Ricker Mtn Met Tower
Wind

Green Mountain
Clean Energy
69 River Road. Montepelier, VT 05602
802) 223-2396

1. A summary of the original goals and objectives of the overall project and a description of how the State funds were to contribute to the accomplishments of these goals and objectives.

In our initial application we wrote that the majority of the money applied for would be used to fund the permitting and construction of a new meteorological tower located at the summit of Ricker Mountain in Bolton Vermont. The goal was to determine whether the wind resources were adequate for a small 6-9 turbine windfarm. Should the wind resources prove to be high enough and not turbulent we will sign a long term agreement with a firm looking to provide additional funding to permit the site.

2. A summary of the project activities accomplished with all project funds and specifically with State funds.

In total the project has spent about $330,000. About $305,000 was spent on the design and construction of the met tower. The remaining $8,000 was spent on environmental site studies and permitting. CEDF funding provided about a quarter of the funding required for all of these activities.

Approximately $18,000 was spent on permitting. Of this $16,000 was spent for attorney's fees in drafting our section 248 application to Public Service of Vermont. Another $2,000 was spent on environmental studies of the area around the proposed location of the tower to determine if there would be any environmental impacts from the tower construction.

Approximately $24,000 was spent on meteorological equipment and for wind consultants Det Norske Veritas (DNV) who designed the layout and engineered the construction drawings for the instrumentation. The new tower will have 3 levels of anemometers and wind vanes which will provide an accurate understanding of not only wind speeds at various heights but also wind shear which is critical to understanding whether the site can be used for modern wind turbines. Sites where the turbulence is too high will cause excessive forces on the gearbox leading to a more downtime.

The vast majority of CEDF funding went toward the engineering, purchase and construction of the 180' met tower. The high cost of the tower was driven by a

variety of factors. Chief among these are the severe weather conditions at the top of Ricker Mountain where the tower is located. Tilt up towers used at other sites would not hold up under the icing and high winds at the site. The tower we erected is a custom-designed guyed lattice tower capable of withstanding 90mph winds and ¾" of ice. Construction of this tower during the winter also created some additional obstacles.

The most expensive part of construction involved setting the rock anchors. Ordinarily we would have drilled the rock anchors directly into the granite. However, when we took core samples of the granite at the site we learned it was fractured to about 20'. Our engineers then redesigned the anchors to be set in concrete. We hired an excavator with a hydraulic hammer to chip out the granite into which we formed the concrete piers. The excavator also had to rebuild the path leading to the site and along the access road which had been washed out by hurricane Irene. Cost of the excavator was $60,000. The team of concrete specialists had to build the forms inside the holes under very adverse conditions and a helicopter was hired to bring the concrete to the site. The final step was hiring the contractor to stack the tower. This required using a helicopter lift service to bring the tower sections to the top. The cost of the helicopter was $31,000. The cost of the contractor who stacked the tower and who installed the met equipment was about $34,000.

3. A discussion of anticipated and actual impacts of the project. Indicate specific benefits attributable to State funding and more general impacts/benefits accruing as a result of the total project. If the project does not fully achieve the expected impacts, the Grantee shall provide an explanation of the reasons why the impact was less than expected.

Building a windfarm in VT is a long and expensive process. A thorough feasibility study of site conditions is a prerequisite in order to attract capital for the more expensive process of permitting the site. The most important part of the feasibility is the analysis of wind. That is why constructing a wind monitoring tower as close to hub height and which is outfitted with the instruments at various heights is important in order to obtain the best and cleanest data we could. The CEDF funding lessened the total cost of a very expensive project and made it financially feasible to finish the project.

If the wind farm is constructed the state will have another renewable resource bringing safe, economical wind energy which will replace other more polluting sources such as coal or natural gas plants and is safer than power produced by the Yankee Nuclear Power station.

4. The expenditure of State and Grantee/match funds shall be reported by line item and compared to the approved grant budget.

Site Work	MD Enterprises	1,500.00
Engineers	Dubois and King 9/10	2,890.50
Insurance Liability	Peerless Insurance	1,362.00
Tax Preperation	Walsh and Co.	350.00
Permitting	Downs Raichlin Martin	16,171.36
Environmental Consulting (flora fauna)	Arrowwood Consulting	1,013.00
Environmental Consulting (birds)	Vermont Center for Ecostudies	939.00
Tower Fabrication	Electronics Research Inc.	52,434.00
Erecting Tower	White Mountain Comm.	34,379.00
Helicopter (stack tower)	JBI	31,000.00
Electrical line extension	National Cable/WMC	5,200.00
Equipment and Consulting	Det Norske Veritas	24,802.00
Geotech Engineers	Knight	2,682.50
Survey and Transport	Rinker	7,357.50
Other engineering	ERI engineering	3,800.00
Excavation	Aardvark	64,800.00
Transport	4 x 4 Center	10,260.50
Helicopter (transport concrete)	Construction Helicopters	26,450.00
Concrete Work	Louie Gendron	37,327.67
Environmental Consulting	VHB	6,800.00
Total		331,519.03

5. Copies of all materials produced as part of this grant.

Copy of Section 248 permit and VHB Report (attached)

6. Picture(s) of final construction project

See attached

Bicknell's Thrush Surveys on Ricker Mountain, Vermont – 2 June 2009

Report to:
Green Mountain Clean Energy
169 River Street
Montpelier, VT 05602

Submitted by:
Christopher Rimmer
Vermont Center for Ecostudies
P.O. Box 420
Norwich, VT 05055

3 July 2009

This report summarizes findings obtained during an avian field survey of the Ricker Mountain ridgeline on 2 June 2009. The survey was conducted on foot between 10:35 am and 1:10 pm, along a work road that extends northeastward from the top of the Bolton Valley Resort Vista Quad lift at 3075 ft elevation to The Point FM communications tower at ~3300 ft elevation. Survey efforts were concentrated in the immediate vicinity of a proposed meteorological (MET) tower test site at 3230 ft elevation (Figure 1), and primary focus was on documenting the presence and locations of Bicknell's Thrush, a montane forest specialist of high conservation priority in the Northeast. Survey methods included passive listening and observing, and use of broadcast elicitation, whereby playbacks of recorded thrush vocalizations were used to elicit responses from birds that may have been present. An inventory was made of individuals of all bird species encountered during the 2.5-hour survey.

Eleven species were detected (Table 1), with Yellow-rumped Warbler the most numerically abundant. Because of the survey's late morning timing, avian vocal activity was likely reduced from its typical early morning peak. It is almost certain that detections of all species were lower than would have been the case during the 2-3 hours after dawn. Bicknell's Thrushes call and sing most actively at dawn and dusk; no spontaneous vocalizations of this species were heard during the survey.

Recorded playbacks of thrush songs and calls were broadcast continuously along the entire survey route from The Point FM tower to the Vista Quad lift. These yielded vocal responses by 4 individual Bicknell's Thrushes at two locations (Figure 1). Two individuals responded at the MET tower location (UTM coordinates 473895.58, 213382.25) at 11:45 am, one bird 30-40 m to the east of the work road, the second 50-60 m distant. At 12:50 pm, two thrushes responded at a site along the work road at 3,172' elevation (UTM coordinates 473743.83, 213187.75); one individual was within 10-15 m of the road, the second > 60 m to the east-southeast. No other Bicknell's Thrushes were detected.

Although this survey documented the presence of at least 4 Bicknell's Thrushes along the Ricker Mountain ridgeline, with two individuals in the immediate vicinity of the proposed MET tower, it is important to emphasize that these results in no way constitute a rigorous population census of the area. It is likely that the individuals encountered were local breeding residents, but it can not be assumed that nest sites were in close proximity to either encounter location. To fully ascertain distribution, abundance and breeding status of the area's Bicknell's Thrush population, and the exact locations of any nests, a far more detailed and rigorous field study would be necessary.

Without a full understanding of Bicknell's Thrush population status and ecology in the proposed MET tower vicinity, it is possible to recommend only general measures to minimize or mitigate potential impacts of construction activities and routine maintenance of the 180-ft tower. Based on > 15 years of studying this species on Mt. Mansfield, we do not believe that the tower itself is likely to pose a significant safety hazard or behavioral impediment to Bicknell's Thrush. However, we strongly recommend that construction activities take place outside the 15 May to 1 August breeding period, when adults and newly-fledged young may be most vulnerable to disturbance or habitat modification. We further recommend that habitat removal and alteration during construction be kept to a minimum, and that active revegetation of any cleared areas not necessary for longer-term operation of the MET tower be accomplished with local vegetation (e.g., balsam fir seedlings). Finally, proactive mitigation could be accomplished via a voluntary contribution to the Bicknell's Thrush Habitat Protection Fund, which is administered by the Adirondack Community Trust. This fund exists to contribute to local conservation projects on Hispaniola, which supports an estimated 90% of the global wintering population of Bicknell's Thrush.

Figure 1. Locations of Bicknell's Thrush observations on Ricker Mountain, 2 June 2009.

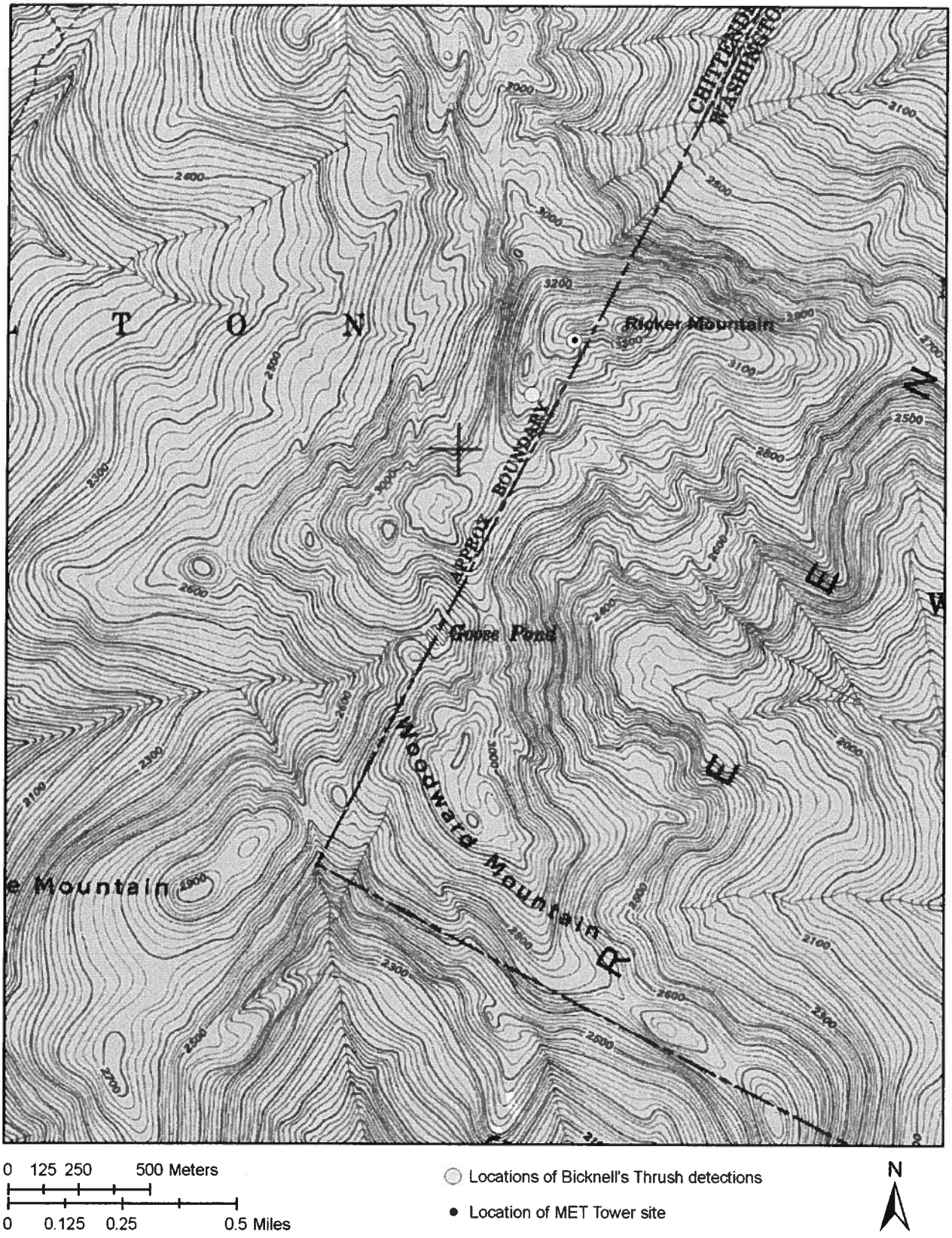
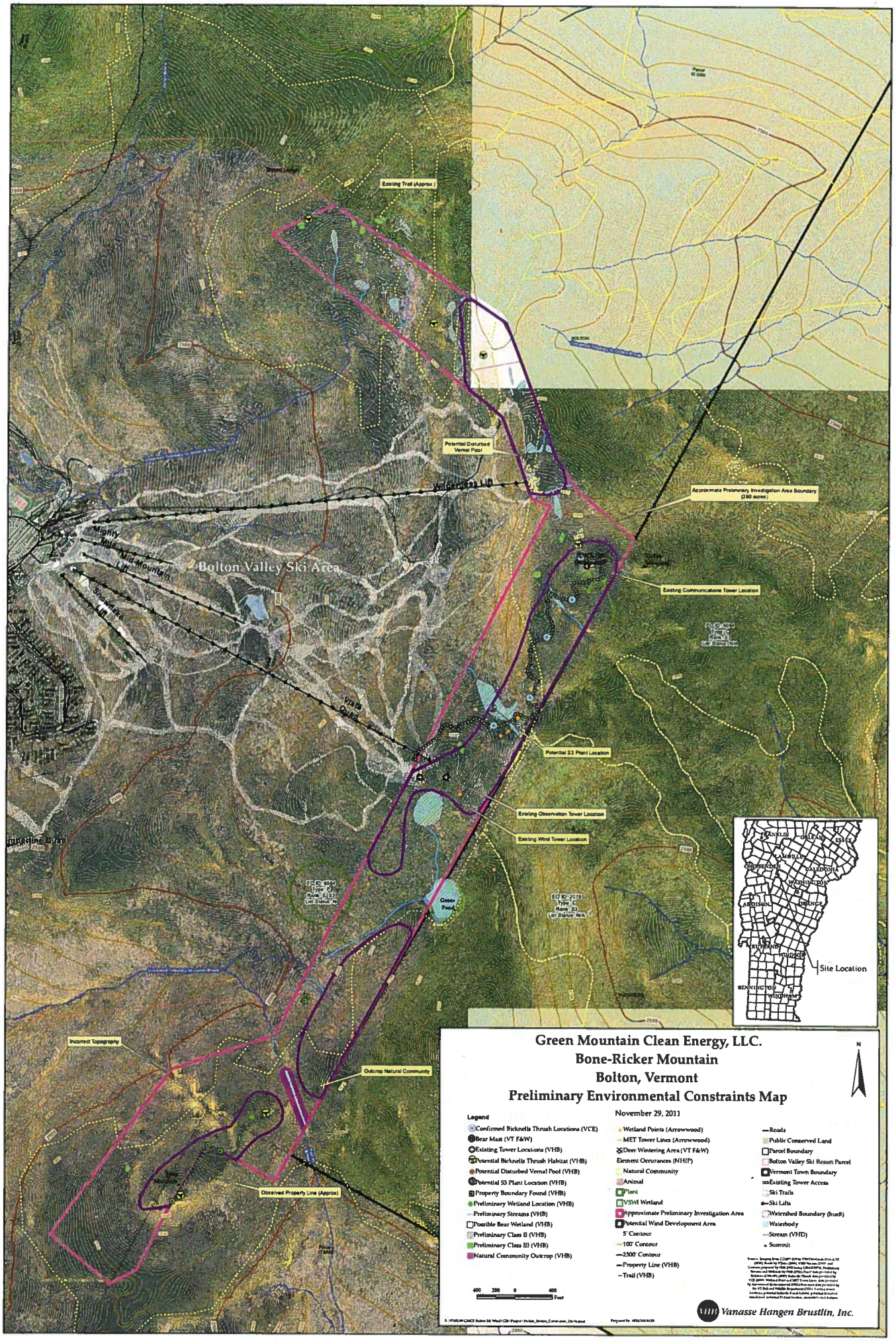
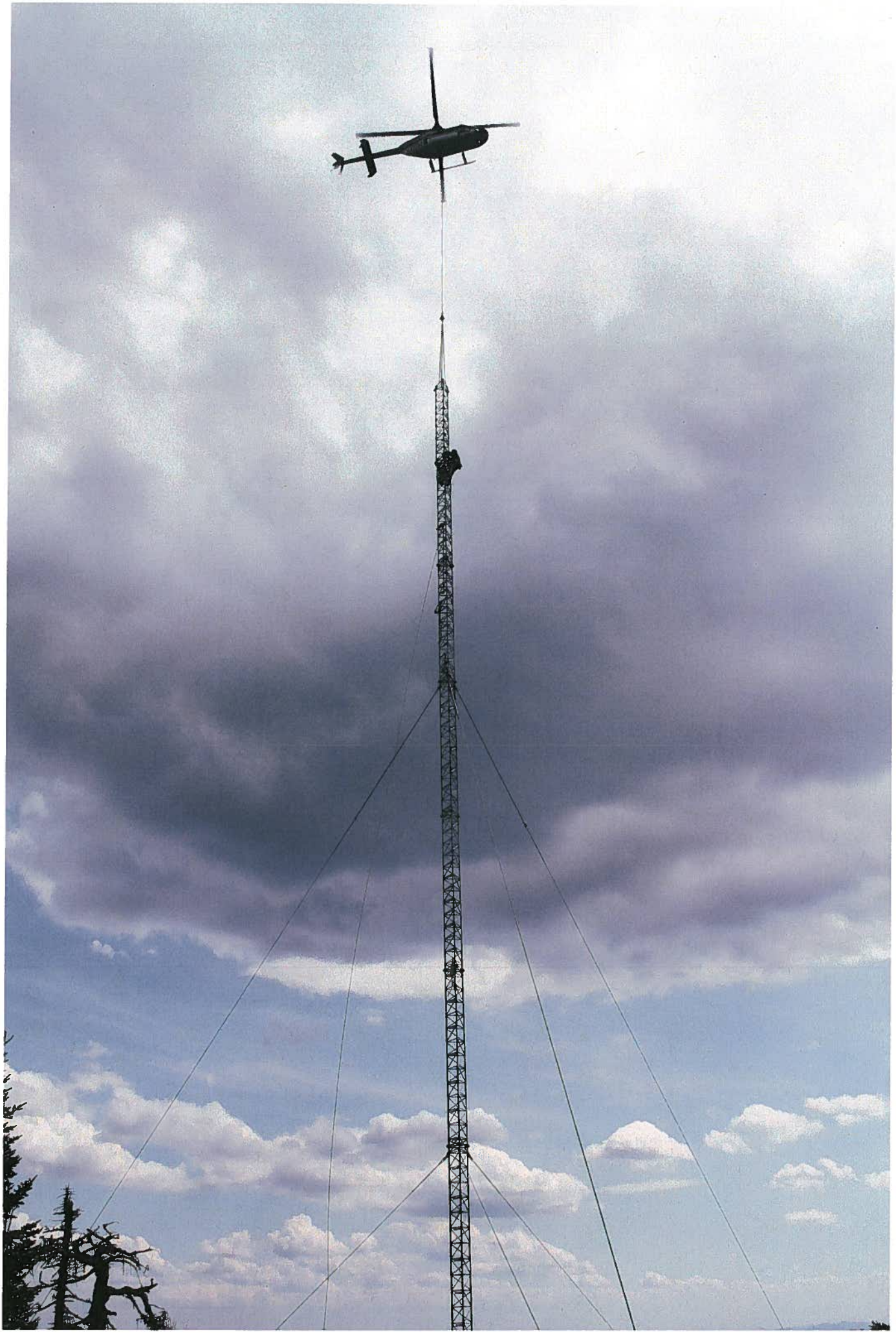


Table 1. Birds detected during Ricker Mountain survey, 2 June 2009

Species	Number
Hairy Woodpecker	1
Blue Jay	1
Winter Wren	2
Golden-crowned Kinglet	1
Bicknell's Thrush	4
Nashville Warbler	1
Magnolia Warbler	1
Yellow-rumped Warbler	7
Blackpoll Warbler	4
White-throated Sparrow	3
Dark-eyed Junco	3


Existing Trail (Approx.)
Potential Disturbed Vernal Pool
Approximate Preliminary Investigation Area Boundary (280 acres)
Bolton Valley Ski Area
Mighty Mile
Wild Mountain
Snowflake
Vista Quad
Existing Communications Tower Location
Potential S3 Plant Location
Existing Observation Tower Location
Existing Wind Tower Location
Goose Pond
Incorrect Topography
Outcrop Natural Community
Observed Property Line (Approx.)
Site Location
Green Mountain Clean Energy, LLC.
Bone-Ricker Mountain
Bolton, Vermont
Preliminary Environmental Constraints Map
November 29, 2011
N
Legend
Confirmed Bicknells Thrush Locations (VCE)
Bear Mast (VT F&W)
Existing Tower Locations (VHB)
Potential Bicknells Thrush Habitat (VHB)
Potential Disturbed Vernal Pool (VHB)
Potential S3 Plant Location (VHB)
Property Boundary Found (VHB)
Preliminary Wetland Location (VHB)
Preliminary Streams (VHB)
Possible Bear Wetland (VHB)
Preliminary Class II (VHB)
Preliminary Class III (VHB)
Natural Community Outcrop (VHB)
Wetland Points (Arrowwood)
MET Tower Lines (Arrowwood)
Deer Wintering Area (VT F&W)
Element Occurances (NHP)
Natural Community
Animal
Plant
VSWI Wetland
Approximate Preliminary Investigation Area
Potential Wind Development Area
5' Contour
100' Contour
2500' Contour
Property Line (VHB)
Trail (VHB)
Roads
Public Conserved Land
Parcel Boundary
Bolton Valley Ski Resort Parcel
Vermont Town Boundary
Existing Tower Access
Ski Trails
Ski Lifts
Watershed Boundary (huc8)
Waterbody
Stream (VHD)
Summit
400 200 0 400
Feet
Vanasse Hangen Brustlin, Inc.



Environmental
Transportation
Land Development
Services

Vanasse Hangen Brustlin, Inc.

7056 US Route 7
Post Office Box 120
North Ferrisburgh, Vermont 05473
802.425-7788
Fax 802.425.7799

Memorandum

To: Bolton Mountain Wind Project File
Jon Silver

Date: November 18, 2011

Project No.: 57492.00

From: Joseph L. Burt and Adam R. Crary

Re: Site Walkover- Preliminary Environmental Constraints

At the request of Green Mountain Clean Energy, LLC (GMCE), Vanasse Hangen Brustlin, Inc. (VHB) conducted a preliminary site walkover during Fall 2011 to assess natural resource features in support of a considered project to install a wind electric generating facility on an approximately 246 acre study site in Bolton, Vermont. The walkover study area location is depicted on the Preliminary Environmental Constraints Map, included on Page 1 of the Attachment. This technical memorandum describes the study methods, site characteristics, and potential resources identified within the study area.

The study for the site included a preliminary evaluation of the following Act 250 Criteria as incorporated into the Vermont Public Service Board (PSB) Section 248 review:

- Streams (§ 6086(a)(1)(E))
- Wetlands (§ 6086(a)(1)(G))
- Rare or Irreplaceable Natural Areas ("RINA")(§ 6086(a)(8)), and Necessary Wildlife Habitat and Endangered Species (§ 6086 (a)(8)(A)).

A description of the individual methodologies for each resource assessment is presented below. A description of the site conditions and the findings are presented in separate sections following the methodologies. Included in the Attachment are the Preliminary Environmental Constraints Map (Page 1) and Representative Site Photographs (Pages 2 through 16).

ASSESSMENT METHODOLOGIES

STREAMS (§ 6086(a)(1)(E))
This Act 250 criterion, as incorporated into Section 248 review, requires that projects will, when feasible, maintain natural stream channel condition, and will not endanger the health safety, or welfare of the public or adjoining landowners (10 V.S.A. § 6086(a)(1)(E)). VHB Senior Wetland Scientist Adam Crary, PWS, PWD conducted preliminary stream assessment work at the site on October 6th and 7th, 2011.

Streams identified in the walkover were hand-sketched on a field map and GPS point locations were taken at certain locations, such as stream origin when encountered.
WETLANDS (§ 6086(a)(1)(G))

The wetlands criterion under Act 250, as incorporated into Section 248, requires that the proposed project comply with the Vermont Wetland Rules (VWR)[1]. The VWR regulates significant wetlands (Class I and Class II wetlands) and their buffers. Class III wetlands are not part of Act 250 Criterion 1(G), but are generally reviewed under section 248(b) (no undue adverse impacts on the natural environment), and are regulated by the U.S. Army Corps of Engineers (USACE) Section 404 permit program, as well as the related Vermont DEC Section 401 Water Quality Certification review process.

VHB Senior Wetland Scientist Adam R. Crary, PWS, PWD, conducted preliminary wetland assessment fieldwork at the study site on October 6 and 7, 2011 including an initial assessment of potential State wetland classification. Wetland features were photographed and demarcated in the field by hand drawing on the field map. Notable wetland features were also GPS-located using a Trimble® GPS unit capable of sub-meter accuracy and post-processed using Trimble® Pathfinder software.

RARE OR IRREPLACABLE NATURAL AREAS (RINA) (§ 6086(a)(8)), AND NECESSARY WILDLIFE HABITAT AND ENDANGERED SPECIES (§6086(a)(8)(A))
Per Act 250, as incorporated into Section 248 review, without significant mitigation a project must have no undue adverse effect on Rare and Irreplaceable Natural Areas (RINA) (§ 6086(a)(8)). Additionally, a project must not destroy or significantly imperil Necessary Wildlife Habitat (NWH) or any Endangered Species (§ 6086(a)(8)(A)). The Vermont Natural Heritage Information Program (NHIP) can recommend that significant natural communities be deemed RINA under Act 250 Criterion 8 based on the combination of the natural community rarity and quality ranking. The presence of rare, threatened, or endangered (RTE) species and these communities may be used by the NHIP to make RINA recommendations. Rare (S1 and S2) natural communities can be considered RINA when quality-ranked A, B, or C. Uncommon (S3) types require a quality rank of A or B to be considered as RINA.

Necessary Wildlife Habitat (NWH) is most often defined as deer wintering habitat, black bear forage habitat (beech mast or wetlands), black bear travel corridors, or in some cases, moose overwintering area. Endangered Species include those that are defined as "threatened" or "endangered" on the Vermont state endangered species list and the state threatened species list, and that are protected under the Vermont Endangered Species Rule. Those species protected under the federal Endangered Species Act are included as well.

VHB researched available NWH mapping (bear mast and bear wetland habitat data) provided by the Vermont Agency of Natural Resources (ANR) to determine if the study area is situated within or adjacent to mapped NWH. Previous data from Multiple Resource Management was also reviewed. This database review was corroborated by inspection of on-site habitat by VHB Wildlife Biologist, Joseph Burt. NWH, if present, are depicted on the Natural Resources Map included as Page 1 of the Attachment, and NWH findings are discussed in the findings section below.

In order to identify the potential occurrence of rare or sensitive species, particularly those that are federally or state-listed threatened or endangered[2], and to quantify available on-site habitat conditions relative to each, VHB researched the NHIP database for the presence of known element occurrences (EOs) of rare, threatened, endangered, or significant natural community types within and adjacent to each study area. Typically, the list of known EOs from within the study area region is then referenced against the known habitat criteria for the species and compared to the available habitats within the study area. Using known EO data and on-site habitat condition information, in combination with

[1] Vermont Natural Resources Board (NRB). 2010. Vermont Wetland Rules. Effective August 1, 2010. Available online at: http://www.nrb.state.vt.us/wrp/rulemaking/wetlands2010/filedruledocs/VWR%207-16-10.pdf

[2] Federal-listed species are protected under the U.S. Endangered Species Act and Vermont-listed species are protected under 10 V.S.A. §123.

reviewing the list of known rare plants and animals for any on-site natural communities (from *Wetland Woodland Wildland: a guide to the natural communities of Vermont*)[3], a list of species that may potentially occur within the study area is often considered during onsite vegetation surveys. EOs identified in the database search are shown on the Preliminary Environmental Constraints Map (Attachment, Page 1). No detailed surveys were conducted, but potential sensitive or unique habitats were investigated, if present, as an aid for any future detailed surveys.

Known Bicknell's thrush (BITH) location data from the Vermont Center for Ecostudies (VCE) is displayed on the Preliminary Environmental Constraints Map on Page 1 of the Attachment. BITH has a State status of S2B (Breeding habitat has a restricted range in Vermont). BITH prefer high elevation Montane Spruce – Fir Forest habitat with low canopy height, and high incidence of snags/ dead fallen trees. Typically the presence of BITH habitat has been considered a constraining sensitive resource to high elevation development projects.

During the preliminary site walkover, VHB field staff also reviewed the on-site natural community or vegetative assemblage types. *Wetland, Woodland, Wildland* was used to define what constitutes a natural community (in contrast to an unnatural community) as well as characterize the natural communities within the study area. Information gathered in the field was used to initially characterize on-site community type as well as identify any natural communities the NHIP could consider RINA during Section 248 review.

SITE DESCRIPTION

The Bolton Mountain Wind study area is located on mountain ridge tops and slopes surrounding the Bolton Valley Ski Area, in the town of Bolton, Vermont. Portions of the site can be accessed via maintenance roads. The study area occurs within forestland and forest openings associated with maintenance roads and ski trails. Existing features within the study area also include an existing wind turbine, communications tower, observation tower, and maintenance roads to the wind and communications towers. The wind turbine is adjacent to the top terminal of the existing Vista quad ski-lift, approximately in the middle of the study area. The observation tower is east of the wind turbine on the top of the ridge, with minimal clearing around it. The radio tower is west of Ricker Mountain and has a maintained road leading to it. These existing structures are shown on the Preliminary Environmental Constraints Map on Page 1 of the Attachment. The topography is predominately steeply sloping, with sections of the study area relatively flat sloped, at elevations ranging from approximately 2,500 to 3,350 feet. Representative photographs of the study area are included on pages 2 through 16 of the Attachment.

The project site is located in the Northern Green Mountains biophysical region of Vermont within the Winooski Watershed (HUC 8 – 02010003). According to the Natural Resources Conservation Service (NRCS) the dominant soils within the study area are Rock Land, Lyman-Marlow- very rocky loams (30-60% slopes), and Peru- extremely stony loam (0-20% slopes) fine sandy loams complex (25-60% slopes), which are not considered hydric by the NRCS.

[3] Thompson, E.H, E.S. Sorenson. 2005. *Wetland, Woodland, Wildland: A guide to the natural communities of Vermont*. Vermont Department of Fish and Wildlife and the Nature Conservancy.

FINDINGS & CONCLUSIONS

STREAMS (§ 6086(a)(1)(E))
During the walkover several headwater (above 2,500-feet are considered Class A waters) streams were identified within or directly adjacent to the tower study area. Three of the streams are VHD-mapped stream channels (see Preliminary Environmental Constraints Map, Page 1 of the Attachment). The streams are distributed throughout the study area. For representative stream photographs see Pages 7 and 8 of the Attachment. Currently, work within a perennial stream requires a Stream Alteration Permit.[4] The US Army Corps of Engineers (USACE) Section 404 permit regulates the placement of fill within jurisdictional Waters of the United States. A detailed stream delineation and determination of any riparian buffer setbacks required per Section 248 Review will be necessary for permitting and design purposes.

WETLANDS (§ 6086(a)(1)(G))
VHB environmental scientists also identified several wetland features within the study area, the majority of which may be considered Class II wetlands. The potential Class II wetlands may be deemed significant per Section 4.6 Presumptive Criteria A (size), C (vegetated and near stream), and E (headwater wetland). For representative wetland photographs see pages 8 through 11 of the Attachment. One wetland is a Vermont Significant Wetland Inventory (VSWI) mapped feature known as Goose Pond. The pond was a historic beaver impoundment, which has since become inactive, resulting in the dam eroding, and there is now minimal inundation (see representative site photograph on Page 9 of the Attachment). A potential (disturbed) vernal pool occurs at the edge of a ski trail/maintenance road in the northern portion of the study area (see Preliminary Environmental Constraints Map on page 1 and photograph on page 13 of the Attachment).

Under the VWR, any proposed impacts to Class II wetlands or their associated 50 foot buffer zones from uses other than those allowed under the VWR, require a Vermont Wetland Permit from VT DEC. Class III wetlands are not regulated by the VWR and do not have a regulated buffer. Any proposed activities within Class II wetlands or their buffers will be required to obtain the necessary Vermont Wetlands Permit and coordination with the Vermont Department of Environmental Conservation (VT DEC). If there are unavoidable impacts from placement of fill in any wetland (regardless of VWR classification), coordination with the USACE will be required to either obtain a Department of the Army permit or verify that one is not required.

As this is a preliminary site walkover, detailed delineations and classification determinations will need to be conducted to completely map and assess the wetland resources within the study area.

RARE OR IRREPLACABLE NATURAL AREAS (RINA) (§ 6086(a)(8)), AND NECESSARY WILDLIFE HABITAT AND ENDANGERED SPECIES (§6086(a)(8)(A))
Through review of the NHIP database, it was determined that there are two natural community EOs within and adjacent to the study area (see Preliminary Environmental Constraints Map, page 1 of the Attachment). Based on the VHB walkover, the natural communities are likely to be considered Montane Spruce- Fir Forest (MSFF) and Montane Yellow Birch- Red Spruce Forest (MYBRSF). The natural community boundaries provided by the NHIP database should be refined based on field review. MSFF and MYBRSF natural communities have a state rank of S3 (high quality examples are uncommon in the state, but not rare). A rock outcrop natural community was identified in the southern portion of the study area and should be examined further to determine community type and quality. One wetland in the northern portion of the study area may be considered Lowland Spruce - Fir Swamp (S3). For natural community representative site photographs see pages 12 through 14 of

[4] Vermont Agency of Natural Resources – Water Quality Division. Stream Alteration Permit. Access online at: http://www.leg.state.vt.us/statutes/fullchapter.cfm?Title=10&Chapter=041

the Attachment). Due to the size and quality of the on-site S3 natural communities and presence of rare elements, the NHIP could consider these RINA. Natural communities should be mapped, inventoried, and assessed through detailed field evaluations.

Through the Vermont Department of Fish and Wildlife database review, no state-mapped necessary wildlife habitat occurs within or adjacent to the study area. The wetlands identified in the northern portion of the study area could potentially be considered necessary bear habitat if they meet the size threshold of one acre as a single wetland or as a complex (see representative site photograph on page 15 and Preliminary Environmental Constraints Map on page 1 of the Attachment). Following wetland delineation, if the wetlands meet the size threshold, they should be reviewed in the spring/summer (May through July) to determine whether there is evidence of bear use. The American beech component of the forest is low and there are no concentrated stands of beech trees or any bear scarred beech habitat identified on the walkover.

There are moderate levels of moose browsing in the northern portion of the project area, much of which is predominately year-round feeding, not necessarily associated with concentrated moose winter shelter. The shelter value is minimal as the trees are young and do not provide extensive canopy enclosure. Though the shelter value is minimal, there is enough evidence of browsing that the habitat should be examined during the winter when snow depths are greatest, to determine whether moose are concentrating within the study area.

The NHIP database review did not determine there to be State or federally listed threatened or endangered species within the study area. An EO of a plant with a state status of S2S3 was identified just outside the study area, west of Goose Pond (see Attachment, page 1). A potential S3 status plant was found within a wetland which crosses the existing maintenance road to the communications tower (see Preliminary Environmental Constraints Map on page 1 of the Attachment). Sections of the MSFF may be considered breeding habitat for BITH. BITH has a state rank of S2B, meaning breeding habitat has a restricted range within Vermont. BITH prefer upper elevation, dense understory of balsam fir/red spruce, low canopy height, and high incidence of snags/ dead fallen trees. Confirmed BITH locations (documented by the VCE) are shown on the Preliminary Environmental Constraints Map (Page 1 of the Attachment). The walkover is a preliminary assessment of the BITH habitat, and a detailed field study would be necessary to determine BITH population status and potential impacts to the habitat.

CONSTRAINING TOPOGRAPHY

Though not a criterion under *§248* regulatory review, extremely steep topographical relief will likely be a constraining factor with respect to being able to design and permit crane paths and turbine pads within certain portions of the study area. Given our preliminary observations, the most suitable terrain for potential wind energy project development would be:

- General area from the existing wind tower heading north-northeast to the existing communications tower and
- From where the Wilderness ski-lift meets the study area heading north-northwest along the ridge spine to where the ridge exits the study area

These areas are depicted on the Preliminary Environmental Constraints Map on page 1 of the Attachment. The remaining sections of the study area are composed of very steep topography. The main access route would likely be feasible from a permitting standpoint if approaching the potential project area using the existing ski resort work roads.

SUMMARY AND RECCOMENDATIONS

Based on this initial assessment, we believe that portions of the site are developable for a wind energy project, given the absence of significant natural resource constraints, and the presence of favorable topographic conditions. However, detailed surveys and careful coordination with regulatory agencies will be needed to secure necessary approvals for a project at this location.

Therefore, VHB suggests that further planning of potential turbine locations, access, and collection/transmission infrastructure be performed to ascertain overall project feasibility. This would be followed by detailed field investigations during appropriate survey seasons of 2012 for:

- streams and wetlands (growing season)
- RTE plants (mid-late summer, typically)
- BITH breeding habitat (late spring)
- natural community mapping/assessment (growing season)
- vernal pools (spring)
- black bear wetland habitat (May to July)
- moose wintering habitat (winter)

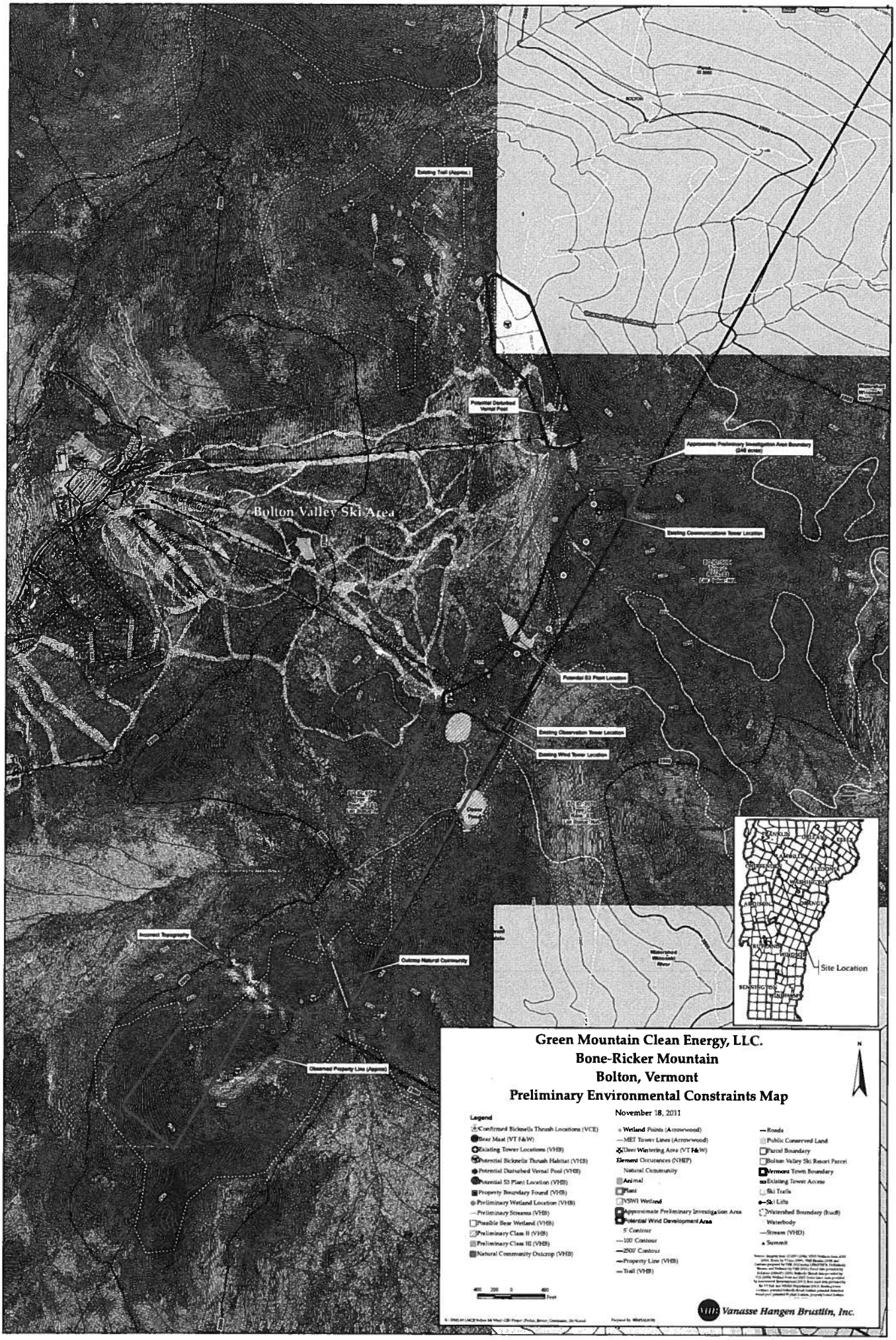
A corridor width of 500-feet to either side of a potential crane path/turbine string and 250-feet to either side of the access road is suggested as a study area. The study area width is subject to change depending on the property boundaries and study discussions with the ANR.

Using the information generated through this initial assessment, we strongly recommend early coordination with Vermont ANR, as well as the U.S. Army Corps of Engineers, to solicit feedback on the project. Subsequent coordination including field visits and confirmation of field survey results will be necessary following detailed investigations.

ATTACHMENT:

- Natural Resources Map
- Representative Site Photographs

ATTACHMENT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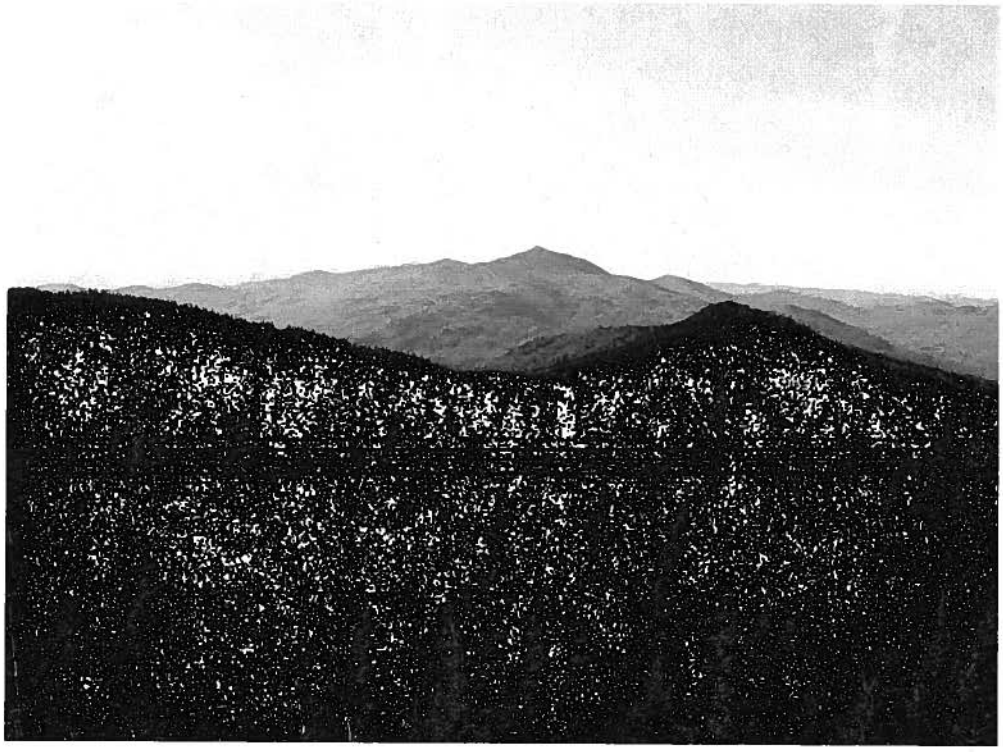
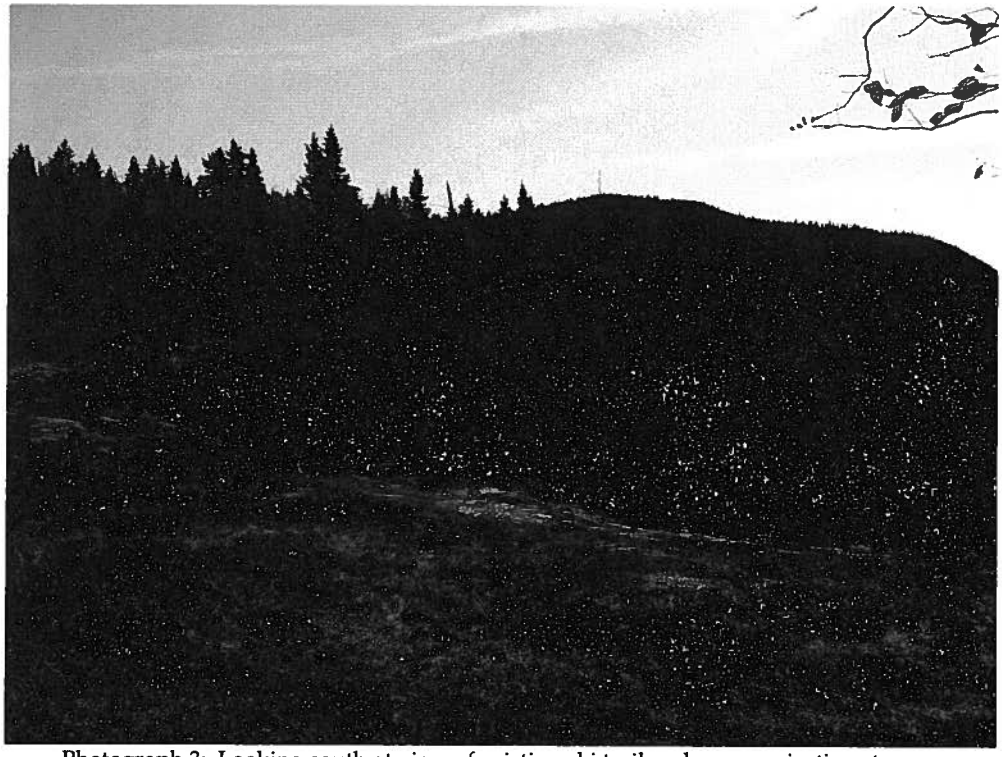
MET Tower Lines (Arrowwood)
Deer Wintering Area (VT F&W)
Element Occurances (NHIP)
Natural Community
Animal
Plant
VSWI Wetland
Approximate Preliminary Investigation Area
Potential Wind Development Area
5' Contour
100' Contour
2500' Contour
Property Line (VHB)
Trail (VHB)
Roads
Public Conserved Land
Parcel Boundary
Bolton Valley Ski Resort Parcel
Vermont Town Boundary
Existing Tower Access
Ski Trails
Ski Lifts
Watershed Boundary (huc8)
Waterbody
Stream (VHD)
Summit
400 200 0 400
Feet
Vanasse Hangen Brustlin, Inc.

Photograph 1: Looking north from the central region of the study site.

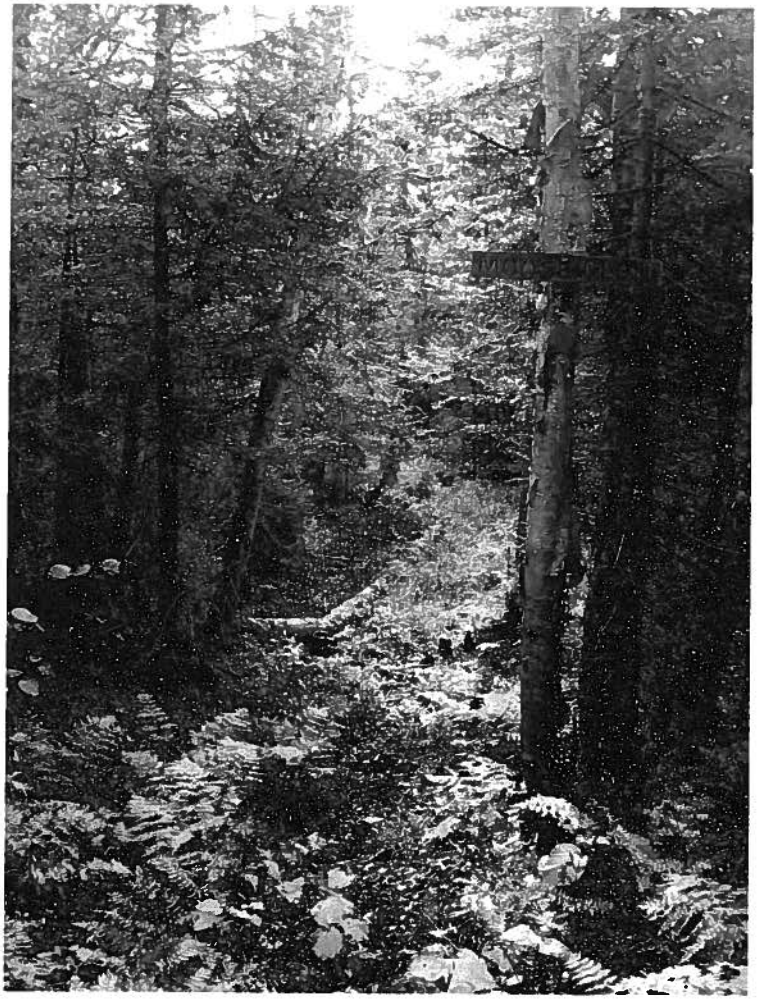


Photograph 2: Looking south toward Bone Mountain and Camels Hump from the central region of the study site.



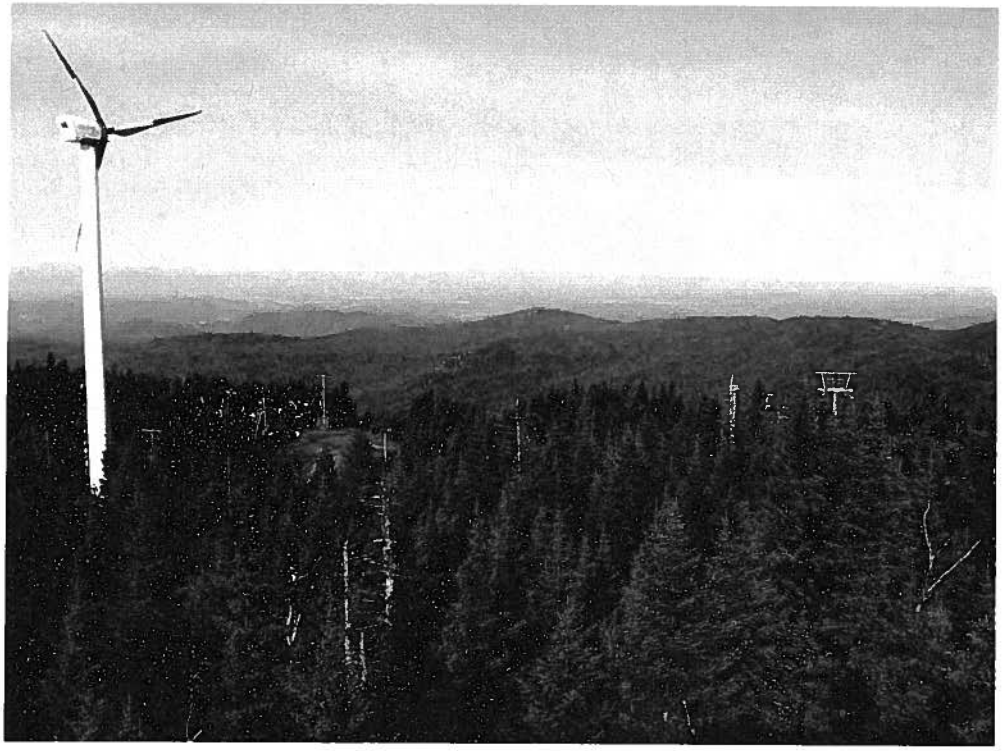
Photograph 3: Looking south at view of existing ski trail and communications tower.

Photograph 4: View of gladed ski terrain in the southern portion.



Photograph 5: View of existing Nordic ski trails in the northern portion.

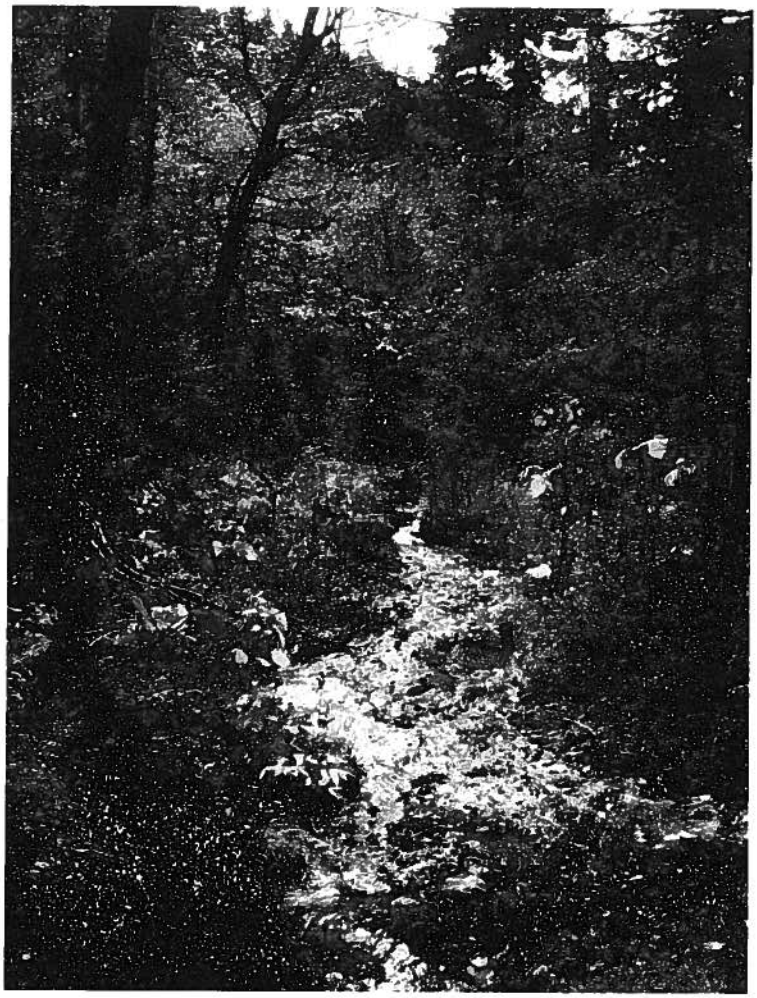
Photograph 6: View of existing observation tower on ridgeline in central portion.



Photograph 7: View of existing wind turbine and Bolton Valley Resort ski terrain (looking west).

Photograph 8: Unnamed perennial stream draining from Goose Pond.

Photograph 9: Typical intermittent stream in the southern portion.

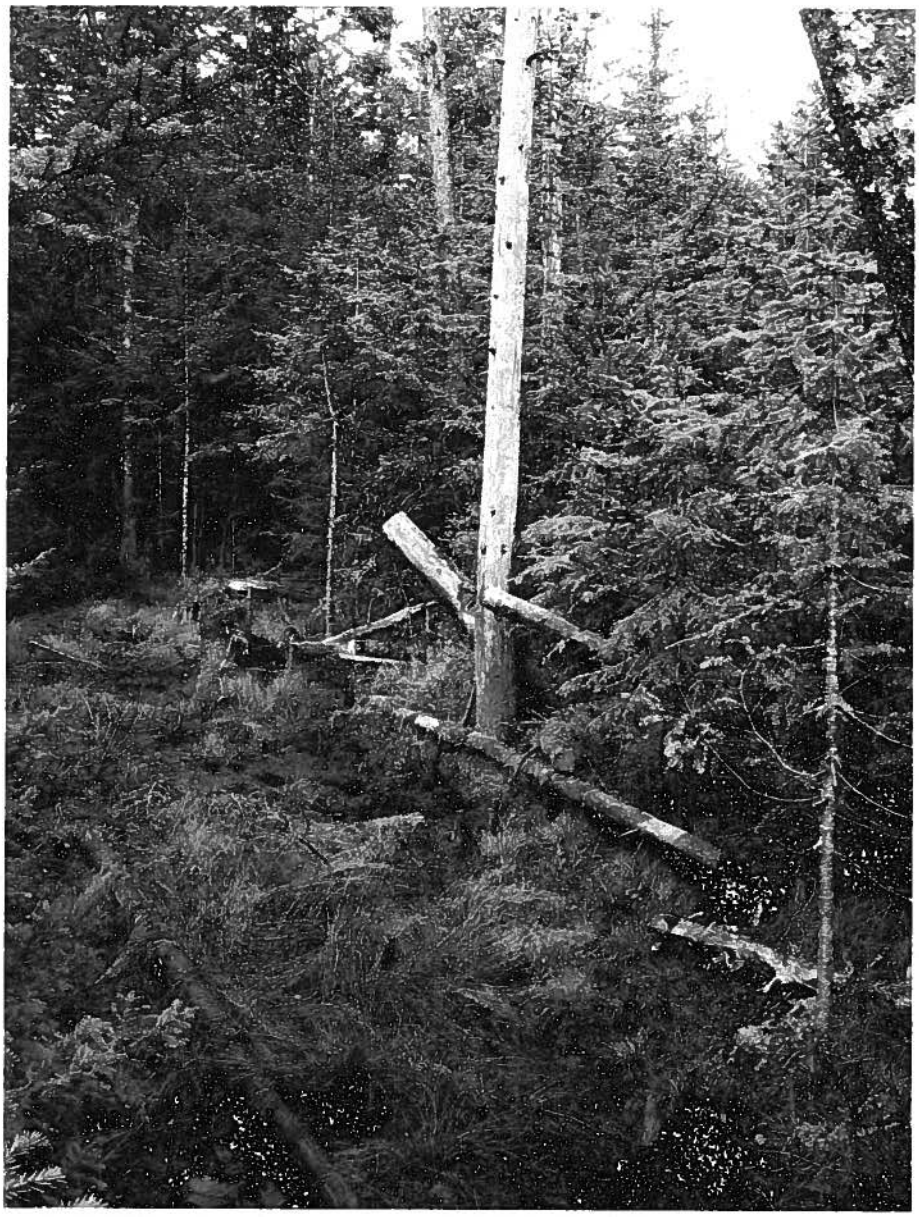


Photograph 10: Intermittent headwater stream in the northern portion.

Photograph 11: View of the Class II wetland at Goose Pond.

Photograph 12: View of likely Class II headwater wetland (in southern portion).

Photograph 13: View of likely Class II headwater wetland constrained by bedrock outcropping in north central portion.



Photograph 14: View of likely Class III wetland perched on ridgeline in northern portion.

Photograph 15: View of typical mature MSFF natural community type.

Photograph 16: View of typical MYBRSF natural community type.

Photograph 17: View of potential vernal pool (disturbed) in the north-central portion.

Photograph 18: View of rock outcrop community in the southern portion.

Photograph 19: View of Lowland Spruce-Fir Swamp natural community in the northern portion.

Photograph 20: View of potential black bear wetland forage habitat in northern portion.

Photograph 21: View of typical fall/early winter moose browse activity .

Photograph 22: Likely optimum Bicknell's thrush habitat in southern portion.

Photograph 23: Likely optimum Bicknell's thrush habitat along Nordic trail in northern portion.

STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 7671

Application of Green Mountain Clean Energy, LLC, for authority, pursuant to 30 V.S.A. §§ 246 and 248, to install a temporary meteorological station in Bolton, Vermont)

Order entered: 10/15/2010

I. INTRODUCTION

In this Order, the Vermont Public Service Board ("Board") approves the application filed by Green Mountain Clean Energy, LLC ("GMCE" or the "Petitioner"), pursuant to 30 V.S.A. §§ 246 and 248, and the Board's Order implementing standards and procedures under this section ("Procedures Order"),[1] and grants the Petitioner a certificate of public good ("CPG") authorizing the installation of a temporary meteorological station located in the Town of Bolton, Vermont (the "Project").

II. BACKGROUND

This case involves an application and prefiled testimony filed by the Petitioner on September 1, 2010, requesting that the Board issue a CPG, pursuant to 30 V.S.A. §§ 246 and 248, authorizing the construction of the facility identified above.

A copy of the application in this docket was sent to all parties as specified in the Procedures Order. The notice stated that any party wishing to submit comments or request a hearing in this matter needed to file comments with the Board within thirty (30) days of the date that the notice of the application was sent.

No comments or requests for hearing regarding the Project have been filed with the Board.

The Board has determined that the application and prefiled testimony have effectively addressed the applicable substantive criteria of 30 V.S.A. § 248. Consequently, we find that the

1. Order implementing standards and procedures for issuance of a certificate of public good for a temporary meteorological station pursuant to 30 V.S.A. §§ 246 and 248, Order issued March 9, 2010.

procedure authorized by § 246 is sufficient to satisfy the public interest, and no hearings are required.

III. FINDINGS

1. GMCE is a limited liability company involved in exploring the viability of wind generation at locations in Vermont. Joint panel pf. at 1-2.

2. GMCE has secured a lease for use of a portion of Ricker Mountain encompassing approximately .28 acres along the borders of the Towns of Waterbury and Bolton for use as the Project site. Joint panel pf. at 4.

3. The Project includes a lattice tower measuring 24 inches in width and 180 feet in height. The tower base will be leveled by forming concrete footings and will be pinned to the rock ledge. The tower will be secured with guy wires which attach at three locations, each at 125 feet from the base of the tower, utilizing rock anchors drilled and cemented into the ledge. A minimum of three anemometers and wind direction sensors will be located on the tower at heights of 110 feet, 145 feet, and 180 feet. Joint panel pf. at 6-7.

4. Access to the Project site will be over existing trails that currently provide access to a nearby communications tower, consequently the Project will not involve the construction of new roads or other access routes. Joint panel pf. at 7.

5. Clearing for the Project will be limited to the area around the base of the tower and along the guy wires. Clearing around the tower base will be restricted to tall woody trees; short shrubs and other vegetation will be left in place, and no earth disturbance will occur. Joint panel pf. at 8.

6. GMCE expects to gather approximately three years worth of data from the Project. Joint panel pf. at 8.

7. The Project will not have an undue adverse impact on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas. This finding is supported by findings 8 and 9, below.

8. The tower will be painted a neutral grey color, will not be lit, and will be difficult to see from a distance. Joint panel pf. at 12.

9. There are no rare or irreplaceable natural areas or historic sites within the vicinity of the existing telecommunications tower site where the Project will be located. Joint panel pf. at 12-13.

10. The Project will not result in any impact on sewage disposal, water supply, police and fire services, or any other factors relating to public health, safety and welfare. Joint panel pf. at 14-15.

11. The Project will not impact the public or quasi-public investment in any facilities or interfere with the public's use or enjoyment of or access to such facilities. Joint panel pf. at 15-16.

12. The Project will not unduly interfere with the orderly development of the region, with due consideration having been given to the recommendations of the municipal and regional planning commissions, the recommendations of municipal legislative bodies, and the land conservation measures contained in the plan of any affected municipality. The Project is consistent with the land conservation measures contained in the applicable town and regional plans. Joint panel pf. at 16-17.

13. The construction and operation of the Project will not result in undue air or water pollution. The Project will not produce emissions or noise and does not involve the discharge of waste or process water. Joint panel pf. at 13-14.

IV. DISCUSSION & CONCLUSION

Pursuant to 30 V.S.A. § 246(a), the Public Service Board ("Board") is required to "establish by rule or order standards and procedures governing application for, issuance or revocation of, a certificate of public good for the temporary installation of one or more meteorological stations under the provisions of section 248 of this title." Further, pursuant to § 246(c), in developing the standards and procedures, the Board "shall develop a simple application form" and "seek to simplify the application and review process, as appropriate, in conformance with this section."

Pursuant to 30 V.S.A. § 246(c)(3), the Board "[m]ay waive the requirements of section 248 of this title that are not applicable to meteorological stations . . ." Section 3 of the Board's

meteorological station application form, developed as part of the Procedures Order, requires applicants to provide a description of a project's impact with regard to the following criteria: aesthetics; historic sites; air and water purity; the natural environment; public health and safety; and public investments.

Further, pursuant to § 246(d), the Board is required to issue a proposal for decision on a project application within five months of receiving a completed application.

Based upon all of the above evidence, the application does not raise a significant issue with respect to the relevant substantive criteria of 30 V.S.A. § 248, the public interest is satisfied by the procedures authorized in 30 V.S.A. § 246, and the proposed Project will promote the general good of the State.

V. ORDER

IT IS HEREBY ORDERED, ADJUDGED AND DECREED by the Public Service Board of the State of Vermont that the installation and operation of a temporary meteorological station by GMCE at the location specified in the above findings, and in accordance with the evidence and plans submitted in this proceeding, will promote the general good of the State of Vermont in accordance with 30 V.S.A. §§ 246 and 248, and a certificate of public good to that effect shall be issued in this matter.

Dated at Montpelier, Vermont, this 15th day October, 2010.

s/ James Volz)
)
) PUBLIC SERVICE
)
s/ David C. Coen) BOARD
)
) OF VERMONT
s/ John D. Burke)

A TRUE COPY
OFFICE OF THE CLERK

FILED: October 15, 2010

ATTEST: Judith C. Whitney
Deputy Clerk of the Board

NOTICE TO READERS: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: psb.clerk@state.vt.us)

Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further Order by this Board or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and order.

STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 7671

Application of Green Mountain Clean Energy, LLC,)
for authority, pursuant to 30 V.S.A. §§ 246 and 248,)
to install a temporary meteorological station in)
Bolton, Vermont)

Entered: 10/15/2010

CERTIFICATE OF PUBLIC GOOD ISSUED PURSUANT TO 30 V.S.A. SECTION 248

IT IS HEREBY CERTIFIED that the Public Service Board of the State of Vermont this day found and adjudged that the proposed installation of a temporary meteorological station to be owned and operated by Green Mountain Clean Energy, LLC, and located in Bolton, Vermont, in accordance with the evidence and plans submitted in this proceeding, will promote the general good of the State, subject to the following conditions:

1. Construction, operation and maintenance of the project shall be in accordance with the plans and evidence submitted in this proceeding.

2. Green Mountain Clean Energy, LLC shall remove the wind measurement tower and associated equipment within three years of the date of this Certificate of Public Good.

3. This Certificate of Public Good shall not be transferred without prior approval of the Board.

Docket No. 7671

DATED at Montpelier, Vermont, this 15th day of October, 2010.

s/ James Volz)
)
) PUBLIC SERVICE
)
s/ David C. Coen) BOARD
)
) OF VERMONT
s/ John D. Burke)

A TRUE COPY
OFFICE OF THE CLERK

Filed: October 15, 2010

Attest: Judith C. Whitney
Deputy Clerk of the Board

NOTICE TO READERS: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: psb.clerk@state.vt.us)