

**Saddleback Ridge Wind, LLC** // Natural Resource Protection Act (NRPA) and Site Location of Development Act applications

- Department Order Under Appeal



## STATE OF MAINE

## Department of Environmental Protection



PAUL R. LEPAGE  
GOVERNOR

PATRICIA W. AHO  
COMMISSIONER

October, 2011

SADDLEBACK RIDGE WIND, LLC  
549 South Street  
Quincy MA 02169

RE: Site Location of Development Act and Natural Resources Protection Act Application,  
L-25137-24-A-N/L-25137-TG-B-N

Dear Applicant:

Please find enclosed a signed copy of your Department of Environmental Protection land use permit. You will note that the permit includes a description of your project, findings of fact that relate to the approval criteria the Department used in evaluating your project, and conditions that are based on those findings and the particulars of your project. Please take several moments to read your permit carefully, paying particular attention to the conditions of the approval. The Department reviews every application thoroughly and strives to formulate reasonable conditions of approval within the context of the Department's environmental laws. You will also find attached some materials that describe the Department's appeal procedures for your information.

If you have any questions about the permit or thoughts on how the Department processed this application please get in touch with me directly. I can be reached at (207) 287-7842 or at [mark.t.margerum@maine.gov](mailto:mark.t.margerum@maine.gov).

Yours sincerely,

*Mark Margerum*

Mark Margerum, Project Manager  
Division of Land Resource Regulation  
Bureau of Land & Water Quality

pc: File

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688 FAX: (207) 287-7826  
RAY BLDG., HOSPITAL ST

BANGOR  
106 HOGAN ROAD  
BANGOR, ME 04401  
(207-941-4570 FAX 207-941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769-2094  
(207) 764-0477 FAX: (207) 764-3143

WEB SITE: [WWW.MAINE.GOV/DEP](http://WWW.MAINE.GOV/DEP)



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
17 STATE HOUSE STATION  
AUGUSTA, ME 04333

DEPARTMENT ORDER

IN THE MATTER OF

SADDLEBACK RIDGE WIND, LLC	)	SITE LOCATION OF DEVELOPMENT ACT
Carthage, Canton and Dixfield	)	NATURAL RESOURCES PROTECTION ACT
Franklin and Oxford Counties	)	FRESHWATER WETLAND ALTERATION
SADDLEBACK RIDGE WIND PROJECT	)	WATER QUALITY CERTIFICATION
L-25137-24-A-N	)	
L-25137-TG-B-N (Approval)	)	FINDINGS OF FACT AND ORDER

Pursuant to the provisions of 38 M.R.S.A. Sections 481 et seq. and 480-A et seq., 35-A M.R.S.A. Sections 3451 et seq. and Section 401 of the Federal Water Pollution Control Act, the Department of Environmental Protection has considered the application of SADDLEBACK RIDGE WIND, LLC with the supportive data, agency review comments, public comments and submission, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. PROJECT DESCRIPTION:

A. Summary: The applicant submitted an application for permits under the Site Location of Development Act (Site Law) and the Natural Resources Protection Act (NRPA) on October 26, 2010. The applications were accepted by the Department for processing on November 15, 2010. The applicant proposes to construct a 12-turbine, 33-megawatt (MW) wind energy development, to be known as the Saddleback Ridge Wind Project, in the towns of Carthage, Canton and Dixfield, Maine.

The proposed development consists of twelve, 2.75-megawatt (MW) turbines with associated turbine pads; an approximately 9,090-linear foot access road leading from Winter Hill Road in Carthage to the ridgeline; an approximately 9,635-linear foot access road connecting the turbines; a 1,750-square foot operations and maintenance building and associated transmission lines and electrical substations. The proposed project is shown on a set of plans prepared by Patriot Renewable and Engineering & Management Services, Inc. (EMS) entitled "Saddleback Ridge Wind Project" and last dated February 10, 2011. The electrical collector and transmission line systems are shown on a set of plans prepared by RLC Engineering, the first of which is titled "Exhibit 2 – Electrical Drawings," and dated October 12, 2010.

The project will create 9.4 acres of new impervious area and 10.9 acres of new developed area. The proposed Saddleback Ridge Wind Project meets the definition of an expedited wind energy development set forth in the Wind Energy Act, 35-A M.R.S.A. §3451 (1)(4).

- 1.) Wind Turbines: The applicant proposes to erect 12 General Electric 2.75-103 wind turbines, each of which is capable of generating 2.75 MW. The turbines will be constructed along the ridgeline of Saddleback Ridge. Each turbine is

L-25137-24-A-N  
L-25137-TG-B-N

2 of 60

approximately 279 feet from the ground to the top of the tower; the total height from the ground to the tip of a fully extended blade is approximately 448 feet (136 meters). The applicant initially proposed to use GE 2.75-100 turbines, but noted in the original application that GE was likely to make a modified blade available for this turbine which would reduce the noise output of the turbine. In the original application the applicant stated that it expected to modify its proposal to incorporate these blades when they became available. On March 17, 2011, the applicant notified the Department of its intent to use turbines with the new blade design, the GE 2.75-103, and submitted revised application sections to reflect the impacts of the new blades.

- 2.) Turbine Pads: The turbines will be constructed on 12 turbine pads. The developed area for each turbine pad will include an approximately 16-foot diameter turbine foundation pedestal with a surrounding 4-foot wide gravel ring, and a 50-foot by 80-foot crane pad constructed of compacted gravel or processed rock. The remaining developed area of each pad will be used as an equipment laydown area. The laydown areas will be allowed to re-vegetate; however, the turbine foundations and crane pads will remain as impervious area. The total impervious area associated with the 12 turbine pads is approximately 2.2 acres.
- 3.) Access Roads and Crane Paths: The access road for the project will begin at the Winter Hill Road and will be approximately 9,090 linear feet and 24 feet wide. The ridgeline road between the turbine sites will be approximately 9,635 linear feet. The ridgeline road will initially be constructed as a 32-foot wide crane path to allow for the crane and other construction equipment necessary for the assembly of the turbines. As shown on the plans, the ridgeline road width will be reduced to 12 feet by either loaming and seeding the area or placing erosion control mulch over the excess road width after the construction of the turbines and the removal of the crane. The disturbed area created in the course of the construction of the access road and the ridgeline road will be approximately 29 acres. The impervious area of these roads after construction of the project will be approximately 5.7 acres.
- 4.) Electrical Transmission Lines: Power from the 12 turbines will be collected in a 34.5 kV underground collector line buried within the ridgeline access road work limits. The underground electrical collector line will transition to an above ground transmission line on the access road approximately 900 feet down from the ridgeline road. The line will continue above ground for approximately 6,700 feet along the access road, then transition below ground for 1,340 feet along the access road and 4,000 feet along the Winter Hill Road to Maine Route 2. The line will run underground along Route 2 for approximately 200 feet, then transition aboveground and cross to the southeastern side of Route 2. From there it will run south-southeast for approximately 7 miles along a new transmission line right-of-way between 60 and 100 feet in width to a new substation tap approximately 1,000 feet from the Central Maine Power Company (CMP) 115-kV Line 229.

L-25137-24-A-N  
L-25137-TG-B-N

3 of 60

The applicant has withdrawn from this application the CMP portion of the proposed substation off the Ludden Lane in Canton, and the approximately 1,000 feet of transmission line which will connect the substation to the existing CMP Section 229 transmission line. The applicant will develop, own, operate and maintain the access road and the collector portion of the substation pad as proposed in this application. The applicant will convey to CMP its portion of the substation pad, approximately one acre, and a right of way for the approximately 1,000-foot transmission line. CMP will independently develop its portion of the substation and the 1,000 feet of transmission line to connect the substation to Section 229.

- 5.) Operations and Maintenance Building and Associated Structures: The proposed project will include a 1,750-square foot operations and maintenance (O&M) building with associated gravel parking area, a well, and a septic system. The O&M building will be located at the base of the access road in an existing gravel parking area for the Skye Theater off Winter Hill Road. The O&M building and parking area will result in the creation of 0.1 acres of permanent impervious area.
- 6.) Meteorological Towers: Currently, there are two temporary meteorological towers on the project site. These towers will be removed prior to commencement of project operation.

The applicant is also seeking approval under the NRPA for impacts to freshwater wetlands and streams. The applicant proposes to permanently fill five square feet of freshwater wetlands during the construction of the access and crane roads, temporarily alter 10,883 square feet of freshwater wetlands during the construction of the transmission line, and permanently convert 41,617 square feet of forested wetlands to scrub shrub wetlands for the construction and maintenance of the electrical transmission line. The proposed transmission line will cross nine streams, which are NRPA-regulated streams. Four of these streams will be crossed by construction equipment, with the use of temporary timber mat bridges. The construction of the access road and the ridge line road will not involve any stream crossings.

The applicant submitted three NRPA Permit by Rule (PBR) notifications (PBR #51466, #51634, and #51635), two under Section 10 and one under Section 19 of the Chapter 305 Standards of the Department's regulations. The first two PBR's relate to crossings of four streams along the transmission line. The third relates to vegetation clearing in the critical terrestrial habitat of a potentially significant vernal pool. These PBRs were submitted to the Department on December 10, and accepted on December 24, 2010.

B. Current Use of Site: The site of the proposed project is known as Saddleback Ridge, which extends to the south from Saddleback Mountain in Carthage. The site is generally forested and has been subject to commercial forest harvesting operations. There are several existing logging roads on the site.

L-25137-24-A-N  
L-25137-TG-B-N

4 of 60

C. **Public Interest:** While the application was being reviewed, the Department received numerous comments from the general public, primarily from residents of the areas surrounding the project. These persons are “interested persons,” as defined in Department Rules, Chapter 2(1)(I), for the purposes of this application review. The Department received a request for a public hearing filed by attorney Rufus Brown on behalf of Friends of Maine’s Mountains “FOMM” and other interested persons listed in the December 10, 2010, filing. The Department denied this request in a letter dated January 21, 2011. The request focused primarily on the potential noise impacts of the proposed project and the arguments raised are discussed in Finding 5 below. As stated in the January 21 letter, the information submitted in the request had been considered in previous application proceedings, and to the extent the request included new information the Department found that it was not sufficient to warrant a public hearing.

In consideration of the level of public interest in wind power projects, the Department held a public meeting pursuant to 38 M.R.S.A. §345-A (5). The purpose of this meeting was to provide interested persons and the general public with an opportunity to comment on the application and submit information into the Department’s record. The Department held the public meeting on March 10, 2011 at the Dirigo High School in the Town of Dixfield, Maine. Members of the public offered comments and asked questions at the meeting. A transcript of the public meeting was prepared, and this transcript and all documents offered at the public meeting are a part of the record for this application. The Department also received numerous other letters and documents regarding specific aspects of the proposed project during the application review period.

D. **Comments on the Draft Order:** The Department issued a draft order for public comment on September 27, 2011. The comment period on the draft order closed on October 4, 2011. The Department’s responses to comments on the draft order are discussed in the appropriate findings below.

2. **TITLE, RIGHT OR INTEREST:**

To demonstrate that it has sufficient title, right or interest in the property proposed for development, as required in Chapter 2 (11)(D) and Chapter 372(9) of the Department’s rules, the applicant submitted copies of leases, purchase options, and easement options between the applicant and the property owners of the proposed project site, including the transmission line that will be constructed on the project site. The application includes deeds which show that the property owners who are leasing to the applicant have ownership over the parcels which are subject to the leases.

The Department finds that the leases, purchase options, and easement options submitted by the applicant provide reasonable evidence of rights to use the project site for the proposed project and its associated uses sufficient for the processing of this application. Therefore, the Department finds that the applicant demonstrated adequate title, right or interest in all of the property which is proposed for development or use. Prior to the start of construction, the applicant will be required to submit evidence that all necessary

L-25137-24-A-N  
L-25137-TG-B-N

5 of 60

options have been exercised and final deeds, leases and easements have been executed and recorded.

3. FINANCIAL CAPACITY:

The total cost of the project is estimated to be \$66 million. The applicant submitted a letter from Sovereign Bank, dated September 23, 2010, stating that it has reviewed the proposed budget for the project and is “more than willing to consider providing the financing in the required amount and with the requested structure.”

The Department finds that the applicant has demonstrated adequate financial capacity to comply with Department standards provided that, prior to the start of construction, the applicant submits evidence that it has secured financing from Sovereign Bank or another financial institution authorized to do business in Maine, or another form of financing has been secured in accordance with 38 MRSA §484(1) and Chapter 373(1), to the Department for review and approval.

4. TECHNICAL ABILITY:

The applicant provided resume information for the key technical people involved with the project. The applicant retained the services of several consulting firms to assist in the design and engineering of the project. These firms and their involvement in the proposed project are as follows:

- Tetra Tech EC, Inc. (Tetra Tech) – natural resources assessment, historic archaeological resources, shadow flicker assessment, permitting assistance
- Boyle Associates – wetlands delineation
- Engineering and Management Services – stormwater management design
- RLC Engineering – electrical engineering design
- Terrence J. DeWan and Associates – visual impact analysis
- Albert Frick Associates – soils, septic, wetlands delineation
- Stockwell Environmental Consulting, Inc. – rare plant and unique natural community surveys
- RSG, Inc. – sound assessment

The Department finds that, based on the applicant’s experience and the professional consultants it retained to prepare the application, the applicant has demonstrated adequate technical ability to comply with Department standards.

5. NOISE:

To address the Site Law standard pertaining to the control of noise, 38 MRSA §484 (3), and the rules adopted thereunder, Chapter 375 §10, the applicant submitted a Noise Impact Study prepared by RSG Inc., dated October 10, 2010, and included as Section 5 of the application. RSG Inc. is a firm with noise experts experienced in evaluating noise impacts from mobile and industrial sources, including wind energy projects. The Noise Impact Study models expected sound levels from the proposed Saddleback Ridge Wind

L-25137-24-A-N  
L-25137-TG-B-N

6 of 60

project and compares the model results to operational standards pursuant to Chapter 375 §10. The Department hired an independent noise expert, EnRad Consulting (EnRad), to assist the Department in its review of the evidence pertaining to noise.

The October 10, 2010, Noise Impact Study was based on the noise output of General Electric 2.75-100 wind turbines as originally proposed. As described above, the applicant amended its proposal and is now proposing the use of the new turbine/blade configuration identified as the General Electric 2.75-103. The applicant submitted a revised Noise Impact Study dated March 17, 2011, that models the noise output from the General Electric 2.75-103. According to the revised study, the modified turbines reduce the sound power output of the turbines sufficiently to reduce the number of turbines required to be operated in Noise Reduction Operation (NRO) to maintain compliance with the Department's nighttime noise standard. The October 10, 2010, study based on the GE 2.75-100 turbine recommended that turbines 6 through 10 be operated in NRO to achieve compliance with the nighttime standard of 45 dBA. The March 17 study, based on the GE 2.75-103, recommends that only turbines 8 and 9 be operated in NRO during the nighttime hours to achieve compliance with the nighttime standard.

The Saddleback Ridge Wind project must comply with Department regulations applicable to sound levels from construction, routine operation and routine maintenance. Chapter 375 §10 applies hourly sound level limits ( $L_{Aeq-Hr}$ ) at facility property boundaries and at nearby protected locations. Chapter 375 §10 (G)(16) defines a protected location as "any location accessible by foot, on a parcel of land containing a residence or approved subdivision..." In addition to residential parcels, protected locations include but are not limited to schools, state parks, and designated wilderness areas.

The hourly sound level resulting from routine operation of a development is limited to 75 dBA at any development property boundary as outlined in Chapter 375 § 10(C)(1)(a)(i). The hourly equivalent sound level limits at any protected location vary depending on local zoning or surrounding land uses and existing (pre-development) ambient sound levels. At protected locations within commercially or industrially zoned areas, or where the predominant surrounding land use is non-residential, the hourly sound level limits for routine operation are 70 dBA in the daytime (7:00 a.m. to 7:00 p.m.) and 60 dBA in the nighttime (7:00 p.m. to 7:00 a.m.). At protected locations within residentially zoned areas or where the predominant surrounding land use is residential, the hourly sound level limits for routine operation are 60 dBA daytime and 50 dBA nighttime. Where the daytime pre-development ambient hourly sound level is equal to or less than 45 dBA and/or nighttime ambient hourly sound level is equal to or less than 35 dBA, the Department's strictest "Quiet Location" limits of 55 dBA daytime and 45 dBA nighttime apply.

Due to the rural nature of the site, Department standards require that the applicant meet the "Quiet Location" limits, the Department's most restrictive sound limits. The applicant proposes to operate the project in compliance with these limits as set forth in Chapter 375 §10 (H) (3) (1). In Quiet Locations, nighttime limits at a protected location

L-25137-24-A-N  
L-25137-TG-B-N

7 of 60

apply at the property line of the protected location or up to 500 feet from sleeping quarters when the property line is greater than 500 feet from a dwelling.

A. Sound Level Modeling. The applicant's noise consultant, RSG, developed a sound level prediction model to estimate sound levels from operation of the proposed project. The acoustic model was developed using the CADNA/A software program, performing calculations in accordance with a generally recognized standard for estimating the propagation of sound in the environment which is published by the International Standards Organization (ISO) as Chapter 9613.2, *Attenuation of Sound During Propagation Outdoors*. CADNA/A uses three dimensional terrain, proposed wind turbine characteristics and locations, plus environmental factors to calculate outdoor sound propagation from the wind turbines. RSG used area topography and wind turbine locations based on USGS topographic information and project design for entry into the CADNA/A model.

In the March 17, 2011, Noise Impact Study, RSG calculated sound levels for simultaneous operation of twelve GE 2.75-103 wind turbines at the proposed turbine locations. RSG's modeling assumptions include: all wind turbines operating at maximum sound power levels concurrently, omni-directional downwind propagation, ground absorption factor of  $G=0$  (hard ground, perfectly reflective surfaces), no sound absorption from foliage or vegetation, and turbine manufacturer's specifications for maximum sound power level (105.0 dBA) plus a 2 dBA uncertainty factor as recommended by the International Electrotechnical Commission Standard IEC 61400-11. The use of a ground absorption factor of  $G=0$  with no sound absorption from foliage or vegetation overestimates sound propagation and is used as an alternative to applying an additional 3 dBA uncertainty factor. RSG stated in a December 20, 2010 memo: "A ground factor of 0 represents hard non-porous ground, like pavement, over the entire modeling area. This results in a ground attenuation factor ( $A_{gr}$ ) of -3 to -4 dB, meaning, in this case, that 3 to 4 dB is added to the overall sound level, depending on frequency, source and receiver height, and propagation distance."

The applicant proposes to operate the turbines at full sound power output of 107 dBA (105.0 + 2 dBA uncertainty factor) between the hours of 7:00 a.m. and 7:00 p.m. With the exception of turbines 8 and 9, the turbines will also operate at full sound power output during nighttime hours. In order to meet the Department's standards, the applicant proposes to operate turbines 8 and 9 in NRO mode during the nighttime hours as set forth in Table 1 below.

**Table 1**

Turbine #	Nighttime Hours 7:00 p.m. – 7:00 a.m.
8	104 dBA
9	103 dBA

Sound levels from wind turbine operation were modeled in the area surrounding the proposed project site. Forty-five residences and 500-foot buffer locations in the vicinity of the proposed project were modeled for sound levels predicted to result from operation

L-25137-24-A-N  
L-25137-TG-B-N

8 of 60

of the project. Only two protected locations are predicted to experience sound levels of more than 45 dBA resulting from the operation of the proposed project. One of these protected locations is the subject of a noise easement to the applicant. The other location, B 002, is predicted to receive 45.3 dBA at 500 feet from the residence during normal operation. With turbines 8 and 9 operating in the proposed NRO-mode, modeled sound levels at 500 feet from the residence are 45.0 dBA.

Based on the conservative assumptions incorporated into RSG's modeling and the applicant's expectation that actual noise levels will be below predicted levels, the applicant stated that through post-construction sound monitoring it may obtain evidence to support an application for a permit modification to allow turbines 8 and 9 to continuously operate in normal operation mode.

B. Short Duration Repetitive Sound (SDRS). Chapter 375 §10(G)(19) defines short duration repetitive sound as "a sequence of repetitive sounds which occur more than once within an hour, each clearly discernible as an event and causing an increase in the sound level of at least 6 dBA on the fast meter response above the sound level observed immediately before and after the event, each typically less than ten seconds in duration, and which are inherent to the process or operation of the development and are foreseeable." Chapter 375 requires that 5 dBA be added to the observed level of any defined SDRS that result from routine operation of a development.

In the Noise Impact Study submitted by the applicant, RSG observed that while the cause of SDRS is debated, it is likely a function of the different wind speeds at the top and bottom of the rotor (wind shear) and turbulence. RSG stated that it reviewed a year of meteorological data collected from the project site. It found that instances of high wind shear occur less than 5% of the time for all hours. It also found that 76% of the data points are below 0.20 turbulence intensity, with most of those periods above this figure occurring during the day, and that turbulence intensity is highest at the lowest wind speeds when sound output from the turbines is lower. Based on this, RSG concluded that, while it is not possible at this time to calculate the extent of SDRS from the proposed project, its analysis indicates that the project site characteristics are not conducive to common occurrences of SDRS from turbine operation.

C. Tonal Sound. As defined in Chapter 375 §10.G (24), a regulated tonal sound occurs when the sound level in a one-third octave band exceeds the arithmetic average of the sound levels in the two adjacent one-third octave bands by a specified dB amount based on octave center frequencies. Chapter 375 requires that 5 dBA be added to the observed level of any defined tonal sounds that result from routine operation of a development.

The Noise Impact Study submitted by the applicant, as revised March, 2011, states that the maximum tonal audibility level as measured by the IEC 61400-11 methodology is less than 4 dB, irrespective of wind speed. No one-third octave band exceeds the arithmetic average of adjacent one-third octave bands by more than 3 dB, so the proposed

L-25137-24-A-N  
L-25137-TG-B-N

9 of 60

turbines should not produce “tonal sound” as defined in the Department’s Noise Chapter 375.

D. Public Comment. Interested persons, including Friends of Maine’s Mountains, submitted comments and information regarding sound levels from the proposed project. Specifically, concerns were raised relative to the potential health effects of low frequency sound from wind turbines, the sufficiency of the background studies and modeling submitted by the applicant, the breadth of the Department’s standards for noise, and whether the proposed project would generate SDRS. FOMM supported its arguments with 43 numbered exhibits. Exhibits 1, 2, and 3 are specific to the noise issues in the Saddleback Ridge application and are discussed below. Exhibit 4 comments on the scenic impacts of the Saddleback Ridge project and is discussed in Finding 6 below.

Exhibit 1 is an affidavit by Michael A. Nissenbaum, dated December 8, 2010. Based on his studies of other wind projects and his medical background, Dr. Nissenbaum states that it is his professional opinion that wind power projects pose a high probability for significant adverse health effects. Dr. Nissenbaum recommends a setback of 2,000 meters, or a nighttime noise standard of 35 dBA. Dr. Nissenbaum argues that many receptor sites around the Saddleback Ridge site are likely to experience health impacts.

Exhibits 2 and 3 are peer reviews of the applicant’s noise study, Exhibit 2 by Richard R. James of E-Cooustic Solutions, and Exhibit 3 by Robert W. Rand and Stephen E. Ambrose. Both of these reviewers criticize the modeling submitted by the applicant and argue that it underestimates the sound levels that will be received at protected locations adjacent to the project and that these residences are likely to suffer adverse affects from the project. Some specific criticisms include that the RSG study fails to apply a 3 dBA uncertainty factor, and the applicant’s reliance on NRO to achieve compliance is not supported.

Exhibits 5 through 31 relate to issues raised by FOMM concerning the modeling and effects of noise from wind power projects. The Department staff and its noise consultant, EnRad, are familiar with these exhibits, which are studies and reports which were submitted and were reviewed in the context of other recent wind energy permit applications. As discussed below, after further review in the context of this proposed project, the Department’s assessment related to those documents remains the same.

FOMM’s exhibits 32, 33, 34, 38, 39, 40, 41, and 42 relate to the issues raised by FOMM concerning the modeling, measurement and characterization of noise issues raised by wind power projects. These exhibits were reviewed by the Department staff and by the Department’s noise consultant, EnRad, in the course of the review of the present project.

FOMM’s exhibits 35, 36, 37, and 43, relate to the potential health effects of noise generated by wind power projects. Exhibit 35 includes a presentation by Nina Pierpont, MD, PhD, at the October 30, 2010, symposium, “First International Symposium on Global Wind Industry and Adverse Health Effects: Loss of Social Justice?” and summaries of other talks at this conference. Dr. Pierpont’s work is set out in greater

L-25137-24-A-N  
L-25137-TG-B-N

10 of 60

detail in exhibit 23, which was also previously reviewed by the Department. Exhibit 36 presents an article titled "Responses of the ear to low frequency sound, infrasound and wind turbines" by Alec N. Salt and Timothy E. Huller, of the Department of Otolaryngology, Washington University School of Medicine, dated June 16, 2010. This article considers possible ways that low frequency sounds, at levels that may or may not be heard, could influence the function of the ear. Exhibit 37 consists of a power point presentation by Dr. Salt illustrating some of the issues covered in the article. Exhibit 43 consists of "A Review of Published Research on Low Frequency Noise and its Effects," by Dr Geoff Leventhall, dated May, 2003. Dr. Leventhall's study reviews some properties of low frequency sounds, their perception, effects on people, and criteria for assessment of those effects.

The applicant has submitted a response to the comments from Friends of Maine's Mountains, prepared by RSG and dated February 23, 2011, which addresses the issues raised and which concludes "The noise impact study prepared for the Saddleback Ridge Wind project is complete and accurate. No changes in our conclusions are required in light of the critique provided by FMM. If operated as designed, the project is modeled to meet the applicable noise requirements of Chapter 375.10." RSG responded to some of the issues raised by FMM in a December 20, 2010, memo, and also submitted documentation of NRO operation provided by General Electric. All of this material has been reviewed by the Department's noise consultant, EnRad, who has taken this information into account in the review of the proposed project.

The Maine Center for Disease Control (MCDC) within the Department of Health and Human Services has reviewed the issues raised by interested persons pertaining to potential health effects associated with wind turbine sound. The MCDC issued a report titled "Wind Turbine Neuro-Acoustical Issues" dated June, 2009, which reviewed a variety of materials relating to the sound impacts of wind turbines. In that report, the MCDC found "no evidence in peer-reviewed medical and public health literature of adverse health effects from the kinds of noise and vibrations heard by wind turbines other than occasional reports of annoyances, and these are mitigated or disappear with proper placement of the turbines from nearby residences."

In the course of the ongoing Chapter 375 rulemaking process, Dr. Dora Anne Mills, previously head of the MCDC, submitted testimony dated July 7, 2011, updating her previous assessments of the state of the science regarding the potential health effects of wind turbine noise. In that testimony she concludes that "there is no credible scientific evidence at this time supporting directly caused health problems, diseases or syndromes resulting from wind turbines that are in compliance with Maine's regulations and current modeling strategies."

The Department has considered the reports of two recent scientific literature reviews relating specifically to wind turbine sound and health effects. The first, dated October 20, 2009, was prepared by Exponent, Inc. for the Wisconsin Public Service Commission and is titled "Evaluation of the Scientific Literature on the Health Effects Associated with Wind Turbines and Low Frequency Sound". The second, dated December, 2009, was

L-25137-24-A-N  
L-25137-TG-B-N

11 of 60

prepared for the American Wind Energy Association (AWEA) and Canadian Wind Energy Association (CWEA) by a panel of seven medical and acoustic experts and is titled "Wind Turbine Sound and Health Effects, An Expert Panel Review". Both of these reports support the MCDC's comments. The Exponent Inc. report concludes in part: "It is clear that some people respond negatively to the noise qualities generated by the operation of wind turbines, but there is no peer-reviewed, scientific data to support a claim that wind turbines are causing disease or specific health conditions. Annoyance regarding the wind turbines is an elusive factor that could underlie a majority of the health complaints being attributed to wind turbine operations."

The AWEA/CWEA panel reached consensus on the following conclusions:

- There is no evidence that the audible or sub-audible sounds emitted by wind turbines have any direct adverse physiological effects.
- The ground-borne vibrations from wind turbines are too weak to be detected by, or to affect, humans.
- The sounds emitted by wind turbines are not unique. There is no reason to believe, based on the levels and frequencies of the sounds and the panel's experience with sound exposures in occupational settings, that the sounds from wind turbines could plausibly have direct adverse health consequences.

Based on its review of all of the material submitted regarding the potential health effects of wind turbines, the Department finds that compliance with Chapter 375 §10 is likely to ensure that there are no adverse health effects due to the proposed project.

One interested person, Alice Barnett, argued that her property on which she has maintained two camper trailers should be considered a protected location because she has a residence and/or planned residence and therefore her property should be protected by the 45 dBA and 55 dBA sound level limits under the Department's rules. Mrs. Barnett has stated that she considers one camper, over which she has constructed a roof, to be a permanent seasonal residence. The axle of this camper was damaged in moving the camper to the site, and the tires have been removed. Mrs. Barnett stated that she intends to "lay cement block along the perimeter when weather permits."

Chapter 375(10)(D)(16) provides that a protected location includes "(a)ny location accessible by foot, on a parcel of land containing a residence or planned residence..." Section (10)(G)(14) defines a residence as a building or structure, including manufactured housing, maintained for permanent or seasonal residential occupancy providing living, cooking and sleeping facilities and having permanent indoor or outdoor sanitary facilities, excluding recreational vehicles, tents, and watercraft. The two structures on the property in question are recreational vehicles; therefore they are not considered to be residences under the above definition. Section (10)(G) (16) explains that a residence is considered to be planned when the owner of the parcel of land on which the residence is to be located has received all applicable building and land use permits and the time for beginning construction under such permits has not expired. This determination must be based on the status of the property at the time a Site Location application is submitted. The Town of Carthage does not require building permits for

L-25137-24-A-N  
L-25137-TG-B-N

12 of 60

new residences. The town does, however, require permits for any kind of wastewater disposal system. Mrs. Barnett stated that she did not yet have a permit for wastewater disposal. She submitted a timber harvest notification form filed with the Department of Conservation in support of her contention that her property should be considered a protected location. The Department does not consider the timber harvest notification form as sufficient to meet the requirement that all applicable building and land use permits for a planned residence be obtained. The timber harvest notification form does not indicate the location of residences and the 'change of use' stipulation of the notification is solely for the use of applying timber harvest standards to the parcel.

Based on the facts outlined above the Department finds that there are no existing residences or planned residences on the property in question and the property is not a protected location. Thus, the applicant is not required to meet the protected location sound level limits on that property.

E. Department Review. As noted above, the Department hired an independent noise expert, EnRad, to assist the Department in its review of the evidence pertaining to noise. EnRad reviewed all of the materials submitted by the applicant and by interested persons.

EnRad reviewed the original, October, 2010, RSG Noise Impact Study and submitted a Noise Impact Study Peer Review dated January 21, 2011. EnRad also reviewed the revised Noise Impact Study dated March, 2011, and submitted additional comments dated May 4, 2011.

EnRad reviewed the assumptions underlying the applicant's noise impact study. In a technical review memorandum dated January 21, 2011, EnRad found that the proposed noise model with the 2 dBA uncertainty factor and the reflective ground surface assumption results in a reasonable prediction model that estimates the most restrictive receiver position sound levels to be within regulatory limits.

In its January 21 peer review, EnRad concluded in part:

"Wind turbine noise predictive modeling utilizing ISO 9613-2 (1996) algorithms is widely used in the international community. Estimated modeling accuracies for greater than 30 (meter) source height and 1000 (meter) distances are not provided in ISO 9613-2, but numerous authors have presented corrections for wind turbine predictive modeling. It is this reviewer's experience and opinion that appropriately corrected ISO 9613-2 algorithms provide reasonable estimates of "worst-case" wind turbine noise that comply with MDEP Chapter 375.10 noise regulations."

EnRad reviewed the information submitted related to SDRS and stated that, while SDRS from project operation has not been entirely ruled out, a full year of ridgeline meteorological data suggests it will be of infrequent occurrence. If post-construction monitoring shows that SDRS is occurring due to project operation the 5 dBA penalty would be applied at that time and modifications would be required to ensure compliance with Department rules.

L-25137-24-A-N  
L-25137-TG-B-N

13 of 60

EnRad reviewed the information submitted relating to tonal sound and stated that the applicant's conservative predictive modeling, which found the proposed project should not produce "tonal sound" as defined in the Department's Noise Chapter 375, are well within the Department's standards for tonal sound.

In its review of the March 17, 2011, revised noise assessment, EnRad commented that the proposed use of NRO for turbines 8 and 9, which the assessment predicts will achieve compliance with the Department rules, is confirmed by RSG by two common methods to account for ground attenuation and modeling uncertainties as employed in MDEP wind turbine project applications. EnRad further commented that, in its opinion, the revised noise assessment is reasonable and technically correct according to standard engineering practices and the Department Regulations on Control of Noise.

F. Post-construction Monitoring Program. To ensure that the modeling and predictions submitted by the applicant and deemed reasonable by the Department correctly predicted sound levels and that the project continues to meet the noise standards reflected in this permit over time, the applicant must conduct post-construction sound level monitoring at least once during the first year of project operation, and then once each successive fifth year thereafter until the project is decommissioned. Additional compliance monitoring may also be required by the Department in response to a complaint and any subsequent enforcement action by the Department, and for validation of the applicant's calculated sound levels when requested by the Department. EnRad recommended that the regular compliance monitoring include the following:

1. Post construction operation compliance testing representative of two separate regions around the project completed within the first year of operation.

The project is up wind of and easterly flanked by approximately 20 protected locations which will be exposed to the entire project, including turbines operating under noise reduced operation mode (NRO). This region should be monitored both meteorologically and acoustically in no less than three locations representative of nonparticipating receivers and their respective elevations. The southern terminus of the project is adjacent to and up wind of approximately 12 protected locations including those closest to the project. This region should be monitored both acoustically and meteorologically at a minimum of one location representative of the most impacted nonparticipating receivers and their respective elevations. Project operation compliance testing should be completed during periods when hardwood trees are without leaves.

2. Compliance testing methodology

Compliance must be demonstrated based on the following outlined conditions for 12; 10-minute measurement intervals per monitoring location meeting as set forth in Chapter 375.10 requirements. All data submittals must be accompanied by concurrent time stamped audio recordings.

L-25137-24-A-N  
L-25137-TG-B-N

14 of 60

a. Compliance will be demonstrated when the required operating/test conditions have been met for twelve 10-minute measurement intervals at each monitoring location.

b. Measurements must be obtained during weather conditions when wind turbine sound is most clearly noticeable, when the measurement location is downwind of the development and maximum surface wind speeds  $\leq 6$  mph with concurrent turbine hub-elevation wind speeds sufficient to generate the maximum continuous rated sound power from the five nearest wind turbines to the measurement location. Measurement intervals affected by increased biological activities, leaf rustling, traffic, high water flow or other extraneous ambient noise sources that affect the ability to demonstrate compliance may be excluded from reported data. A downwind location is defined as within  $45^\circ$  of the direction between a specific measurement location and the acoustic center of the five nearest wind turbines.

c. Sensitive receiver sound monitoring locations must be positioned to most closely reflect the representative protected locations for purposes of demonstrating compliance with applicable sound level limits, subject to permission from the respective property owner(s). Selection of monitoring locations will require concurrence from the Department.

d. Meteorological measurements of wind speed and direction should be collected using anemometers at a 10-meter height above ground at the center of large unobstructed areas and generally correlated with sound level measurement locations. Results should be reported based on 1-second integration intervals, and be reported synchronously with hub level and sound level measurements at 10 minute intervals. The wind speed average and maximum should be reported from surface stations. Department concurrence on meteorological site selection is required. One second data should be available on request, as required.

e. Sound level parameters reported for each 10-minute measurement period should include A-weighted equivalent sound level, 10/90% exceedance levels and ten 1-minute  $1/3$  octave band linear equivalent sound levels (dB). Short duration repetitive events should be characterized by event duration and amplitude. Amplitude is defined as the peak event amplitude minus the average minima sound levels immediately before and after the event, as measured at an interval of 50 ms or less, A-weighted and fast time response, i.e. 125 ms. For each 10-minute measurement period short duration repetitive sound events should be reported by percentage of 50 ms or less intervals for each observed amplitude integer above 4 dBA. Reported measurement results should be confirmed to be free of extraneous noise in the respective measurement intervals to the extent possible and in accordance with section (b) above.

f. Compliance data collected in accordance with the assessment methods outlined above for representative locations selected in accordance with this protocol must be gathered and submitted to the Department at the earliest possible opportunity after the

L-25137-24-A-N  
L-25137-TG-B-N

15 of 60

commencement of operation, with consideration for the required weather, operations, and seasonal constraints, but no later than twelve months after commencement of operation. Subsequently, compliance data for each location must be submitted to the Department for review and approval once every successive fifth year until the project is fully decommissioned.

g. All operational, sound and meteorological data shall be retained by the applicant for a period of one year from the date of collection. All audio data collected shall be retained by the applicant for period of four weeks from the date of collection unless subject to a complaint filed in accordance with the complaint protocol outlined below, in which case the audio data shall be retained for a period of one year from the date of collection. All operational, sound, audio and meteorological data is subject to inspection by the Department and submission to the Department upon request.

G. Complaint Response. In light of concerns raised by interested persons in this proceeding regarding the investigation of sound related complaints at similar facilities, the applicant must set up a toll free complaint hotline designed to allow concerned citizens to call in a noise related complaint 24 hours per day, 7 days per week. The hotline number must be clearly noticed to all abutting property owners and posted in prominent locations around the project site and within the towns of Carthage, Canton, and Dixfield municipal offices. For those complaints that include sufficient information to warrant an investigation, the applicant must, within two business days of receipt of the complaint, collect the complainant information (name, location, time of complaint and other complaint information) and the meteorological and operational data from the project at the time of the complaint, and submit that information to the Department and the complainant. At the Department's request, the applicant shall plot complaint locations and key information on a project area map to evaluate complaints for a consistent pattern of site, operating and weather conditions; and submit this analysis to the Department with a comparison of these patterns to the compliance protocol outlined above to determine whether testing under additional site and operating conditions is necessary and if so, shall propose a testing plan that addresses the locations and the conditions under which the pattern of complaints has occurred. The applicant will be responsible for the reimbursement of all costs incurred by the Department in the review of any noise related complaint.

H. Department Findings. The Department finds that the sound modeling techniques used by the applicant are in keeping with standard industrial sound modeling protocols; nevertheless, to confirm that the modeling accurately predicted sound levels and to ensure that the standards are met, both initially and on an ongoing basis, the Department finds that the applicant must implement the post-construction monitoring program, including complaint response, and the additional requirements recommended by EnRad as described above. Upon a finding of non-compliance by the Department, the applicant must take short term action immediately to adjust operations to reduce sound output to applicable limits under Chapter 375 (10). Within 60 days of a determination of non-compliance by the Department, the applicant must submit, for review and approval, a compliance plan that proposes actions to bring the project into compliance at all the

L-25137-24-A-N  
L-25137-TG-B-N

16 of 60

protected locations surrounding the development. This compliance plan must include, among other strategies, consideration and analysis of how potential turbine shutdown scenarios may bring the project into compliance with the terms of this permit. The Department will review any such compliance plan and may require additional mitigation or alternative measures. If immediate actions to bring the project into compliance with the applicable noise standards are not taken or are not successful while the process of generating and obtaining approval of a longer term plan is taking place, the Department may take such enforcement action as it finds appropriate to ensure compliance with the Site Law, applicable provisions of Chapter 375(10), and this permit.

In response to the draft order interested persons objected to the draft findings on noise. FOMM submitted several exhibits from the recent BEP rulemaking proceeding regarding the Chapter 375 noise standards in support of its comments on the draft permit in this licensing proceeding. The Department considered those documents as well as the other expert testimony and submissions from that rulemaking proceeding on the general issue of noise impacts. The Department notes that the provisionally adopted rules resulting from the BEP's proceeding are not yet in effect. The Department's noise consultant reviewed the draft order and agreed with its findings on noise.

After consideration of the information submitted in the application, review comments of that material, the submission from the Friends of Maine's Mountains and other interested persons, the subsequent submissions from the applicant, comments by the Department's review agents, and comments on the draft order, the Department finds that the proposed project will meet the applicable standards of Chapter 375 (10), including tonal sound and SDRS, and that the applicant has made adequate provision for the control of excessive environmental noise from the proposed project, provided that (1) the applicant operates the project with two turbines operating in reduced sound power mode as shown in Table 1; (2) the applicant submits the compliance locations for review and approval to the Department prior to operation; (3) the compliance locations are fully operational prior to the operation of the facility; (4) the applicant implements the complaint protocol outlined above; and (5) the applicant submits sound level monitoring reports in accordance with the post-construction monitoring program described above.

6. SCENIC CHARACTER:

In order to assess the potential scenic impact of the Saddleback Ridge Wind project on resources of state and/or national significance, the applicant submitted a visual impact assessment (VIA) of the project area which was prepared by Terrence J. DeWan and Associates, dated October 2010. This study focused on the viewshed within an 8-mile radius of any one of the proposed turbine locations. The Department hired a third party expert, James F. Palmer of Scenic Quality Consultants (SQC), to review the Scenic Character section of the application and provide the Department with comments.

The applicant also commissioned a survey of hikers at the summit of Mount Blue in Mount Blue State Park to assess public opinions of the possible effects of the project on

L-25137-24-A-N  
L-25137-TG-B-N

17 of 60

that viewshed. The survey was conducted over Labor Day weekend in 2010. The results of that survey are summarized in the report: "Research Report, Mt. Blue-Saddleback Ridge Wind Power Project Intercepts," prepared by Market Decisions and dated September 2010. This report is included in Section 30 of the Site Location application.

Friends of Maine's Mountains submitted a report titled "Saddleback Ridge Wind Project, Carthage, Maine, Generating Facility-Visual Quality and Scenic Character Report," dated December, 2010, and prepared by Michael Lawrence Assoc. (MLA), Landscape Architects & Site Planning Consultants. This report assesses the materials submitted by the applicant as well as summarizing field surveys conducted by MLA.

The applicant submitted a document entitled "Saddleback Ridge Wind Project, Visual Impact Assessment, Supplemental Information," dated January 13, 2011, and prepared by Terrence J. DeWan & Associates. This report responds to the December, 2010, MLA report as well as comments submitted by the Department of Conservation and by the Department's expert, SQC.

Scenic Quality Consultants submitted review comments on all of these materials to the Department in a document entitled "Review of the Saddleback Ridge Wind Project Visual Impact Assessment" dated January 21, 2011 (January 2011 VIA Review). In the course of preparing these comments SQC conducted its own fieldwork, visiting the scenic resources impacted by the proposed project. SQC's findings from this fieldwork are summarized in the January 21 report. SQC also reviewed the report submitted by FOMM and submitted separate comments on that report.

Title 35-A § 3452 (1) provides in pertinent part that:

In making findings regarding the effect of an expedited wind energy development on scenic character and existing uses related to scenic character pursuant to...Title 38 § 484 (3) or § 480-D the Department shall determine, in the manner provided in subsection 3, whether the development significantly compromises views from a scenic resource of state or national significance such that the development has an unreasonable adverse effect on the scenic character or existing uses related to scenic character ... Except as otherwise provided in subsection 2, determination that a wind energy development fits harmoniously into the existing natural environment in terms of potential effects on scenic character and existing uses related to scenic character is not required for approval under...Title 38, § 484 (3).

Title 35-A § 3452 (2) provides in pertinent part that:

The [Department] shall evaluate the effect of associated facilities of a wind energy development in terms of potential effects on scenic character and existing uses related to scenic character in accordance with...Title 38 § 484 (3), in the manner provided for development other than wind energy development if the Department determines that application of the standard in subsection 1 to the

L-25137-24-A-N  
L-25137-TG-B-N

18 of 60

development may result in unreasonable adverse effects due to the scope, scale, location or other characteristics of the associated facilities. An interested party may submit information regarding this determination to the Department for its consideration. The Department shall make a determination pursuant to this subsection within 30 days of its acceptance of the application as complete for processing.

Title 35-A § 3452 (3) provides that:

A finding by the Department that the development's generating facilities are a highly visible feature in the landscape is not a solely sufficient basis for determination that an expedited wind energy project has an unreasonable adverse effect on the scenic character and existing uses related to scenic character of a scenic resource of state or national significance. In making its determination under subsection 1, the Department shall consider insignificant the effects of portions of the development's generating facilities located more than 8 miles, measured horizontally, from a scenic resource of state or national significance.

The proposed Saddleback Ridge Wind project contains "generating facilities" including wind turbines and towers as defined by 35-A M.R.S.A. § 3451 (5) and "associated facilities" such as buildings, access roads, substations, and generator lead transmission lines as defined by 35-A M.R.S.A. § 3451 (1). The proposed project is subject to the expedited wind energy development standards outlined above and, to the extent applicable, 38 M.R.S.A. § 484 (3).

The Department required the applicant to conduct a visual impact assessment within a three mile radius of the proposed project. Although not specifically required by the Department, the applicant elected to also review potential visual impacts in the area between three and eight miles of the proposed project. The applicant's visual impact assessment addressed the following criteria, as set forth in 35-A section 3452(3):

- (A) The significance of the potentially affected scenic resource of state or national significance;
- (B) The existing character of the surrounding area;
- (C) The expectations of the typical viewer;
- (D) The expedited wind energy development's purpose and the context of the proposed activity;
- (E) The extent, nature and duration of potentially affected public uses of the scenic resource of state or national significance and the potential effect of the generating facilities' presence on the public's continued use and enjoyment of the scenic resource of state or national significance; and
- (F) The scope and scale of the potential effect of views of the generating facilities on the scenic resource of state or national significance, including but not limited to issues related to the number and extent of turbines visible from the scenic resource of state or national significance, the distance from the scenic resource of state or national significance and the effect of prominent features of the development on the landscape.

L-25137-24-A-N  
L-25137-TG-B-N

19 of 60

Title 35-A §3451 (9) defines a scenic resource of state or national significance, in part, as an area or place owned by the public or to which the public has a legal right of access. The applicant's visual impact assessment (VIA) identified the following potential scenic resources of state or national significance:

1.) National Natural Landmarks. The VIA found no National Natural Landmarks within an eight mile radius of any turbine or associated project facilities.

2.) Historic Resources. The applicant conducted historic resource surveys which indicated that there are seven properties on the National Register of Historic Places within eight miles of the Project area. Of these only two would have views of the proposed turbines.

- **John G. Coburn House** is located on River Road in Carthage. Up to 12 turbines would be visible from this location at a distance of approximately five miles. This is a private residence with no public access.
- **Jay-Niles Memorial Library** is located on Route 4 in North Jay. This is a public library in active use by the public. Up to 8 turbines would be visible looking northwest from the front of the library under leaf-on conditions and up to 12 turbines under leaf-off conditions. The turbines would be at a distance of approximately 7.8 miles.
- **Goodspeed Memorial Library** is located in Wilton, 7.0 miles from the project site. The project would not be visible from this location.
- **Bass Boarding House** is located in Wilton, 7.0 miles from the project site. The project would not be visible from this location.
- **North Jay Grange Store** is located in North Jay, 7.8 miles from the project site. The project would not be visible from this location.
- **Temple Intervale School** is located in Temple, 7.8 miles away from the project site. The project would not be visible from this location.
- **Weld Town Hall** is located in Weld, 5.8 miles from the project site. The project would not be visible from this location.

3.) National or State Parks. There is one State Park within an eight mile radius of any generating facilities, Mount Blue State Park. Mt. Blue State Park is Maine's largest state park, encompassing approximately 8,000 acres in two sections separated by Webb Lake. A campground in the Webb Beach section has 136 wooded sites a short walk from a sandy beach and picnic area. Visitors swim, launch and rent boats, and walk on trails near the lake. Across the lake from the Webb Beach section is the 3,187-foot Mt. Blue, and the Mount Blue Trail is a popular day-hike. Visitors also enjoy walks and picnics on Center Hill. Mountain bikers, equestrians, and ATV riders use the 25 miles of multi-use trails. In winter, the park's extensive trail system supports snowmobiling, snowshoeing and cross-country skiing. Five locations among those areas with possible views within the park are evaluated:

- **Mount Blue Summit**. All 12 turbines would be visible from this location, with five turbines at a distance of between 7.4 and 8.0 miles, and seven turbines will be

L-25137-24-A-N  
L-25137-TG-B-N

20 of 60

beyond the eight-mile zone of potentially adverse impacts. As a group, they would occupy a horizontal angle of five degrees in a panoramic view that is approximately 150 degrees wide.

- **Center Hill Ledges.** Four or five turbines would be within the eight-mile zone of potentially adverse impacts, at a distance of from 7.6 to 8.0 miles. These turbines would occupy approximately a two-degree horizontal angle of view.
- **Farmhouse Turnout.** All 12 turbines would be visible, at a distance of from 6.9 miles to 8.0 miles. As a group they would occupy approximately a ten-degree horizontal angle of view.
- **Webb Lake Beach.** The proposed turbines would not be visible from the Webb Lake Beach.
- **Shoreline North of the Beach.** People walking on the shoreline trail north of the beach may come to places where as many as 12 turbines could be visible at distances of 5.5 to 6.5 miles. There is no project visibility along much of the shore.

4.) Great Ponds. There are six great ponds located within an 8-mile radius of the project site that are listed in "Maine's Finest Lakes, the Results of the Maine Lakes Study" published by the Maine State Planning Office or "Maine Wildlands Lakes Assessment" published by the Maine Land Use Regulation Commission, pursuant to 35-A M.R.S.A. § 3451 (9)(D). Halfmoon Pond is the only one of these lakes rated for its scenic resources and considered a scenic resource of state or national significance.

- **Halfmoon Pond** is 53 acres in size and is located in Carthage. It is listed as an outstanding scenic resource. It is undeveloped. There appears to be recent substantial logging activity in the area around the pond. There is an extensive network of ATV and snowmobile trails in the area. The western shoreline will have partial views of approximately 6 turbines at a distance of 6.4 to 7.0 miles. Recreational use of the pond includes fishing.

5.) Scenic Rivers. The VIA found no designated Scenic River or Stream segments within eight miles of the project.

6.) Scenic Viewpoints or Trails. The VIA found one scenic viewpoint on state public reserved land or on a trail used exclusively for pedestrian use. The Department of Conservation designated the Perkins Lot a scenic viewpoint of state significance by rule in accordance with Title 35-A §3457. The Bald Mountain Trail crosses privately owned land and leads to the Perkins Lot, a 166.7-acre parcel of Maine Public Reserve Land in Perkins Township.

7.) Scenic Turnouts. The VIA found no scenic turnouts off of a public road designated as a scenic highway by the Maine Department of Transportation within eight miles of the proposed project.

L-25137-24-A-N  
L-25137-TG-B-N

21 of 60

8.) Scenic Viewpoints located in the Coastal Area. The applicant's VIA states that the project is approximately 66 miles from the coastal area and is outside of the zone of visibility.

The applicant's VIA includes a summary of field investigations, photo-simulations and viewshed mapping, descriptions of the visible components of the project, a description of the project area, and assessments of the potential visual impacts to scenic resources of state or national significance. The VIA concludes that the visual impact on these resources "should be slight, due to the effects of distance, intervening topography, and the scale of the surrounding landscape." The applicant states that after analyzing several potential locations for wind turbine placement on Saddleback Mountain, it selected sites on the southerly ridgeline which meet the primary energy generating objectives while minimizing potential visual impacts to scenic resources, particularly at distances less than three miles. Finally, the VIA concludes that the associated facilities for the project (transmission lines, O&M building, and related improvements) will have minimal impact on views from scenic resources of state or national significance and that they will not be of a location, character, or size to cause an unreasonable adverse visual affect on the scenic character of the study area.

The Department's third party visual impact expert, SQC, visited most of the identified scenic resources within 8 miles of the proposed project with potential visibility. SQC also reviewed the geographic information system data used for the VIA and conducted additional analysis. SQC used ArcGIS 10 software to perform visibility analyses and to review the visual simulations provided in the VIA to determine representational accuracy.

The January 21, 2011, Project Review report by SQC thoroughly evaluated each scenic impact under the Evaluation Criteria described in Title 35-A § 3452 in relation to the proposed project. In short form, the scenic impact criteria are: (1) significance of resource, (2) character of surrounding area, (3) typical viewer expectation, (4) development's purpose and context, (5) extent, nature and duration of uses, (6) effect on continue uses and enjoyment, and (7) scope and scale of project views. In Table 8 of its January, 2011, Project Review, SQC summarizes the impacts and rates the scenic impact evaluation criteria by severity and summarizes the impact for each scenic resource. The following is a summary of the overall scenic impact ratings found in the SQC report:

**Table 2.**

Scenic Resource	Overall Scenic Impact
<b>Historic Sites</b>	
John G. Coburn House	None
Goodspeed Memorial Library	None
Bass Boarding House	None
North Jay Grange Store	None
Jay-Niles Memorial Library	None-Low
Temple Intervale School	None
Weld town Hall	None
<b>Mt. Blue State Park</b>	

L-25137-24-A-N  
L-25137-TG-B-N

22 of 60

Mt. Blue Summit	Low-Medium
Center Hill Ledges	Low-Medium
Farmhouse Turnout	Low-Medium
Webb Lake Beach	None
Shoreline North of Beach	None-Low
<b>Great Ponds</b>	
Halfmoon Pond	None-Low
<b>Maine Public Reserve Land</b>	
Perkins Lot-Bald Mountain near summit	Low

In the January, 2011 report SQC concludes: “Overall (the applicant’s) VIA is accurate and clearly presented. Additional fieldwork and analysis completed for this review generally supports this conclusion. A framework based on the Wind Energy Act’s evaluation criteria is systematically applied to all of the state and nationally significant scenic resources.”

Interested persons raised concerns regarding the potential views of the proposed project from Webb Lake/Mount Blue State Park. The Department’s consultant conducted a thorough review of the materials submitted by the applicant and the interested persons, conducted fieldwork visiting the potential viewpoints in the park, and concluded that the potential views from three locations reach a visual impact severity of Low-Medium. No locations reach the level of High Severity.

Interested persons argued that the applicant’s VIA did not adequately assess the visual impacts to users of Webb Lake, and that a portion of the lake should be considered part of the Mount Blue State Park swimming beach area. The Bureau of Parks and Lands did not find sufficient statutory basis to request an analysis of views from the water of Webb Lake near but not precisely on the State Park beach. Pursuant to 35-M.R.S.A. §3451(9), the Legislature directed that the “Maine’s Finest Lakes” study, published by the Executive Department, State Planning Office in 1989, be used to determine whether a great pond is designated as a scenic resource of state or national significance during the review of a wind energy development. Webb Lake is not listed on the “Maine’s Finest Lakes” study. Therefore, Webb Lake is not considered a scenic resource of state or national significance in accordance with Title 35-A § 3452, and pursuant to the Wind Energy Act a general determination that a wind energy development fits harmoniously into the existing natural environment in terms of potential effects on scenic character and existing uses related to scenic character is not required for approval.

In response to the draft order interested persons reiterated comments about the visual impact of the project, with special concern expressed for Mount Blue State Park and Webb Lake. FOMM submitted an assessment prepared by Michael Lawrence and dated October 4, 2011 which argues that Webb Lake meets the criteria underlying the 1989 Maine’s Finest Lakes Study. However, the fact remains that Webb Lake is not on the list and that is the statutory criteria established in the Wind Energy Act.

L-25137-24-A-N  
L-25137-TG-B-N

23 of 60

Interested persons argued that the cumulative impact of proposed wind projects in the area will have an unreasonable impact on the scenic character of the area. In response to this argument the applicant submitted a summary of projects with pending applications, permitted or operating projects in the area and a viewshed analysis prepared by Terrence J DeWan & Associates. Based on this analysis, the applicant stated that Halfmoon Pond is the only scenic resource of state or national significance that is located within eight miles of the Saddleback Ridge Wind Project and any other wind power project. Halfmoon Pond is also within eight miles of the Record Hill Wind project, but that project will not be visible from the pond due to intervening topography.

In response to the draft order interested persons continued to raise concerns related to the cumulative visual impacts of wind projects on the area. The Department finds no statutory basis to assess these potential impacts without reference to a scenic resource of state or national significance in accordance with Title 35-A § 3452.

Interested persons have also argued that the proposed project will unreasonably impact the scenic character of Saddleback Ridge itself. However, Saddleback Ridge does not qualify as a scenic resource of state or national significance in accordance with Title 35-A § 3452, and a general determination that a wind energy development fits harmoniously into the existing natural environment in terms of potential effects on scenic character and existing uses related to scenic character is not required for approval.

Based on the information presented in the VIA, the design of the proposed project, the applicant's user survey, review comments from Scenic Quality Consultants, the comments submitted by interested persons including the MLA report, and in consideration of the evaluation criteria pursuant to 35-A M.R.S.A. § 3452 (3), the Department finds that the applicant has made reasonable accommodation to fit the development into the natural environment and that no aspect of the project will have an unreasonable adverse effect on the scenic character, or existing uses related to scenic character of scenic resources of state or national significance, or other existing uses in the area.

7. WILDLIFE AND FISHERIES:

The applicant submitted the results of a series of ecological field surveys conducted by Tetra Tech, including avian and bat surveys, wetland delineations, rare, threatened, and endangered species surveys, and vernal pool surveys within the project area. In its preparation of the application, Tetra Tech consulted with the Department and other natural resource review agencies, including the Department of Conservation, Maine Natural Areas Program (MNAP), the Maine Department of Inland Fisheries and Wildlife (MDIFW), the U.S. Fish and Wildlife Service (USFWS), and the U.S. Army Corps of Engineers (USACOE).

Tetra Tech conducted avian and bat surveys during the spring migration, summer residency and fall migration periods of 2009. The purposes of the studies were to document avian and bat occurrences in the study area, to provide baseline information on

L-25137-24-A-N  
L-25137-TG-B-N

24 of 60

the avian and bat communities around the project area, and to facilitate a project design that minimizes potential environmental impacts.

Surveys were targeted to provide data to help assess the project's potential to impact birds and bats; rare, threatened and endangered (RTE) plants and animals; breeding amphibians; and wetlands. The scope of the surveys was based on a combination of methods employed within the wind power industry for pre-construction surveys to address regulatory requirements, with guidance provided by the Department, USFWS, MDIFW and USACOE. Avian and bat mortality through direct or near collisions with wind turbines are two of the possible wildlife impacts that could occur as a result of the proposed project.

A. Significant Vernal Pools. Tetra Tech conducted vernal pool surveys of the project area during the amphibian breeding season (April and May) in 2009 and 2010. The 2009 vernal pool field surveys covered an expanded survey area and evaluated a number of alternative layouts for project facilities so that the alternative with the least impact could be identified. Eight resources were identified within the expanded field survey area. Only one of these resources was classified as a potential significant vernal pool (PSVP) and four were classified as potential vernal pools (PVP). Three were classified as amphibian breeding areas. PVPs have the physical characteristics of NRPA-regulated vernal pools but are only classified as significant vernal pools if they also meet the biological criteria identified in Chapter 335, the Department's Significant Wildlife Habitat Rules. PSVPs meet at least one of the biological criteria of Chapter 335. The proposed project will have no direct impacts to any of these resources. A portion of the proposed transmission line crosses the Critical Terrestrial Habitat of the PSVP. The proposed alteration qualifies as a minimal impact activity under the Chapter 305 permit by rule standards for alteration of significant wildlife habitat, and is addressed by PBR #51635 submitted with the application as noted in Section 1(A) above.

B. Inland Waterfowl and Wading Bird Habitat. The proposed project area does not contain Inland Waterfowl and Wading Bird Habitat mapped by MDIFW in areas proposed for wind turbines, access roads, collector lines, and associated structures.

C. Deer Wintering Areas. The proposed project area does not contain any MDIFW mapped Deer Wintering Areas in areas proposed for wind turbines, access roads, collector lines, and associated structures.

D. Rare, Threatened, and Endangered (RTE) Species. Tetra Tech conducted an RTE species survey for plant and animal species within the project area. In addition to that survey, bird and bat surveys conducted in 2009 also included investigations for RTE species or Species of Special Concern on the project site.

One peregrine falcon was observed during the fall surveys. Peregrine falcons are listed as a state endangered species. Seven observations of bald eagles were recorded by Tetra Tech, four in the spring and three in the fall surveys. Bald eagles are listed as a species of special concern in Maine.

Two bat species of special concern, the hoary bat and the silver haired bat, were observed at the project site during the surveys but both were found to be of low occurrence in the project area. No calls were identified from federally or state-listed endangered or threatened bat species.

For terrestrial species, Tetra Tech conducted surveys for the roaring brook mayfly, an Endangered Species, and the northern spring salamander, a species of Special Concern, as recommended by MDIFW. Surveys were conducted in consultation with MDIFW staff during the 2009 field season. No streams containing suitable habitat for these species were identified.

E. Migratory Birds, Bats, and Raptors. Tetra Tech used a MERLIN avian radar system to automatically and continuously record bird and bat activity in the vicinity of the proposed project during both the spring and fall migration periods. During 2009, Tetra Tech conducted a spring and a fall raptor migration survey, a spring breeding bird survey, a spring and fall migrant stopover survey, and a spring and fall bat acoustic survey. The raptor migration studies found low passage rates as compared to surveys taken at mountains closer to the coast. Bat activity levels and timing of movements documented at the project site did not indicate large migratory movements of bats during the survey periods.

Based on results from pre-construction surveys, as well as results from wildlife studies at other wind energy projects operating in Maine, Tetra-Tech determined impacts to birds and bats as the result of the project are likely to be low. Post-construction surveys will continue to evaluate the risk to birds and bats and will provide the necessary data to confirm the actual impacts of the project.

MDIFW found that the findings presented in the application for development of the Saddleback Ridge Wind Project are consistent with other pre-construction studies conducted for wind power projects MDIFW has reviewed in Maine. MDIFW commented that additional pre-construction studies at this site are not necessary. This determination is based on state regulations and review policies.

MDIFW cited recent studies (Arnett et al. 2009 & 2010, Baerwald et al. 2008) at operating wind facilities that have indicated that increasing the cut-in speed (the wind speed at which the turbine is allowed to begin rotating) for operating turbines to 5.0 meters per second has significantly decreased turbine-caused fatalities for bats. MDIFW recommended that this method of operation be adopted to reduce bat mortality. Tetra Tech responded, in a letter dated February 11, 2011, that its review of recent studies indicated that further study is needed to determine the effectiveness of this mitigation technique taking into consideration site specific factors. Tetra Tech further argues, based on its pre-construction studies, that the Saddleback Ridge site is not likely to present a high risk for bat mortality. The applicant proposed that it would work with MDIFW to design a post construction monitoring plan to determine if bat mortality is occurring at this site, and to develop a tiered approach to reduce impacts to bats if the Department

L-25137-24-A-N  
L-25137-TG-B-N

26 of 60

finds that the post construction monitoring results indicate the need for such mitigation. The Department finds that this is a reasonable proposal. In response to the draft permit interested parties argued that the 5.0 meter cut-in speed should be applied prior to the commencement of operation. The Department finds that it is reasonable to reserve this management measure until post-construction monitoring has been accomplished.

F. Post-construction Monitoring. MDIFW requested that the applicant be required to implement a post-construction bird and bat mortality monitoring plan to ensure that there are no unreasonable adverse impacts on birds and bats. The applicant proposes a post-construction monitoring program that would include mortality searches at six of the 12 proposed turbines, two surveys per week during the spring and fall migration seasons and one survey per week during the summer, to commence in the first year of operation. The applicant proposes to conduct two non-consecutive years of post-construction mortality surveys within the first five years of project operation. Surveys will include carcass searches, searcher efficiency trials and scavenger removal assessments in order to determine avian and bat mortalities. Surveys will be conducted between April 1 and November 1. Before commencing field work, the applicant proposes to contact MDIFW to determine appropriate search intervals, appropriate number of turbines to be surveyed, and to discuss any other logistical constraints related to scavenger removal and searcher efficiency trials. The first round of surveys will take place within the first year after the project is fully operational. The applicant proposes to review the findings with MDIFW and make adjustments based on MDIFW's recommendations for the second survey, which will most likely occur during year three or four of operation.

In its review comments, MDIFW stated that post-construction monitoring protocols for wind projects are rapidly evolving. MDIFW and the Department will advise the applicant in refining the design of its monitoring plan as necessary prior to project operation. This post-construction monitoring protocol will be adaptive as results from operating wind power projects provide new information on possible ways to minimize impacts on birds and bats. The post-construction monitoring plan will be reviewed by MDIFW and the Department and must be approved by the Department prior to operation of any wind turbines, and prior to the commencement of the second survey.

All survey results will be evaluated by MDIFW staff and the Department, and in response to the results the Department may require one or more adaptive management measures in an effort to minimize wildlife mortalities at one or more turbine sites. Based on recent research findings and the results of operation, and based on MDIFW's review of the survey results, if the Department determines that unexpected adverse effects to wildlife are occurring, measures that may be required include, but are not limited to:

- (1) Modified Operations. If a turbine is found to be causing unreasonable adverse impacts as determined by the Department, the Department may require suspending operation for periods determined by the Department to be of highest risk, provided there is a basis to expect that a non-operating turbine will pose less risk than an operating turbine. For example, if impacts were occurring at night during certain

L-25137-24-A-N  
L-25137-TG-B-N

27 of 60

periods of fall migration, the Department may require that the applicant modify or suspend the operation of the turbine during those high-risk nights.

(2) On-Site Habitat Management. The applicant may be required to implement habitat management measures in the vicinity of the turbines to modify wildlife behavior and reduce the risk of impacts. Any such measures may be required by the Department in response to specific concerns or impacts that are related to habitat factors. Examples include, but are not limited to, modifying the type or extent of vegetation cover, forest openings, perching and nesting sites, or cover for prey species.

(3) Habitat Protection. The applicant may be required to provide appropriate compensatory mitigation for wildlife impacts such as the protection or enhancement of wildlife habitat with functions and values similar to those impacted by the project. The Department will determine the need for and appropriateness of any compensatory mitigation.

Prior to the start of operation, the applicant must submit a post-construction monitoring plan to the Department for review and approval. The monitoring plan, including the survey protocol and its implementation method, must be developed in consultation with MDIFW, and must be inclusive of both migratory and non-migratory movement periods. The Department may require that it be adjusted in the future depending on the type and severity of observed impacts, cost benefit considerations, and practicality. Additional measures may be considered by the Department depending on future research findings.

In response to the draft order interested persons commented that the draft order did not adequately address potential impacts to avian, bat and raptor populations. Interested persons referenced comments submitted by US Fish and Wildlife to the Army Corps of Engineers in the course of the review of the applicant's proposal by that regulatory agency. The recommendations of USF&W are directed to the Army Corps under their licensing authority which is different from the Department's. These comments have also been provided to MDIFW and where they address mutual concerns will be taken into account in the design of the post construction monitoring plans required by this permit.

Based on the Department's review of the information submitted in the application, and MDIFW's review comments, the Department finds that the proposed project will not unreasonably harm any significant wildlife habitat, unreasonably disturb wildlife, or unreasonably affect the use of the site by the subject wildlife, provided that the applicant submits a finalized post-construction avian, bat, and raptor post-construction monitoring plan to the Department for review and approval prior to the beginning of operation of the Saddleback Ridge Wind Project.

H. Streams and associated fisheries. The applicant proposes to utilize four temporary stream crossings of NRPA regulated streams, one perennial and three intermittent, during the construction of the proposed transmission line. The applicant proposes to use timber mat bridges to cross these streams. MDIFW recommends a stream crossing work

L-25137-24-A-N  
L-25137-TG-B-N

28 of 60

window of July 15 to October 1 for any in-stream work. Timber mat bridges that completely span the stream and its banks are not in-stream work and are therefore not restricted to this construction period.

Based on the Department's review of the information submitted in the application and MDIFW's review comments, the Department finds that the proposed project will not unreasonably harm fisheries habitats provided that all in-stream work is conducted between July 15 and October 1.

8. HISTORIC SITES AND UNUSUAL NATURAL AREAS:

Historic Sites: On behalf of the applicant, Tetra Tech conducted a Phase 0 Archaeological Reconnaissance Survey and Phase 1 Prehistoric Archaeological Investigation with shovel tests and a photographic record. Tetra Tech also conducted a reconnaissance-level historical architecture survey.

A. Surveys. In Section 8 of the application, the applicant submitted the results of the Phase 0 Archaeological Reconnaissance Survey in a report entitled "Phase 0 Archaeological Reconnaissance Survey Report, Saddleback Ridge Wind Project, Towns of Carthage, Dixfield, and Canton, Franklin and Oxford Counties, Maine," prepared by Tetra Tech dated October, 2010. Tetra Tech conducted documentary research at the Maine Historic Preservation Commission (MHPC), and conducted field surveys of the project site. There are no previously recorded prehistoric archaeological sites or surveys within a two mile radius around the project study area, nor are there any prehistoric sites eligible for nomination or listed in the State or National Register of Historic Places located within the area potentially affected by the project. No prehistoric or historic artifacts or possible indications of prehistoric features were observed during the Phase 0 pedestrian archaeological survey for the project. Based on the results of the Phase 0 survey, Phase 1 Archaeological Investigations were conducted in two archaeological sensitive areas. No historic period artifacts or any indications of prehistoric or historic cultural features were recovered from any of the survey work.

B. Historic Architecture Survey. A historic architecture reconnaissance survey was conducted in accordance with the requirements of Section 106 of the National Historic Preservation Act of 1966. The report and analysis of the historic architecture was prepared by Tetra Tech, dated August, 2009 – October, 2010, and included in the application as Attachment 8-3. The survey addressed 191 properties and found the proposed project would have no adverse effect on historic properties.

This survey was conducted for a five mile radius of the proposed wind turbines and a three mile radius around the transmission line, with respect to potentially eligible, eligible, and listed properties under Section 106 criteria. The survey found no historic properties that would be directly impacted by the proposed project. The Tetra Tech survey identified seven properties in the eight mile visual impact survey area that are listed in the National Register of Historic Places: the John G. Coburn House,

L-25137-24-A-N  
L-25137-TG-B-N

29 of 60

the Goodspeed Memorial Library, the Bass Boarding House, the North Jay Grange Store, the Jay-Niles Memorial Library, the Temple Intervale School, and the Weld Town Hall. Based on the results of the visual impact assessment conducted by TJD&A and discussed in section 6 above, Tetra Tech concluded that the proposed project would have no unreasonable adverse impact on these seven properties.

The Maine Historic Preservation Commission reviewed the studies submitted by the applicant. In a letter dated November 16, 2010, MHPC commented that, based on the standards of the Site Location of Development Law and the Wind Energy Act, there are no historic sites (archaeological or architectural) in the project area, and therefore the proposed project will have no direct or scenic impact on such resources. Based on the Department's review of the survey information submitted in the application and MHPC's review comments, the Department finds that the proposed development will not have an adverse effect on the preservation of any historic sites either on or near the project site.

Unusual Natural Areas: To determine if unusual natural areas, including areas with rare, threatened, and endangered (RTE) species occur within the scope of the project, the applicant consulted with the Maine Natural Areas Program. After reviewing its records and the survey work submitted by the applicant, in a memorandum dated December 14, 2010, the Maine Natural Areas Program stated that there are no rare or unique botanical features in the vicinity of the project site.

Based on its review of the applicant's rare communities survey and the comments from the Maine Natural Areas Program, the Department finds that the proposed development will not have an adverse effect on any unusual natural areas either on or near the development site.

9. BUFFER STRIPS:

The applicant proposes to maintain vegetated buffers for stormwater management and waterbody protection. Buffers for the proposed project include three different types of buffers: no-disturbance buffers around roads and turbines, a transmission corridor buffer, and waterbody buffers at streams and other wetland crossings. The vegetation cutting practices which have been proposed to preserve and maintain buffers include no cutting, limited and selective clearing, and mechanized clearing combined with selective use of herbicides.

1. Access Road, Crane Path, and Turbine Buffers. The application states that a 250-foot to 300-foot radius around each turbine is typically cleared, resulting in a circular impact. For this project the applicant has proposed a design which minimizes the clearing, resulting in smaller, irregularly-shaped openings. The applicant has maximized the use of relatively level terrain on the ridge to minimize cut and fills slopes on the road shoulders. In addition all workspace in the vicinity of the towers, up to the turbine foundations will be loamed, seeded and re-vegetated following construction.

L-25137-24-A-N  
L-25137-TG-B-N

30 of 60

2. Transmission Line Buffers. The area within the electrical transmission line corridor will require vegetative cutting to meet line safety and reliability goals. The applicant proposes to employ a Vegetation Management Plan (further described below) in accordance with ISO-New England safety standards to control the growth of vegetation along the transmission line. Transmission line corridor construction and maintenance procedures will provide for the retention of low ground cover to the greatest extent practicable during construction, restoration and stabilization of areas affected by construction, and ongoing maintenance activities with the intention of promoting long-term growth of low vegetation.

3. Stream Buffers. The applicant proposes to maintain a 75-foot riparian buffer from DEP regulated rivers, streams and brooks with the exception of crossings. The project was designed to maintain a 100-foot setback from waterbodies for pole placement. The use of herbicides will be prohibited within all waterbody buffers and within 25 feet of any wetlands with water visible at the surface. Additionally, no refueling or maintenance of equipment will be performed within waterbody buffer areas.

4. Wetlands. The applicant proposes to minimize clearing of vegetation in wetland areas and within any amphibian breeding habitat areas (these areas do not meet the requirements to be considered Significant Vernal Pools but they may still support the breeding activities of some amphibians).

Vegetation Maintenance Plan. The applicant submitted a vegetation maintenance plan (VMP) (Attachment 10-1 of the application) entitled "Saddleback Ridge Wind Project: Vegetation Management Plan." The plan summarizes vegetation maintenance methods and procedures that will be utilized by the applicant for the transmission line corridor, and describes maintenance requirements and restrictions associated with waterbody crossings.

The Department finds that the applicant has made adequate provision for buffer strips provided that the applicant complies with the post-construction VMP submitted in the application, and that all visual screening buffers, stormwater treatment buffers, and stream buffers are permanently marked on the ground pursuant to Chapter 500 Stormwater Management rules prior to the start of construction. Further, prior to the start of operation, the applicant must record buffer deed restrictions with the Registry of Deeds for the subject parcels. The deed restrictions must be consistent with Chapter 500 Stormwater Management Rules and have attached a plot plan for the parcels, drawn to scale, that specifies the location of all buffers on the parcels. The applicant must submit a copy of the recorded deed restrictions, including the plot plans, to the Department within 60 days of the recording.

10. SOILS:

The applicant submitted Class B High Intensity and Class L Linear Soil Surveys for the proposed project site prepared by Albert Frick Associates, Inc. and dated November,

L-25137-24-A-N  
L-25137-TG-B-N

31 of 60

2009, and October 2010. These reports are contained in Section 11 of the application and concluded that the soils are generally appropriate for the proposed construction activities.

The applicant submitted a blasting plan which outlines the proposed procedures for blasting in the area of the turbine foundations, the proposed access roads in areas requiring significant cut, the underground power line trenches, and the substation pad. The applicant also submitted plans for acid rock drainage should such rock be encountered. The applicant proposes to balance cuts and fills on the project site and reuse as much material as possible.

Interested persons contend that the proposed blasting and other project activities may negatively impact their water supply wells. The applicant submitted a letter from Richard Groll, an Industrial Seismologist, dated September 24, 2010. Mr. Groll reviewed the blasting plan for the proposed project and stated that "the proposed blasting operations at this site will not cause damage to the surrounding structures or water wells. The scale of blasting required at this site is commonly employed within 50 feet of occupied dwellings and working water supply wells without causing damage. The blasting process is highly refined and scientific." Mr. Groll further comments, "there is no reason to believe that the blasting activity at the Saddleback Ridge Wind Project will disturb the rock structure or composition in a manner that would result in the diminution of the quality or quantity of local drinking water supplies. The rock at Saddleback Mountain is a highly elastic, hard, ridge forming material which will not fracture outside the intended areas of rock excavation."

The applicant proposes to conduct a pre-blast survey of all structures within a 2,000-foot radius of all areas to be blasted. In addition, in a letter dated April 27, 2011, the applicant proposes that all property owners with an active well within 3,500 feet of any blasting activity will be offered pre- and post-construction water testing. This testing will be incorporated into the pre-blast survey.

In response to the draft order interested persons expressed concerns about how such wells would be defined and identified. The Department finds that it is reasonable to require the applicant to develop the survey protocols in consultation with Department geologists and to ensure that the plan is clear on these questions prior to commencement of construction.

The soils reports and other application materials described above were reviewed by staff from the Department's Division of Environmental Assessment (DEA). After review of the applicant's proposals and the materials submitted DEA commented that blasting as necessary for this project can be conducted without unreasonable adverse impact on existing uses and properties. Prior to any blasting on the project site, the applicant will be required to submit the final plans for pre-blast surveys of structures and active wells to the Department for review and approval. All water-quality, water yield or any other data related to water supply wells, collected during the pre-blast surveys will also be required to be submitted to the Department. All blasting must be conducted in compliance with the Department's Performance Standards for Quarries (38 M.R.S.A. § 490-Z (14)).

L-25137-24-A-N  
L-25137-TG-B-N

32 of 60

The Department finds that the applicant has submitted sufficient evidence that the soils on the project site present no limitations to the proposed project that cannot be overcome through standard engineering practices provided that, prior to any blasting on the project site, the applicant submits a final plan for a pre-blast survey which includes all structures within 2,000 feet and all active wells within 3,500 feet of any proposed blasting, to the Department for review and approval.

11. STORMWATER MANAGEMENT:

The construction of the proposed project will disturb a total of 42 acres of land. The applicant proposes that at the completion of construction, it will re-vegetate all but 10.9 acres of developed area, of which 9.4 acres will be impervious area. The proposed project is not located in the watershed of a lake most at risk or an urban impaired stream. The applicant submitted a stormwater management plan based on the basic, general, and flooding standards contained in Chapter 500 of the Department Rules. Stormwater quality treatment will be achieved with various Best Management Practices (BMPs) and buffers as described in the application. The applicant's post-development drainage analysis shows no increase in peak flow rates and a negligible increase in runoff volume for a 25-year storm event. The applicant proposes to achieve stormwater quality treatment and flooding mitigation with numerous buffers that will provide treatment and mitigation through absorption, disconnected impervious area, and lengthening of flow paths.

A. Basic Standard:

(1) Erosion and Sedimentation Control: The applicant submitted an Erosion and Sedimentation Control Plan (Section 14 of the application) that is based on the performance standards contained in Appendix A of Chapter 500 of the Department's rules and the Best Management Practices outlined in the Maine Erosion and Sediment Control BMPs, which were developed by the Department. This plan and plan sheets containing erosion control details were reviewed by the Department's Division of Watershed Management (DWM). DWM commented that the applicant's erosion control plan is an acceptable plan and a good starting point for providing erosion control protection during construction. However, based on site and weather conditions during construction, additional erosion and sedimentation control measures may be necessary. Regular inspection by a professional engineer will also be necessary to assure proper implementation and maintenance of the proposed erosion control measures, and the identification of any additional measures that may be needed.

Given the level of disturbance, steep slopes, and close proximity to water resources, the applicant must retain the services of a third party inspector in accordance with the Special Condition for Third Party Inspection Program, which is attached to this Order. The inspecting engineer must make weekly (at a minimum) visits to the project site while the project is under construction, report on the erosion and sedimentation controls and any problems encountered during the inspections, and recommend corrective measures if any must be taken. During construction, any area of instability or erosion must be corrected

L-25137-24-A-N  
L-25137-TG-B-N

33 of 60

immediately and maintained until the site is completely stabilized or vegetation is established.

Erosion control details will be included on the final construction plans and the erosion control narrative will be included in the project specifications to be provided to the construction contractor. Prior to the start of construction, the applicant must conduct a pre-construction meeting to discuss the construction schedule and the erosion and sediment control plan with the appropriate parties. This meeting must be attended by the applicant's representative, Department staff, the design engineer, the contractor, and the third-party inspector.

(2) Inspection and Maintenance: The applicant submitted a maintenance plan that addresses both short and long-term maintenance requirements. This plan was reviewed by DWM. The maintenance plan is based on the standards contained in Appendix B of Chapter 500. The applicant will be responsible for the maintenance of the stormwater management system.

(3) Housekeeping: The proposed project will comply with the performance standards outlined in Appendix C of Chapter 500:

Based on DWM's review of the applicant's erosion and sedimentation control plan and the maintenance plan, the Department finds that the proposed project meets the Basic Standards contained in Chapter 500(4)(A) provided that the applicant conducts a pre-construction meeting and retains a third-party inspector to oversee project construction.

#### B. General Standards:

The applicant's stormwater management plan proposes general treatment measures designed to mitigate for the increased frequency and duration of channel erosive flows due to runoff from smaller storms, provide for effective treatment of pollutants in stormwater, and mitigate potential temperature impacts. Mitigation for the non-linear portion of the project (the O&M building) is proposed to be achieved by using an alternative buffer design that DWM has reviewed and approved in accordance with Chapter 500 § (4)(B)(2). The applicant proposes to utilize a forested buffer with an additional treatment berm constructed on the re-vegetated portion of the crane path and access road. Though the natural slope is greater than the standard buffer table allows, DWM stated that the additional treatment berm will improve the buffer's efficiency sufficiently to meet the standard buffer treatment requirement. DWM further commented that buffer treatment in this case is preferable to the use of more physical treatments such as soil filters or ponds. The proposed access roads meet the definition of "a linear portion of a project" in Chapter 500 and the applicant is proposing to provide stormwater treatment for over 76% of the volume from the impervious area. The applicant is proposing to provide treatment for 100% of the non-linear impervious areas. The Department finds that both the linear portion of the project and the non-linear portion of the project will meet the standards of Chapter 500.

L-25137-24-A-N  
L-25137-TG-B-N

34 of 60

The forested, limited disturbance stormwater buffers will be protected from alteration through the execution of a Declaration of Restrictions. The Declaration of Restrictions must have attached to it a plot plan, drawn to scale, that specifies the location of the buffers. The applicant proposes to use the deed restriction language contained in Appendix G of Chapter 500. The Declaration of Restrictions must be recorded prior to the start of operation, and the applicant must submit a copy of the recorded deed restriction including the plot plan to the Department within 90 days of its recording. Prior to initiating work in an area, the location of forested buffers must be permanently marked on the ground. Methods of marking the ground must include, but are not limited to, a combination of field flagging and clearly marked permanent signage.

The stormwater management system proposed by the applicant was reviewed by, and revised in response to comments from, DWM. After a final review, DWM commented that the proposed stormwater management system is designed in accordance with the Chapter 500 General Standards. DWM recommended that the applicant retain the services of a professional engineer to inspect the construction and stabilization of the road ditch turnouts and stone bermed level spreaders to be built on the site. Inspections must consist of weekly visits to the site to inspect each turnout from initial ground disturbance to final stabilization. If necessary, the inspecting engineer will interpret the turnouts' location and construction plan for the contractor. The inspecting engineer will notify the Department in writing within 14 days of the completion of construction and stabilization of the turnouts and level spreaders. Accompanying the engineer's notification must be a log of the engineer's inspections giving the date of each inspection, the time of each inspection and the items inspected on each visit.

Based on the stormwater system's design the Department finds that the applicant has made adequate provision to ensure that the proposed project will meet the Chapter 500 General Standards provided that the applicant adheres to the required protocol for inspections of the ditch turnouts and level spreaders, that the buffers are permanently marked on the ground, and a copy of the recorded deed restrictions are submitted to the Department as outlined above.

C. **Flooding Standard:** The applicant is proposing to utilize a stormwater management system based on estimates of pre- and post-development stormwater runoff flows obtained by using Hydrocad, a stormwater modeling software that utilizes the methodologies outlined in Technical Releases #55 and #20, U.S.D.A., Soil Conservation Service and detains stormwater from 24-hour storms of 2-, 10-, and 25-year frequency. The Department's DWM reviewed the analysis of the watersheds involved in the proposed project for potential flooding impacts. The applicant's model shows the project's impact on the weighted curve number of each watershed and the subsequent impact to peak flows for these watersheds for the 25 year, 24 hour storm. The evidence shows that the weighted curve number for each subwatershed will exhibit a negligible change. This change is well within the model tolerances and does not take into consideration the redistribution of flows in the buffer areas that will lengthen the time of concentration for all the watersheds. DWM analysis is that the model indicates that the

L-25137-24-A-N  
L-25137-TG-B-N

35 of 60

project meets the flooding standard requirement of maintaining the pre-construction peak flows for the 2, 10 and 25 year, 24-hour storm at the property boundary.

The following minor adjustments may be made during construction without advance notice to the Department provided they do not impact protected resources and are reflected in the final as-built drawings: changes that result in a reduction in impact and/or footprint (such as a reduction in clearing or impervious area, and elimination of structures or a reduction in structure size); location of a structure within the identified clearing limits; the type of foundations used; additional drainage culverts, level spreaders or rock sandwiches; changes to culvert size or type provided that the culvert does not convey a regulated stream and that the hydraulic capacity of the substitute culvert is greater than or equal to that of the original; and changes of up to 10 feet in the base elevation of a turbine vertically up or down as long as the change in elevation does not result in new visual impacts or changes to the stormwater management plan.

Additionally, the following minor adjustments may be made upon prior approval by the third party inspector or Department staff and do not require a revision or modification of the permit but must be reflected in the final as built drawings: minor changes that do not increase overall project impacts or project footprint and which do not impact any protected resources as long as any new areas of impact have been surveyed for environmental resources and do not affect other landowners. These changes include adjustments to horizontal or vertical road geometry that do not result in changes to the stormwater management plan; a shift of up to 100 feet in a turbine clearing area; and adjustments to culvert locations based on field topography.

Based on the system's design and DWM's review, the Department finds that the applicant has made adequate provision to ensure that the proposed project will meet the Chapter 500, Flooding Standard for channel limits and runoff areas, and peak flow from the project site.

The Department further finds that the proposed project will meet the Chapter 500 standards for: (1) easements and covenants; (2) management of stormwater discharges; (3) discharge to freshwater or coastal wetlands; and (4) threatened or endangered species.

## 12. GROUNDWATER:

There are no mapped significant sand and gravel aquifers on the project site. The Maine Geological Survey data indicates that the nearest aquifer is located along the Androscoggin River to the south of the project. A single drilled well is proposed to serve domestic water needs at the project's O&M building.

Spill Prevention, Control, and Countermeasures (SPCC) plan. The applicant submitted a plan detailing steps to be taken to prevent groundwater contamination during construction. The applicant stated that the potential sources of groundwater contamination during construction will be fuel and hydraulic and lubricating oils used in the operation of vehicles and construction equipment. The plan includes general operational requirements, storage and handling requirements, and training requirements

L-25137-24-A-N  
L-25137-TG-B-N

36 of 60

to prevent spilling of oil, hazardous materials or waste. The plan also sets out spill reporting and cleanup requirements should such an event occur. No herbicides will be used, stored, mixed, or transferred between containers within the stream buffer areas, and no refueling of equipment will be allowed in these buffers. Prior to any construction, site preparation, or maintenance, the applicant must flag the boundaries of any such setbacks in the field. All staff must receive suitable training to recognize and comply with these setback markers and requirements. Prior to any application of herbicides or other use of chemicals or petroleum products during maintenance of the transmission line, the transmission line right-of-way must be checked for any new construction that would require establishment of setbacks for herbicides or other use of chemicals or petroleum products, and any such setback must be clearly flagged in the field.

Because the project involves the handling of chemicals or petroleum on site, including the changing of lubricating oils in the turbines, the applicant is also required to submit an operational SPCC plan prior to the commencement of operation of the project.

DEA reviewed the applicant's proposals for protecting groundwater and recommended that the applicant be required to confirm the installation of the well and wastewater disposal system in accordance with the proposed plans after construction.

The Department finds that the proposed project will not have an unreasonable adverse effect on ground water quality provided that, prior to operation, the applicant submits to the Department for review a site drawing showing the location of the O&M building well and confirming that the wastewater disposal field was constructed at the approved location, and an operational SPCC plan.

13. WATER SUPPLY:

The proposed project will not require a water supply for the operation of the wind turbines or the electrical equipment. The only anticipated demand for water will be at the O&M building. The O&M building will house a maximum of six staff people and will provide bathroom facilities and potable water for the staff. The applicant anticipates that 135 gallons/day will be required to provide for these purposes. An individual well will be drilled on-site to supply potable water to the O&M building.

The applicant states that non-potable water will be needed for dust abatement. This water will not be withdrawn from groundwater sources or from rivers or streams. The applicant proposes to use a tanker truck to bring water to the site from Wilson Pond in Wilton. The Department finds that the proposed amount of withdrawal is not anticipated to have any impact on lake water levels.

The applicant's proposals for water supply have been reviewed by DEA, which had no objection to the applicant's proposals provided the final location of the water supply well is confirmed after construction.

L-25137-24-A-N  
L-25137-TG-B-N

37 of 60

Based on the materials in the application, the Department finds that the applicant has made adequate provision for securing and maintaining a sufficient and healthful water supply.

14. WASTEWATER DISPOSAL:

The applicant stated that the only potential generation of wastewater would be from the domestic water needs at the proposed O&M building. The applicant submitted a design for a subsurface wastewater disposal system designed to handle wastewater from up to six employees. This equates to approximately 135 gallons of wastewater per day. There will be no commercial or industrial wastewater generation associated with the proposed project.

The applicant submitted a subsurface wastewater disposal system design (HHE-200 form) dated October 1, 2010, and prepared by Albert Frick, a licensed professional site evaluator. The applicant also submitted the soil survey map and report discussed in Finding 10. The design of the wastewater disposal system complies with the Subsurface Wastewater Disposal Rules. The wastewater disposal system will be built on suitable soils adjacent to the O&M building, a minimum of 100 feet from the water supply well.

The applicant's proposal for wastewater disposal was reviewed by DEA, which found the proposal to be more than adequate, as the design will accommodate up to 300 gallons per day. Based on the materials submitted, the Department finds that the proposed wastewater disposal system will be built on suitable soil types.

15. SOLID WASTE:

The development of the site and construction of the turbines will generate approximately 230 cubic yards of construction debris, packaging materials, and associated wastes. All construction and demolition debris generated will be disposed of at the Juniper Ridge Landfill, which is in substantial compliance with the Department's Solid Waste Management Regulations of the State of Maine. By letter dated October 29, 2009, Juniper Ridge Landfill stated that the landfill has the capacity to accept this construction waste. This facility is located in Alton, Maine.

All marketable trees located in the footprint of the proposed turbine pads and roads will be harvested and sold for timber or pulp. Non-marketable wood waste will be processed and used as mulch on the site. Stumps will remain in place wherever possible. Stumps will be shredded and used for erosion control mulch.

Solid waste produced during operation of the proposed project is expected to be limited to general office waste from the O&M building. The applicant has indicated that it will contract with Archie's Inc., which will haul the office waste to the Northern Oxford Regional Waste Facility in Mexico, Maine.

L-25137-24-A-N  
L-25137-TG-B-N

38 of 60

The Department's Bureau of Remediation and Waste Management reviewed the applicant's proposal for solid waste disposal, and stated that the proposal is adequate. Any change in these plans would require the approval of the Department. Based on the above information, the Department finds that the applicant has made adequate provision for solid waste disposal.

16. FLOODING:

The applicant does not propose to construct any structure within a flood zone. As discussed in Finding 11, the Department has reviewed the applicant's plans for stormwater management and found that the project is unlikely to have any adverse impact on downstream flooding. Based upon the nature of the project and the fact that no part of it is located in a flood zone, the Department finds that the proposed project is unlikely to cause or increase flooding or cause an unreasonable flood hazard to any structure.

17. WETLAND IMPACTS:

Tetra Tech conducted the applicant's surveys to locate wetland and waterbody resources on the Saddleback Ridge Wind Project site and summarized the results of that work in Section 7 of the Site Law application and Section 6 of the NRPA application. Field surveys were conducted in expanded survey corridors encompassing the project area including: the proposed access road, the crane road located along the ridgeline, the turbine pads and the area around the pads, the electrical transmission corridor, the laydown area and the O&M building. The results of these surveys are summarized as follows:

- One hundred and one wetlands were identified within the expanded field survey area. Of these wetlands, 58 were classified as palustrine emergent wetlands, 32 were classified as palustrine forested wetlands, and 11 were classified as palustrine scrub shrub wetlands.
- Eighteen streams were identified in the expanded field survey.
- One potentially significant vernal pool was identified in the expanded field survey, as discussed in Finding 7(A).

Freshwater Wetland Impacts. The applicant proposes to permanently fill five square feet of forested freshwater wetlands for the construction of both the access road and the crane road, and to temporarily alter 10,883 square feet of freshwater wetlands during the construction of the transmission line. All equipment involved with the construction of the transmission line will work on construction mats when in wetlands. The applicant also proposes to convert 41,616 square feet of forested wetlands to scrub shrub wetlands for operation of the transmission line. Maintenance of the transmission line right-of-way will be in done in accordance with the applicant's Vegetation Management Plan (VMP) which is included as section 8-1 of the NRPA application. A portion of the proposed transmission line crosses the Critical Terrestrial Habitat of the PSVP. The proposed alteration qualifies as a minimal impact activity under the Chapter 305 Permit by Rule standards for alteration of significant wildlife habitat as noted above.

Stream Impacts. The applicant proposes to cross four streams as defined by the NRPA during the construction of the proposed transmission line. During construction of the transmission line, the applicant proposes to utilize timber mat bridges to cross the streams.

Chapter 310 of the Department's rules interprets and elaborates on the NRPA criteria pertaining to wetlands and waterbodies, such as streams. The rules guide the Department in its determination of whether a project's impacts would be unreasonable. A proposed project would generally be found to be unreasonable if it would cause a loss of wetland area, functions and values and there is a practicable alternative to the project that would be less damaging to the environment. Each application for a wetland alteration permit must provide an analysis of alternatives in order to demonstrate that a practicable alternative with less impact does not exist.

- A. Avoidance. Tetra Tech prepared an alternatives analysis for the proposed project which was submitted as section 7 of the NRPA application, an impact avoidance and minimization analysis which was submitted as section 8, and a summary of resource impacts which was submitted as section 9. These analyses address multiple factors that were considered in the selection of the site. These factors include quality of the wind resource, logistics of delivering power to market, compatibility with existing land uses, and environmental impacts. The application states that efforts to avoid wetland impacts in the planning of this project included utilizing existing roads where possible and siting the turbine pads, transmission line corridor and other project facilities to avoid and minimize resource impacts. Overall, the applicant proposes to permanently fill five square feet of freshwater wetlands during the construction of the entire project. There are no permanent stream crossings proposed. The transmission line right of way will cross nine streams. Construction activities will require temporary crossings of four of these streams, through the use of timber mat bridges. Approximately 41,616 square feet of forested freshwater wetlands will be permanently converted to scrub shrub wetlands with the installation and maintenance of the electrical transmission line.
- B. Minimal Alteration. The amount of wetland and waterbodies to be altered must be kept to the minimum amount necessary for meeting the overall purpose of the project. In the areas where wetland impacts could not be avoided, the applicant minimized wetland impacts by using various techniques. Some techniques used to minimize impacts included narrowing road shoulders where possible and modifying cut and fill slopes on both roads and turbine pads. The applicant maximized buffers to allow larger riparian areas between roads and turbine pads and the wetland areas. The temporary stream crossings were sited to ensure that they minimized impacts to the streams.

L-25137-24-A-N  
L-25137-TG-B-N

40 of 60

- C. Compensation. In accordance with Chapter 310 5(C)(6)(a)(ii), compensation is not required for impacts associated with the proposed project, because the applicant is proposing to fill less than 15,000 square feet of freshwater wetland.

Based on the Department's review of the wetlands and waterbodies surveys and the proposed layout of the project as shown on plans submitted by the applicant, the Department finds that the applicant has avoided and minimized wetland and waterbody impacts to the greatest extent practicable, and that the proposed project represents the least environmentally damaging alternative that meets the overall purpose of the project provided that the applicant implements the Vegetation Management Plan contained in the application.

18. AIR QUALITY:

The applicant stated that the project is not expected to have an adverse affect on air quality. Emissions from construction activities will include exhaust from construction vehicles and the use of a rock crusher.

The site will be monitored for dust control during construction. Dust is not anticipated to be a problem, as most of the project roads and pads will be covered with crushed stone. Calcium chloride or water will be used as needed to address any dust problems that may become a nuisance to neighboring properties or where safety and visibility are compromised. Treatment will be on an as-needed basis as ordered by the resident engineer.

The applicant proposes using a rock crusher on the project site during the construction of the proposed project and states that it will use a crusher which is licensed by the Department's Bureau of Air Quality and is operated in accordance with that license.

The Department finds that no significant source of air emissions has been identified with the exception of the rock crusher and dust emissions as described above, and the proposals for limiting emissions are adequate

19. ODORS:

The applicant stated that the clearing and construction phase of the proposed project will not create significant odors, other than from equipment exhaust. If burning of vegetation occurs, it will be under the supervision of an environmental or third-party inspector and will be accomplished in compliance with local and state open burning requirements.

The Department finds that the proposed project will not be a significant source of odors.

20. ALTERATION OF CLIMATE/WATER VAPOR:

The proposed project does not involve any significant sources of water vapor emissions.

L-25137-24-A-N  
L-25137-TG-B-N

41 of 60

21. ACCESS TO SUNLIGHT:

Chapter 375(13) recognizes that some existing structures utilize active or passive solar energy systems for purposes such as heating air or water, and that in those instances, it may be an unreasonable effect on existing uses to deny access to direct sunlight.

The applicant stated that no part of the proposed project will block access to direct sunlight for structures utilizing solar energy through active or passive systems.

Based on the applicant's submittal, the Department finds that the proposed project will not have an unreasonable effect on any existing solar energy uses.

22. SHADOW FLICKER:

In accordance with 38 M.R.S.A. § 484(10), an applicant must demonstrate that the proposed wind energy development has been designed to avoid unreasonable adverse shadow flicker effects. Shadow flicker caused by wind turbines is defined as alternating changes in light intensity caused by the moving blade casting shadows on the ground and stationary objects. Shadow flicker is the sun seen through a rotating wind turbine rotor. Shadow flicker does not occur when the sun is obscured by clouds or fog or when the turbine is not rotating. The spatial relationships between a wind turbine and receptor, as well as wind direction are key factors related to shadow flicker duration. At distances of greater than 1,000 feet between wind turbines and receptors, shadow flicker usually occurs where the rotor plane is in-line with the sun and receptor (as seen from the receptor), the cast shadows will be very narrow (blade thickness), of low intensity, and the shadows will move quickly past the stationary receptor. When the rotor plane is perpendicular to the sun-receptor "view line" the cast shadow of the blades will move within a circle equal to the turbine rotor diameter.

The applicant submitted a shadow flicker analysis as Section 26 of the application. This analysis was subsequently updated to reflect the modified turbine blades proposed for the project. The applicant utilized WindPRO, a wind modeling software program, to model expected shadow flicker effects on adjacent properties from the 12 proposed turbine locations. The applicant used historic sunshine data and wind data collected by the on-site meteorological tower. The applicant assumed the worse case scenario, that all receptors have a direct in-line view of the incoming shadow flicker sunlight. Further, the analysis does not take vegetative screening into account between a turbine and a receptor.

The Department generally recommends that an applicant conduct a shadow flicker model out to a distance of 1,000 feet or greater from a residential structure. As represented in Section 5, Table 2 gives the distances between the nearest turbine and the location of nearby receptors. The residential structure identified in the applicant's study as the closest to a turbine is approximately 2,447 feet from the nearest turbine. The furthest receptor studied was approximately 5,465 feet from the nearest turbine. There were 31 potentially-impacted receptors identified in this range.

L-25137-24-A-N  
L-25137-TG-B-N

42 of 60

The applicant submitted an easement option on one adjacent parcel. This property is undeveloped and actively managed as a timber lot. The easement giving the applicant the right to place one turbine nearer than 1.5 times the turbine height but no closer than 350 feet from the boundary of the parcel, cast shadows or shadow flicker from the proposed wind project onto the parcel, and the right to have sound generated from the project impact the parcel.

Maine currently has no numerical regulatory limits on exposure to shadow flicker; however, the industry commonly uses 30 hours per year as a limit to reduce nuisance complaints. The applicant's analysis of thirty-one potential shadow flicker receptors, using historical and on site modeling assumptions, indicated potential exposures between zero and 14 hours, 21 minutes per year. The applicant stated that when vegetation is taken into consideration, actual impacts are expected to be less.

The Department finds that the shadow flicker modeling conducted by the applicant is credible. Based upon the proposed project's location and design, the distance to the nearest shadow flicker receptor, and results of the shadow flicker analysis showing a maximum exposure of 14 hours, 21 minutes per year, the Department finds that the proposed project will not unreasonably cause shadow flicker to occur over adjacent properties.

23. PUBLIC SAFETY:

The proposed project will use GE 2.75 megawatt wind turbine generators. The turbines have been certified by TUV NORD, a wind power product certification authority, to withstand Class IIB and IIIA wind gusts, as defined by the International Electrotechnical Commission Standard 61400-1 "Wind Turbine Generator Systems-Part 1: Safety Requirements." The Standard considers an extreme wind speed at hub height of 52.5 meters per second (117 miles per hour). The applicant submitted evidence that the GE 2.75 wind turbine meets acceptable International safety standards in the form of a Statement of Compliance issued by TUV NORD dated February 4, 2010.

The Department recognizes that locating wind turbines a safe distance away from any occupied structures, public road or other public use area is of utmost importance. In establishing a recommended safety setback, the Department considered industry standards for wind energy production in climates similar to Maine, as well as the guidelines recommended by certifying agencies such as Det Norske Veritas. Based on these sources, the Department recommends that all wind turbines be set back from the property line, occupied structures or public areas at a minimum of 1.5 times the maximum blade height of the wind turbine. The maximum blade height of the GE 2.75-103 is approximately 448 feet from the ground to the tip of the fully extended turbine blade. Based on the Department setback specifications, the minimum setback distance to the nearest property line should be 672 feet. A review of the application indicates that all of the turbines except Turbine #11 are setback an adequate distance from the property boundaries. Turbine #11 is located 388 feet from the closest property boundary. The parcel abutting Turbine #11 is a large, actively managed timber lot. As described in

L-25137-24-A-N  
L-25137-TG-B-N

43 of 60

Section 22 above, the applicant has submitted an option for an easement on this parcel to provide the necessary safety setback for Turbine #11. The easement option indicates that the property owner does not object to the placement of a turbine closer than 1.5 times the turbine height from the property boundary. All other safety setbacks will be met on the applicant's own parcel.

Interested persons have argued that wind turbines pose a risk of fire which could pose an unreasonable safety risk. The applicable laws and rules under which the Department is reviewing this project have no specific criteria addressing fire safety; however, the applicant has stated that there have been only three confirmed fires among 16,000 operating 1.5 and 2.5 MW GE Turbines, and none of these resulted in significant fires that spread outside the turbine area. The applicant further states that there have been no reported fires on 2.5 to 2.75 MW GE turbines. The applicant also states it intends to monitor the turbines continuously, and coordinate with local authorities in the unlikely event of fire. The Department finds no evidence of a public safety risk from fire related to the proposed turbines.

The Department finds that the applicant has provided documentation in the form of standards of compliance by the manufacturer and certification by an engineer that the wind generation equipment has been designed to conform to applicable industry safety standards and has demonstrated that the proposed development has been sited such that it will not present an unreasonable safety hazard to adjacent properties or adjacent property uses. The Department further finds that the applicant submitted sufficient evidence which demonstrates that the proposed project has been sited with appropriate safety related setbacks from adjacent properties and existing uses provided that prior to project construction, the applicant submits a copy of the recorded easement to the Department.

24. DECOMMISSIONING PLAN:

The proposed wind turbine generators are designed and certified by independent agencies for a minimum expected operational life of 20 years. In order to facilitate and ensure appropriate removal of the wind generation equipment when it reaches the end of its useful life, the Department requires an applicant to demonstrate, in the form of a decommissioning plan, the means by which decommissioning will be accomplished. The applicant submitted a decommissioning plan as Section 29 of the application. The decommissioning plan includes a description of the trigger for implementing the decommissioning, a description of work required, an estimate of decommissioning costs, a schedule for contributions to its decommissioning fund and a demonstration of financial assurance.

- A. Description of trigger for implementation of decommissioning. The applicant states that the wind generation facility will be decommissioned when it ceases to generate electricity for a continuous period of twelve months. In the case of a force majeure event which is the cause of the project not generating electricity for 12 months the applicant may submit to the Department for review and approval reasonable evidence in support of a request that it not be required to decommission the project at that time.

L-25137-24-A-N  
L-25137-TG-B-N

44 of 60

- B. Description of work. The description of work contained in Section 29 of the application outlines how the turbines and other components of the proposed project will be dismantled and removed from the site. Subsurface components will be removed to a minimum of 24 inches below grade, facilities will be removed and salvaged, and disturbed areas will be re-seeded. At the time of decommissioning, the applicant must submit a plan for continued beneficial use of any wind energy development component proposed to be left on-site to the Department for review and approval.
- C. Cost estimates for decommissioning. The applicant stated that the total cost of decommissioning, minus salvage value, is estimated to be \$558,444. A detailed breakdown of decommissioning costs is included in Section 29 of the application.
- D. Financial assurance. The applicant proposed that it will ensure that financial assurance for decommissioning costs will be fully established by year 13 of operation. In addition, prior to year 13, the applicant will provide increasing levels of financial assurance according to the schedule outlined below in Table 4.

The applicant proposes to provide financial assurance in the form of a performance bond, surety bond, letter of credit parental guaranty or other acceptable form of financial guarantee. The initial financial assurance level of 20% will be in place prior to the commercial operation date and will be increased by 20% of the estimated total costs every three years until the financial assurance level reaches 100% of the total project decommissioning costs. The applicant stated that financial assurance will be in place at all times during the operation of the project according to the table below. The applicant proposes to reassess the estimated total decommissioning costs (decommissioning costs minus salvage value) prior to the end of years 6, 12, 18, 20 and each year thereafter. The updated estimated total decommissioning costs will be submitted to the Department for review and approval and the financial assurance will be adjusted to cover 100% of the revised total decommissioning costs.

Table 4.

Year of Operation	Financial Assurance Level % of total project Decommissioning costs	Reassess Total Project Decommissioning Cost at end of period
1 - 3	20%	-
4 - 6	40%	Yes
7 - 9	60%	-
10 - 12	80%	Yes
13 - 15	100%	-
16 - 18	100%	Yes
19 - 20	100%	Yes
21 end of life	100%	Every year

L-25137-24-A-N  
L-25137-TG-B-N

45 of 60

The applicant proposes to make the Department the obligee of any performance bond used to prove financial assurance. The Department will have the right to call the bond in the event of non-performance. The trigger for the Department's third party rights will be the dissolution of the project's owner or if the project ceases to generate electricity for a continuous period of twelve months, as described in (1) above, and the failure of the licensee to perform its decommissioning obligations under this permit. Upon decommissioning the site any remaining balance of the financial assurance will be returned to the applicant.

Based on the applicant's proposal outlined above, and in consideration of comments from interested persons, the Department finds that the applicant has made adequate provisions for demonstrating a decommissioning plan and a mechanism to execute the plan provided that the plan is implemented and that salvage values are reassessed every time the decommissioning costs are estimated in accordance with the schedule in Table 4 above.

25. TANGIBLE BENEFITS:

The applicant submitted a description of the tangible benefits to be provided by the Saddleback Ridge Wind Project as Section 28 of the application. In that description the applicant describes tangible benefits that the project will provide to the State of Maine and to the host community of Carthage, including economic benefits and environmental benefits. The applicant states that the project is expected to be assessed at approximately \$66 million, providing tax revenue to the host community.

The applicant states that the host community will also benefit through employment opportunities, the local purchase of materials and supplies, taxes paid on the project, and a proposed annual Community Benefit Fund payment. The applicant describes the employment benefits in part as follows:

“On average, the Project would employ 60 to 70 construction workers for five to six months and up to 100 workers during peak construction times. Materials located close to the site will be used as much as possible, giving local stone quarries and construction material suppliers procurement opportunities. In addition, local businesses such as motels, restaurants, gas stations, and retail stores will see increases in activity during construction. After construction is complete, the Project will employ a maintenance staff of two to three full-time workers. There will also be a need for ongoing road maintenance, plowing, and landscaping services.”

The applicant also states that the project will increase energy diversity, thereby helping to reduce electric price volatility in Maine. The applicant states that the project will help Maine meet its commitments under the Regional Greenhouse Gas Initiative, which establishes limits for emissions associated with the generation of electricity, and that it will have the capacity to provide enough emission-free energy to power more than 16,000 Maine households annually, with no air or water pollution and with no greenhouse gas emissions, a leading cause of global warming.

L-25137-24-A-N  
L-25137-TG-B-N

46 of 60

Community Benefits Fund. The applicant has agreed with the Town of Carthage to establish a Community Benefits Fund. This fund would be used at the Town's discretion to provide direct economic benefits to its citizens. The applicant's proposed contribution to the community benefit fund will be at least \$4,000 per turbine per year for the life of the project and will be administered by the Town of Carthage. The applicant states that the size of this fund may increase subject to availability of project resources. The Town of Carthage submitted a letter to the Department dated February 21, 2011, accepting the proposed community benefit fund.

Recreation Donation. The applicant initially proposed to donate \$60,000 to the Maine Bureau of Parks and Lands for a new playground at the beach and campground near Webb Lake in Mount Blue State Park. In comments dated December 9, 2010, the Department of Conservation, Bureau of Parks and Lands (BPL) notes that this proposal is above and beyond the minimum requirements of the law. BPL further stated that since negotiating the agreement, other potential funds have been identified for the playground so the donation should be restructured as a more general contribution to BPL, or more specifically for land acquisition in the vicinity of Mount Blue State Park.

Interested persons contend that the tangible benefits of the project are inadequate and specifically the donation to the Bureau of Parks and Lands is inadequate to compensate for the impacts to public views from the park. As noted in Section 6 above, views of the project from the park will be at distances of from 5.5 to over 8 miles. The Department's scenic consultant commented that the scenic impact to views from the park would be in the low-to-medium range or lower.

In response to the draft order interested persons raised questions about the proposed donation to the Bureau of Parks and Lands. BPL reviewed the draft order and stated that it still intended to accept the contribution from the developer for land protection efforts in this area.

The Department reviewed the concerns expressed by interested persons. Based upon consideration of all of the benefits proposed by the applicant, information in the record, and interested persons' comments, the Department finds that the applicant has demonstrated that the proposed project will provide significant tangible benefits to the host community and surrounding area pursuant to Title 35-A § 3454, provided that annual payments are made to the Town of Carthage and that prior to the start of construction a one time \$60,000 payment is made to the Maine Bureau of Parks and Lands for land acquisition projects in the area of Mount Blue State Park.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S.A. Sections 480-A et seq. and Section 401 of the Federal Water Pollution Control Act:

L-25137-24-A-N  
L-25137-TG-B-N

47 of 60

- A. The proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses.
- B. The proposed activity will not cause unreasonable erosion of soil or sediment.
- C. The proposed activity will not unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.
- D. The proposed activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life provided that the applicant submits a post-construction monitoring program, and that the applicant performs post-construction avian, bat and raptor monitoring at six turbine locations.
- E. The proposed activity will not unreasonably interfere with the natural flow of any surface or subsurface waters.
- F. The proposed activity will not violate any state water quality law including those governing the classifications of the State's waters.
- G. The proposed activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties.
- H. The proposed activity is not on or adjacent to a sand dune.
- I. The proposed activity is not on an outstanding river segment as noted in 38 M.R.S.A. Section 480-P.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S.A. Sections 481 et seq. and 35-A Sections 3451 et seq.:

- A. The applicant has provided adequate evidence of title, right or interest, financial capacity and technical ability to develop the project in a manner consistent with state environmental standards provided that, prior to the start of construction, (1) the applicant submits copies of the recorded deeds for property currently under purchase options and of the executed transmission easement as described in Finding 2; and of the executed sound, shadow flicker and public safety easement as described in Findings 5 and 23 and (2) the applicant submits evidence that it has secured financing for the project as described in Finding 3.
- B. The applicant has made adequate provision for fitting the development harmoniously into the existing natural environment and the development will not adversely affect existing uses, air quality, water quality or other natural resources in the municipality or in neighboring municipalities provided that the applicant operates the project with two

L-25137-24-A-N  
L-25137-TG-B-N

48 of 60

turbines operating in reduced sound power mode as shown in Table 1 and submits the compliance locations for review and approval to the Department, that the compliance locations are fully operational prior to the commencement of operation of the facility, that the applicant implements the complaint protocol outlined above, and that the applicant submits sound level monitoring reports in accordance with the post-construction monitoring program, all as described in Finding 5; provided that the applicant complies with the post-construction VMP, and all visual screening buffers and stormwater treatment buffers are marked on the ground as described in Finding 9; and provided all required deed restrictions are recorded and copies of the recorded deed restrictions, including the plot plans, are submitted as described in Finding 11.

- C. The proposed development will be built on soil types which are suitable to the nature of the undertaking and will not cause unreasonable erosion of soil or sediment nor inhibit the natural transfer of soil provided that the applicant submits a final plan for pre-blast surveys and well monitoring as described in Finding 10.
- D. The proposed development meets the standards for stormwater management in Section 420-D and the standard for erosion and sedimentation control in Section 420-C provided that the applicant holds a pre-construction meeting, hires a third-party inspector to oversee project construction, adheres to the required protocol for inspections of the ditch turnouts and treatment berms, permanently marks buffers on the ground and submits a copy of the recorded deed restrictions, all as described in Finding 11.
- E. The proposed development will not pose an unreasonable risk that a discharge to a significant groundwater aquifer will occur provided that the applicant submits a site drawing showing the location of the O&M building well and confirming the wastewater disposal field location as described in Finding 12.
- F. The applicant has made adequate provision of utilities, including water supplies, sewerage facilities, solid waste disposal and roadways required for the development and the development will not have an unreasonable adverse effect on the existing or proposed utilities and roadways in the municipality or area served by those services.
- G. The proposed development will not unreasonably cause or increase the flooding of the alteration area or adjacent properties nor create an unreasonable flood hazard to any structure.
- H. The proposed development will not significantly compromise views from a scenic resource of state or national significance such that the development will have an unreasonable adverse effect on the scenic character or existing uses related to scenic character of the area.
- I. The proposed development will not unreasonably cause shadow flicker effects to occur over adjacent properties.

L-25137-24-A-N  
L-25137-TG-B-N

49 of 60

- J. The proposed development will not present an unreasonable safety hazard to adjacent properties or adjacent property uses.
- K. The applicant has made adequate provision to achieve decommissioning of the wind power facility.
- L. The proposed development will provide significant tangible benefits to the host community and surrounding area, provided that the applicant implements the Community Benefit Fund described in Finding 25 and makes a one time contribution of \$60,000 to the Bureau of Parks and Lands.

THEREFORE, the Department APPROVES the application of SADDLEBACK RIDGE WIND LLC to construct a 33 MW wind energy development project, known as Saddleback Ridge Wind Project, located in the Towns of Carthage, Canton and Dixfield, as described above, SUBJECT TO THE FOLLOWING CONDITIONS and all applicable standards and regulations:

1. The Standard Conditions of Approval, a copy attached.
2. In addition to any specific erosion control measures described in this order, the applicant shall take all necessary actions to ensure that its activities or those of its agents do not result in noticeable erosion of soils or fugitive dust emissions on the site during the construction and operation of the project covered by this approval.
3. Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.
4. The applicant or other responsible party shall, within three months of the expiration of each five-year interval from the date of this Order, submit a report certifying that the items listed in Department Rules, Chapter 500, Appendix B(4) have been completed in accordance with the approved plans.
5. Prior to the start of construction, the applicant shall provide copies of the recorded deeds for the two properties currently under purchase options and three executed easements for the transmission line corridor, and one executed sound and public safety setback easement to the Department for review.
6. Prior to the start of construction, the applicant shall submit evidence that it has secured final financing for the project in accordance with 38 MRSA §484(1) and Chapter 373(1), to the Bureau of Land and Water Quality for review and approval.
7. The applicant shall operate the project with turbines 8 and 9 operating in reduced sound power mode as shown in Finding 5, Table 1.

L-25137-24-A-N  
L-25137-TG-B-N

50 of 60

8. Prior to the commencement of operation, the applicant shall submit the sound level compliance locations to the Bureau of Land and Water Quality for review and approval.
9. Prior to the commencement of operation, the sound level compliance locations shall be fully operational.
10. Prior to the commencement of operation, the applicant shall implement the sound level complaint response protocol as outlined in Finding 5.G. The applicant shall maintain a toll free noise complaint hotline 24 hours a day, 7 days per week. The hotline number shall be clearly noticed to all abutters, posted in prominent locations around the project site and at the Municipal Offices. For those complaints that include sufficient information to warrant an investigation, the applicant must, within two business days of receipt of the complaint, collect the complainant information (name, location, time of complaint and other complaint information) and the meteorological and operational data from the project at the time of the complaint, and submit that information to the Department and the complainant. At the Department's request, the applicant shall plot complaint locations and key information on a project area map to evaluate complaints for a consistent pattern of site, operating and weather conditions; and submit this analysis to the Department with a comparison of these patterns to the compliance protocol outlined above to determine whether testing under additional site and operating conditions is necessary and if so, shall propose a testing plan that addresses the locations and the conditions under which the pattern of complaints has occurred. The applicant shall be responsible to reimburse the Department for all costs incurred by the Department in the review of any noise related complaint. If the Department finds that the project is not in compliance with this Order, the applicant shall take short term action immediately to adjust operations to reduce sound output to acceptable levels under Chapter 375 (10). Within 60 days of a determination of non-compliance by the Department, the applicant shall submit, for review and approval, a compliance plan that proposes actions to bring the project into compliance at all the protected locations surrounding the development.
11. The applicant shall submit sound level monitoring reports in accordance with the post-construction monitoring program described in Finding 5. If the Department finds that the project is not in compliance with this Order, the applicant shall take short term action immediately to adjust operations to reduce sound output to acceptable levels under Chapter 375 (10). Within 60 days of a determination of non-compliance by the Department, the applicant shall submit, for review and approval, a compliance plan that proposes actions to bring the project into compliance at all the protected locations surrounding the development.
12. The applicant shall develop a post-construction avian, bat, and raptor post-construction monitoring plan in consultation with the Department and the Maine Department of Inland Fisheries and Wildlife. Prior to the commencement of operation of the project, the applicant shall submit the final plan to the Department for review and approval.
13. The applicant shall perform post-construction avian, bat and raptor monitoring in accordance with the plan approved pursuant to Special Condition #12 of this Order and

L-25137-24-A-N  
L-25137-TG-B-N

51 of 60

- shall submit reports to the Department in accordance with the schedule established in the plan.
14. All in-stream work shall be conducted between July 15 and October 1.
  15. The applicant shall comply with the post-construction Vegetation Management Plan submitted with the application.
  16. The applicant shall retain the services of a third-party inspector in accordance with the Special Condition for Third-Party Inspection Program, which is attached to this Order.
  17. Prior to the start of construction, the applicant shall conduct a pre-construction meeting. This meeting shall be attended by the applicant's representative, Department staff, the design engineer, the contractor, and the third-party inspector.
  18. Prior to the commencement of operation, the applicant shall execute and record all required deed restrictions with the Registry of Deeds, including the appropriate buffer (stormwater) deed restrictions, all with attached plot plans, drawn to scale.
  19. Prior to the start of construction, the location of all buffers (including natural resource buffers and stormwater buffers) shall be clearly marked in the field using durable signs and/or flagging that is visible to construction personnel. The location of protective buffers shall be marked on construction drawings and restrictions within these buffers shall be explained during the pre-construction meeting with the contractor. The applicant's environmental inspector will be responsible for ensuring signs are maintained and visible to construction personnel during the construction phase of the project. Locations of protective buffers will be permanently marked on the ground following the construction phase of the project.
  20. Prior to any blasting on the site, the applicant shall submit a plan for a pre-blast survey identifying any structures within 2,000 feet and any active wells within 3,500 feet of any blasting area, to the Department for review and approval. Owners of active wells shall be notified of the opportunity to enroll in a well monitoring program as described in Finding 10. The applicant shall submit a consultation draft to the Department for review prior to the submittal of the final plan.
  21. Prior to the commencement of operation, the applicant shall submit an operational SPCC plan to the Department for review.
  22. The applicant shall retain the services of a professional engineer to inspect the construction and stabilization of the stone bermed level spreaders and road ditch turnouts. The applicant shall submit the inspecting engineer's report and notify the Department within 14 days of completion of the stone bermed level spreaders and turnouts.
  23. Within 60 days of the installation of the well and wastewater disposal field, the applicant shall submit a site drawing showing the location of both the O&M building well and the

L-25137-24-A-N  
L-25137-TG-B-N

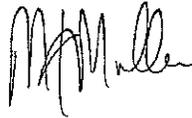
52 of 60

wastewater disposal field and a statement confirming that they were constructed at the approved location.

24. The applicant shall make annual payments, to the Town of Carthage in accordance with the terms of the Community Benefit Fund.
25. Prior to commencement of project operation the applicant shall make a contribution of \$60,000 to the Department of Conservation, Bureau of Parks and Lands, for land acquisition projects in the vicinity of Mount Blue State Park,.
26. The applicant shall execute the decommissioning plan as described in Finding 24 and the salvage values shall be reassessed every time the decommissioning costs are estimated in accordance with Table 4 of this Department Order.

THIS APPROVAL DOES NOT CONSTITUTE OR SUBSTITUTE FOR ANY OTHER REQUIRED STATE, FEDERAL OR LOCAL APPROVALS NOR DOES IT VERIFY COMPLIANCE WITH ANY APPLICABLE SHORELAND ZONING ORDINANCES.

DEPARTMENT OF ENVIRONMENTAL PROTECTION



This permit is digitally signed by Michael Mullen on behalf of Acting Commissioner Patricia Aho. It is digitally signed pursuant to 10 M.R.S.A. § 9418. It has been filed with the Board of Environmental Protection as of the signature date. 2011.10.06 14:09:01 -04'00'

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES...  
l25137anbn/ats72710&72711

L-25137-24-A-N  
L-25137-TG-B-N

53 of 60

**DEP SITE LOCATION OF DEVELOPMENT (SITE) STANDARD CONDITIONS  
STRICT CONFORMANCE WITH THE STANDARD AND SPECIAL CONDITIONS OF THIS  
APPROVAL IS NECESSARY FOR THE PROJECT TO MEET THE STATUTORY CRITERIA FOR  
APPROVAL.**

1. This approval is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from the plans, proposals and supporting documents is subject to the review and approval of the Board prior to implementation. Further subdivision of proposed lots by the applicant or future owners is specifically prohibited, without prior approval by the Board of Environmental Protection, and the applicant shall include deed restrictions to this effect.
2. The applicant shall secure and comply with all applicable Federal, State and local licenses, permits, authorizations, conditions, agreements, and orders, prior to or during construction and operation as appropriate.
3. The applicant shall submit all reports and information requested by the Board or Department demonstrating that the applicant has complied or will comply with all conditions of this approval. All preconstruction terms and conditions must be met before construction begins.
4. Advertising relating to matters included in this application shall refer to this approval only if it notes that the approval has been granted **WITH CONDITIONS**, and indicates where copies of those conditions may be obtained.
5. Unless otherwise provided in this approval, the applicant shall not sell, lease, assign or otherwise transfer the development or any portion thereof without prior written approval of the Board where the purpose or consequence of the transfer is to transfer any of the obligations of the developer as incorporated in this approval. Such approval shall be granted only if the applicant or transferee demonstrates to the Board that the transferee has the technical capacity and financial ability to comply with conditions of this approval and the proposals and plans contained in the application and supporting documents submitted by the applicant.
6. If the construction or operation of the activity is not begun within two years, this approval shall lapse and the applicant shall reapply to the Board for a new approval. The applicant may not begin construction or operation of the development until a new approval is granted. Reapplications for approval shall state the reasons why the development was not begun within two years from the granting of the initial approval and the reasons why the applicant will be able to begin the activity within two years from the granting of a new approval, if granted. Reapplications for approval may include information submitted in the initial application by reference.
7. If the approved development is not completed within five years from the date of the granting of approval, the Board may reexamine its approval and impose additional terms or conditions or prescribe other necessary corrective action to respond to significant changes in circumstances which may have occurred during the five-year period.
8. A copy of this approval must be included in or attached to all contract bid specifications for the development.
9. Work done by a contractor pursuant to this approval shall not begin before the contractor has been shown by the developer a copy of this approval. (2/81)/Revised November 1, 1979

L-25137-24-A-N  
L-25137-TG-B-N

54 of 60



## Natural Resource Protection Act (NRPA) Standard Conditions

THE FOLLOWING STANDARD CONDITIONS SHALL APPLY TO ALL PERMITS GRANTED UNDER THE NATURAL RESOURCE PROTECTION ACT, TITLE 38, M.R.S.A. SECTION 480-A ET. SEQ. UNLESS OTHERWISE SPECIFICALLY STATED IN THE PERMIT.

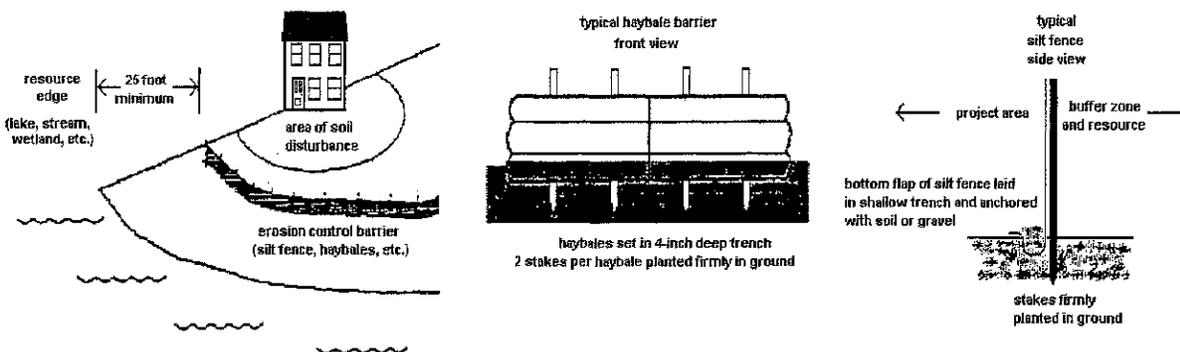
- A. Approval of Variations From Plans. The granting of this permit is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from these plans, proposals, and supporting documents is subject to review and approval prior to implementation.
- B. Compliance With All Applicable Laws. The applicant shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate.
- C. Erosion Control. The applicant shall take all necessary measures to ensure that his activities or those of his agents do not result in measurable erosion of soils on the site during the construction and operation of the project covered by this Approval.
- D. Compliance With Conditions. Should the project be found, at any time, not to be in compliance with any of the Conditions of this Approval, or should the applicant construct or operate this development in any way other the specified in the Application or Supporting Documents, as modified by the Conditions of this Approval, then the terms of this Approval shall be considered to have been violated.
- E. Initiation of Activity Within Two Years. If construction or operation of the activity is not begun within two years, this permit shall lapse and the applicant shall reapply to the Board for a new permit. The applicant may not begin construction or operation of the activity until a new permit is granted. Reapplications for permits shall state the reasons why the applicant will be able to begin the activity within two years form the granting of a new permit, if so granted. Reapplications for permits may include information submitted in the initial application by reference.
- F. Reexamination After Five Years. If the approved activity is not completed within five years from the date of the granting of a permit, the Board may reexamine its permit approval and impose additional terms or conditions to respond to significant changes in circumstances which may have occurred during the five-year period.
- G. No Construction Equipment Below High Water. No construction equipment used in the undertaking of an approved activity is allowed below the mean high water line unless otherwise specified by this permit.
- H. Permit Included In Contract Bids. A copy of this permit must be included in or attached to all contract bid specifications for the approved activity.
- E. Permit Shown To Contractor. Work done by a contractor pursuant to this permit shall not begin before the contractor has been shown by the applicant a copy of this permit.

Revised (4/92/DEP LW0428

**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**Erosion Control for Homeowners**

***Before Construction***

1. If you have hired a contractor, make sure you discuss your permit-by-rule with them. Talk about what measures they plan to take to control erosion. Everybody involved should understand what the resource is, and where it is located. Most people can identify the edge of a lake or river. However, the edges of wetlands are often not so obvious. Your contractor may be the person actually pushing dirt around, but you are both responsible for complying with the permit-by-rule.
2. Call around to find where erosion control materials are available. Chances are your contractor has these materials already on hand. You probably will need silt fence, hay bales, wooden stakes, grass seed (or conservation mix), and perhaps filter fabric. Places to check for these items include farm & feed supply stores, garden & lawn suppliers, and landscaping companies. It is not always easy to find hay or straw during late winter and early spring. It also may be more expensive during those times of year. Plan ahead -- buy a supply early and keep it under a tarp.
3. Before any soil is disturbed, make sure an erosion control barrier has been installed. The barrier can be either a silt fence, a row of staked hay bales, or both. Use the drawings below as a guide for correct installation and placement. The barrier should be placed as close as possible to the soil-disturbance activity.
4. If a contractor is installing the erosion control barrier, double check it as a precaution. Erosion control barriers should be installed "on the contour", meaning at the same level or elevation across the land slope, whenever possible. This keeps stormwater from flowing to the lowest point along the barrier where it can build up and overflow or destroy the barrier.



***During Construction***

1. Use lots of hay or straw mulch on disturbed soil. The idea behind mulch is to prevent rain from striking the soil directly. It is the force of raindrops hitting the bare ground that makes the soil begin to move downslope with the runoff water, and cause erosion. More than 90% of erosion is prevented by keeping the soil covered.
2. Inspect your erosion control barriers frequently. This is especially important after a rainfall. If there is muddy water leaving the project site, then your erosion controls are not working as intended. You or your contractor then need to figure out what can be done to prevent more soil from getting past the barrier.
3. Keep your erosion control barrier up and maintained until you get a good and healthy growth of grass and the area is permanently stabilized.

L-25137-24-A-N  
L-25137-TG-B-N

56 of 60

Special Condition  
for  
Third Party Inspection Program

L-25137-24-A-N  
L-25137-TG-B-N

57 of 60

## THIRD-PARTY INSPECTION PROGRAM

### 1.0 THE PURPOSE OF THE THIRD-PARTY INSPECTION

As a condition of this permit, the Maine Department of Environmental Protection (MDEP) requires the permit applicant to retain the services of a third-party inspector to monitor compliance with MDEP permit conditions during construction. The objectives of this condition are as follows:

- 1) to ensure that all construction and stabilization activities comply with the permit conditions and the MDEP-approved drawings and specifications,
- 2) to ensure that field decisions regarding erosion control implementation, stormwater system installation, and natural resource protection are based on sound engineering and environmental considerations, and
- 3) to ensure communication between the contractor and MDEP regarding any changes to the development's erosion control plan, stormwater management plan, or final stabilization plan.

This document establishes the inspection program and outlines the responsibilities of the permit applicant, the MDEP, and the inspector.

### 2.0 SELECTING THE INSPECTOR

At least 30 days prior to starting any construction activity on the site, the applicant will submit the names of at least two inspector candidates to the MDEP. Each candidate must meet the minimum qualifications listed under section 3.0. The candidates may not be employees, partners, or contracted consultants involved with the permitting of the project or otherwise employed by the same company or agency except that the MDEP may accept subcontractors who worked for the project's primary consultant on some aspect of the project such as, but not limited to, completing wetland delineations, identifying significant wildlife habitats, or conducting geotechnical investigations, but who were not directly employed by the applicant, as Third Party inspectors on a case by case basis. The MDEP will have 15 days from receiving the names to select one of the candidates as the inspector or to reject both candidates. If the MDEP rejects both candidates, then the MDEP shall state the particular reasons for the rejections. In this case, the applicant may either dispute the rejection to the Director of the Bureau of Land and Water Quality or start the selection process over by nominating two, new candidates.

### 3.0 THE INSPECTOR'S QUALIFICATIONS

Each inspector candidate nominated by the applicant shall have the following minimum qualifications:

- 1) a degree in an environmental science or civil engineering, or other demonstrated expertise,
- 2) a practical knowledge of erosion control practices and stormwater hydrology,
- 3) experience in management or supervision on large construction projects,
- 4) the ability to understand and articulate permit conditions to contractors concerning erosion control or stormwater management,
- 5) the ability to clearly document activities being inspected,
- 6) appropriate facilities and, if necessary, support staff to carry out the duties and responsibilities set forth in section 6.0 in a timely manner, and
- 7) no ownership or financial interest in the development other than that created by being retained as the third-

L-25137-24-A-N  
L-25137-TG-B-N

58 of 60

party inspector.

#### 4.0 INITIATING THE INSPECTOR'S SERVICES

The applicant will not formally and finally engage for service any inspector under this permit condition prior to MDEP approval or waiver by omission under section 2.0. No clearing, grubbing, grading, filling, stockpiling, or other construction activity will take place on the development site until the applicant retains the MDEP-approved inspector for service.

#### 5.0 TERMINATING THE INSPECTOR'S SERVICES

The applicant will not terminate the services of the MDEP-approved inspector at any time between commencing construction and completing final site stabilization without first getting written approval to do so from the MDEP.

#### 6.0 THE INSPECTOR'S DUTIES AND RESPONSIBILITIES

The inspector's work shall consist of the duties and responsibilities outlined below.

- 1) Prior to construction, the inspector will become thoroughly familiar with the terms and conditions of the state-issued site permit, natural resources protection permit, or both.
- 2) Prior to construction, the inspector will become thoroughly familiar with the proposed construction schedule, including the timing for installing and removing erosion controls, the timing for constructing and stabilizing any basins or ponds, and the deadlines for completing stabilization of disturbed soils.
- 3) Prior to construction, the inspector will become thoroughly familiar with the project plans and specifications, including those for building detention basins, those for installing the erosion control measures to be used on the site, and those for temporarily or permanently stabilizing disturbed soils in a timely manner.
- 4) During construction, the inspector will monitor the contractor's installation and maintenance of the erosion control measures called for in the state permit(s) and any additional measures the inspector believes are necessary to prevent sediment discharge to off-site properties or natural resources. This direction will be based on the approved erosion control plan, field conditions at the time of construction, and the natural resources potentially impacted by construction activities.
- 5) During construction, the inspector will monitor the contractor's construction of the stormwater system, including the construction and stabilization of ditches, culverts, detention basins, water quality treatment measures, and storm sewers.
- 6) During construction, the inspector will monitor the contractor's installation of any stream or wetland crossings.
- 7) During construction, the inspector will monitor the contractor's final stabilization of the project site.
- 8) During construction, the inspector will keep logs recording any rain storms at the site, the contractor's activities on the site, discussions with the contractor(s), and possible violations of the permit conditions.
- 9) During construction, the inspector will inspect the project site at least once a week and before and after any significant rain event. The inspector will photograph all protected natural resources both before and after construction and will photograph all areas under construction. All photographs will be identified with, at a minimum the date the photo was taken, the location and the name of the individual taking the photograph.  
*Note: the frequency of these inspections as contained in this condition may be varied to best address particular project needs.*
- 10) During construction, the inspector will prepare and submit weekly (*or other frequency*) inspection reports to

L-25137-24-A-N  
L-25137-TG-B-N

59 of 60

the MDEP.

- 11) During construction, the inspector will notify the designated person at the MDEP immediately of any sediment-laden discharges to a protected natural resource or other significant issues such as the improper construction of a stormwater control structure or the use of construction plans not approved by the MDEP.

## 7.0 INSPECTION REPORTS

The inspector will submit weekly written reports (*or at another designated frequency*), including photographs of areas that are under construction, on a form provided by the Department to the designated person at the MDEP. Each report will be due at the MDEP by the Friday (*or other designated day*) following the inspection week (Monday through Sunday).

The weekly report will summarize construction activities and events on the site for the previous week as outlined below.

- 1) The report will state the name of the development, its permit number(s), and the start and end dates for the inspection week (Monday through Sunday).
- 2) The report will state the date(s) and time(s) when the inspector was on the site making inspections.
- 3) The report will state the date(s) and approximate duration(s) of any rainfall events on the site for the week.
- 4) The report will identify and describe any erosion problems that resulted in sediment leaving the property or sediment being discharged into a wetland, brook, stream, river, lake, or public storm sewer system. The report will describe the contractor's actions to repair any damage to other properties or natural resources, actions to eliminate the erosion source, and actions to prevent future sediment discharges from the area.
- 5) The report will list the buildings, roads, parking lots, detention basins, stream crossings or other features open to construction for the week, including those features or areas actively worked and those left unworked (dormant).
- 6) For each area open to construction, the report will list the date of initial soil disturbance for the area.
- 7) For each area open to construction, the report will note which areas were actively worked that week and which were left dormant for the week. For those areas actively worked, the report will briefly state the work performed in the area that week and the progress toward final stabilization of the area -- e.g. "grubbing in progress", "grubbing complete", "rough grading in progress", "rough grading complete", "finish grading in progress", "finish grading complete", "permanent seeding completed", "area fully stable and temporary erosion controls removed", etc.
- 8) For each area open to construction, the report will list the erosion and sedimentation control measures installed, maintained, or removed during the week.
- 9) For each erosion control measure in-place, the report will note the condition of the measure and any maintenance performed to bring it to standard.

L-25137-24-A-N  
L-25137-TG-B-N

60 of 60

**Third Party Inspection Form**

**This report is prepared by a Third Party Inspector to meet the requirements of the Third Party Inspector Condition attached as a Special Condition to the Department Order that was issued for the project identified below. The information in this report/form is not intended to serve as a determination of whether the project is in compliance with the Department permit or other applicable Department laws and rules. Only Department staff may make that determination.**

TO: <i>PM, Maine DEP (@maine.gov)</i>	FROM:
PROJECT NAME/ LOCATION:	DEP #:
DATE OF INSPECTION:	DATE OF REPORT:
WEATHER:	CONDITIONS:

**SITE CHARACTERISTICS:**

# ACRES OPEN:	# ACRES ACTIVE:	# ACRES INACTIVE:
LOCATION OF OPEN LAND:	LOCATION OF ACTIVE LAND:	LOCATION OF INACTIVE LAND:
OPEN SINCE:	OPEN SINCE:	OPEN SINCE:

**PROGRESS OF WORK:**

INSPECTION OF:	Satisfactory	Minor Deviation (corrective action required)	Unsatisfactory (include photos)
STORMWATER CONTROL (VEGETATIVE & STRUCTURAL BMP'S)			
EROSION & SEDIMENTATION CONTROL (TEMPORARY & PERMANENT BMP'S)			
OTHER: (PERMIT CONDITIONS, ENGINEERING DESIGN, ETC.)			

COMMENTS/CORRECTIVE ACTIONS TAKEN (attach additional sheets as necessary):

Photos (must be labeled with date, photographer and location):

Cc:		
<i>Original and all copies were sent by email only.</i>		



**DEP INFORMATION SHEET**  
**Appealing a Commissioner's Licensing Decision**

**Dated: May 2004**

**Contact: (207) 287-2811**

**SUMMARY**

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner: (1) in an administrative process before the Board of Environmental Protection (Board); or (2) in a judicial process before Maine's Superior Court. This INFORMATION SHEET, in conjunction with consulting statutory and regulatory provisions referred to herein, can help aggrieved persons with understanding their rights and obligations in filing an administrative or judicial appeal.

**I. ADMINISTRATIVE APPEALS TO THE BOARD**

**LEGAL REFERENCES**

DEP's General Laws, 38 M.R.S.A. § 341-D (4), and its Rules Concerning the Processing of Applications and Other Administrative Matters (Chapter 2), 06-096 CMR 2.24 (April 1, 2003).

**HOW LONG YOU HAVE TO SUBMIT AN APPEAL TO THE BOARD**

The Board must receive a written notice of appeal within 30 calendar days of the date on which the Commissioner's decision was filed with the Board. Appeals filed after 30 calendar days will be rejected.

**HOW TO SUBMIT AN APPEAL TO THE BOARD**

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, c/o Department of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017; faxes are acceptable for purposes of meeting the deadline when followed by receipt of mailed original documents within five (5) working days. Receipt on a particular day must be by 5:00 PM at DEP's offices in Augusta; materials received after 5:00 PM are not considered received until the following day. The person appealing a licensing decision must also send the DEP's Commissioner and the applicant a copy of the documents. All the information listed in the next section must be submitted at the time the appeal is filed. Only the extraordinary circumstances described at the end of that section will justify evidence not in the DEP's record at the time of decision being added to the record for consideration by the Board as part of an appeal.

**WHAT YOUR APPEAL PAPERWORK MUST CONTAIN**

The materials constituting an appeal must contain the following information at the time submitted:

1. *Aggrieved Status.* Standing to maintain an appeal requires the appellant to show they are particularly injured by the Commissioner's decision.
2. *The findings, conclusions or conditions objected to or believed to be in error.* Specific references and facts regarding the appellant's issues with the decision must be provided in the notice of appeal.
3. *The basis of the objections or challenge.* If possible, specific regulations, statutes or other facts should be referenced. This may include citing omissions of relevant requirements, and errors believed to have been made in interpretations, conclusions, and relevant requirements.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.

5. *All the matters to be contested.* The Board will limit its consideration to those arguments specifically raised in the written notice of appeal.
6. *Request for hearing.* The Board will hear presentations on appeals at its regularly scheduled meetings, unless a public hearing is requested and granted. A request for public hearing on an appeal must be filed as part of the notice of appeal.
7. *New or additional evidence to be offered.* The Board may allow new or additional evidence as part of an appeal only when the person seeking to add information to the record can show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process or show that the evidence itself is newly discovered and could not have been presented earlier in the process. Specific requirements for additional evidence are found in Chapter 2, Section 24(B) (5)

#### **OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD**

1. *Be familiar with all relevant material in the DEP record.* A license file is public information made easily accessible by DEP. Upon request, the DEP will make the material available during normal working hours, provide space to review the file, and provide opportunity for photocopying materials. There is a charge for copies or copying services.
2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer questions regarding applicable requirements.
3. *The filing of an appeal does not operate as a stay to any decision.* An applicant proceeding with a project pending the outcome of an appeal runs the risk of the decision being reversed or modified as a result of the appeal.

#### **WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD**

The Board will formally acknowledge initiation of the appeals procedure, including the name of the DEP project manager assigned to the specific appeal, within 15 days of receiving a timely filing. The notice of appeal, all materials accepted by the Board Chair as additional evidence, and any materials submitted in response to the appeal will be sent to Board members along with a briefing and recommendation from DEP staff. Parties filing appeals and interested persons are notified in advance of the final date set for Board consideration of an appeal or request for public hearing. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision. The Board will notify parties to an appeal and interested persons of its decision.

## **II APPEALS TO MAINE SUPERIOR COURT**

Maine law allows aggrieved persons to appeal final Commissioner licensing decisions to Maine's Superior Court, see 38 M.R.S.A. § 346(1); 06-096 CMR 2.26; 5 M.R.S.A. § 11001; & MRCivP 80C. Parties to the licensing decision must file a petition for review within 30 days after receipt of notice of the Commissioner's written decision. A petition for review by any other person aggrieved must be filed within 40-days from the date the written decision is rendered. The laws cited in this paragraph and other legal procedures govern the contents and processing of a Superior Court appeal.

**ADDITIONAL INFORMATION:** If you have questions or need additional information on the appeal process, contact the DEP's Director of Procedures and Enforcement at (207) 287-2811.

---

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.

---

