

**Highland Wind Project**  
**LURC Development Permit DP 4862**  
**Compiled Agency Review Comments, Part 2**  
**April 20, 2011**

This document contains the agency review comments submitted by the Maine Department of Environmental Protection, Public Utilities Commission, Bureau of Parks and Lands, and Historic Preservation Commission. Review comments provided by LURC's third party review sound expert will be supplied under separate cover.

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**Maine Department of Environmental Protection**

**Site Location of Development**  
**TECHNICAL REVIEW MEMORANDUM**  
*Bureau of Land and Water Quality*

TO: **Marcia Spencer-Famous, Project Manager, LURC**  
FROM: **David A. Waddell -- Division of Watershed Management**  
DATE: **April 14, 2011**  
RE: **Highland Plt – Highland Wind Project**

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**APPLICANT: Highland Wind LLC**

**Application #:** DP-4862

**Town:** Highland Plt. and Pleasant Ridge Plt.

**Engineer who prepared application:** Stantec / Sewall Corp

**Parcel Size:** \_\_\_\_\_

**Site Description:** Wooded hillsides and tops with steep slopes.

**Project description:** 39 Wind Power turbines, Substation, 115kV Power Line, O+M Building, Access Roads

**Size of new impervious area:** \_\_\_\_ acres

**Size of new developed area:** \_\_\_\_ acres

**Watershed (waterbody):** Gilman Pond, Carrabassett River, and Kennebec River

**Watershed type:** sensitive / threatened lake and other

**PLANS USED FOR REVIEW**

Pre-development: Plan Sheet C-701 and C-702, "Pre Development Drainage Plan," dated 12/20/10, no revisions.

Post-development: Plan Sheet C-702, "Post Development Drainage Plan," dated 12/20/10, no revisions.

Erosion and Sediment Control Plans: Plan Sheets in the 400, 500, and 600, "Erosion Sedimentation Control Plan," dated 11/12/2010, revised 1/25/2011.

Note: Other plans may have been reviewed that are not noted here.

**STORMWATER MANAGEMENT**

The applicant is proposing a 39 turbine wind power project in Highland and Pleasant Ridge Plantation called Highland Wind Project. This project lies within the watersheds of Gilman Pond, Carrabassett River, and Kennebec River. This proposed project will create \_\_\_ acres of developed area and \_\_\_ acres of impervious area. This project has been required to meet the “Stormwater Law” rules and as such must meet the Basic, General, and Flooding Standards. Under the General Standards the applicant is applying the phosphorus methodology to address impacts to Gilman Pond. As such, the applicant is required to use the Phosphorous Methodology outlined in "Phosphorous Control in Lake Watersheds: A Technical Guide to Evaluating New Development" to assess the development.

This project is being reviewed under the 2006 Stormwater Management rules and the design and sizing of the proposed BMPs for this project are based on the “Stormwater Management for Maine” January 2006.

Stormwater quality treatment will be achieved with numerous roadside, ditch turnout, and stone berm level lip spreader buffers, and two grassed underdrained soil filters. Stormwater flooding mitigation will be achieved with disconnected impervious area and lengthening of flow paths.

**The following comments need to be addressed:**

**ENGINEERING**

Please direct me to the project SPCC plan. I was unable to find one for this project for either construction operation nor operations and maintenance.. For the construction SPCC plan, please address the storage and containment of materials related to construction (such as paint, solvents, grease, etc.) and disposal of construction debris. Consider including other housekeeping measures like dust suppression that are not typical for other sections of the application.

My review relies heavily on the contour information provided with the application. It is understood due to the nature of the project that during construction changes may be necessary to accommodate inaccuracies in the contour information, soils, or to accommodate infrastructure needs. Small changes in the locations of drainage / treatment structures to improve the treatment provided can be approved through the third party inspector. A cover letter outlining the changes should be submitted to the Commission for the project file at the end of construction. For changes that go beyond the scope above consider the following condition:

**Proposed Condition:** The applicant will retain the services of a professional engineer to provide “as-built” plans that detail any portions of the project that significantly deviate from the approved plans. Any changes in layout, grading, stormwater system, impervious area, or other changes that affect the stormwater quality need to be located and addressed as to how these changes have been treated and meet the general standard. Significant changes in the proposed project may trigger the need for an amendment of the approved department order. This requirement is for the portion of the project constructed as

common property. The applicant's agent will notify the department in writing within 14 days of final acceptance of the project to state that the project has been completed. Accompanying the engineer's notification must be updated project plan sheets (if necessary), a report on the changes in treatment and how they meet standard (if necessary), and a copy of the Notice of Termination (NOT) for the project.

### **BASIC STANDARDS**

***Note:** As always the applicant's erosion control plan is a good starting point for providing protection during construction. However, based on site and weather conditions during construction, additional erosion and sediment control measures may be necessary to stop soil from leaving the site. In addition, other measures may be necessary for winter construction. All areas of instability and erosion must be repaired immediately during construction and need to be maintained until the site is fully stabilized or vegetation is established. Approval of this plan does not authorize discharges from the site.*

1. Plan Sheet C-4: super elevated road detail shows a wood waste compost berm below a culvert outlet. Typically, a sedimentation berm is not allowed in areas of concentrated flow. Please correct.
2. Laydown areas are proposed for the project. These areas may be necessary during decommissioning or upgrades at a later date. After construction use these areas could be covered in a layer of erosion control mix with a minimum of 4 inches in thickness.
3. Through out the project there are three types of level spreaders used on the project to return concentrated flow back into sheet flow: typical level spreaders, ditch turnouts, and stone bermed level lip spreaders. Details are provided for ditch turnouts and stone bermed level lip spreaders. For the typical level spreaders please provide a detail and information on sizing. The peak flow rate to a level spreader due to runoff from a 10-year 24 hour storm must be less than 0.25 cubic feet per second (0.25 cfs) per foot of level spreader lip. The maximum drainage area to the spreader is typically 0.10 acres per foot length of the level spreader. Level spreaders should also be sited so that flow from the level spreader will remain in sheet flow until entering a natural or man made receiving channel.
4. Loam stock piles are called for but no detail of the stock pile was provided. Locations of the stock pile should be identified.
5. Stabilized construction entrance is noted in the details. Please identify the location of the entrance.
6. The rip rap slope protection detail should have the fabric keyed at the top of the embankment.
7. Slope application of erosion control mesh: please state the slope requirements in the detail notes (typically slopes over 8%) and show the locations on the E+S location plans.
- 8.
9. Erosion control notes call for top soil stock piles on site. Please provide locations of the stockpiles on the E+S location plan.
10. It is somewhat standard that the type of lining and the depth of the ditch determined by the application of Manning's equation and the velocity in the ditch line at that location for the 10 year / 24 hour storm event. The ditch linings details proposed for

the project call for stone lining on slopes greater than 8% and geotextile and vegetation for slopes less than 8%. Is that determination left to the contractor to determine or will it slopes and ditch lining types be located for the contractor by the applicant's agent?? In places where grass lining is called for down gradient of stone lining, the transition zone between linings where flow loses velocity may succumb to erosion. A reinforced turf mat may work but it is standard for stone lining to be continued to a stable collection area. The detail for stone ditch protection states that the riprap will be 6 inch in size. Please direct me to the sizing calculations. Typically the sizing is based on the flow rate anticipated in the ditchline and is stated as a d50. Does this sizing hold for all of the riprap lining for this project?

11. Please add erosion control specifics to the bridge crossing details.
12. Stone check dams are intended to reduce scour of soil in the ditch line. This would only be necessary if the ditch lines were to be vegetated with out the application of mats since the mats are only there to prevent ditch scour. Where check dams are indicated on the plans the spacing is not correctly shown if the construction detail was applied.
13. Plan Sheet C-4 Silt Fence Detail: Notes do not limit silt fencing to ¼ acre of drainage for each 100 feet of fencing. The detail also does not require fencing be installed along the contour. Please correct.
14. It is typical for filter barriers such as silt fencing, hay bale barriers, and erosion control mix barriers (wood waste berms) to be installed along the contour. The location sheets show the location of the fencing at the down gradient toe of any disturbance. As discussed on other projects notations on the plan sheets indicating that location line is for reference and fencing needs to be installed along the contour may be sufficient. Please consider a small detail for reference showing how the silt fencing is installed in staggered line along the toe of a slope. This detail can then be referenced in the notation.
15. Provide a detail for the appropriate discharge of foundation and pit dewatering discharge.
16. I was unable to find the collection of erosion control measures used for crossings on the proposed powerline. Typically in the case of powerlines, a "tool box" approach to erosion control is appropriate. The toolbox should address the type of crossings anticipated and the appropriate locations for erosion controls. David Rocque may have some more specific requirement for the "tool box" like the use of rock sandwiches.

**Proposed Condition:** Due to the level of disturbance, steep slopes, and its close proximity to on site water resources, an independent third party site inspector reviewing erosion and sedimentation control is suggested for this project. The applicant will retain the services of an approved site inspector to inspect the erosion and sedimentation controls on the site. Inspections shall consist of weekly visits to the site to inspect erosion and sedimentation controls from initial ground disturbance to final stabilization. If necessary, the inspecting engineer will interpret the erosion and sedimentation control plans and notes for the contractor. Once the site has reached final stabilization, the inspector will notify the department in writing within 14 days to state that the construction has been completed. 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.

## **GENERAL STANDARDS**

### **For Project:**

#### Non-linear Portion

Percent of Impervious Treated: 95% (95% required)

Percent of Developed Treated: 91.14% (80% required)

#### Linear Portion

Percent of Impervious Treated: 76.83% (75% required)

Percent of Developed Treated: 76.83% (50% required) \*\*

\*\* Due to the lack of landscaped and lawn area associated with the road system the developed area and the impervious area are the same.

#### Phosphorus to Gilman Pond

Per Acre Phosphorus Budget (PAPB):	0.038 lbs / acre / yr
Project Acreage (eligible for allocation)(A):	580.5 acres
Project Phosphorus Budget (PPB):	22.059 lbs / yr

Total Phosphorous Mitigation Credit (SEC + STC):	0.00 lbs / yr
Total Pre-treatment Phosphorus Export (Pre-PPE):	41.85 lbs / yr
Total Post-treatment Phosphorous Export (Post-PPE):	22.057 lbs / yr

Project Phosphorus Export:	22.057 lbs / yr
Level of Control:	adequate

(Note: the above table is subject to change with response to comments.)

### **General Comments:**

17. The application states that there are 49.95 acres of impervious area and 50.35 acres of developed area. Totals from the treatment tables result in a lower number of impervious area. Please Address.
18. Through out the plan sets the proposed grading is shown as crowned but the treatment plan calls for almost all sections of road to be super elevated to one side or another.
19. Diversion berms are called for in some areas. Please provide a detail.
20. The ditch lines does not show any diversions that divert flow into cross culverts. This could be done in a standard culvert crossing detail without showing it on the proposed contour plans. However, without a detail it is assumed that flow in the ditch lines is not being directed into the cross culvert and continues down the fall line of the ditch.
21. Roadside buffers are shown as 35 feet (wooded) in width for a single lane of standard road way drainage and 55 feet (wooded) for two lanes of standard road way drainage. For this project the crane path is much greater in width than a standard road and as

such to use the roadside buffers for a wider crane path will need to increase. For crane path road side buffers, the buffer width would need to be increased from 35 feet (wooded) to 55 feet (wooded) for a single lane buffer width, and from 55 feet (wooded) to 80 feet (wooded) for a two lane buffer width.

22. In general the level spreader buffers are shown with straight sides and do not follow the fall line of the contours or cross them perpendicularly. This results in the treatment areas not being the areas protected by the buffer plan.
23. Ditch turnouts and stone berm level lip spreaders have different requirements. Ditch turnouts are 20' in length with a loose stone berm, and limited to 400' for a one lane road section, and 250' for a two road lane section. Their slope is limited to 20%. Stone bermed level lip spreader have a varying lip length and buffer length based on the contributing drainage area and are not limited by road length, but are restricted in slope (15%) and the stone berm is of a "tighter" grade of stone. At C-403, Connector, Sta 96+00, the ditch turn out receives too much length of road (710') for a turn out. This is one example, other areas are have this same confusion. Please review the other section to be sure that they meet the requirements above.
24. Through out the road system there are many ditch turnouts that the ditch line does not connect to on the plan sheets. Though the detail may imply what needs to be done in these cases, it would be safer to show the connection. Consider "blow up" details for troubling areas. Example C-404, Connector, Sta 143+00. Please review plans for other areas like these.
25. Though some details of treatment of the substation are included in the calculations sheets, the location sheets plan profile sheet or erosion control sheets do not include the locations or details.
26. The calculations do not appear to take into consideration the existing impervious area that is being reused for this project. If existing impervious area is being taken into consideration please include it as a total value per watershed and project portion (connector, east, and west) in the final calculations of the Quality Calcs.

**Road Specific:**

27. C-403, Connector, Sta 69+50, please review location of the level spreader. NRPA requires a minimum of 25' buffer typically.
28. C-403, Connector, Sta 80+00 to 81+00 (??), treatment is taken for this section of road but plan sheets show that it drains to cross stream.
29. C-403, Connector, Sta 84+00, culvert extends beyond ditch on plan.
30. C-404, Connector, Sta 160+00, a culvert is provide on the right side of the road when the road section is proposed for removal. Is this necessary?
31. C-404, Connector, Sta 161+50, road tips to the right and is then brought back across here. The wetland looks too close to the turn out for practical construction please relook at this area.
32. C-501, W2, Sta 54+00 to 56+00, ditch shown to not connecting to buffer.
33. C-502, W2, Sta 25+00 to 28+50, ditch does not go to buffer BL7.
34. C-503, W12, W18, How is flow diverted into BL11, BL12, BL13.
35. C-503, W18, BL13 appears to be intended to collect from sta 49+50 to 56+00 but does not appear to be used.
36. C-504, W18, BL16, is the impact to the adjacent wetland taken into consideration??

37. C-505, W18, Relook at Turbine 17W treatment and placement of BL20. Contour conflict?
38. C-505, W18, RB21, The treatment sheets call for Sta 71+50 to 75+00 to go to RB21, plan sheets only show treatment to 74+00.
39. C-601, Turbine 19E, the diversion berm directs flow to EBR1 level spreader (there are two EBR1s) is it necessary to have the diversion and the level spreader? Consider grading pad to the Northwest. I assume that this slope is riprapped? Re look at this area.
40. C-603, E36, Sta 16+00 to 31+50, Note: this section of road is very steep with big cuts and fills and lots of rip rap I assume. Consider looking into products like permanent turf reinforcement mat and slope stability fabrics that the may be a vegetated solution and not as obtrusive.
41. C-603, EBL16, Buffer fall line goes through the wetland and concentrates within 50 feet or so. Look for a better placement.
42. C-603, E36, Sta 33+00, The proposed level spreader discharges on to the landing / lay-down area. This does not seem like a good idea for many reasons but mostly it seems like flows would tend to concentrate and cause erosion.
43. C-604, E36, Sta 51+05 to 54+00, This area drains to EBL39 and goes to Gilman Pond but is included in the Kennebec calculations.
44. C-604, E37, Sta 9+90, the proposed 18" culvert drains onto the landing / laydown area. Relook at this area.
45. C-605, E43, Sta 4+00 to 6+00 drains to EBL24 and goes to the Kennebec River but is tabulated in Gilman Pond.
46. C-605, E43, Sta 57+00 to 62+50, drains to EBR27 and goes to the Kennebec River but is tabulated in Gilman Pond.
47. C-606, E47, Sta 1+75 to 8+50, goes to EBR29, calculations say EBS29.
48. C-4, Super Elevated Schedule, E47, Sta 21+25 to 58+75, right side should be elevated.
49. My review relies heavily on the contour information provided with the application. It is understood due to the nature of the project that during construction changes may be necessary to accommodate inaccuracies in the contour information, soils, or to accommodate infrastructure needs. Small changes in the locations of drainage / treatment structures to improve the treatment provided can be approved through the third party inspector. A cover letter outlining the changes should be submitted to the Commission for the project file at the end of construction. For changes that go beyond the scope above consider the following condition:

**Proposed Condition:** The applicant will retain the services of a professional engineer to provide "as-built" plans that detail any portions of the project that significantly deviate from the approved plans. Any changes in layout, grading, stormwater system, impervious area, or other changes that affect the stormwater quality need to be located and addressed as to how these changes have been treated and meet the general standard. Significant changes in the proposed project may trigger the need for an amendment of the approved department order. This requirement is for the portion of the project constructed as common property. The applicant's agent will notify the department in writing within 14 days of final acceptance of the project to state that the project has been completed.

Accompanying the engineer's notification must be updated project plan sheets (if necessary), a report on the changes in treatment and how they meet standard (if necessary), and a copy of the Notice of Termination (NOT) for the project.

**Proposed Condition:** The applicant will retain the services of a professional engineer to inspect the construction and stabilization of the stone bermed level spreaders and ditch turnouts to be built on the site. Inspections shall consist of weekly visits to the site to inspect each level spreaders /turnout construction, stone berm material and placement, settling basin from initial ground disturbance to final stabilization of the level spreader. If necessary, the inspecting engineer will interpret the stone bermed level lip spreader's location and construction plan for the contractor. Once the stone bermed level lip spreaders are constructed and stabilized, the inspecting engineer will notify the department in writing within 14 days to state that the level lips have been completed. 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, the items inspected on each visit, and include any testing data or sieve analysis data of the berm media.

### **FLOODING STANDARDS**

The applicant has provided a Hydro-cad model that shows the impact to peak flows for these watersheds for the 2, 10, and 25 year, 24 hour storm. The summary table for this model indicates that there is a minor / "insignificant" increase in the peak flow for each of the major on-site watersheds.

The flow paths provided are not representative of the sub-watershed areas chosen for the project. These short flow paths with large drainage areas indicate that the flow from the over-sized sub area would rapidly leave the site (short travel times) and overestimate the flow rates in both the pre and post construction models. In addition, the model flow paths do not take into consideration the redistribution of flows into buffer areas and level spreaders that will lengthen the time of concentration for all of the watersheds. For a truly representative model watershed areas would need to be broken into numerous subareas and points of interest, or analyzed at a single off-site point of interest that encompasses more watershed area.

A review of the weighted curve numbers per watershed indicates a reduction in most cases. These reductions are in the fraction of a percentile and well within model tolerances. For this project the model indicates that the project meets the flooding standard requirement of maintaining the preconstruction peak flows for the 2, 10, and 25 year, 24 hour storm at the property boundary.

*Note: The model provided by the applicant used a hydrologic soil group condition of "D" throughout. This has been applied in both the pre and post development condition. Should the actual soils allow for more infiltration then runoff would be over estimated in both the pre and post condition. When sizing detention structures, an over estimate in the precondition means that reducing the post construction flow back to the pre condition would not detain enough and may result in flooding and off site damage. It would be more accurate to use the soils information submitted with the application in section 13.*



50. No culvert sizing schedule was found, nor was there any individual ID for culverts on the project except for road stationing. Please direct me to the calculations used for structure sizing of the proposed drainage features like ditch lines, culverts and level spreaders.

### **MAINTENANCE**

*NOTE: The applicant and contractor will be responsible for the maintenance of all proposed stormwater management structures, i.e. ponds, swales, culverts and discharge outlets during construction. Thereafter, each stormwater management structure should be cleaned and cleared of debris yearly at a minimum. Sweeping of all pavements is recommended on an annual basis. The DEP may request to inspect the site at a future date.*

Please add rock sandwiches and buffers to the provided maintenance plan. The maintenance plan should also include time frames for maintenance items (how often inspected). Please identify the contact individual responsible for the long-term inspection and maintenance of the stormwater management system. Please identify the individual appropriate for providing the inspections of each BMP. It may be okay for a maintenance worker to inspect certain portions of the stormwater system, but certain BMPs may require a professional review. Please provide a blank log for applicant's use in following the maintenance requirements. Logs will need to include the required information noted in Appendix B of chapter 500.

### **DESIGN REVIEW RESPONSIBILITY**

This review only ensures that the proposed plan is meeting the minimum standards set by the department for erosion control management and for stormwater management. It does not guarantee that the design is appropriate for the level of work suggested and for the functionality of the facility.

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## **Maine Department of Environmental Protection**

### **REVIEW MEMORANDUM**

**April 14, 2011**

**To: Marcia Spencer-Famous, Project Manager, Land Use Regulation Commission**  
**From: John Hopeck, Ph.D., Division of Environmental Assessment**  
**Re: Highland Wind Project**

- 1) This project includes a section of transmission line in addition to the wind turbines and associated facilities. Section 18.3 of the application includes standards addressing application of herbicides along the route of these facilities. These standards are generally acceptable, but it should be noted that in areas in or adjacent to natural resources such as wetlands that do not show surface water throughout the year, it is possible that more than one of the standards may apply;

it should be clear in the permit that the most restrictive applicable standard would apply at any time. All applicable herbicide restriction standards would also apply in areas requiring invasive species control (Section 18.3.6.5). Setbacks from private water supplies and springs are defined, but, given the intervals expected between herbicide applications, the applicant should inspect the areas of possible application, and adjust and flag buffer areas as necessary to account for any new water supplies established since the previous survey. There are no reported public water supplies in the immediate area of the project; if any are established or identified, they should be provided with a greater buffer of at least 200 feet or other distance as determined by the Department of Health and Human Services. The Commission should be provided with a complete list giving the location of all existing water supplies (if any) requiring buffers for this project.

- 2) Information on wastewater disposal is found in Appendix 12-2 rather than Appendix 12-4, as stated in Section 12.1.6. According to the HHE-200 form submitted in Appendix 12-2, the proposed disposal field is sized for a design flow of 270 gallons per day rather than the 135 gallons per day stated in Section 12.1.6, although Section 1.0 of Appendix 12-2 states that the system is oversized to allow for periods of additional use. Discussion of the nitrate-impact assessment does not appear relevant to this project, as the project is located in unorganized territory. However, the applicant should note that the interpretation of the exemption from the study requirement, as presented in Section 12.1.6 and Appendix 12-2, is incorrect; the exemption requires both a minimum design flow and a minimum distance from the downgradient property boundary, and it is not clear that the system as proposed would meet both requirements. As already noted, however, that standard does not appear to apply in this location, but the applicant should be sure to correct this misreading of the exemption prior to application for projects in organized territory.
- 3) The Spill Prevention, Control, and Countermeasures Plan submitted defines setbacks (Section 12.7.1) of 100 feet from refueling areas for certain resources and wells. These setbacks should also apply for fuel storage, overnight vehicle parking, and any vehicle or equipment maintenance. The setbacks for refueling, maintenance, and other activities involving these products should be consistent with those in Section 18.3, and should apply to public and private drinking water sources generally consistent with the standards as described in Item 1 of this memo. Note that although reportable quantities for spills are discussed in Item 6 of Section 12.7.2, the sequence of events requiring notification of the Department is consistent with the state requirement of no minimum reportable quantity, as long as this sequence is followed.

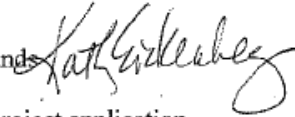
- 4) Prior to operation, the applicant should submit for review and approval a Spill Prevention, Control, and Countermeasures Plan addressing the operation of the project, including description of storage at the operation and maintenance building, including storage for emergency generators, if any, and procedures for changing oil and other lubricants in the turbines, including volumes and temporary storage methods for new and used oil.
- 5) The applicant has submitted an assessment of the potential for development of acid rock drainage at the site and management of any potential acid drainage that occurs. Note that these are discussed in Appendices 12-4 and 12-5, rather than Appendix 12-1. In general this analysis is correct, in that the potential for encountering acid drainage is low but may occur in the vicinity of the pluton boundary. As noted in the reports, the applicant's staff and construction crews should be able to recognize rocks of potential concern and implement appropriate measures. If necessary, suitable measures for management of these materials should be developed on a case-by-case basis with review and approval by the Commission.
- 6) The applicant is proposing (Section 12.9) pre-blast surveys for structures within 500 feet of a blast area. The Department generally recommends that reasonable values of pounds per delay be considered and compared to the distances to structures not owned or controlled by the applicant, in order to determine whether or not the scaled distance is equal to or greater than  $70 \text{ lb/ft}^{1/2}$ ; pre-blast surveys are generally not required for structures at which this is the case. Conversely, this analysis may reveal locations which may require pre-blast surveys, blast monitoring, or other assessment. The applicant has not proposed specific standards for record keeping, ground vibration, and air overpressure. Air overpressure should not exceed the limits defined at Department rules Chapter 375.10(C)(4)(c); note that these overpressure limits are dependent on the number of blasts per day. Ground vibration should not exceed the frequency-dependent limits at Figure B-1 of Appendix B, U.S. Bureau of Mines Report of Investigations RI8507. Record-keeping requirements should be equivalent to those at 38MRSA§490-Z(14)(L). There is a minor contradiction in the proposed standard for flyrock control, which state that "mats and backfill will be used...when blasting in close proximity to structures", but also that mats are to be used to "prevent flyrock from entering a protected natural resource on or surrounding the blast site". Mats may therefore be required in areas not in close proximity to structures. Note that the Department allows an exemption from this protection for natural resources in some circumstances if alteration of those resources has been approved.
- 7) Although some test pit locations were not clear, due most likely to the density of data on some of the maps, and the Stantec test pits show two locations for TP 40

and do not show TP 40A or TP 41A, the soils appear generally consistent with what I would expect from the topography, likely parent material, and position in the landscape.

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**Maine Bureau of Parks and Lands**

To: Marcia Spencer-Famous, LURC  
From: Kathy Eickenberg, Chief of Planning, Bureau of Parks and Lands  
Date: April 20, 2011  
RE: BPL comment regarding DP 4862 Highland Wind proposed project application



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This memo is to formally advise you and the Commission that the Bureau of Parks and Lands (BPL) withdraws its status as intervenor in this case. The Bureau will continue to provide any information it has that would be helpful to the applicant or to intervenors for the project.

As has been previously articulated by former Deputy Director Alan Stearns, the Bureau's role is not to provide expert comment on the scenic effects of the projects as BPL has no special expertise in this area. The statutes are clear on the criteria that LURC must evaluate regarding scenic impact, and it is the Commission's responsibility to evaluate the applicant's analysis of scenic impact.

The proposed application includes "Substantial Payments to BPL for Additional Bigelow Preserve Viewshed Protection." (Item 3 in cover letter dated December 28, 2010 from Highland Wind LLC to Ms. Gwen Hilton, Chair, and Ms. Catherine M. Carroll, Director, Land use Regulation Commission). BPL declines to accept this proposal. The Bureau's current policy is to remain neutral in these proceedings, and acceptance of such benefits is viewed as a conflict of interest. The Bureau understands that the intentions of the applicant were to provide the means for additional viewshed protection as seen from the trails of the Bigelow Preserve, and declines to accept the proposal with no prejudice to the applicant or to the merits of the project.

**MAINE PUBLIC UTILITIES COMMISSION  
Review Comments**

Highland Wind Project  
April 20, 2011

**Introduction**

The Land Use Regulation Commission (LURC) has requested that the Public Utilities Commission (PUC) provide review comments with respect to the Highland Wind LLC (Highland) proposed Highland Wind Project. The Highland Wind Project is a 39 turbine wind power project located in Highland Plantation, Somerset County, Maine.

An Act to Implement Recommendations of the Governor's Task Force on Wind Power Development (Act) requires LURC to determine whether the Highland Wind Project will provide "significant tangible benefits."<sup>1</sup> As defined by statute, "tangible benefits" mean:

environmental or economic improvements attributable to the construction, operation and maintenance of an expedited wind energy development, including but not limited to: construction-related employment; local purchase of materials; employment in operations and maintenance; reduced property taxes; reduced electrical rates; natural resource conservation; performance of construction, operations and maintenance activities by trained, qualified and licensed workers in accordance with Title 32, chapter 17 and other applicable laws; or other comparable benefits, with particular attention to assurance of such benefits to the host community to the extent practicable and affected neighboring communities.<sup>2</sup>

The Act specifies that the siting authority shall presume the general energy and environmental benefits stated in statute (reduced reliance on fossil fuels, reduced emissions and energy security) and make additional findings regarding other

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<sup>1</sup> P.L. 2007, ch. 661, section C-4 (codified at 12 M.R.S.A. § 685-B (4-B)).

<sup>2</sup> 35-A M.R.S.A. § 3451(10).

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tangible benefits.<sup>3</sup> The provision also states the PUC (among other agencies) shall provide review comments at the request of the siting authority.<sup>4</sup>

The PUC is pleased to provide review comments within its areas of expertise. Thus, we comment on tangible benefit issues involving the electricity market and pricing.

### **Discussion**

In its application, Highland states that, to reduce energy costs to the residents of Highland Plantation, it will make annual payments directly to all existing Highland Plantation households for 20 years for day-to-day electricity use. The proposed energy cost reduction plan is clearly a "tangible benefit" and should be considered by LURC as such. It is also a tangible benefit to the host community and should be given additional weight in that the statutory definition of tangible benefits provides that there should be "particular attention to assurance of such benefits to the host community to the extent practicable...."<sup>5</sup> However, the PUC's view is that the electricity cost payments to the customers in Highland Plantation would not alone constitute significant tangible benefits as contemplated by the statute. The PUC emphasizes that it takes no view on whether the non-electricity benefits of the projects together with the energy assistance plan satisfies the statutory requirement.

The PUC suggests that the LURC consider the sale of a significant amount of the output of the project to customers within the area, or to the utility under the PUC's long-term contracting authority,<sup>6</sup> at fixed prices projected to be below market prices or at a stated discount off of market prices, as an "electricity market tangible benefit."

The PUC appreciates the opportunity to provide these comments.

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<sup>3</sup> 35-A M.R.S.A. § 3402(1), 3454.

<sup>4</sup> 35-A M.R.S.A. § 3454.

<sup>5</sup> 35-A M.R.S.A. § 3451(10).

<sup>6</sup> Under statute, the PUC has the authority to solicit proposals from generators for long-term electricity contracts and to direct utilities to enter into such contracts. 35-A M.R.S.A. 3210-C.

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## Maine Historic Preservation Commission

In response to LURC's "Request for Review and Comment on Pending Application" for the subject project received March 8, 2011, the Maine Historic Preservation Commission is providing the following comments pursuant to the requirements of the Maine Land Use Regulation Commission and Maine law 35-A MRSA §3451 and §3452.

### Supplement S-2. 19.

As noted in Section 15 Historical and Archeological Reports, the following historic properties within 8 miles of the Project are either listed in or have been determined eligible to be listed in the National Register of Historic Places:

- Arnold Trail to Quebec Historic District (NR listed)
- Bingham Free Meetinghouse, Bingham (NR listed)
- Appalachian Trail (previously determined NR eligible)
- Wyman Dam, Bingham (previously determined NR eligible)
- Cold Spring Ranch Farmstead, Reed Road, New Portland (newly determined NR eligible)
- Farmstead, 1142 Long Falls Dam Road, Lexington (newly determined NR eligible)

The Phase I A prehistoric archaeological report and Phase 0 historic archaeological report are acceptable as written. The Phase I A prehistoric archaeological report recommends Phase I B (field testing) of several stream crossings along the proposed power line route. That work needs to be completed. Other than the power line Phase I B archaeological testing, no further archaeological fieldwork is necessary.

### Project Effects

It is our understanding from the discussion on page 28 of the Visual Impact Assessment (dated December 27, 2010) in Section 16 of the Application, that 35 M.R.S.A. §3451.9.B. limits LURC's consideration of a project's effect on historic properties to those that are listed in the National Register of Historic Places. Unlike Federal law, the referenced statute apparently does not allow for the consideration of historic properties that were either previously determined to be eligible for listing in the Register or that were identified during the course of resource investigations. Unless advised otherwise, our comments are thus confined to the Arnold Trail to Quebec Historic District and the Bingham Free Meetinghouse.

**Bingham Free Meetinghouse** – The Historic Architectural Reconnaissance Survey and Effects Assessment in Section 15 of the Application states on page 6 that the Project "was determined to have no potential visual or other types of indirect effects." The Commission concurs with this conclusion.

**Arnold Trail to Quebec Historic District** – The following italicized comments were submitted by the Commission to the applicant in a letter dated May 6, 2010 in response to the original Highland Wind application. They remain relevant to understanding the qualities of significance of the Arnold Trail.

*As is the case with most if not all of the early nominations to the National Register from Maine, the physical description of the Arnold Trail in section 7 of the nomination form is, by today's standards, limited. This includes the lack of a detailed discussion about the aspects of integrity that the Arnold Trail possessed and that were important to understanding its significance when it was nominated to the Register. Nonetheless, the character of the trail was broadly described as follows:*

*Much of the countryside through which the army passed looks much as it looked in the fall of 1775...The banks of the Kennebec from its mouth to Bingham are a patchwork of farms and woodlands. Above Bingham (sic) the agricultural section ends, the land gets more hilly and rocky, and the forest closes in. Virtually no virgin timber remains along the trail from Bingham to the Canadian border, but the entire region does give the appearance of a vast, hostile wilderness, as it did in 1775.*

*Since the preparation of the Arnold Trail to Quebec nomination in 1969, the National Register has issued a substantial body of guidance for evaluating whether a property has significance and retains integrity. Among that guidance is National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation. In describing setting as an aspect of integrity, Bulletin 15 states that:*

*Setting is the physical environment of a historic property. Whereas location refers to the specific place where a property was built or an event occurred, setting refers to the character of the place in which the property played its historic role. It involves how, not just where, the property is situated and its relationship to surrounding features and open spaces.*

*Bulletin 15 also states in relation to the physical features that comprise a property's setting (topographic, vegetation, manmade, and relationships between buildings and other features or open space) that:*

*These features and their relationships should be examined not only within the exact boundaries of the property, but also between the property and its surroundings.*



The Commission's interpretation of the guidance in Bulletin 15 leads us to the conclusion that the physical environment of the Arnold Trail, comprised of mountains, bodies of water and forested landscapes, are among the more important aspects of integrity that the Arnold Trail possesses. As noted above, "setting refers to the character of the place in which the property played its historical role." We believe that the character of the Arnold Trail in the Carry Ponds is in large measure defined by the wilderness setting that extends well beyond the narrow physical boundary proposed in the "American Battlefield Protection Program Associated Historic Property Form for the Arnold March to Quebec," or the actual path or paths that the soldiers and their bateaux took during the march. Nevertheless, the project's wind turbines will be visible even within this narrow boundary in the Carry Ponds. (The only boundary description in the original National Register nomination defines a rectangle that encompasses the area of the proposed Highland Wind project. The narrower boundary defined in the ABPP planning document is consistent with current National Register guidance.)

As noted in letters to Stantec Consulting dated April 1 and May 6, 2010, the Great Carry portion of the Arnold March route "provides an excellent experience of the physical labor and passage through deep forest and across small lakes experienced by Arnold's men. This is one of the best preserved sections of the March route...." The Great Carry begins in what is now the impoundment of Wyman Dam and ends at Flagstaff Lake. Although both termini are now under impoundments, the Carry Ponds are, more or less, unaltered from the period of Arnold's March.

Beginning on page 28, the Visual Impact Assessment describes potential impacts to this historic property, and concludes on page 31 that the project "will not significantly compromise views from the Arnold Trail." The photo simulation from West Carry Pond shows that a line of turbine rotors and the upper part of turbine shafts will be visible to the south above the tree line, terminating with a fully visible turbine at the base of Stewart Mountain. The analysis on page 31 also states that turbines will be visible from portions of the other Carry Ponds and Sandy Stream, but no simulations have been provided to show what this impact will be. In addition, as noted in the Executive Summary red warning lights will be "mounted on the top of some of the nacelles and on each of the five permanent meteorological towers."

Based on the information contained in the Visual Impact Assessment, the Commission concludes that the proposed project will alter the Arnold Trail's integrity of setting in the Great Carry, which is the section of the Trail's route that has witnessed the least encroachment from human development. However, we do not offer an opinion as to whether this constitutes an "undue adverse effect."

It is the Commission's understanding that the Highland Wind development will be required to obtain a permit from the US Army Corps of Engineers, thus making it an "undertaking" as defined in 36 CFR Part 800.16(y) subject to review under Section 106 of the National Historic Preservation Act of 1966, as amended. That review will examine effects on historic properties in the area of potential effects that are both listed in and eligible for listing in the National Register of Historic Places, including some or all of those listed above.