.

Conclusion:

Grading plans for the access roads and turbine pads and their clearing areas should be provided along with an analysis of the true impacts from clearing on visibility from the east and west of the project. The potential for visible cleared areas for turbine pads and corresponding visual impacts needs to be confirmed or countered. It is recommended that the applicant provide a more realistic and accurate accounting of potential clearing impacts; and ensure that the simulation provided of the view from Whitecap summit is accurate and accounts for any substantive clearing required by the project. If it is determined that the overall impacts from clearing and grading cannot be adequately assessed, then a restoration and management plan to address visible clearing and grading impacts should be developed.

7. Evaluation of Visual Impacts on Scenic Resources of State or National Significance

For the nineteen resources of state or national significance, TJD&A evaluates the potential visual impact using the seven criteria outlined in the Maine Wind Energy Act, and have presented the criteria in the following manner:

¹ LandWorks can provide an exhibit, if warranted, that demonstrates how clearing and grading impacts for access roads and utility facilities on steep wooded slopes is often under represented or underestimated.

- **Context.** *The existing character of the surrounding area and the context of the proposed activity. (§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 effect of prominent features of the development on the landscape. (§3452.3.F).*
- **Potential Effect on Public Use.** *The potential effect on the generating facilities' presence on the public's continued use and enjoyment of the scenic resource of state or national significance. (§3452.3.E).*
- **Conclusion.** *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).*

LandWorks reviewed the 8-mile study area to ensure that all of the SRSNSs were correctly identified, and found no additional or overlooked resources. The VIA correctly identifies all nineteen of the SRSNSs, which include: one 'other comparable outstanding natural and cultural feature', thirteen sites listed on the National Register of Historic Places, two great ponds, two segments of scenic rivers identified on the Maine Rivers Study, and one scenic viewpoint. TJD&A lists the following SRSNSs:

1. Rumford Whitecap Mountain Preserve
2. Rumford Commercial Historic District
3. Mechanic Institute
4. Strathglass building
5. Municipal Building
6. Rumford Falls Power Company Building
7. Rumford Public Library
8. Strathglass Park District
9. Deacon Hutchins House
10. Lovejoy Bridge
11. Andover Public Library
12. Andover Hook & Ladder Company
13. Merrill-Poor House

14. John G. Coburn House
15. Joes Pond
16. Halfmoon Pond
17. Swift River
18. West Branch of the Ellis River
19. Tumbledown Mount Blue Public Reserve Land

The only SRSNSs that drew our concern, Ellis Pond and Whitecap Mountain, are covered below.

Whitecap Mountain, Rumford, Maine

Value and significance of the Resource

This review focuses on Whitecap Mountain as the scenic resource most directly impacted by this project. The viewshed mapping and site visit confirmed that the proposed project would have a potentially deleterious effect on the use and experience of the Whitecap Mountain summit. Whitecap Mountain is a unique and outstanding scenic resource, despite the fact that views from the summit encompass a number of mountaintop utilities and wind projects. The mountain is one of the signature resources of the Mahoosuc Land Trust and is well known and loved for its outstanding blueberry crop, which covers much of the higher sections of the rounded bald summit.

Of note also is the fact that, although the summit has been identified as having “Regional” significance – as stated in the applicant’s VIA, this may be misleading given the actual user profiles. In one 2-week period, visitors were recorded from New Hampshire, Canada, Massachusetts, and New York, as well as from throughout Maine. The summit’s significance is elevated by the facts that 1) as previously stated, it is well known and well-loved for its blueberry crop, according to anecdotal accounts; 2) it has some distinct and rare natural communities, including dwarf Red Pine populations and a natural mid-elevation “bald” feature; 3) it is one of the lowest elevation “balds” or bedrock summits with alpine characteristics in New England; 4) it has some unique surficial geological features including unusual glacial striations; and 5) based on our review, it has some of the most spectacular 360-degree views of any mountain of this elevation in the White Mountain and Western Maine mountain area.

Anecdotal information (gleaned from informal conversations with hikers) also suggests that the addition of another wind energy project proximate to Whitecap and so readily visible, regardless of size, may exceed a threshold of acceptability and thus change the user’s level of enjoyment. A field trip reaffirmed the experience of the Whitecap summit as one of the more outstanding and memorable visual experiences in the region for a mountain so accessible to so many.

Extent of Use, Nature and Duration

It is true that Whitecap summit appears to continue to enjoy a high level of visitors. On September 28, 2018, the trail register showed approximately 40 to 50 users in the previous 2 weeks. (Some entries indicated the numbers in the party; others did not provide that information.). We contacted and communicated with the Mahoosuc Land Trust to assess the availability of more detailed user information. We received the following response from Robert Isles, Chairman of the Whitecap Stewardship Committee, via email 10/6/18:

We have had sign-in boxes at the beginning of the Whitecap Trails since their beginning with the Mahoosuc Land Trust. I keep all the sign-in sheets in a file and there used to be copies in the office. Literally thousands of people hike Whitecap. In 2017, 1659 hikers signed in. As a result of asking people on the mountain, we estimate that less than 50% of hikers sign in.

We also had a trail counter which worked for a while but which would have counted wildlife as well as hikers. In 2017 we determined the trail counter was not working properly (it showed 57984 hikers) and we removed it.

The fact that individuals climb Whitecap to pick blueberries and to experience a 360-degree view provides some basis for concluding that the duration of visitation can be more than the typical summit visit – lasting from one to even 2 hours in duration². Despite the dwarf vegetation and mostly bedrock surfaces of the summit dome, there are many places where a hiker can get out of the wind and weather nestled in and among the clusters of dwarf trees and shrubs.

Given the foregoing review and the information available regarding numbers of users, the summit's significance, and the actual physical experience of the summit itself (which photos and simulations cannot convey in this case), this review would suggest that the

² Evidence of this activity is found on Maine Trail Finder website, which is provided as a link for "Additional Trail Resources" on the Maine Bureau of Parks and Lands 'Hiking' webpage":

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

also:

"The Preserve is home to several natural plant communities, including part of the largest red pine woodland in the state. It has long been a popular picnicking and berrying destination for local residents".

Another popular trail website, alltrails.com, has this entry:

"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."

(<https://www.alltrails.com/trail/us/maine/rumford-whitecap-trail>)

conclusions with regard to the evaluation criteria in the applicant's Visual Impact Assessment be revisited. These include criteria A) Significance and C) Viewer Expectation, which will potentially be changed substantively with the addition of 4 new turbines 3.5 to 4.2 miles distant, coalescing with the existing Record Hill project with the closest turbines of that array at 4.6 miles. Additionally, criteria E.1) Extent, Nature and Duration of Uses, E.2) Effect on Continued Use and Enjoyment; and F) Scope and Scale of Project Views/Visual Impact need further study.

The extent, nature and duration of uses has not been adequately described beyond basic references. There is no discussion of specific numbers of users, the expectations of those users and how long they typically stay on the summit. For example, field observations during two visits indicate that users highly value the accessibility and breadth of the view, and can spend as much as 2 hours or more on the summit picking berries, having lunch, taking in the view - which is extraordinary due to its accessibility and the 360 degree panorama of the summit. Additionally, entries in hiking guides that date as far back as 1971 describe the nature of the hike along the 1-mile ridgeline and the fact that this one mile hike will have sustained views of the proposed project.³

With regard to the effect on continued use and enjoyment, the issue of whether this new project undermines the easterly/northeasterly viewscape needs to be further addressed and discussed. Anecdotal discussions with users indicates that the advent of four new turbines proximate to the summit and creating a continuous view of turbines and utility towers on Black Mountain will potentially change the summit experience in a substantive manner. While the VIA concludes the effect will be low in this category, that is based on the presence of the existing projects on Record Hill and Spruce Mountain, and not on any discussion of what effect this new project will have.

Effect on Continued Use and Enjoyment

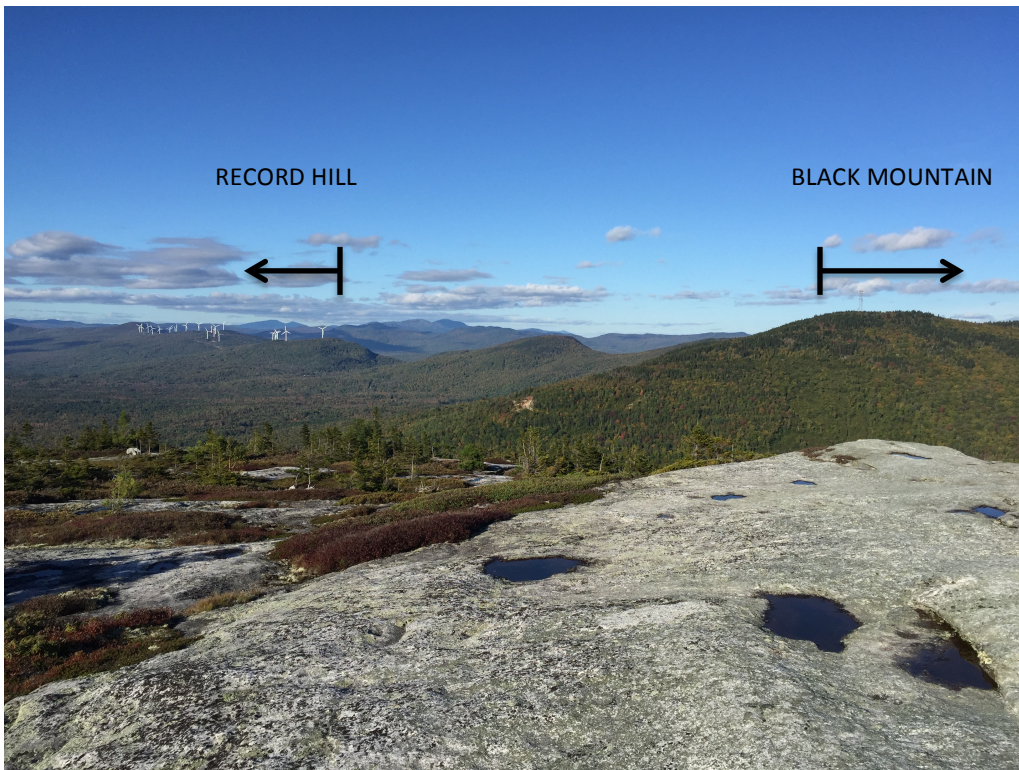
The site visit and analysis yielded the real concern that the proposed Roxwind project will "close the viewing gap" that now exists between the Record Hill project and the utility structures on the Black Mountain summit. This provides the viewer with some visual relief and a long distance view to Tumbledown Mountain and the rugged landscapes to the northeast.

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

³ The 1971 *AMC Maine Mountain Guide* has the following entry:
"Rumford White Cap is a mile long ridge that is alpine in character. ...The final one mile is a delightful walk along the open ridge to the summit. From the summit the antenna on Black Mountain and the Satellite Station in Andover is visible" (pp. xvii and 206).

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. The Record Hill project is just far enough away, and the gap between it and the industrial elements on Black Mountain separates the two intrusions sufficiently to accommodate them without substantively undermining the view. The concern is that this will change with the advent of the new turbines.

It is important to also distinguish between the dispassionate and necessary recording of data points and geometric analyses and the actual experience of the Whitecap summit. No simulation can replace the sensory effects of a real-life view and the effect of that view on the overall summit experience of the individual hiker. In fact, on fair weather days with low humidity, and at certain times of day and sun angle, the turbines currently in place can and do appear more prominent and more “present” than any simulation can convey. In fact, while the applicant points out that the focus of the human cone of vision is typically around 45 degrees, the viewer on a mountain summit readily takes in a full 120-degree panorama. At 2.4 miles distant from its closest turbine, the array can appear much closer in the flesh, particularly when viewed with the turbine structures lit white in full sun.



View gap to Tumbledown Mountain

Cumulative Effect

The Site Location of Development application, as stated in Section 9 of the VIA, provides for an assessment of potential cumulative impacts:

“Provide a detailed description of how construction of the proposed project will not cause unreasonable adverse effects to the scenic character of the proposed project’s SRSNS, or scenic character related to cumulative impacts related to the existing, previously approved, applications under review, or planned wind energy projects.”

This review concludes that one key issue with the cumulative effect analysis is that the project has been analyzed in isolation, without any extensive consideration or narrative devoted to the presence of the Record Hill project, and yet, at the same time, uses the advent of the Record Hill and Spruce Mountain projects (despite the latter project’s location beyond the 8 mile radius) as a basis for concluding that there was no sign of a reduction in the “high level of use” of the Whitecap summit subsequent to their commissioning without any documentation to substantiate this.

As stated previously, the Whitecap summit should be reclassified or understood as a scenic resource of statewide significance, and given some of the project factors there is the potential for an unreasonable (and cumulative) effect on the view from the summit of the mountain. 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. Whitecap is highly valued by its user group, is a prominent and highly accessible alpine summit, and has current views today to the northeast mountains that will be altered and undermined with the advent of the Roxwind Project.

Conclusions:

1. It is recommended that the applicant revisit the analysis of Whitecap Mountain with a more robust accounting of the nature and duration of the public’s use of the resource. There also needs to be presented a substantive rationale for how the project will not unreasonably adversely affect continued use and enjoyment of Whitecap, and a more extensive account of how this project will not unreasonably

alter the current scenic character of the summit experience and its panoramic surroundings as viewed from the summit.

2. 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.
3. The applicant should conduct a more detailed analysis of the potential cumulative effects posed by this project within the framework of concerns set forth in this report.

Swift River

As indicated by the applicant's simulations and analysis, there will be project visibility from the Swift River, which is identified as a scenic river in the Maine Rivers Study. At 1.7 miles distant from the river at its closest point, the project will be visible from certain reaches/sections and in leaf-off conditions. Viewshed mapping shows three extended areas of visibility along the river. More information on the duration and nature of the views from the river and the viewer effect is needed. How much use does the river get? Is it primarily anglers or paddlers, or both? And what are their expectations?

Conclusion:

It is recommended that additional study and review of the following issues be undertaken prior to granting a permit for construction of this project:

- 1) the specific evaluation criteria as discussed in this report and as applied to Whitecap Mountain;
- 2) user characteristics and the potential effects on those users of the mountain, and
- 3) the change in scenic character when experienced from the summit of Whitecap Mountain if the proposed project is constructed.

Appendix

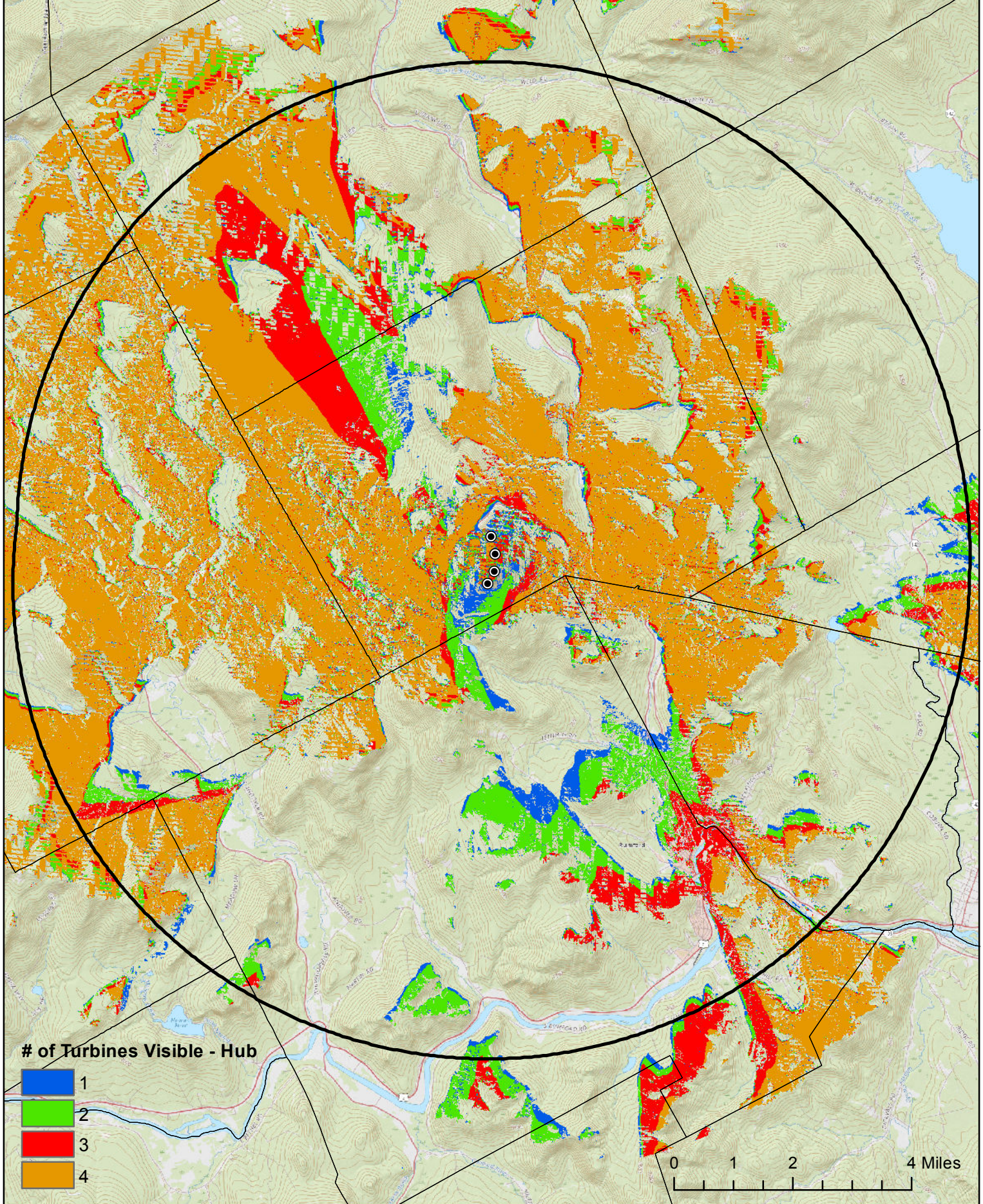
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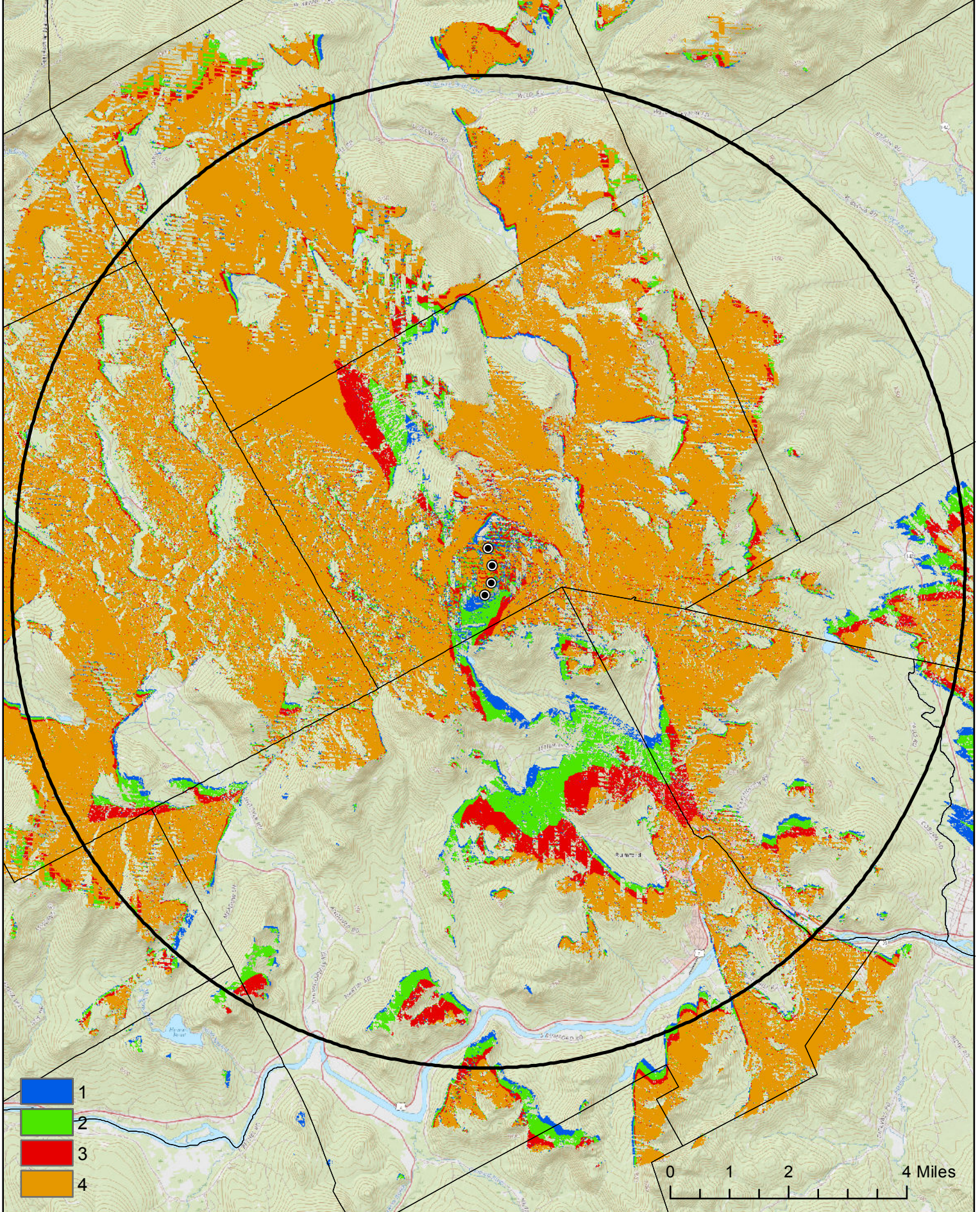
Figure 1: View Looking East from Summit of Whitecap Mountain, 10/5/18



Maine DEP: Roxwind LLC
 Map 1: Topography Viewshed to Hub

Date: 10.24.18

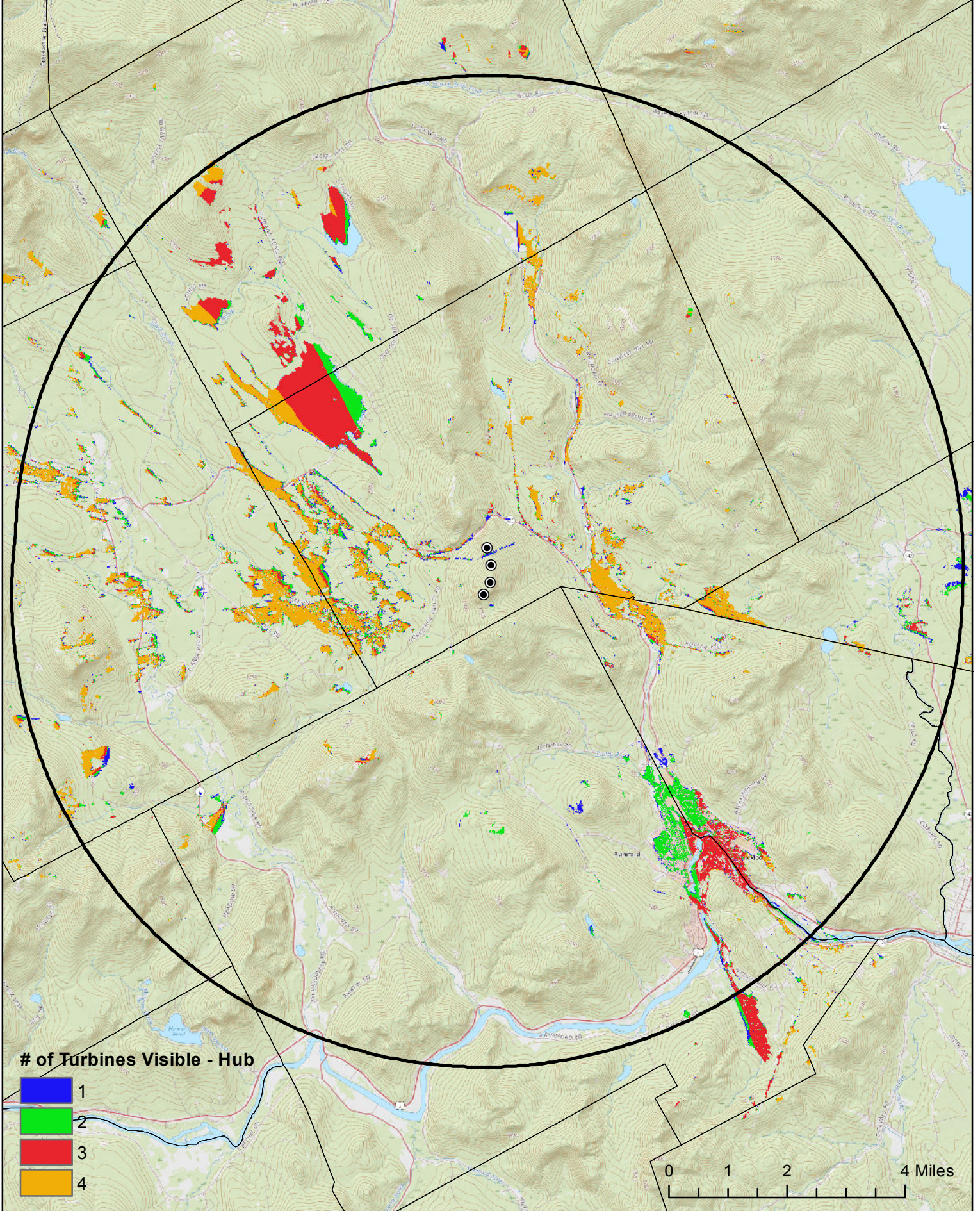




Maine DEP: Roxwind LLC

Map 2: Topography viewshed to tip of blades Date: 10.24.18

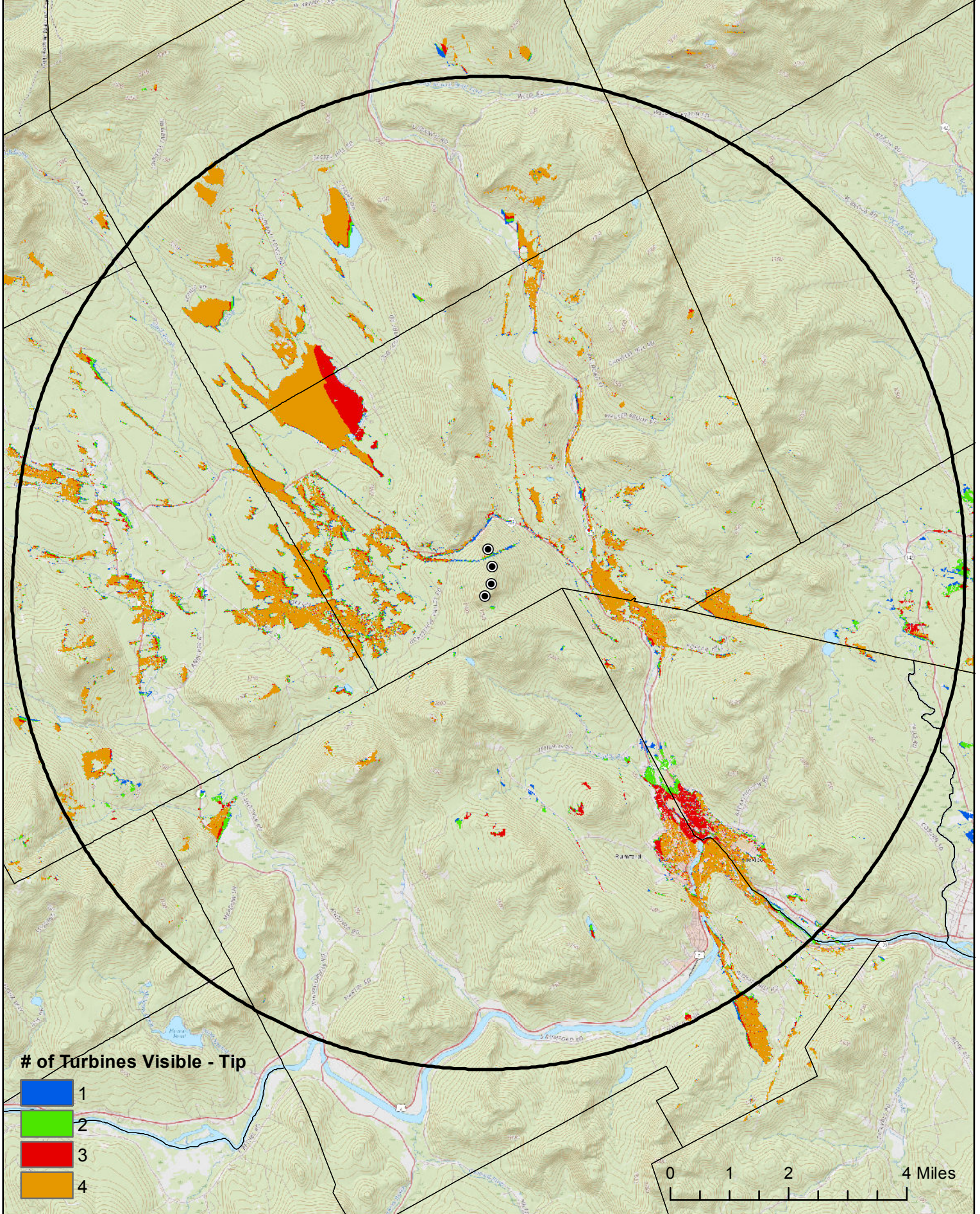




Maine DEP: Roxwind LLC
 Map 3: Landcover Viewshed to Hub

Date: 10.24.18





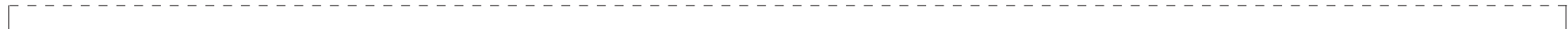
Maine DEP: Roxwind LLC

Map 4: Landcover viewedshed to tip of blades

Date: 10.24.18



Full extent of visible new view with energy and utility infrastructure



Existing Record Hill turbines



Proposed extent of Roxwind Project



Utility infrastructure on Black Mountain



Figure 1

View looking east toward proposed Roxwind project from the summit of Whitecap Mountain

October 5, 2018

