



STATE OF MAINE  
DEPARTMENT OF CONSERVATION  
22 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333-0022

JOHN ELIAS BALDACCI  
GOVERNOR

ELIZA TOWNSEND  
COMMISSIONER

# PERMIT

## COMMISSION DECISION IN THE MATTER OF

TransCanada Maine Wind Development, Inc.  
Development Permit DP 4860  
Water Quality Certification

### Findings of Fact and Decision

The Maine Land Use Regulation Commission, at a meeting of the Commission held on January 5, 2011, at Bangor, Maine, after reviewing the application and supporting documents submitted by TransCanada Maine Wind Development, Inc. for Development Permit DP 4860, public and Intervenor comments, agency review comments and other related materials on file, pursuant to 12 M.R.S.A. § 681, *et seq.* and the Commission's Standards and Rules, finds the following facts:

1. Applicant: TransCanada Maine Wind Development, Inc.  
3647 The Arnold Trail  
Chain of Ponds Twp., ME 04936  
  
Agent: Juliet Browne, Esq., Verrill Dana  
One Portland Square  
Portland, ME 04112
2. Project location: Kibby Twp. and Chain of Ponds Twp., Franklin County  
Kibby Twp. – FR13, Plan 1, Lots 1.1 and 2  
Chain of Ponds Twp. – FR014, Plan 01, Lot 1
3. Zoning: P-MA Subdistrict, P-SL2 Subdistrict; P-WL1, 2 and 3 Subdistricts; and M-GN Subdistrict

## Proposal

The relevant review criteria and administrative history are contained in Appendices I and II, respectively, attached at the end of this document, and incorporated herein by reference.

References to the so-called “Wind Energy Act” are to P.L. 2007, Ch. 661, “An Act to Implement Recommendations of the Governor’s Task Force on Wind Energy Development.”

<http://www.mainelegislature.org/ros/LOM/LOM123rd/123S1/PUBLIC661.asp>

4. *Background.* On December 23, 2009, the application submitted by TransCanada Maine Wind Development, Inc. (hereinafter “the applicant”) for Development Permit DP 4680 was accepted for processing. The originally proposed Kibby Expansion Project was a 45 MW ‘grid-scale wind energy development’ (as defined in 35-A M.R.S., Ch. 34-A, § 3451(6)) consisting of fifteen (15) 3 megawatt (MW) wind turbines, to be sited within the expedited permitting area for wind energy development along the ridgeline north of Sisk Mountain. The project would be located in Kibby Twp. and Chain of Ponds Twp., Franklin County, in a P-MA Subdistrict; P-SL2 Subdistricts; P-WL1, 2 and 3 Subdistricts; and the M-GN Subdistrict. The applicant later submitted a revised proposal for the Kibby Expansion Project (KEP), as discussed below.
  - A. The applicant submitted with its application the required exhibits in accordance with the Wind Energy Act, as well as the other materials required by LURC’s application checklist for wind energy development.
  - B. On August 16, 2010, the applicant submitted a revised proposal for the KEP. The revised project would be a 33 MW grid-scale wind energy development consisting of eleven (11) 3 MW wind turbines, access roads, and the other associated facilities, all of which would be at the same location as previously proposed, but eliminating the four (4) southernmost turbines and the associated access road.
  - C. The detailed background and administrative history can be found in Appendix II at the end of this document.
5. *Proposal*<sup>1</sup>. The proposed KEP would be a 33 MW wind energy development to be sited within the expedited permitting area for wind energy development along the ridgeline north of Sisk Mountain, near the Canada/United States border. The project would be located in Kibby Twp. and Chain of Ponds Twp., Franklin County, in a P-MA Subdistrict; P-SL2 Subdistricts; P-WL1, 2 and 3 Subdistricts; and the M-GN Subdistrict. The proposed KEP would expand upon the existing Kibby Project (reference Zoning Petition ZP 709 and Development Permit DP 4794); and would use the existing 115 kV generator lead line, O&M facility/construction control center, and one of the existing lay-down areas used for the Kibby Project. No infrastructure improvements would be needed outside the immediate Kibby and Sisk Mountain area. Access to the project area would be by way of Gold Brook Road and Wahl Road.

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<sup>1</sup> The findings include evidence from the entire record, including that submitted for the original proposal, where that evidence remains relevant to the revised proposal.

- A. The proposed KEP would connect to the New England grid using the existing 115 kV generator lead line that runs between the existing Kibby Substation and the existing Bigelow Substation.
  - B. The proposed KEP would be located approximately 2 miles from the closest turbine of Series B, and 4 miles from Series A of the existing Kibby Project. Several hills are located between Series A and the proposed KEP area, but no hills would separate the KEP from Series B.
6. *Comprehensive Land Use Plan.* Relying on the Commission’s 2010 Comprehensive Land Use Plan (CLUP), as well as the Commission’s 1997 CLUP, in its pre-filed testimony on the original 15 turbine project, the applicant asserted that the CLUP states that its “goals and policies may at times conflict with one another,” the CLUP directs the Commission to “balance the various policies so as to best achieve its vision for the jurisdiction.” (*see* 2010 CLUP, page 5). The applicant asserted that the applicable provisions of the 2010 CLUP it cited are equally relevant to the 1997 CLUP. The applicant asserted that the proposed KEP is “an ideal example of how that balance can be applied by guiding important renewable development to locations most suited to accommodate that development and where the impacts will not compromise the principal values or vision of the jurisdiction.”
- A. The applicant asserted that the proposed KEP would not be located in an area known for primitive recreational pursuits such as hiking. Rather, the project area is used for activities such as motorized boating, snowmobiling, and ATV riding. The applicant contended that the KEP would not interfere with the existing use of the area for recreational pursuits, noting that recreational user expectation in the Chain of Ponds area differs from the more remote back country areas such as the Bigelow Preserve. Moreover, the applicant contended that the project area is not known for its remote character, having features such as Route 27 which make the area readily accessible by car, as well as heavy on-going logging activities; and being proximate to organized towns such as Eustis/Stratton. Due to these factors, the applicant asserted that the proposed KEP would not be incompatible with the recreational uses of the area.
  - B. The applicant contended that the KEP would not cause an undue adverse effect on high value natural resources or a high mountain area, and as such there would not be overriding public values in need of protection that would outweigh the significant benefits the project would supply. The applicant referenced its testimony of the assessment of each natural resource in the project area.
  - C. The applicant asserted that the proposed KEP is an excellent example of how the Commission can advance its energy and climate change policies while retaining the jurisdiction’s principal values.
  - D. The applicant asserted that the proposed KEP would be located several miles from the historic, cultural, or archaeological resources in the area (*i.e.*, the Arnold Trail), and would not compromise these resources’ educational, scientific, or social values.

E. The applicant asserted that the KEP would not compromise the economic value of a working forest because the area would continue to be managed for timber.

7. *Public comments.* The public comments received on the revised proposal are summarized herein. Comments from legislators (on both the original proposal and the revised proposal), local and county governments, and organizations are also included in this finding. The comments of organizations that were Intervening Parties<sup>2</sup> are covered in the findings under each subject heading, as applicable.

A. *General public - Opposition.* Generally, opinions expressed and issues raised in opposition to the revised proposal included adverse impacts to: scenic and historic resources (specifically the Chain of Ponds area and the Arnold Trail), the remote character of the area, the tourism-based economy of the area, and to natural resources, in particular to high mountain areas. Concerns doubting the viability of wind power as an energy source and its development in Maine were also raised.

B. *General public - Support.* Generally, opinions expressed and issues raised in support of the revised proposal included: the economic benefits of the proposed KEP based on the experiences during the construction of the Kibby Project; and that the project would not cause an undue adverse impact to scenic, historic, recreational, and natural resources.

C. *Legislators, local and county governments, and organizations.* For the revised proposal, one letter was received from a member of the Legislature in support of re-opening the record to allow the revised proposal to be submitted, and re-stating his support for the project. For the original proposal, five letters were received from Legislators, four in support and one requesting a public hearing. Groups and local governments expressing support for the revised proposal included the Franklin County Commissioners, the Eustis/Stratton Town Selectmen, the Arnold Expedition Historical Society, the High Peaks Alliance, and the Greater Franklin Development Corporation. No groups other than those granted Intervenor status (*see* Appendix II, Section 2) expressed opposition to the project.

### Proposed Structures and Activities

8. *Proposed structures and activities.* The proposed 33 MW KEP would consist of eleven (11) 3 MW wind turbines, each within a cleared turbine pad area; 2.1 miles of new 34 foot wide ridgeline road (reduced to 20 feet wide after construction), 1.1 miles of new 20 foot wide access road, 2.4 miles of upgraded existing access roads, 7.5 miles of 34.5 kV collector and communication line, a new substation, one permanent meteorological tower and access way, and a 325 foot long segment of 115 KV transmission line to connect the new substation to the existing Kibby Substation. The engineered plans received on August 16, 2010 showing the changes for the 11 turbine project, in combination with those portions of the January 22<sup>nd</sup>

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<sup>2</sup> Intervening Parties: Consolidated Parties consisting of the Natural Resources Council of Maine, the Appalachian Mountain Club and the Maine Audubon Society; and the Friends of the Boundary Mountains. See Appendix II.

and May 6<sup>th</sup> engineered plans for the 15 turbine project that remain relevant to the 11 turbine proposal, constitute the plans for this project.

- A. *Elevations.* The proposed KEP would be located at elevations ranging from 1,720 feet above mean sea level (msl) near the new substation to 3,357 feet msl at Turbine 9. All 11 turbines would be located above 2,700 feet msl<sup>3</sup>. Project components of the proposed KEP that would be located above 2,700 feet msl in a P-MA Subdistrict include all 11 turbines, 2.1 miles of crane path along the ridgeline, 2.2 miles of 34.5 kV collector line, and 0.6 miles of access road.
- B. *Wind turbine generators and turbine pads.* The eleven 3.0 MW turbines would be the Vestas V90 “cold weather” package, or a similar design. The turbine pads would be 200 feet long by 150 feet wide during construction, reduced to a 70 foot by 70 foot crane pad and a circle 50 feet in diameter around the turbine base permanently. The remaining pad area would be restored by spreading erosion control mix and allowing the areas to re-vegetate naturally (*see* Findings of Fact #44,B and E, and #45 to #47).
- (1) The turbine tower height is 263 feet, with a base diameter of 13.5 feet. Each turbine has three 144 foot long blades. The rotor is 295 feet in diameter, with the rotor swept area comprising 68,482 square feet (sq ft). When in operation, the rotors spin at between 8.6 and 18.4 revolutions per minute. Measuring to the upward turned tip of the blade, the turbines would be 410 feet tall.
  - (2) Slow on-off red, flashing lights would be installed on approximately half of the turbines in accordance with the Federal Aeronautics Administration requirements.
  - (3) During the review of the original 15 turbine project, in response to the review comments supplied by the MDIFW and the Maine Natural Areas Program (MNAP), the applicant moved the location of Turbine #11 to limit impacts to the Bicknell’s thrush/Subalpine Fir-Heart-leaved Birch Forest habitat (*see* Finding of Fact #30,A and D).
  - (4) In response to Commission concerns, the applicant eliminated 4 turbines (Turbines 12 to 15) that had previously been proposed, and the associated ridgeline access road (*see* Appendix II, Section 6).
  - (5) The applicant expects that the turbine foundations will be the rock anchor type, except that the spread footing foundation may need to be used for some turbines. The geotechnical data collected to date indicates that the rock anchor foundation is expected, but the continuing data collection will verify the final type of foundation needed. Concrete for the turbine pads would be brought to the site by a contractor. The same procedures for handling the concrete and equipment at the site used for the Kibby Project would be used for the proposed KEP.
- C. *Access roads.* The proposed KEP would include 2.1 miles of new ridgeline road (*i.e.* “crane path”) (34 feet wide, reduced to 20 feet wide after construction), 1.1 miles of new access road (20 feet wide), and 2.4 miles of upgraded existing access roads (20 feet

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<sup>3</sup> For a point of reference, the existing O&M facility for the Kibby Project, located at the intersection of Gold Brook Road and Route 27, is at an elevation of 1,400 ft msl. For comparison, the existing Kibby Project turbines range from elevation 2,507 ft msl to 3,210 ft msl, with 32 of the 44 turbines located above 2,700 ft msl.

wide). See the engineered plans received on August 16<sup>th</sup>, May 6<sup>th</sup>, and January 22, 2010 for construction detail.

- D. *34.5 kV collector line corridor.* The 7.5 miles of 34.5 kV collector line would be placed adjacent to the new ridgeline road and the existing roads to the extent possible to minimize the clearing needed for the power line corridor. Of the 7.5 miles, 1.7 miles would be on the ridgeline and 5.8 miles would extend from the ridgeline to the substation. The cleared corridor would be up to 60 feet wide, less where the line is located along the road. The corridor would be maintained with scrub shrub vegetation.
- E. *Kibby Expansion Substation and 115 kV line.* The proposed substation would be located within a 140 foot by 140 foot fenced-in area. A 325 foot long segment of 115 kV transmission line within a cleared 100-foot wide corridor would connect the proposed substation to the existing Kibby transmission line (*see* Amendment F to DP 4794). The proposed substation would be accessed by a 20 foot wide by 50 foot long driveway.
- F. *Temporary activities during construction.* Temporary activities proposed include a new 2.5 acre lay-down area along the Mile 5 Road, continued use of an existing 2.4 acre lay-down area approved for the Kibby Project (*see* pending Amendment F to DP 4794), and on-site rock crushing and materials storage within the other areas disturbed for project construction. The existing 1.3 acre O&M facility associated with the Kibby Project (*see* approved Amendment H to DP 4794), plus an adjacent approximately 1 acre area would be used for the Construction Control Center for the proposed KEP. For disposal of rock, earth spoil, or stumps not used during construction, these materials will be temporarily stored in areas disturbed for construction, and if needed, permanent disposal would be within one of the two lay-down areas.
- G. *Construction schedule, work plan, and reporting.* The applicant submitted a detailed schedule (updated with the revised proposal) and work plan with the application. The proposed start of construction is in 2011, with an in-service date in late summer of 2012.
- (1) *Winter construction.* For winter construction activities, the applicant proposes to (a) conduct clearing under frozen conditions to minimize impacts to wetlands and areas with sensitive soils; (b) to complete any road or turbine pad construction activities started before the ground freezes to assure that a stable roadway is in place before spring thaw; and (c) to install the power line poles at the lower elevations. The applicant proposed a winter construction protocol designed to ensure that the surface and subsurface water flow is identified and mapped under appropriate seasonal conditions, as well as other winter-specific erosion and sedimentation control measures. *See* Exhibit B.11 of the application for the details of the proposal regarding winter construction.
  - (2) *In-stream work window.* All in-stream work would be conducted between June 15<sup>th</sup> and September 15<sup>th</sup>, unless agreed to by MDIFW after prior consultation.
  - (3) *Reporting during construction.* The applicant proposed a system of routine quarterly, material change, and as-built reporting to LURC. Post-construction monitoring would begin following the completion of construction. *See* Exhibit B.11 of the application for the details of the reporting proposal.

H. *Clearing (see Table 1, below).* The proposed total new cleared or disturbed area within the terms of this permit during construction would be 100.4 acres, reduced to 44.8 acres after construction. After construction, the lay-down areas, ridgeline road edges, and a portion of each turbine pad would be mulched with erosion control mix and allowed to naturally re-vegetate. The areas to remain permanently altered would consist of 9.7 acres for the turbine pads and road above 2,700 feet in elevation (3.2 acres for turbines, 5.1 acres for crane path, 1.4 acres for access road), 1.2 acres for the new access road below elevation 2,700 feet msl, 1.2 acres for the substation; 28.3 acres for the shrub-dominated power line both above and below 2,700 feet, 3 acres for the met tower, and 1.4 acres for improvements along the existing access roads.

Table 1: Temporary and permanent clearing/disturbance for the revised 11 turbine KEP

<b>Acres to be cleared/disturbed</b>	<b>Total</b>	<b>Temporary</b>	<b>Permanent</b>
Turbine pads	12.6	9.4	3.2
Ridgeline road ( <i>i.e.</i> , “crane path”)	34.8	29.7	5.1
New access road	13.2	10.6	2.6 <sup>b</sup>
Mile 5 Road improvement	1.3 <sup>a</sup>	0	1.3
Wahl Road improvements	1.5 <sup>a</sup>	1.4	0.1
34.5 kV collector line corridor	28.3	0	28.3
Substation with driveway and 325 foot long 115 kV line	1.2	0	1.2
Met tower and access way	4	1	3
Temporary lay-down areas (1 new – 2.5 acres) <sup>c</sup> .	2.5	2.5	0
Construction Control Center and parking <sup>d</sup>	1	1	0
<b>Total</b>	<b>100.4</b>	<b>55.6</b>	<b>44.8</b>
a – Includes only newly disturbed/cleared areas b - 1.4 acres above 2,700 feet, 1.2 acres below 2,700 feet c - See pending DP 4794-F for 1 existing 2.4 acre lay-down area to be used. d - See DP 4794-H for the existing contiguous O&M facility.			

I. *Signs.* The applicant would locate informational signs at the Construction Control Center, at each turbine location, at the substation, and along various project roads. All signs would meet the requirements of Section 10.27,J of the Commission’s Land Use Districts and Standards (*see Exhibits B.6 and B.13.12 of the application*).

J. *Traffic circulation.* The applicant evaluated the use of existing public and private roads and proposed new roads for the KEP, and the expected traffic flow, to assure that the increase in traffic during construction would not cause any public safety concerns. The

traffic produced by the project during operation is expected to be minimal (*see* Exhibit B.6 of the application).

9. *Setbacks.*

A. *Public safety related setbacks (in accordance with the Wind Energy Act, 35-A M.R.S. § 3455).*

- (1) The applicant proposed that all of the turbines would be located more than 1.5 times the turbine height, or 615 feet, from public roads or other structures. Eight of the 11 proposed turbines would be located more than 615 feet from property boundary lines, except as discussed below in section B(1), and logging roads. The remaining three turbines (8, 9, and 11) would be closer than 615 feet to the property boundary line that coincides with the township boundary line between Chain of Ponds Township and Kibby Township. The setbacks to the U.S./Canada international boundary are discussed below in Section B(1).
- (2) The applicant proposed that where the turbines would be less than 615 feet from the abutting parcel, the land is non-residential and is in active, exclusive use for timber harvesting. The applicant has obtained consent from adjacent/underlying landowners Kennebec West Forest and Plum Creek Maine Timberlands for the turbines to be located less than 1.5 times the turbine height from the parcel boundary. The provision was expressly included in the underlying landowner Plum Creek easement agreement, and a separate agreement was obtained from underlying landowner Kennebec West Forest.
- (3) The applicant provided the IEC Design Evaluation Statement<sup>4</sup> and turbine protection systems information for the Vestas V90 turbine showing that the turbine design meets accepted safety standards, and that over-speed controls (*e.g.*, variable pitch, mechanical brakes) are incorporated in the design.

B. *Chapter 10 setbacks, Section 10.26,D of the Commission's Land Use Districts and Standards.*

- (1) The applicant proposed that the bases of all of the turbines would range from 170 feet up to 6,842 feet from all property boundaries, including the cleared corridor (closest turbine is 170 feet) along the Maine/Quebec boundary that is maintained by the International Boundary Commission (IBC). The applicant consulted with the IBC regarding the location of the turbines relative to the international boundary between the U.S. and Canada, who informed them that as long as no part of the project would extend into the cleared corridor IBC maintains along the Maine/Quebec border, no permit from the IBC would be needed. The IBC maintains a cleared corridor that averages 35 feet wide. The land use directly across the border from the proposed KEP is forest management. No residential structures or publicly used roads are located near the proposed development area.

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<sup>4</sup> International Electrotechnical Commission: Publication of IEC WT 01 by the IEC's Certification Assessment Board in April 2001 set the standards and technical specifications for the safety of wind turbines, rotor blade tests, power curve, noise and load measurements, and power quality.



- (2) One pole structure and portion of the 34.5 kV collector line would be located less than 25 feet from a property boundary line. The applicant obtained consent from the abutting landowner to do so.
- (3) *Setbacks to streams and wetlands.* All turbines would be set back at least 150 feet from all minor flowing waters and P-WL1 wetlands. Except for at stream crossings, the new and existing roads and the proposed collector lines would be set back at least 100 feet.

C. No agency comment or testimony from the Parties was received regarding public safety-related setbacks associated with the proposed KEP.

10. *Title, right, and interest; and use of the surrounding area.* The land proposed to be developed for the KEP in Kibby Twp. is owned by Plum Creek Maine Timberlands, LLC (Plum Creek), and in Chain of Ponds Twp. is owned by Kennebec West Forest, LLC (KWF). Both landowners have granted to the applicant easements to develop this site with a wind energy generating facility. The land surrounding the proposed development area is actively managed forestland.

- A. A Wind Energy Easement was signed by KWF with the applicant on August 30, 2009. KWF also granted consent to allow the turbines to be less than the required or recommended setbacks from the edge of the easement area. The KWF easement provides for continued forest management activities, and provides a noise easement such that all areas within 2,500 feet of the turbines do not have to meet the state or local maximum state sound level limits.
- B. A Wind Energy Easement was signed by Plum Creek with the applicant on December 1, 2009, and includes a 3,900 acre sound easement area located in the western portion of Kibby Twp., allowing the sound generated by the facility to exceed the regulatory limits, and to cast shadows or shadow flicker.

11. *Development costs, financial and technical capacity, and decommissioning plan.*

- A. *Development costs and financial capacity.* The total estimated development cost would be \$116.3 million, of which the estimated capital costs for the proposed 11-turbine project would be \$92 million. The applicant is a wholly owned subsidiary of TransCanada Corporation, which as of December 2008 had over \$39 billion of assets, \$3 billion of cash flow, and \$1.4 billion of net income from continuing operations, with an "A" credit rating, and has committed to fund the proposed project.
- B. *Technical capacity.* The applicant was responsible for the design, permitting, and construction of the existing Kibby Project (reference Zoning Petition ZP 709 and Development Permit DP 4794), which is located near the proposed KEP site. As such, the site conditions at the proposed KEP site are similar. The Kibby Project was successfully constructed, but Kibby Project is much larger and included more extensive associated facilities. The applicant would implement the expertise and state-of-the art construction techniques used and approved of at the Kibby Project site to construct the proposed KEP.

- C. *Applicant's decommissioning plan proposal.* The applicant stated that it expects to re-power the proposed KEP at the end of its 25-year life span, and would operate the facility up to 50 years or more. However, in accordance with requirements of the Wind Energy Act, the applicant submitted the following regarding its decommissioning plan:
- (1) The decommissioning plan would entail dismantlement of the turbines, including removal and resale or reuse of the nacelles, blades and towers; all above ground collector system; the substation; and the met tower(s). The applicant stated that the project components have high market value. Disturbed areas would be re-graded and natural vegetation would be allowed to re-colonize these areas unless the landowner requests otherwise in writing.
  - (2) To fund the decommissioning, the applicant would put in place a Letter of Credit (LOC) or Parental Guarantee from TransCanada Corporation to fund the necessary activities. The estimated cost would be \$2,458,281 (based on 2009 US dollars) for removal of the collector system and substation; the turbines and foundations, minus the salvage credits per turbine; and the cost of transportation and disposal.
    - (a) If TransCanada Corporation's credit rating falls below investment grade, the applicant would provide a LOC from a financial institution of investment grade standing.
    - (b) The amount of the Parental Guarantee or LOC would be 50% of the estimated decommissioning costs, submitted by December 31<sup>st</sup> of the first year of commercial operation. No later than year 15 of operation, the applicant will reassess the decommissioning costs and put in place a financial assurance for 100% of the then estimated decommissioning costs, less salvage value.
  - (3) A detailed decommissioning plan including a description of the work to be performed to remove the turbines and foundations down to a depth of 24 inches below final grade; to remove all buildings, cables, electrical components, and associated facilities (unless they are to be otherwise placed into productive use); and how the site will be restored, including any landowner requests, will be submitted:
    - (a) No later than 60 days after the date the KEP ceases to generate electricity as set forth in a written notice from the applicant to LURC stating an intention to cease generating electricity; or
    - (b) If no notice is given, 60 days after the KEP ceases to generate electricity for 12 consecutive months, unless the operator demonstrates to LURC that the project has not been abandoned and should not be decommissioned.
- D. *Applicant and Parties' testimony.* No issues related to the proposed decommissioning plan were raised by the Parties, with the exception of re-vegetation of high mountain areas, which was commented on by the FBM and is addressed in Findings of Facts #46 and #47. MNAP in its review comments recommended provisions that should be incorporated in the applicant's decommissioning plan for restoration of the Subalpine Fir Forest areas (*see* Finding of Fact #30,C).

## Tangible Benefits and Energy Production

### 12. *Background.*

A. LD 1504, now PL 2009, Ch. 642, which revised the law with regard to tangible benefits, became effective on July 12, 2010. The application for Development Permit DP 4860 was accepted for processing in December of 2009 prior to Chapter 642 becoming effective, and revised on August 16, 2010. As such, this proposal is subject to the tangible benefits provisions of PL 2007 Ch. 661 (the “Wind Energy Act”), but not to the provisions of the new law, PL 2009 Ch. 642. In any event, the applicant asserts, as discussed below, that this proposal satisfies both tangible benefits provisions.

B. *Energy production.* Regarding energy production, although testimony was received from FBM, and in rebuttal to FBM from the applicant (*see* Findings of Fact #18 and #19), the issue of energy production is not directly relevant to the Commission’s decision criteria. Most recently, the 12<sup>th</sup> Procedural Order, issued on November 10<sup>th</sup>, addressed the relevancy of energy production to this proceeding and states:

*“Actual power production data is of general interest during the consideration of grid-scale wind energy facilities, and the Commission has requested that such data be submitted for projects it has granted approval for. The Wind Energy Act, specifically 35-A M.R.S.A., Ch. 34-A, Sections 3402(1), 3404, and 3454, establish that wind energy development provides energy, recites various environmental and economic benefits of such development, and sets wind energy generation goals for the state. While 12 M.R.S.A., Section 685-B(4) and 35-A M.R.S.A., Section 3452 require that a wind energy development be evaluated to determine if there would be undue or unreasonable adverse impacts, the Wind Energy Act presumes that such development is an economically feasible energy resource.”*

C. *Energy benefits.* The applicant stated that the proposed 33 MW KEP would generate up to 92,000 megawatt hours (MWh) of emission-free, renewable energy, equivalent to the power used by 13,000 Maine homes per year, based on an estimated average annual capacity factor of 31.8%. The applicant estimated that this site’s high value wind resource will enable an energy capture of 8,400 MWh per turbine<sup>5</sup>, and asserted that this would be an efficient use of land.

13. *Applicant’s tangible benefits proposal.* The applicant asserted the following regarding the tangible benefits associated with the proposed revised KEP:

A. *Economic benefits.* The applicant asserted that the proposed revised KEP would provide significant economic benefits for Maine and the region, and they expect the benefits to be similar to the actual benefits resulting from the existing Kibby Project. As of December 2009 the Kibby Project had resulted in \$109 million spent in Maine, of which \$9 million was spent in Franklin and Somerset Counties. During peak construction during the summer of 2009, 315 workers were employed, of which 80% were from Maine. The actual construction period data from the Kibby Project were consistent with predictions

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<sup>5</sup> As compared to lower wind resource sites, such as the Stetson Project, with 4,400 MWh per turbine.

by State economist Charles Colgan during review of that project (reference Zoning Petition ZP 709). In addition, the applicant asserted the following:

- (1) Direct and indirect employment during construction of the proposed revised KEP would include both temporary construction industry jobs, and indirect support of local businesses. Maine companies such as construction or environmental companies that were used for the Kibby Project have already been or are expected to be used for the revised KEP.
- (2) For the proposed revised KEP, 1 additional permanent employee would be needed. Nine people from Maine (most from Franklin County) were hired for the Kibby Project A Series, with more hired as the B Series came on-line in the fall of 2010.
- (3) The benefits to energy security and costs cannot be analyzed using econometric models. The KEP will sell to New England market, but market stability is affected by world fossil fuel markets. However, wind energy tends to stabilize prices, mitigating other destabilizing forces.
- (4) Several real property taxes and local benefits were noted:
  - (a) *Property taxes.* Additional property revenues over the life of the project, paid to the State's General Fund would be paid. Although the exact tax value of the KEP has not yet been determined, the applicant is the largest single tax payer in Franklin County, and estimates it will pay more than \$400,000 per year in property taxes to the Unorganized Territories, or \$10 million over a 25-year period, for the revised KEP.
  - (b) *State income taxes.* There would be additional State income tax revenues paid over the life of the project, estimated to be at least \$13 million over a 25-year period.
  - (c) *Community benefits package.* The community benefits package to Eustis/Stratton would be increased from \$132,000 to \$165,000 for the additional 33 MW (\$1,000 per MW). The community benefits package would be equivalent to \$4,000 per turbine per year over a 25 year period, for a cumulative package of \$880,000, and would consist of:
    - (i) \$33,000 per year payable to the Town of Eustis/Stratton, or \$660,000 over 20 years (reduced from \$45,000 per year in the original proposal)
    - (ii) \$110,000 lump sum payment to the Maine Department of Labor to support green job education and training in Franklin County (reduced from \$150,000 in the original proposal);
    - (iii) \$110,000 lump sum payment to the High Peaks Alliance (HPA) to support land conservation and trail corridor acquisition in Franklin County (reduced from \$150,000 in the original proposal).

#### 14. *Agency and local government review comments.*

- A. *State Planning Office/Maine Department of Labor (SPO/DOL).* SPO and DOL jointly reviewed the original 15 turbine proposal, including amendments to the proposed tangible benefits package in April of 2010, and commented that the community benefits package and the contribution of \$150,000 in support of training Maine workers would undoubtedly be economically beneficial for State of Maine.

- B. *Maine Public Utilities Commission (PUC)*. PUC reviewed the revised application and confirmed the assumed energy benefits, however also noting that these benefits are presumed in law and are not considered tangible benefits for the purpose of the law. PUC noted that, “the Wind Energy Act does not require a wind project to provide tangible benefits from each of the categories listed in statute to meet the significant tangible benefits requirement”.
- C. *Maine Bureau of Parks and Land (BPL)*. BPL reviewed the revised application and commented that tangible benefits packages should ensure concrete outcomes. To accomplish this end for the contribution to the HPA, LURC should require conservation funding to be placed in escrow pending concurrence of various parties, and BPL offered to serve as a party on an escrow agreement to ensure expenditures result in concrete outcomes. BPL acknowledged that land conservation is more than mere “price at closing”, but argued that because only modest funds are involved in this proposal, “price at closing” is an important benchmark from which to mobilize additional funds. Additionally, land “stewardship” is an important component of land conservation. BPL recommended that LURC condition the decision as follows:
- (1) “To the High Peaks Alliance, 80% of funds toward value at closing, toward conservation or recreation land or interest in land in Franklin County, held in escrow pending release by the Bureau of Parks & Lands upon a finding that the transaction will permanently protect conservation and recreation interests.”
  - (2) “To the High Peaks Alliance, 20% of funds toward land conservation stewardship or recreational stewardship, of those interests in land acquired with the 80% above, held in escrow until land or interests in land have been acquired, with no other conditions on the release of funds to the High Peaks Alliance.”
- D. *Franklin County Commissioners*. The Franklin County Commissioners commented during the review of the revised proposal that they support the “TransCanada compromise proposal for an additional eleven wind turbines to be located in Franklin County” because it would “provide for an economic and ecological fit for Maine” that would be “important to Franklin County and the state of Maine”. The Franklin County Commissioners also submitted a summary of the development of the Kibby Project tax incremental financing (TIF) agreement, including accounting from the County’s May 2010 report.
- E. *Town of Eustis/Stratton*. The Town of Eustis/Stratton selectman commented in support of the revised application because of the existing infrastructure and the tangible benefits that the town will receive. The Selectmen stated, “The 11-turbine expansion is a good project as it is adjacent to the 44-turbine Kibby Project and much of the infrastructure is already in place. It is a boon to our small town during construction and after completion as the town of Eustis is the nearest town to receive the benefit package offered by TransCanada.”
15. *FBM comments on tangible benefits*. FBM asserted that the proposed tangible benefits package did not meet the standard in law because it came from the applicant’s wealth and was not “attributable to the construction, operation and maintenance of the windpower

project”. FBM also asserted that property values in the vicinity of the proposed KEP would decrease as a result of the project, noting testimony offered by various members of the public and citing certain studies and data. FBM also submitted comments regarding the applicant and TIFs, responding to Terry Bennett’s pre-filed testimony on the estimated taxes to be paid for the proposed KEP. FBM conjectured that the applicant applied for a TIF for the Kibby Project because it had failed to properly estimate the time involved with permitting, and that certified accounting of the costs of the Kibby Project should be shared publicly. FBM asserted that the applicant did not support its claim that the Kibby Project mutually benefits both the applicant and Franklin County with hard data.

16. *Applicant’s response to BPL, rebuttal to FBM comments on tangible benefits, response to 6<sup>th</sup> Procedural Order, and testimony on TIFs.*
  - A. *BPL comments.* In response to BPL’s recommendation on how to shape the contribution the HPA in a manner that will ensure concrete outcomes, the applicant concurred with BPL’s recommendations to ensure the tangible benefits achieve their intended objective.
  - B. *FBM comments.* The applicant objected to FBM’s characterization of the proposed tangible benefits, asserting that FBM did not correctly interpret the intent of the recent legislation in this regard. The applicant rebutted FBM’s assertion, stating, “the requirement to demonstrate tangible benefits in the amount of \$4,000 per turbine per year averaged over a 20 year period is in addition to the tangible benefits that result from construction, operation, and maintenance of the project.”
  - C. *Response to Sixth Procedural Order, on real estate values.* With its post-hearing comments, the applicant included the titles and summaries of five papers addressing impacts of wind energy development on real estate values. The applicant noted that the results of the studies, which were done at a variety of locations in the U.S., indicate that any adverse impacts on real estate values are inconsistent, and that the evidence does not support that there is necessarily an adverse effect.
  - D. *Terry Bennett testimony on Tax Incremental Financing (TIF).* The applicant testified at the May 12<sup>th</sup> hearing that it does not currently have plans to pursue a TIF for the KEP. However, several statements were contained in its pre-filed testimony regarding the projected taxes expected to be paid for the KEP.
17. *Larry Warren letter discussing the Kibby Project TIF.* At the May 12<sup>th</sup> hearing, Larry Warren, as a member of the public, presented oral testimony on TIFs, submitting after the hearing a letter containing the information he discussed in his oral testimony. In that letter he stated: “TransCanada has taken a responsible role in the absence of a State policy on tangible benefits. Their contributions under the Kibby Project were in excess of \$3.1 million. Their proposed contributions under the Sisk project are \$1.4 million. Their application for a TIF in Franklin County resulted in a \$4 million benefit package to Franklin County that could have been greater had the County opted to capture more of the project under the TIF. TransCanada locked in to an 8 mill rate for twenty years when the impact of their investment

in the unorganized territories would have significantly reduced the mill rate and their net long term tax payments.”

18. *Friends of the Boundary Mountains (FBM) comments on energy production.* FBM asserted the following:
  - A. “LURC needs to question the viability, both economic and environmental, of this project,” considering “the amount of energy that may actually be generated against the environmental damage”, “the cost to Maine's tax and ratepayers once all subsidies; Tax Incentive Financing agreements, and upgrades of power transmission are factored in”, disruption of the existing New England power grid due to the intermittent nature of wind power, and the project’s expected 20 to 25 year life span.
  - B. The proposed KEP site and the existing Kibby Project site are unsuitable for windpower due to severe winter weather and high elevations. The actual production for first 8 months of Series A of the Kibby Project (10/31/09 thru 6/30/10) was 19.4%, and the annual production will probably be under 19% due to a shut-down for maintenance during August.
  - C. TransCanada has represented the Boundary Mountains as having a “premier” wind resource, claiming that the existing Kibby Project will have a capacity factor of at least 30%. However, the facility did not reach that level of production.
  - D. FBM’s Exhibit B provided month-by-month production data for Series A of the Kibby Project’s first 8 months of operation, showing the actual amount of electricity produced in MWh (22 turbines) from October 31, 2009 through June 30, 2010. The average capacity factor for the first 8 months was 19.4%, with 50.4% on the day it started up production, dropping to 16.8% by December, then to 6.7% in January 2010, increasing again and then dropping back to 16.6% in June.
  - E. FBM’s Exhibit C compared the first 6 months of operation of Series A of the Kibby Project to the Mars Hill and Stetson I wind energy facilities, with the Kibby Project producing far less than either Mars Hill (nearly 40% of capacity) or Stetson I.
19. *Applicant’s rebuttal to FBM regarding energy production.* In rebuttal to FBM’s contention that the site is unsuitable for wind power, the applicant asserted that FBM based its statement on a snap shot of production numbers from the Kibby Project, and that a brief period, in particular during the start-up phase, does not provide a basis for evaluating long-term energy production. The applicant countered that, excluding the period when the project was not in production due to collector line issues, the Kibby Project has been operating as expected. The applicant supplied comparisons of the Kibby Project output within other projects during a similar period of time showing comparable outputs to refute FBM’s assertion that the proposed KEP site is not suitable for wind power.

## Environmental Assessment

### Scenic Impact Assessment

#### 20. *Applicant's scenic impact assessment*<sup>6</sup>.

- A. *Background.* For the 15 turbine proposal, the applicant conducted a scenic assessment of the scenic resources of state or national significance, as defined in 35-A MRS, Ch. 34-A, § 3451(9), (hereinafter "scenic resources") located within 8 miles of the proposed KEP development area that would be affected: the Chain of Ponds (Long Pond, Natanis Pond, and Bag Pond), the Arnold Trail, Kibby Stream, Arnold Pond, and Crosby Pond. Scenic resources located within 8 miles, but having no view of the project turbines were noted: Sarampus Falls Picnic Area, Natanis Pond Overlook, Round Pond and Lower Pond of the Chain of Ponds, the North Branch of the Dead River, and Spencer Stream. As defined, scenic resources for which a scenic impact assessment must be done include properties listed on the National Register of Historic Places [see 35-A M.R.S., Ch. 34-A, § 3451(9)(H)].

The materials submitted by the Maine Historic Preservation Commission (MHPC) to the LURC record assessing historic and archaeological resource impacts, separate from the scenic impact assessment, were also submitted to the U.S. Army Corps of Engineers (Corps) for its federal Section 106 consultation process with MHPC on historic impacts, which is a part of the federal Section 404 wetland permit review. Much of MHPC's review comments were in the nature of conclusions made in the context of applying federal criteria (see Finding of Fact #28).

- B. *Applicant's scenic impact assessment, with adjustments for the proposed 11-turbine KEP.*
- (1) *Chain of Ponds.* Chain of Ponds is a great pond rated by the *Maine Wildlands Lakes Assessment* (1987) as having outstanding scenic value, consisting of five connected ponds: Round Pond, Natanis Pond, Long Pond, Bag Pond, and Lower Pond. For Turbines 1 through 8, there is no significant difference between the original proposal and the revised proposal for scenic impact. The applicant's assessment determined there would be visibility of the proposed revised KEP from the Chain of Ponds at distances ranging from approximately 2.9 miles to approximately 4 miles from 24% of the ponds' area. The most extensive view of the turbines would be from the southeastern portion of Long Pond. No view of the turbines would occur from Round Pond or Lower Pond.
- (a) *Natanis Pond.* From the southeastern part of Natanis Pond, the hub of 1 turbine at a distance of 3.25 miles and possibly 2 turbines' blade tips would be visible. No turbines would be visible from the remaining portion of Natanis Pond, including from the Natanis Pond Campground, which is part of the BPL public reserve land located at the western end of Natanis Pond.
- (b) *Long Pond.* Portions of up to 11 turbines may be visible from one area in the central portion of Long Pond, primarily on the lake and from the eastern shore.

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<sup>6</sup> The applicant's visual impact assessment included the turbines and the associated facilities such as roads and power line corridors.



Closer to either end of the pond, portions of up to 7 turbines may be visible. The area of cut and fill for road construction connecting turbine 11 to turbines 12 through 15 that would previously have been visible from this pond has been eliminated. From the western shore, there would only be a very limited view of 4 to 7 of the turbines. Other road and turbine pad construction would not be visible from Long Pond, with the exception of possibly a very small area of the turbine pad fill for Turbine 11.

- (c) *Bag Pond*. Portions of up to 11 turbines would be visible from the western part of Bag Pond, but no turbines would be visible from the eastern shore or from Route 27.
- (2) *Arnold Trail*. Where the Arnold Trail is located within the Chain of Ponds and Arnold Pond, the Trail and these water bodies are synonymous. The proposed KEP would be visible from the Trail at distances of approximately 2.9 miles to 4 miles at Chain of Ponds, and at 7 miles on Arnold Pond. Listed on the National Register of Historic Places, the Arnold Trail extends from Coburne Shipyard in Pittston, Maine to Quebec City. The Trail roughly follows Route 27 from just north of Stratton to Arnold Pond, but is over water within the North Branch of the Dead River, Chain of Ponds, Horseshoe Pond, and Arnold Pond sections. Within 8 miles of the development area, the Trail follows the North Branch of the Dead River and then continues north through Chain of Ponds, along Horseshoe Stream to Horseshoe Pond, and then to Arnold Pond.
- (3) *Crosby Pond and Arnold Pond*. Portions of Turbines 1 through 8 would be visible from Arnold and Crosby Ponds. The applicant noted that the CP does not object to Turbines 1 through 8.
  - (a) *Arnold Pond*. Portions of 6 turbines would be visible from Arnold Pond at a distance of 7.4 to 7.8 miles. Arnold Pond is a great pond rated by the “Maine Wildlands Lakes Assessment” as having outstanding scenic value.
  - (b) *Crosby Pond*. Portions of 9 turbines would be visible from Crosby Pond at a distance of 6.3 to 7.3 miles. Crosby Pond is a great pond rated by the “Maine Wildlands Lakes Assessment” as having outstanding scenic value.
- (4) *Kibby Stream*. Within 8 miles of the proposed KEP, Kibby Stream is located on private land, and can only be accessed over private land. The applicant’s assessment showed that one of the few areas from which the project would be visible is a harvesting equipment storage area where Kibby Stream is crossed by a logging road (approximately 3 miles from the KEP), but this viewpoint is not a high value viewing location. The other potential view of the project, including the access road and a portion of the cleared corridor for the collector line, is from a distance of 8 miles.
  - (a) The applicant inspected the site conditions along Kibby Stream, finding that at 1 to 1.5 miles from the proposed KEP the stream does not meet the State’s definition of navigable water. This stream becomes navigable below Gold Brook Road, approximately 4 miles from the project. The P-SL Subdistrict along the stream is intact forest for much of the stream’s length, and there is little opportunity for views of the surrounding hills from the stream until the stream is much larger and in an open wetland area, over 5 miles from the project.

C. *Applicant's testimony on cumulative impacts (during review of the original 15-turbine project)*. During review of the original 15-turbine project, the applicant included with its scenic impact assessment materials on the cumulative impacts of the proposed KEP and the existing Kibby Project, including a map showing cumulative impact areas. The cumulative impact assessment was not comprehensively updated for the 11-turbine proposal. In its pre-filed testimony, the applicant asserted that while the Kibby Project is visible from Long Pond, locating additional turbines in this area is appropriate as the incremental impacts will not be significant, and locating the two projects in proximity will reduce the overall impact of wind energy projects in the state (Vissering Pre-Filed Direct Testimony p. 39, 40, transcript [testimony of Jean Vissering at pp. 315-316]).

21. *LURC third party scenic assessment peer review by James F. Palmer, applicant's response, and staff questions and responses.*

A. *Background - Full report submitted for review of the original 15 turbine project*. James F. Palmer, PhD FASLA (Fellow of the American Society of Landscape Architects), Landscape Architect, was contracted by LURC to conduct a third party peer review of the applicant's scenic impact assessment, entitled "Kibby Expansion Wind Project Aesthetic Impact Assessment". Mr. Palmer's report, submitted on April 16, 2010, addressed (1) the adequacy of the applicant's visual assessment with respect to the completeness of each step in the process, (2) a summary of the changes implemented by the "Act to Implement Recommendations of the Governor's Task Force on Wind Power Development" (hereinafter the "Wind Energy Act"), and its effect on evaluating scenic impacts from expedited grid-scale wind energy development in the context of a standard process of visual impact assessment, (3) a discussion of the field work and additional studies conducted for his review, and (4) a discussion of additional issues.

B. *Summary of Mr. Palmer's report for the revised 11 turbine project*. To evaluate the applicant's scenic assessment for the revised KEP, Mr. Palmer utilized his expertise and systematically applied the scenic impact criteria and standards in Maine's Wind Energy Act to the record evidence. In his report, Mr. Palmer included a table summarizing his evaluation of the proposed 11-turbine KEP, as well as the results of computer modeling<sup>7</sup>. Mr. Palmer concluded the following:

- (1) "Two ponds, Long Pond and Bag Pond, have the potential for Medium scenic impacts, which are adverse but typical of wind energy development, and within the range of impacts that the Wind Energy Acts anticipates."
- (2) "Several locations have the potential for Low to Medium scenic impacts, primarily because of distance or reduced visibility. These include Arnold Pond, Crosby Pond, Natanis Pond and North Branch Dead River."
- (3) "The Kibby Stream is an unusual case. Someone fly fishing might get to within a mile of the turbines after walking up stream for 7 miles. They would have the potential to see large portions of several turbines at a close distance, though perhaps

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<sup>7</sup> Palmer's report rates scenic impacts by categories. The factors used by Palmer to create his "high-medium-low" categories were based on the criteria in the Wind Energy Act, field investigation, and a computer generated visibility analysis which considered factors such as: the extent of visibility combined with the number of turbines visible, distance, vegetation/canopy height, and topography.

- only briefly through a screen of trees. However, it is not clear that such exposure would disrupt a fly-fishing experience. It is just as likely that someone might pick this fishing destination in the hopes that they might glimpse the turbines. The rating of scenic impact is Low-Medium.”
- (4) “The potential scenic impacts to Arnold Trail are Low, largely because the experience of scenic quality is not identified as a significant determinant in its nomination forms.”
  - (5) “There is no scenic impact to Round Pond, Lower Pond, the Natanis Pond Overlook or the Sarampus Falls Rest Area because turbines are not visible from these areas.”

C. *Applicant’s response to Mr. Palmer’s report.* The applicant noted that while a visual assessment is inherently qualitative, they appreciate Mr. Palmer’s efforts to provide a quantitative and systematic approach, assigning high-medium-low ratings for each affected resource with regard to the Wind Energy Act. Mr. Palmer noted that the removal of 4 turbines results in a reduction of the number of turbines visible in most instances (including Long Pond, Bag Pond, and Kibby Stream). The applicant noted that the conclusions reached by BPL and Mr. Palmer are consistent with the conclusions reached by the applicant’s consultant, and that no expert has testified that the visual impacts would be unreasonable or unduly adverse. Furthermore, no expert has testified that the revised project fails to meet the visual review criteria.

- (1) *Arnold Trail.* Mr. Palmer concluded that the impact to the Arnold Trail would be low, and that scenic quality does not play a significant role in the historical experience of the Trail. Likewise, Ms. Vissering concluded that the presence of the turbines in portions of the Trail’s viewshed was unlikely to diminish the historical experience.
- (2) *Kibby Stream.* Mr. Palmer determined that the visual impact to Kibby Stream would be Low-Medium, principally due to the potential for views within one mile, but did not determine that the impacts would be undue. Moreover, Mr. Palmer assessed the impacts as if Kibby Stream were fully accessible by the public. The applicant noted, however, that access to Kibby Stream is across privately owned land, and provided additional detail for how Kibby Stream may be accessed, navigable areas of the stream, and the locations from which the project would be visible. Finally, for the Kibby Project, Ms. Vissering had conducted user surveys of individuals using the project area, finding that the views of that project would have neither a positive nor a negative effect on their recreational experience (*see* Zoning Petition ZP 709, Finding of Fact #47).
- (3) *Crosby and Arnold Ponds.* Mr. Palmer determined that the views from these ponds, at distances ranging from 6.5 miles to 7.5 miles, would be Low-Medium. The applicant noted that the views from these ponds are predominantly of Turbines 1 through 8, which the Consolidated Parties (CP) agree is not undue. The views would include Turbines 1 to 3 and 5 to 10, with Mt. Pisgah largely blocking the view of Turbines 9 and 10 (Note: In its relocated position, Turbine 11 would not be visible from these ponds).
- (4) *Chain of Ponds.* No view of the project would occur from Round Pond or Lower Pond. The view from Natanis Pond would only include the tips of the blades of one or two turbines, and potentially one turbine hub, and would not be from the State-

owned campground. The applicant's consultant has testified that the view of the turbines from Bag and Long Pond is diminished by the dominance in the viewshed of Mt. Pisgah.

D. *Staff questions to Jim Palmer and response.* In the 10<sup>th</sup> Procedural Order, staff questions were directed to Mr. Palmer regarding his report. Those questions and Mr. Palmer's responses are summarized below:

(1) Staff asked Mr. Palmer to provide detail of how both Arnold Pond and Crosby Pond, at a distance of 6.6 miles to 7.5 miles, could be given the same rating as Natanis Pond at a distance of approximately 3 to 4 miles.

*Response.* Mr. Palmer responded that he first described and tried to clarify the meaning of the Wind Energy Act's criteria, and then defined levels of severity to make determinations of Adverse and Unreasonably Adverse impact. The Overall Scenic Impact rating is not simply an average of the ratings for the criteria, but is also based on informed judgment. The overall ratings for these three ponds are based on the particular circumstances for each, with the differences being in the scope and scale of the project views and the viewers.

- (a) For Arnold Pond, "the hubs of up to 6 turbines are likely to be visible from approximately 7.4 to 7.8 miles away, with the possible visibility of an additional 4 turbine blade tips. This visibility is concentrated to the eastern two-thirds of the lake. The original Kibby [Project] turbines are beyond 8 miles. Arnold Pond has a boat launch, but there are no indications of large numbers of users. Though several turbine hubs will be visible from a large portion of the lake, their distance is approaching the threshold of No Adverse impact - the turbines will not be visually dominant. Combine this with the relatively few users and the overall scenic impact was deemed to be Low-Medium (*i.e.*, between low and medium)."
- (b) For Crosby Pond, "the hubs of up to 9 turbines are likely to be visible from approximately 6.3 to 7.3 miles away, with the possible visibility of an additional 2 turbine blade tips. This visibility is concentrated to the eastern half of the lake. The original Kibby [Project] turbines are beyond 8 miles. Crosby Pond has maintained forest campsites, but there are no indications of large numbers of users. Though several turbine hubs will be visible from a large portion of the lake, their distance is approaching the threshold of No Adverse impact - the turbines will not be visually dominant. Combine this with the relatively few users and the overall scenic impact was deemed to be Low-Medium (*i.e.*, between low and medium)."
- (c) For Natanis Pond, "there is the possibility of 1 turbine hub being visible from approximately 3.25 miles away, with the possible visibility of an additional 2 turbine blade tips. This visibility is limited to a very small area in the southwestern corner of the lake and is questionable. Up to 4 turbine hubs from the original Kibby project may be visible from the left half of the lake. Natanis Pond has a boat launch and a large developed campground, though they are well away from the small area of potential visibility. While there is the potential for a larger number of users, the area of visibility is quite small and away from the more intensively used areas. When this is considered with the very limited

possibility of seeing a turbine hub or blade tip, the overall scenic impact was deemed to be Low-Medium (*i.e.*, between low and medium).

- (2) Staff asked Mr. Palmer how he considered the number and extent of turbines visible in his evaluation, for example did he assign quantities, such as 1-3 turbines visible = low, 4-7 turbines = medium, 8-11 turbines = high?

*Response.* Mr. Palmer stated no, that he did not form interval groupings for the number of turbines visible, noting that there is an interaction between the portion of the turbine and the number of turbines that are visible. He chose a turbine's hub - the center of a nacelle - as a point where a turbine would be easily recognizable. In addition, the greater the number of turbines that are visible, the more they are recognized as an energy production factory.

- (3) Staff asked Mr. Palmer if there were instances where only a tip of the blade was visible versus the entire blade, and if so, how did that factor into or not factor into his analysis?

*Response.* Mr. Palmer stated that he has found that for this project, the scenic resources tend to have potential views of turbine hubs or no potential views at all, with the exception of the North Branch Dead River, which may have only a view of a blade tip. This scenic resource was given a Low rating for Overall Scenic Impact. If only a few meters of a blade tip were visible, one would need to be quite close for it to be significant.

## 22. *Maine Bureau of Parks and Lands (BPL) review comments, and applicant's response.*

- A. *BPL review comments.* BPL commented that it "offers no reason for rejection of the pending revised [KEP] application". BPL's overall review comments are summarized below:

- (1) *State-owned lands.* BPL has not identified any jurisdictional viewpoint on BPL land or BPL-owned shoreline. BPL does not have reasonably foreseeable plans to develop viewpoints on other BPL undeveloped conserved lands.
- (2) *Chain of Ponds.* There are jurisdictional viewpoints on the Chain of Ponds, which abut BPL lands. BPL contended that its ownership of the shoreline is relevant as LURC weighs the significance of the water viewpoints, asserting, "these water viewpoints overlap with BPL's stated interest as a guardian, of sorts, of the Arnold Trail. However, it is BPL's inexpert opinion that the impacts are neither unreasonable nor unduly adverse."
- (3) *Arnold Trail.* Regarding the views from the Arnold Trail, and the extent to which the existence of the Trail may or may not enhance the value of the Chain of Ponds viewshed, BPL deferred to the opinions of the MHPC or other parties with respect to the extent or reasonableness or adversity under state and/or federal law. However, BPL asserted that the Arnold Trail should be analyzed as one viewpoint synonymous with the Chain of Ponds, noting that because the two occupy same geography the viewer expectations and other criteria should be identical.
- (4) BPL noted that the applicant's withdrawal of the rulemaking petition that would have sought further wind energy development in the area and the scaling back of the KEP collectively result in the scenic and recreational impacts of the revised KEP proposal not being troublesome to BPL.

(5) BPL offered several additional observations, but also stated it does not intend to lead LURC toward any conclusion other than neither unreasonable nor unduly adverse (as stated above).

(a) BPL urged exclusion of any proposed finding that highway noise on a scenic byway is a significant reason to significantly diminish the significance of a scenic asset.

(b) BPL urged exclusion of any proposed finding that motorized recreation is a significant reason to diminish the significance of a scenic asset.

B. *Applicant's response to BPL comments on scenic impacts.* The applicant noted BPL's statements that "it offers no reason for rejection of the pending [KEP] application", and that "the removal of the Kibby III rulemaking and its cumulative implications, and the scaling back of [the KEP], collectively mean that the scenic and recreational impacts of the revised [KEP] proposal do not jump out as troublesome to BPL." The applicant further noted that BPL stated that views from the water, including the Arnold Trail where it coincides with the Chain of Ponds, "are neither unreasonable nor unduly adverse". The applicant also noted that the conclusions reached by BPL and LURC's scenic expert Jim Palmer are consistent with the conclusions reached by its scenic consultant, Ms. Vissering. Last, the applicant noted that no visual expert has testified that the scenic impacts would be unreasonable. The applicant asserted that for these reasons, it believes the scenic impacts due to the proposed revised KEP would be reasonable and well within acceptable limits according to the law.

23. *Consolidated Parties' (CP) review comments.* The CP asserted that the project would "cause an unreasonable adverse impact to the character of outstanding scenic resources of both state and national significance", asserting that "the number of turbines is not as important as the level of adverse impact to the resources;" "although the revised application reduces some impacts to natural resources, the remaining impacts are still undue adverse impacts;" "the northern eight turbines would not cause an undue or unreasonable adverse impact", and "development of turbines in the area to the south would cause undue or unreasonable adverse impacts." The CP asserted the following:

A. *Scenic resources to be adversely impacted.* The scenic resources that would be affected by the proposed turbines include Chain of Ponds (associated with the Chain of Ponds Public Land Unit), the Arnold Trail, Arnold Pond, Crosby Pond and Kibby Stream. The ponds are all Management Class 1A, and the primary character of this region is its highly scenic undeveloped mountains and forests. The ponds, the stream, and the historic trail are all distinguished because of the very high scenic character of the surrounding area. Recreation in the area (e.g. camping, paddling and fishing) is primarily primitive in character, dependent on the natural scenic character of the surroundings.

B. *CP analysis of the scenic impacts.* The CP stated it "supports the construction of the eight turbines and their associated roads in the northern portion of this project area. Scenic impacts from the northern eight turbines meet the standards and would be notably reduced in comparison to the project as proposed. The removal of Turbines 9 to 11 would not eliminate the adverse impacts of the project on the Chain of Ponds, including the

Public Lands Unit and the Arnold Trail, but it would reduce them below the level of undue adverse impacts.”

- (1) “The southern three turbines continue to constitute an undue adverse impact on scenic resources of state and national significance, and related uses, and should not receive a permit.” “The northern eight turbines can meet the legal criteria regarding the effect of the proposed project on scenic character and related existing recreational uses if certain conditions are included in the permit.”
- (2) “The southern [three] turbines would have an unreasonable and undue adverse impact on the scenic resources and related uses of state or national significance. This region is recognized for its outstanding scenic beauty and possesses multiple individual scenic resources of state and national significance. The southern turbines would compromise the expectations of users and visitors in the region. The turbines and associated road would be prominent, dominant and permanent – forever altering the scenic beauty of the region.”
- (3) “The northern eight turbines cause fewer adverse impacts to the ponds, public lands and the Arnold Trail. The northern eight turbines are generally further away and less dominant on the landscape. While the northern part of the project would have some impacts on the scenic resources and related recreational uses, those impacts would not significantly compromise the scenic resources or uses and do not rise to the level of unreasonable adverse effect.”
- (4) “The turbines, particularly Turbines 9, 10 and 11, would be prominently visible from Chain of Ponds and the Arnold Trail, resources of state and national significance, and would change the scenic character from a landscape with minimal evidence of human activity to one with wind turbines that would be widely visible by recreational paddlers and anglers on Chain of Ponds, and visitors along the Arnold Trail.”
- (5) “Turbines on the ridge between Sisk Mountain and Mt. Pisgah would be squarely in front of the viewer, in particular Turbines 9 through 11. Visitors who enjoy the public lands and waters at Chain of Ponds because of their ‘accessible remoteness’ and their sense of naturalness would have to tolerate this compromise of their recreational experience. The user experience of the Arnold Trail would also be compromised. This particular stretch of the Arnold Trail is where the troops experienced problems resulting from being in the wilderness. Visitors today can get a good sense of the wilderness that Arnold’s men faced.”
- (6) “Most of the proposed 11 turbines will be visible from Long Pond, even seven of the eight turbines CP has concluded would not incur an undue adverse impact (however, some form of mitigation is warranted). The group of 3 southern turbines would be closer, and appear larger, to viewers on Chain of Ponds, making their ‘scope and scale’ greater. In addition, the location adjustment of Turbine 11 made the visual impact greater. CP is not aware of any revision to the visual simulations following the adjustment of Turbine 11 until the revised proposal was submitted.”
- (7) “Some of the turbines are within approximately 3.5 miles of the Chain of Ponds and the Arnold Trail. The viewscape from the south end of Long Pond is framed on the northwest by Mount Pisgah and on the southeast by Sisk Mountain. The two peaks are connected by a long ridge, on which the turbines are proposed. The viewer’s eye is drawn upward from the pond by the two peaks.”

- (8) “Regarding the applicant’s position that the Chain of Ponds is only meant to be managed for motorized uses, recognizing that motorized users also seek and value scenic resources in this region, other than Route 27, some logging roads and a few camps along Chain of Ponds, the only major man-made features in the area are the Kibby I wind turbines and their associated road system.”
- (9) The CP contended there is very limited visibility of the Kibby Project turbines from the scenic resources listed above, except Kibby Stream. However, CP noted that in the revised submission, the applicant addresses cumulative impacts saying that the proposed project will only pose “incremental visual impact of turbines in a landscape that already hosts existing turbines.”

24. *Applicant’s rebuttal to CP comments.* The applicant offered the following rebuttal in response to the CP’s comments:

- A. The applicant noted that CP has argued that the visibility of Turbines 9 through 11 on the Chain of Ponds would be unacceptable, but also acknowledged that Turbines 1 through 8 would also be visible from these locations. The applicant responded to CP that from Bag Pond, the predominant visible turbines would be Turbines 1 through 7 and 9 (*see* viewpoint #6, Vissering pre-filed testimony).
- B. The applicant responded to CP that the change of location of Turbine 11 resulted in it no longer being visible from Crosby Pond or Arnold Pond. Mt. Pisgah would block the view of Turbines 9 to 11. The applicant asserted that “there can be no serious claim that the visual impact of Turbines 1 through 8 on these two ponds is acceptable, but that the visual impacts of Turbines 1 through 11 are unacceptable.”
- C. The applicant asserted that “there is no visibility of the turbines on Round or Lower Pond, and only the tips of the blades of one or two turbines are visible from Natanis Pond, some distance from the concentration of public uses near the State-owned campground. It is only the limited visibility from Bag Pond and Long Pond that raises any issues.” The visibility from Long Pond is shown in the visual simulation in the revised application. The removal of the southern 4 turbines has narrowed the arc of visibility.
- D. The applicant noted that Mr. Palmer concluded that “the overall impact to those portions of Chain of Ponds was medium, that the turbines would not overwhelm the view, and that although there was an adverse impact, it was not undue and was acceptable under the Wind Energy Act.”

25. *Friends of the Boundary Mountains (FBM) review comments.* The FBM asserted the following with regard to scenic impacts:

- A. “The revised proposal would have adverse visual impacts on scenic resources of state and national significance. The remaining turbines will still mar the beauty and character of the area forever. Kibby Stream has potential for large cumulative impacts due to visibility of turbines on Kibby and Sisk. LURC stated [in the draft denial document for the 15 turbine project, pg. 32] the cumulative impacts to the Chain of Ponds



and the Arnold Trail demonstrates that the project would not meet the standards for no undue adverse impacts to the scenic value in the area.”

B. *Cumulative impacts.* “A review of the cumulative impacts of the existing Kibby [Project] combined with the proposed [KEP] demonstrates extensive visual impacts.” FBM asserted which turbines they believe would be visible from various scenic resources of state or national significance in the viewshed<sup>8</sup>, and offered opinions about the visual impacts to scenic resources located both within 8 miles of the proposed KEP and beyond 8 miles. (Note: Scenic resources located more than 8 miles from the proposed KEP are not included in this finding because they are not relevant to the proceeding (*see* 35-A M.R.S. § 3452) included Bigelow Preserve and the Appalachian Trail, Flagstaff Lake, Tim Pond, and Jim Pond. However, Jim Pond is both located within 8 miles of the existing Kibby Project.

- (1) *Bag Pond.* A total of 16 turbines would be visible from the southwest bay of Bag Pond: portions of 6 existing Kibby Project turbines, and portions of 10 turbines from the revised KEP.
- (2) *Lower Pond.* From the southeast corner of Lower Pond up to 13 of the existing Kibby Project turbines would be visible, with no added impact due to the revised proposal.
- (3) *Long Pond.* A total of 13 turbines would be visible from Long Pond at the southern end: up to three existing Kibby Project turbines, and 10 of the 11 proposed KEP turbines.
- (4) *Natanis Pond.* A total of 5 turbines would be visible from Natanis Pond: two existing Kibby Project turbines, and 3 proposed KEP turbines.
- (5) *Arnold Pond.* From Arnold Pond the existing Kibby Project is visible at a distance of 10.7 miles, with the number of turbines visible depending on one’s location on the pond. The revised KEP proposal would add up to 10 turbines visible from this pond.
- (6) *Jim Pond.* Some points on Jim Pond, at 5.1 miles from the Kibby Project, may have a view of up to 8 to 10 the existing Kibby Project turbines. The Pond is a management class 2, resource class 1A, noted for its outstanding fisheries and wildlife values.
- (7) *Crosby Pond.* In Coburn Gore, Crosby Pond, located 10 miles from the existing Kibby Project, there is view of up to 6 turbines due to the changing ridgeline. The proposed 11 turbines of the KEP would result in a total of 17 visible turbines.
- (8) *Arnold Trail.* The blade tip or hub of 10 of the proposed 11 turbines of the revised KEP would be visible from the Arnold Trail.
- (9) *North Branch of the Dead River.* Along the shoreline of the North Branch of the Dead River three blade tips of the existing Kibby Project are visible.
- (10) *Kibby Stream.* Kibby Stream will have cumulative visual impacts, due to both the Kibby Project and the 11 proposed KEP turbines in the revised proposal.

C. Maine’s Wind Energy Act requires an applicant to demonstrate no unreasonable adverse impact to scenic resources located within an eight-mile radius. FBM questioned the definition of "unreasonably adverse", noting that an example can be drawn from the U.S. Environmental Protection Agency’s regulations that govern pesticide registration, which explicitly defines "unreasonable adverse effects" as being determined by a risk/benefit

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<sup>8</sup> Based on Table 1 of Jim Palmer's report; on FBM’s own observations; and the existing Kibby Project in Zoning Petition ZP 709, Section 9, page 73.

balance analysis. Unreasonable is interpreted to mean “exceeding reasonable limits” and adverse is interpreted to mean “harmful or unfavorable.” FBM contended that to interpret these together, one needs to do an analysis of the benefits and harms, *i.e.* net effect, of the activity or project, and asserted that TransCanada has not done such an analysis and has not demonstrated that there would not be unreasonable adverse impacts upon scenic resources.

D. FBM further asserted, “lost scenic value cannot be compensated for because of the subjective nature of the experience. A destroyed or severely impacted scenic vista cannot be replaced with another one in another location. The burden of proof for no unreasonable adverse impact on the scenic character of this area has not been met by TransCanada in its original application or in its amended version.”

26. *Applicant’s rebuttal to FBM comments.* With respect to the viewpoints in FBM’s cumulative impacts assessment that are not scenic resources of state or national significance, the applicant asserted that the alleged visibility of the KEP on such viewpoints are not a part of the proceeding. As such, the applicant did not respond to, or correct any misstatements, in those comments. Regarding cumulative impacts, the applicant noted that subject was addressed in the previous written filings and oral testimony of Jean Vissering and Jim Palmer, and as such it did not re-address that topic.

27. *Public comments specific to the Arnold Trail.* Letters from the public were received during the review of the original proposal as well as for the revised proposal with respect to the potential for a change to the character of the Trail, both in opposition to the KEP and in support. While those opposed felt the KEP would greatly impact the character of the area, those in support did not feel the affect would be unduly adverse. The Arnold Trail Snowmobile Club and the Arnold Expedition Historical Society have stated support for the project.

### Historic Resources

28. *Materials submitted by the applicant regarding historic resources (separate from the scenic assessment), review comments by MHPC, and applicant’s response.*

A. *Background.* A summary of the applicant’s assessment of the impacts to historic and archaeological resources as a result of the proposed KEP, and its “Architectural Survey Report and Finding of Effect Report”, dated November 25, 2009 were submitted with the original application. The National Register of Historic Places database includes 42 historic resources in Franklin County, including the Arnold Trail.

(1) The visibility of the proposed KEP from the Arnold Trail was assessed as a part of the applicant’s scenic impact assessment (*see* Finding of Fact #20). Other than the Arnold Trail, the next closest listed historic resources are located 15 to 20 miles southwest of the development area. Sixteen structures older than 50 years are located within 8 miles of the site, but none meet the criteria for listing on the National Register of Historic Places.

- (2) Both Kibby Mtn. and Sisk Mtn. have been previously surveyed for archaeological resources. It was determined in consultation with MHPC that no known archaeological site would be affected.
- (3) MHPC reviewed the applicant's November 25, 2009 report, and requested that the applicant submit to MHPC additional materials pursuant to (federal) Section 106 of the National Historic Preservation Act. The federal Section 106 review process is conducted independently of the Commission's review process.
- (4) In a letter dated May 6, 2010, MHPC copied to LURC its review comments regarding the original 15-turbine project to the applicant and the Corps pursuant to Section 106 for a portion of the National Register listed Benedict Arnold Trail to the Quebec Historic District. In this letter, MHPC re-iterated an earlier conclusion that, in applying the legal standard set forth at 36 CFR Part 800.5(a)(1), the project would have an "adverse" effect on 1.6 miles of the Arnold Trail. MHPC further stated that once the formal Section 106 process begins, "it will continue consultation to seek ways to avoid, minimize or mitigate the adverse effects that we believe the project will have on historic properties."

- B. *MHPC comments submitted during review of the revised proposal.* MHPC submitted to LURC an explanation of the National Historic Preservation Act Section 106 adverse effect process, stating that in circumstances where there is an adverse effect, adequate mitigation is the desired result. MHPC, the Arnold Expedition Historical Society, the Army Corps, and TransCanada drafted two documents that were found to be acceptable by the MHPC to provide mitigation: a Memorandum of Agreement (MOA) between TransCanada and the Arnold Expedition Historical Society and an MOA between the Army Corps and the Maine SHPO. As a part of this agreement, the applicant proposed to contribute \$75,000 to a fund that would be jointly administered by the AEHS and MHPC to further the preservation and continued public use and awareness of the Arnold Trail.
- C. *Applicant's response regarding MHPC's comments.* Although MHPC has made a finding under federal law of adverse impact, they did not offer an opinion on whether the visual impacts satisfy LURC's criteria. The applicant further noted that the AEHS does not object to the proposed revised KEP.

#### Fir Heart-leaved Birch Subalpine Fir Forest

#### *29. Applicant's survey of Fir-Heart-leaved Birch Subalpine Forest and Bicknell's thrush, and assessment of impacts due to the revised proposal.*

- A. *Subalpine Fir Forest.* The applicant surveyed the proposed development area and identified a Fir-Heart-leaved Birch Subalpine Forest (hereinafter Subalpine Fir Forest) natural plant community at elevation 3,250 feet msl or higher along the Sisk Mountain ridgeline. This natural plant community on Sisk Mountain is a forest community with a 20 foot to 50 foot high canopy, dominated by balsam fir, with a minor component of heart-leaved birch, and frequent wind-throw disturbances. The Subalpine Fir Forest natural community is rated as S-3 by MNAP (defined by MNAP as "Rare in Maine, on

the order of 20 to 100 occurrences<sup>9</sup>). The summit of Sisk Mountain is well below the elevation where “fir-waves” typically occur, although this occurrence was beginning in some areas. Down-slope from Subalpine Fir Forest, the forest grades into the S-4 rated Spruce-Fir-Wood Sorrel-Feathermoss Forest natural plant community.

- (1) The applicant calculated that direct impacts to the Subalpine Fir Forest would affect 20 acres, and indirect impacts would be to 25 acres, for a total of 45 acres affected. The applicant based its indirect impact evaluation on a 50-foot wide buffer. The remaining Subalpine Fir Forest would be one 313-acre contiguous block, or 87.4% of the original 358-acre mapped community (*see* Table 2, below).
- (2) *Background.* Although the applicant asserted that in the original 15 turbine proposal it had avoided and minimized impacts to this natural plant community by adjusting the road alignment, moving turbines out of the highest wind resource areas, and moving the location of Turbine 11 in response to comments by MNAP and MDIFW, the further reduction to the project down to an 11 turbine project was proposed in response to the Commission’s concerns.
  - (a) The record for the original 15 turbine project raised concerns about fragmentation and impacts due to the southern four turbines (Turbines 12 through 15) and the associated ridge road appeared unacceptable (*see* Finding of Fact #31). After the first deliberative session, the Commission directed staff to prepare a denial document. As a result, the applicant revised the proposal as an 11-turbine project, eliminating Turbines 12 through 15, which are the southernmost four turbines.
  - (b) The revised proposal eliminated 19 acres of direct impact, 28 acres of indirect impact, and fragmentation, leaving one 313-acre contiguous block of Subalpine Fir Forest.

B. *Bicknell’s thrush habitat* (*see* Table 2). As a part of its breeding bird survey in 2009, the applicant surveyed and assessed the site for the presence of Bicknell’s thrush (*Catharus bicknelli*) between June 4 and July 24, 2009. Bicknell’s thrush is recognized by MDIFW as a “Species of Special Concern”, but is not ranked as threatened or endangered. This species, which until 1993 was considered a subspecies of grey-cheeked thrush, generally uses a specialized high-elevation habitat and has limited distribution in Maine, although it also breeds to the north and east in Canada.

- (1) Previous surveys for Bicknell’s thrush in the vicinity of the proposed KEP were conducted in 1992 for U.S. Windpower, and in 2005 to 2006 for the Kibby Project, showing Bicknell’s thrush to be present in ridge top areas on Kibby Mountain and the Kibby Range ridgeline (1992 and 2006), and in a balsam fir dominated regenerating clear-cut at a lower elevation (2006).
- (2) The applicant contracted the BioDiversity Research Institute (BRI) to conduct the surveys in the KEP study area in 2009. BRI found that Bicknell’s thrush were the most abundant where the Subalpine Fir Forest was most abundant, with two nests found in this area, although this species was also observed elsewhere. BRI applied the Vermont Center for Ecostudies’ model to assess potential Bicknell’s thrush breeding habitat, finding that within a one mile around Sisk Mountain there are 357.3

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<sup>9</sup> MNAP’s rating system for natural plant communities ranges from S1 through S5, with S1 being endangered, and S-5 common and secure.

ha of potentially suitable habitat. BRI noted, “while the habitat may be patchier than the model suggests, both the model and breeding bird data suggest that Sisk Mountain is part of a larger complex of breeding Bicknell’s thrush habitat in Maine.”

- (3) The applicant identified approximately 88 acres in the project area as Bicknell’s thrush preferred habitat, of which approximately 5 acres would be directly altered by clearing. The applicant asserted that, based on the known habitat needs of Bicknell’s thrush, the proposed impact would potentially affect one female home range. The applicant noted that the total area of this Subalpine Fir Forest is 358 acres, and that any displaced birds may be able to use the adjacent forest. The applicant also asserted that because the males’ display flight would largely be below the height of the blades, and flight displays are not as likely when the wind is blowing (blades do not start rotating until the winds are 9 mph or greater), the potential for impact is low.

Table 2. Comparison of applicant, CP, and MNAP impact areas for the Subalpine Fir Forest and Bicknell’s thrush habitat (no specific figures or methodology were submitted by MDIFW or FBM)

Acres impacted			
Subalpine fir forest – 358 acres Bicknell’s thrush habitat – 88 acres	W/o buffer, direct impact only	W/buffer, direct and indirect impact	Bicknell’s habitat, direct impact
Applicant (w/ 50 foot buffer)	20 acres - 94.4% intact	45 acres - 87.4% intact	5 acres
CP (w/ 250 foot buffer)	20 acres	55 acres - 84.6% intact	15 acres or more
MNAP (w/50 foot buffer)	23 acres - 93.6% intact	44 acres - 87.7% intact	

- (4) The applicant asserted that the reduction to the Subalpine Fir Forest would also reduce the potential for impacts to Bicknell’s thrush. The applicant noted the steps it took to identify, assess, and minimize impacts to Bicknell’s thrush, including surveys conducted using protocols as advised by MDIFW. The surveys identified 88 acres of existing Bicknell’s thrush habitat within the 358-acre Subalpine Fir Forest, with two areas identified as having high use, which through consultation with MDIFW were mapped as “core” habitat. By removing the southern 4 turbines, the applicant has removed the impacts to the larger of the two core habitat areas, and reducing the remaining clearing impacts from 8 acres to 5 acres.

30. *Agency review comments and applicant’s responses.*

- A. *MDIFW.* MDIFW reviewed the revised proposal for the KEP and commented as follows:  
 (1) “MDIFW still believes that additional pre-construction studies at this site are not necessary. This determination is based on state regulations and review policies. Considerations relative to federal law (Migratory Bird Treaty Act, U.S. Endangered

Species Act, or Bald Eagle – Golden Eagle Protection Act) are under the jurisdiction of the U.S. Fish and Wildlife Service.”

(2) *Bicknell’s thrush habitat.*

- (a) “The original proposal included 5 turbines, which would have occurred within potential Bicknell’s thrush habitat. Turbine # 11 and its access road were the greatest concern to MDIFW, because this turbine and road would have bisected the occupied habitat. We originally recommended that the applicant remove Turbine # 11 and its access road. The applicant moved that turbine and road to the outside of the habitat currently occupied by Bicknell’s thrush, which reduced impacts to this habitat.”
- (b) “In the revised proposal, “the applicant proposes to remove the southern 4 turbines, which will further reduce impacts to Bicknell’s habitat associated with this site. The removal of the southern 4 turbines not only reduces direct habitat loss, but also reduces the fragmentation of habitat currently occupied by Bicknell’s thrush, as well as any future habitat that may occur within the Fir-Heart-leaved Birch Subalpine Forest identified on-site.”
- (c) “Although significantly reduced, impacts to Bicknell’s thrush habitat still exist with the remaining 2 turbine pads and access roads. Therefore, MDIFW still requests a detailed post-construction monitoring protocol to be implemented for this species with at least the same rigor and scope as the pre-construction studies.”

B. *Applicant’s response to MDIFW comments.* The applicant did not submit a response to MDIFW’s review comments. See Finding of Fact #32 for the applicant’s rebuttal to the CP’s comments regarding impacts to Bicknell’s thrush.

C. *Maine Natural Areas Program (MNAP).* MNAP reviewed the proposal for the 11 turbine project, and commented with regard to the Subalpine Fir Forest, as summarized below:

- (1) *Review comments.* MNAP noted the Subalpine Fir Forest natural plant community at the proposed development site as having statewide ecological importance. This type of community is rated S3 (defined as 20 to 100 occurrences statewide), and is not considered to be common. [Nineteen] occurrences have been mapped in Maine so far, for a total combined acreage of approximately 40,000 acres (less than 1/5 of 1% of Maine’s total land area).
  - (a) MNAP noted that this Subalpine Fir Forest community covers 358 acres and is considered a good quality example of the type with an element occurrence rank of B. The element occurrence rank is derived from a system used to rank the overall quality (*i.e.* condition, landscape context and size) of a natural community or rare plant occurrence.
  - (b) MNAP stated that the applicant estimated 23 acres of the Subalpine Fir Forest would be cleared, noting that a portion of the northern half of the community will be affected such that its natural value would be lost. “Clearing will also create unnatural edges within the natural community that will alter the habitat immediately adjacent. Expected impacts to the edge of the natural community include increased light and wind, and will likely change the habitat by removing moisture and damaging trees. To account for the impacts along the edges that will be created”... “MNAP added a 50 foot buffer to the proposed clearing.”

MNAP estimated that the total impact to the Subalpine Fir Forest from site clearing, impacts caused by creating edges, and fragmentation will be approximately 44 acres or 12% of the total area of the 358-acre Subalpine Fir Forest.

- (c) MNAP recommended that “if a wind powered electric generation facility is approved for construction on this site, the project plan should specifically demonstrate how the facility has been designed to cause the least impact to sensitive plant and animal habitat, and the development plan should address each of the following considerations in the design, construction, and management of the facility”. MNAP listed several subjects that should be addressed in such a plan, including disturbance minimization for high elevation soils and vegetation, erosion control, especially on steep high elevation roads, off-site disposal of construction debris and cleared vegetation, an access plan to prevent irresponsible use of unauthorized motorized vehicles in sensitive habitats, invasive plant control, and a vegetation restoration plan, including restoration if the project is decommissioned (*see also* Section E of this Finding, below).
  - (d) MNAP also requested that, “to ensure that protecting the natural integrity of this site is a priority during construction, we recommend there be frequent site inspections as well as the opportunity for [MNAP] staff to participate in one or more of the inspections.”
- (2) *MNAP response to LURC staff questions in the Tenth Procedural Order.*
- (a) LURC staff’s first two questions ask MNAP to qualify the differences in impact to the Subalpine Fir Forest on Sisk Mountain between the applicant’s initial application and the current application. MNAP responded that its “comments on the current project design, dated October 12, 2010 wholly replace the comments made for the initial application, dated February 24, 2010.” MNAP’s “comments of October 12, 2010 make no mention of habitat fragmentation because habitat fragmentation is not a concern in the current application.”
  - (b) Regarding LURC staff’s question #3: The size of the Subalpine Fir Forest would be reduced from 358 acres to 314 acres, changing this natural community’s occurrence status from 11<sup>th</sup> to 12<sup>th</sup> largest in the state. The rank of the site would remain a ‘B’, indicating a good quality example of the type. MNAP noted, however, that it is in the process of documenting new records for this community, and so this site’s size status as 12<sup>th</sup> largest in the state is likely to change in the future. The ‘B’ quality rank would not be affected by the addition of these new records.
  - (c) Regarding LURC staff’s question #4: “[MNAP’s] comments on disturbance minimization, erosion control, off-site disposal, access plan, invasive plant control, and a restoration plan are intended as general comments. We do not have any specific issues regarding these items in the applicant’s proposal. We trust that LURC staff is making sure these items are being addressed in the application.”

D. *Applicant’s response to MNAP comments on the 11-turbine project.* The applicant responded to MNAP’s review comments on the 11-turbine project, as summarized below:

- (1) The Subalpine Fir Forest on Sisk Mountain is a good example of a plant community type that occurs throughout Maine at higher elevations. The Sisk Mountain

- community is 358 acres in size and has been ranked by MNAP as being “good” quality. The change from a 15-turbine layout to an 11-turbine layout will reduce the extent of fragmentation. The applicant met with MNAP to discuss this change in August of 2010, when both MNAP and MDIFW agreed the impact reduction would be significant. The applicant noted that in its October 12<sup>th</sup> comments, MNAP used acreage amounts that are less conservative than the applicant’s, and as such the applicant responded using its more conservative numbers<sup>10</sup>. The applicant noted that currently the 12<sup>th</sup> largest Subalpine Fir Forest in MNAP’s records is the 316-acre community on Black Nubble in Redington Twp., which is approximately equivalent to the proposed remaining community at this site (313 acres).
- (2) The proposed clearing has been reduced from 39 acres to 20 acres, and indirect impacts have been reduced by approximately 2/3 from 62 acres to 25 acres. The total impacts have been reduced by more than ½ from 102 acres to 45 acres. The remaining 313-acre Subalpine Fir Forest would be the 12<sup>th</sup> largest in the state, would retain its overall quality rating of “good”, and would be more than twice as large as six of the 19 documented occurrences.
  - (3) The applicant asserted that the impacts to the Subalpine Fir Forest at this site would not be undue because:
    - (a) Turbine 11 was moved as recommended by MNAP to avoid impacts, and impacts have been further reduced by eliminating the four southern most turbines;
    - (b) The total area of the community to be impacted would be approximately 10%, leaving a 313-acre community intact;
    - (c) The overall “good” quality ranking will be retained; and
    - (d) The remaining community will be almost equal in size to the community on Black Nubble.

E. *MNAP comment during review of the 15-turbine project and applicant’s response.*

- (1) *MNAP comment.* During the review of the 15-turbine project, MNAP commented that the project plan for this facility should demonstrate how the facility has been designed to cause the least impact to sensitive plant and animal habitat, and address design, construction, and management considerations. Inadvertent impacts to soil and vegetation should be avoided because high elevation habitats are extremely slow to recover after disturbance. Strict no disturbance zones should be clearly marked adjacent to the construction zones.
- (2) *Applicant’s response to MNAP comment.* The applicant responded to MNAP’s comment during review of the 15-turbine project, asserting that the project design reduces overall footprint to the minimum needed for the proposed project, and outlining the aspects of a plan it proposed to employ during and after construction.
  - (a) Components of the proposed project plan that minimize impacts include:
    - (i) Road width would be the minimal amount necessary for construction equipment. After construction, the ridge road widths will be reduced from 34 ft to 20 ft wide by applying erosion control mulch to the road edges. Most of each turbine pad area would be similarly treated.

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<sup>10</sup> The applicant corrected the narrative of its August 16<sup>th</sup> revised proposal, stating that the indirect impacts would be 25 acres, not 35 acres.



- (ii) Road and crane pad construction materials would come from the project site, requiring no additional clearing or removal of other materials from other areas.
  - (iii) Cut/fill for the project has been balanced, with only minimal materials required from outside of the project footprint.
  - (iv) Clearing limits would be established prior to construction and well marked with surveyors tape or flagging. Clearing would be performed to leave the flagging in place, with the marked limit then used as a limit for any future disturbance.
- (b) All wetlands, streams, rare plant locations, rare animal habitats and rare natural community areas would be clearly marked where they intersect with the clearing limits and are within 50 ft of the clearing limits.
  - (c) Tree stumps, organic soils not suitable for construction activities, and other woody debris will be used on-site to manufacture erosion control mix for erosion control berms and to spread on areas being restored along roads and turbine pads. This technique was developed in consultation with the SSS for the Kibby Project and has been used successfully. Woody debris not used for erosion control mix will be distributed on rock fill slopes to provide visual screening and encourage establishment of vegetation.
  - (d) To control the introduction of invasive plants, the E&S Plan restricts the use of hay mulch to below 2,700 feet in elevation, and above 2,700 feet only erosion control mix made from on-site native materials or erosion control blankets may be used. The Plan does not address preventing the spread of plant materials from construction vehicles, and does not include a monitoring plan. The applicant will consult with MNAP to address its concerns for rehabilitation and restoration of the Subalpine Fir Forest. MNAP will be included as an interested party to the third party inspection reporting, and MNAP site inspections should be integrated into these same inspections.

31. *CP comments.* The CP commented on impacts to the Subalpine Fir Forest and to Bicknell's thrush, as summarized below:

- A. Turbines 1 through 7 and the associated access road would be entirely outside of the mapped Subalpine Fir Forest, but Turbine 8 and its associated road would only impact a small area at the northern tip. "The impact of Turbine 8 on the community can legitimately be described as "minimal" and is therefore not undue. This northern part of the project area is located outside of high-quality Bicknell's thrush habitat, is not now in use by Bicknell's nor is it likely potential habitat in the future. Therefore, concern over both habitat loss and risk of collisions with turbines [for Turbines 1 through 8] is minimal."
- B. *Subalpine Fir Forest.* The CP acknowledged that the revised proposal has lessened the impact to the Subalpine Fir Forest, but believes that the remaining impacts still constitute an undue adverse impact.

- (1) The CP did not repeat its full original testimony regarding the value of this Subalpine Fir Forest, but summarize these points it believes remain relevant to the revised proposal:
  - (a) The Subalpine Fir Forest is ranked S3 (rare) by the MNAP, with only 19 documented occurrences in the state encompassing 40,000 acres in total, or 0.2% of the state's land area. Of this acreage, 86% is found in five areas: Mount Katahdin, the Mahoosuc Range, Bigelow Mountain, Redington/Crocker and Baker/Lily Bay. The MNAP stated that this community "should not be considered common anywhere in Maine".
  - (b) The occurrence of Subalpine Fir Forest on Sisk Mountain encompasses 358-acres, making it the 11<sup>th</sup> largest of the state's 19 documented occurrences. This occurrence is more than twice as large as 7 of the 19 documented occurrences.
  - (c) The occurrence on Sisk Mountain was assigned an Element Occurrence Rank of "B", or "Good", by MNAP, and was given the highest ranking for its undisturbed and natural condition (size and landscape context being the other two factors considered).
  - (d) This rare natural community on Sisk Mountain should be considered an ecologically significant occurrence.
  - (e) Peer-reviewed climate/vegetation modeling indicates that areas capable of supporting spruce-fir forests will likely contract again to just the mountainous regions of northwestern Maine and northern New Hampshire as the climate warms over the coming century, even under relatively conservative assumptions about the projected increase in atmospheric CO<sub>2</sub>. Areas such as Sisk Mountain are likely to maintain spruce-fir habitat on the landscape at a time when this habitat has been greatly reduced or eliminated at lower elevations, and will serve as refugia for species dependent on this habitat.
- (2) The CP asserted that the revised project will cause fragmentation, direct habitat loss and edge effects. The impacts of the 15-turbine project were created by two clusters of southern turbines within the Subalpine Fir Forest: the southernmost four turbines (Turbines 12 through 15 and the associated road) and the middle southern four turbines (Turbines 8 through 11, and associated roads). The elimination of the southernmost cluster significantly reduces the fragmenting impact, but does not adequately reduce the direct impact and edge effect.
- (3) The CP asserted that the applicant's use of a 50-foot wide buffer to estimate indirect adverse effects on the Subalpine Fir Forest greatly underestimates the extent of this impact. CP asserted that while there is no single accepted standard for estimating edge effects on forest communities, a 250 foot wide buffer is commonly used. A 250-foot buffer would increase the indirect impact area by more than 10 acres, or 20%, as compared to the applicant's estimate, bringing the total amount of this community occurrence that would be directly or indirectly impacted to at least 55 acres.
- (4) The majority of the impact to the Subalpine Fir Forest would occur above 3,200 feet in elevation, which is the most ecologically significant part of this community and where the core Bicknell's thrush habitat is located. Turbines 9 and 10 would be located above 3,350 feet in elevation. The land above 3,350 feet represents just 8% of the land within this particular community occurrence. These turbines would be

- located within the rarest part of this rare community. The impacts of the revised project would directly or indirectly impact a significant part of this community's highest-elevation core.
- (5) This Subalpine Fir Forest community on Sisk Mountain is one of only 13 occurrences of this community in the state ranked as a "good" or better quality by the MNAP. The loss of over 50 acres goes beyond the level of impact that should be considered acceptable. The loss of 55 acres of this habitat as proposed is equivalent to eliminating the 16<sup>th</sup> largest documented occurrence of this community in Maine. The revised proposal still constitutes an undue adverse impact on this rare and very important ecological community.
  - (6) The CP asserted that the Subalpine Fir Forest found in the southern portion of the revised project area is ecologically significant and very limited in the state, and would suffer an undue adverse impact if the project were approved. The Subalpine Fir Forest on Sisk Mountain is a good quality example of a rare natural community that has retained an undisturbed and natural condition, and provides valuable habitat to one of the state's rarest wildlife species.
- C. *Bicknell's thrush*. The 3 remaining southern turbines (Turbines 9 through 11) in the revised project area would still have an undue adverse impact on breeding Bicknell's thrush due to direct habitat loss, additional degradation of habitat, and risk of direct mortality.
- (1) The CP did not repeat its testimony in its comments, but re-asserted several pertinent points:
    - (a) Bicknell's thrush is one of the highest conservation priorities in our region, listed by multiple conservation organizations and government agencies as a species of highest conservation concern, due in part to its restricted range (the northeastern U.S. and southeastern Canada) and to its narrow habitat niche in high elevation, stunted spruce-fir forest.
    - (b) Bicknell's thrush habitat is extremely limited, occurring primarily above 3,000 feet in elevation. There is no peer-reviewed scientific evidence that Bicknell's thrush breed successfully in Maine in any other habitat.
    - (c) Bicknell's thrush restriction to high-elevation forests makes it a top priority for conservation, especially in light of climate change. High-elevation, resilient "islands" of its habitat will likely remain as refugia for this species as the climate changes.
  - (2) The proposed revised project's impacts will result in more than the direct loss of habitat in the actual footprint of roads, collector corridors and turbines. Openings in the forest create "edge effects" that can degrade habitat beyond the physical edge of clearing.
  - (3) The applicant significantly underestimated the amount of direct breeding habitat loss. Because survey search areas were limited to 10 ha plots around each of six point count locations, there is no information about habitat use beyond these plots.
  - (4) The International Bicknell's Thrush Conservation Group (IBTCG) released a comprehensive review and Action Plan, addressing population status, threats, and goals for Bicknell's thrush. The plan, developed by a team of international Bicknell's

- thrush experts, re-affirms the threat of wind development to Bicknell's thrush, and highlights the need to protect known and potential breeding habitat.
- (5) CP questioned the applicant's delineation of "core" habitat, and considers all mapped Bicknell's thrush habitat as equally important. The CP noted that the IBTCG points out in its plan that due to its unusual mating system the estimation of breeding densities of Bicknell's thrush by traditional methods is difficult.
  - (6) The revised layout reduces the 3 areas of impact to Bicknell's thrush habitat to just one, but this one remaining area is the largest of the three original areas and occurs in an area of highest elevation (potentially higher habitat quality). CP repeated its assertion that the applicant underestimated the amount of habitat that would be lost because they ignore the habitat degradation that would occur due to edge effects. CP asserted that a more accurate estimate of the impacts would include edge effects and a broader interpretation of the spot mapping results. Previous testimony referenced documented edge effects up to 492 feet from the edge of forested habitat. Adding a 100 foot buffer around the area designated by the applicant as lost habitat at least doubles the estimate of habitat impacts to 10 acres. A more liberal buffer of 200 feet to 250 feet would increase the impact area several fold. Because of the approach used by the applicant for surveying and delineating the habitat, the use by Bicknell's thrush beyond the searched areas is unknown. The additional potential area triples the original estimate of habitat lost to 15 acres or more.
  - (7) The applicant did not acknowledge the edge effect, leading to the under-estimate of 5 acres of habitat loss. The applicant's assumptions about Bicknell's thrush observations and their limited search area resulted in additional underestimation of the adversely impacted suitable habitat. The CP testified previously that the loss of 8 acres of suitable Bicknell's thrush habitat was enough to cause undue adverse impacts, and CP believes the revised project will impact almost twice that area (>15 acres).
  - (8) The applicant significantly overestimated the amount of potential habitat for Bicknell's thrush in Maine. CP asserted that it is likely regenerating clear-cuts would provide lower quality habitat compared to naturally disturbed forests, with ample evidence in the scientific literature showing that lower quality habitat often attracts singing males with little or no chance of successful breeding. The applicant's one observation in the western mountains does not lead to the conclusion that 90,000 acres of regenerating clear-cuts across the state are potential Bicknell's thrush habitat. There is no documentation in the scientific literature, by the staff at the MDIFW, or by the Vermont Center for Ecostudies (VCE) of Bicknell's thrush breeding *successfully* in regenerating clear-cuts in Maine. There are no studies by MDIFW or VCE underway to evaluate Bicknell's thrush use of regenerating clear-cuts in Maine, because, the CP asserted, there is lack of support for the idea that this forest type offers any significant amount of breeding habitat for Bicknell's thrush.
  - (9) The CP agreed with the applicant that risks of collision from the southernmost four turbines would be eliminated if those turbines were not built, but asserted that the risk of collision from the remaining three turbines to Bicknell's thrush habitat still contributes to an undue adverse impact. Because the turbine blades are 119 feet or more off the ground, there is the potential for displaying males to fly directly into the rotor swept area, especially given their likelihood of displaying on windy days when

turbine blades are turning. The inaccuracy of this species' density estimates and unusual mating behavior make it difficult to estimate how many birds might be impacted by the turning blades. Given the IBTCG's recommendation for conserving habitat for this species, the CP asserted that risk for collisions from the revised project rises to the level of undue adverse impacts.

- (10) The applicant has significantly underestimated the amount of direct and indirect impacts on Bicknell's thrush habitat, not considered direct mortality, and overestimated the amount of available habitat.
- (11) The southern portion of the revised project area comprises breeding Bicknell's thrush habitat. Such habitat is severely limited. Bicknell's thrush is one of the most rare, range-restricted breeding birds in the Northeast, and ranks high on the region's conservation priority lists. Experts recommend avoiding development in areas such as this. Locating turbines and their accompanying roads within and adjacent to this habitat would cause direct loss of this habitat, degrade additional habitat, and result in direct mortality to singing males, therefore comprising an undue adverse impact.

### 32. Applicant's rebuttal to CP's comments.

A. *Subalpine Fir Forest*. In rebuttal to the CP's comments, the applicant asserted that the impacts to the Subalpine Fir Forest in the development area would not be undue. The applicant's comments are summarized below:

- (1) The 358-acre natural plant community Subalpine Fir Forest mapped at the project site (rated as "good" quality by MNAP), is a community type found throughout Maine at higher elevations. Responding to the MNAP comments on the 15-turbine project, the applicant moved Turbine 11 to reduce fragmentation. The applicant asserted that the elimination of the four southern turbines and access road further reduces the impacts significantly, from 39 acres of direct impact to 20 acres, and from 63 acres of indirect impact to 25 acres. The total impact area has been reduced from 102 acres to 45 acres. The remaining natural community will be 313 acres in size, and will be the 12<sup>th</sup> largest example of this community in Maine (the 11<sup>th</sup> largest being the 316-acre community at Black Nubble in Redington Township), and it will be more than twice as large as 6 of the 19 documented occurrences. The ranking of this community will remain the same.
- (2) Countering the CP's assertion that the impacts to this community would be undue, the applicant noted that it has been documented that there are 40,000 acres of this community mapped in Maine, with an additional 3,000 acres known to exist in the area immediately surrounding Sisk Mountain. The applicant further noted that CP calculated the total impact area of the 11-turbine project to be 55 acres, but conceded that the impact to 15 acres of the Subalpine Fir Forest by the northern 8 turbines would not be undue. The applicant calculated that the proposed impact to this community would be less than 0.2% of the overall known land area of this community type in Maine.
- (3) The applicant presented specific examples of scientific and policy reason why the proposed impacts are acceptable and consistent with existing precedent.
  - (a) The applicant's expert had testified that this community on Sisk Mountain is not a unique or rare example of Subalpine Fir Forest.

- (b) The overall quality ranking of the remaining 313-acre community will not change, and there would not be a measurable effect on the habitat's ability to support dependent species if climate change results in refugia at this site.
  - (c) S1 and S2 communities are identified in LURC's rules for special protection, but S3 communities are not. Neither Legislature nor LURC has adopted a prohibition against adverse impacts to S3 communities, including the Subalpine Fir Forest.
  - (d) Maine's Comprehensive Wildlife Conservation Strategy concluded that subalpine forests in Maine are relatively stable in extent and extensive on Maine's mountains, and that neither recreation nor windpower are likely to present a significant threat.
  - (e) LURC has issued a number of permits for timber harvesting above 2,700 feet in elevation, including one permit recently issued to the Bureau of Parks and Lands for harvesting within a mapped subalpine forest community (reference Forest Operations Permit FOP 879).
- B. *Bicknell's thrush*. In rebuttal to the CP's comments, the applicant asserted that the impacts to Bicknell's thrush and its habitat in the development area would not be undue. The applicant's comments are summarized below:
- (1) The elimination of the southern 4 turbines will reduce the direct impacts on Bicknell's thrush habitat by 1/3, from 8 acres to 5 acres. The CP contends that the loss of 5 acres of breeding habitat, out of the known 83,000 acres in Maine, is undue. The applicant asserted that the CP's position is based on factual errors, is at odds with the authorities they cite and with the conclusions reached by every undisputed expert on Bicknell's thrush, and that their expert has changed her position several times during these proceedings as to what would constitute an undue adverse impact.
  - (2) The applicant noted that the test for determining if the proposed impact would be undue is in the context of considering whether to allow a permit for an allowed use.
  - (3) Bicknell's thrush is not limited to breeding only in the habitat area mapped for this project. The CP asserted that the mapping of Bicknell's thrush habitat in the project area was done incorrectly, in particular the assessment of an indirect impact area, contending that the actual impact area would be up to 15 acres, or more. The applicant responded that the CP misses the point, and that it mapped the habitat in the project area in order to use the information to minimize impacts. The mapped area is not the only location that this species will breed.
  - (4) The applicant asserted that the evidence in the record and the scientific literature shows that the available Bicknell's thrush habitat will not be limited to the 88 acres on Sisk Mountain. During the Black Nubble proceedings (reference ZP 702) NRCM testified that there is an estimated 90,000 acres of re-generating clear-cut habitat in Maine. The applicant also provided additional authoritative citations as evidence that Bicknell's thrush do use regenerating clear-cut areas for breeding (*see* Rebuttal at pages 4 to 5). In addition, the applicant quoted the National Audubon Society: "recently, Bicknell's thrush has taken advantage of areas disturbed by timber harvesting, ski trail and road construction, and other human activities." The applicant also re-stated its earlier testimony that it had captured and banded breeding Bicknell's thrush in regenerating clear-cuts below 2,700 feet in elevation. Last, the applicant

- asserted that the CP's position that there are no studies showing Bicknell's thrush using regenerating clear cuts is without merit in the literature.
- (5) The applicant asserted that the loss of 5 acres (or 5.6%) of the 88 acre breeding habitat, as well as any indirect impacts, would not constitute an undue adverse impact, countering that the remaining 83 acres of habitat is likely to be viable. The applicant cited previous testimony regarding impacts to Bicknell's thrush habitat, including MDIFW's statements in one case that the loss of 300 acres would not constitute an undue adverse impact due to the large global breeding population of this species, and the large number of sites in Maine providing breeding habitat. Dr. Wells, a recognized avian expert in Maine, testified that the loss of 64 acres of Bicknell's thrush habitat would not be an undue adverse impact. Last, the applicant pointed out that its expert, Dr. Vickery, has spent over 30 years studying Bicknell's thrush.
  - (6) The applicant asserted that the CP's determination of indirect impacts due to edge effects do not apply to Bicknell's thrush because this species makes use of edge areas and can be found using the edges of human-created openings as well as natural fir wave openings or blow down areas.
  - (7) MDIFW has commented that the elimination of the southern four turbines will significantly reduce the impacts to Bicknell's thrush breeding habitat by reducing direct habitat loss as well as reducing fragmentation (*see* Finding of Fact #4, above).
  - (8) The applicant asserted that the loss of 5 acres of habitat constitutes 0.006% of the 83,000 acres of available habitat in Maine, not including the additional possible 90,000 acres of regenerating clear cuts discussed earlier. The applicant recalculated the percentage of lost area of habitat using the CP's 15 acre estimate, finding that it constitutes 0.018% of the 83,000 acres of breeding habitat. The applicant contended that the loss of less than 0.2% of this species' undisputed breeding habitat in Maine is not undue.
  - (9) The applicant noted that NRCM has, in a previous proceeding, stated that one of the most serious threats to Bicknell's thrush is global warming, a point to which the applicant's expert also testified. The applicant asserted that while this project alone will not stop global warming, every such project is part of a collective solution, making it important that projects be sited in areas with a sufficient wind resource in order to contribute to the solution.
  - (10) The proposed revised KEP will provide an opportunity to collect data on Bicknell's thrush breeding areas to help in the development of protection strategies for this species. The National Audubon Society has noted that "conservation efforts and research are difficult to conduct for the species under natural conditions, but power line and radio tower cuts, commercial ski activities, and wind power stations may provide access and significant opportunities for habitat management." The applicant noted that MDIFW has recommended post-construction studies for this site, with protocols to be developed in consultation with that agency.

33. *FBM comments.* The FBM commented on the impacts to the Subalpine Fir Forest and to Bicknell's thrush habitat, as summarized below:

- A. FBM noted that Bicknell's thrush is recognized by MDIFW as a "Species of Special Concern", that there are 88 acres in the project area which are Bicknell's thrush preferred habitat, and that the revised proposal would clear 5 acres of this habitat. FBM asserted that although there would be 3 acres less cleared for the revised proposal, the population remains at risk from strikes from Turbines 9 to 11 and overall disturbances to habitat.
  - B. FBM asserted that the Bicknell's thrush habitat is an integral part of the fragile Subalpine Fir Forest to be directly impacted by 45 acres of alteration or clearing. A reduction of the impact area by 3 acres of core habitat does not appreciably reduce the amount of damage to this habitat and does not fulfill the applicant's obligation to meet the burden of proof for no undue adverse impact on a species of special concern.
  - C. FBM made note of the CP claim the applicant has grossly overestimated the amount of potential thrush habitat in Maine, and specifically on this ridge. FBM asserted that suitable habitat for Bicknell's thrush includes west-facing ridges, ridgelines, fir-waves and areas adjacent to fir waves, and experts have urged caution to avoid development in these areas. FBM further asserted that the area removed from the proposal is only 'potential' habitat of comparatively low significance when compared to the proven habitat areas under Turbines 10 and 11.
  - D. FBM asserted that the applicant failed to acknowledge the comments made by the CP on edge effect, and that edge effect from a logging road is minimal compared to the large-scale project proposed. However, during the May 11<sup>th</sup> site visit to the Series A Kibby Project, the applicant admitted the habitat adjacent to large clearings would change.
  - E. FBM asserted that Turbines 8 through 11 will cause significant edge effect to the Subalpine Fir Forest community, and that such effect should be taken into account, as well as the combined amount of current and future acreage adversely impacted due to edge effect by both of the Kibby complexes and by the proposed expansion.
34. *Applicant's rebuttal to FBM comments.* The applicant acknowledged that FBM raised the issues of impacts to the Subalpine Fir Forest and to Bicknell's thrush habitat, but did not respond directly to FBM on those issues because it had done so in its rebuttal to the CP's comments (*see* Findings of Fact #31 and #32).

Wetlands, streams, and vernal pools (including Roaring Brook mayfly and spring salamander)

35. *Applicant's wetland and vernal pool site survey.*

A. *Wetland site survey.*

(1) *Proposed wetland alteration.* A total of 4.34 acres of wetland would be altered for the proposed 11 turbine KEP, of which 3.49 acres would be permanently cleared for the collector line corridor, 0.08 acre would be temporarily cleared, and 0.77 acre would be filled for wetland and stream crossings.

(a) *Clearing.* Of the wetlands 3.49 acres of wetland proposed to be permanently cleared, 0.94 is P-WL1 wetland, and 2.55 acres is P-WL2/3 wetland. For the 0.08



- acre of temporarily cleared areas, 17 sq ft is P-WL1 wetland and 3,629 sq ft (0.083 acres) is P-WL 2/3 wetland. The permanently cleared forested wetland areas, for example within the power line corridor, would be maintained as scrub-shrub wetlands. The temporarily cleared areas would be allowed to fully re-vegetate.
- (b) *Filling*. Of the 0.77 acre of wetlands proposed to be filled, 0.06 acre is P-WL1 wetland fill for stream channel crossings, and 0.72 acre is P-WL2/3 wetland.
- (2) *Functional assessment*. The applicant conducted a functional assessment for the wetlands to be affected, submitted with the original application for the 15-turbine KEP. The impact areas were separated into three categories: those associated with new roads or turbine pads, with collector line clearing, or with improvements to existing roads. The applicant asserted that the wetland impacts have been avoided or minimized to the extent possible, with many of the permanent fill areas being along the existing Mile 5 Road for crossings. The alterations in wetland areas due to clearing for the collector line will alter, but not permanently remove, wetland habitat because they will be maintained as scrub-shrub wetlands.
- B. *Vernal pool site survey*. The applicant inspected the proposed development area for the presence of vernal pools during wetland delineation surveys conducted in July through October of 2009, and identified 14 potential vernal pools located along the existing Mile 5 Road, which is a logging road/skidder trail.
- (1) All of the pools were found to be man-made as a result of skidder activities, and as such do not meet the MDEP/MDIFW definition of a significant (*i.e.*, regulated) vernal pool. Because the pools were man-made, and not considered by MDIFW to be jurisdictional, the applicant did not conduct additional surveys of each pool during the amphibian breeding season.
- (2) None of the man-made pools identified by the applicant would be impacted by the proposed project. In spite of being man-made, to enhance the habitat for breeding amphibians, the applicant proposed for the forested upland buffer within 250 feet of these man-made pools to: (a) maintain at least a partially closed canopy of no less than 75%, (b) minimize forest floor disturbance, and (c) maintain native understory vegetation and woody debris. Within 750 feet of these pools, less than 10% of the forest would be impacted. Forested habitat around vernal pools enhances the pools' ability to serve as amphibian breeding habitat.
- C. The applicant conducted surveys of the streams in the project area to assess the potential for Roaring Brook mayfly and spring salamander to occur (*see* Finding of Fact #39,B(4) and (5)).
36. *MDIFW review comments and response to staff questions*. MDIFW commented on the proposed 11-turbine project, as summarized below:
- A. *Vernal Pools*. To clarify issues regarding vernal pools surveys, MDIFW stated:
- (1) MDIFW requests vernal pool surveys as part of any large development application, typically utilizing DEP's NRPA - Significant Vernal Pools standards, regardless of actual regulatory jurisdiction (*see* 06-960 Chapter 335 Rules; Section 9, Significant Vernal Pools). "NRPA rules only provide protection for vernal pools that are

determined to be ‘Significant Vernal Pools,’ using several criteria to determine significance.

- (a) NRPA rules allow for vernal pools to be surveyed in any season. Potential vernal pools are identified using field indicators (flat areas pit-and-mound topography, wetland flora, presence of fingernail clams or caddisfly cases, and evidence of temporary flooding), and can be re-surveyed during the breeding season if warranted. Official determination of Significance is made by MDIFW, not the applicant or certified professional conducting the survey.
  - (b) TransCanada consulted with MDIFW and adopted a protocol to identify vernal pools as part of their pre-construction study package based on these NRPA standards and definitions. The objective was to identify, map, and characterize all vernal pools in the immediate vicinity of the proposed development area. The vernal pool data forms were submitted to MDIFW, and all of the pools were determined to be non-significant because all were man-made. As such, additional surveys during the breeding season were unnecessary, in accordance with the NRPA rules.
- B. *Roaring Brook mayfly and spring salamander.* The removal of the southern 4 turbines does not minimize potential impacts to both Roaring Brook mayfly and spring salamander, known to occur within the Gold Brook watershed.
- (1) MDIFW stated that its initial review comments still apply, as follows: “The applicant conducted surveys for both of these species in the Kibby Stream watershed. The surveys did not document either species within Kibby Stream, however suitable habitat for both species is present in the watershed. The applicant has agreed to follow MDIFW management guidelines...developed to protect the habitat for both species. As currently proposed, the “Mile 5 Access Road” has 4 stream crossings with the greatest potential for [Roaring Brook mayfly] to occur.” MDIFW provided recommendations for how the crossings should be treated.
  - (2) MDIFW also recommended that all collector line crossings of perennial streams should follow guidelines similar to DEP’s proposed Minimum Performance Standards for Electric Utility Corridors, found in its draft Appendix A of Chapter 375 Rules.
- C. *MDIFW response to staff questions in Tenth Procedural Order.*
- (1) *Staff question.* Regarding MDIFW’s comments on collector line crossings, staff asked MDIFW if they “agreed that the provisions included in LURC’s permit for this project, should one be granted, be tailored to accommodate the specific needs of this project?”
- MDIFW responded that, yes, “not only the specific needs of the project, but also the specific needs for two species with special conservation needs” should be addressed. Because habitat for spring salamander and Roaring Brook mayfly are found in the nearby Gold Brook watershed, it is likely to occur within the project area. Special considerations for these species should be employed for all crossings of perennial streams, including any long-term vegetation management plan associated with the project.

(2) *Staff question.* Regarding MDIFW’s clarification of how vernal pools serves are done in Maine, staff asked if it is “accurate to state that outside the breeding season vernal pools retain wetland characteristics, which can be identified during a routine wetland delineation, or retain landscape features that could initially be located during a field survey, and flagged to later determine significance during the breeding season (with the exception of man-made pools, which by DEP and MDIFW definition are not significant)”.

MDIFW responded “in most cases, vernal pools do retain wetland characteristics or have landscape features, which can be identified by experienced professionals outside the appropriate survey period for determining the presence of pool-breeding amphibians. This is why MDIFW allows flexibility for the timing of vernal pool surveys.” “In the case of this project, all potential vernal pools were deemed man-made and thus not subject to re-surveying or management standards.”

D. *MDIFW response to the Commission’s Sixth Procedural Order.* MDIFW responded to the Commission’s Sixth Procedural Order, stating that it uses the Natural Resources Protection Act - Significant Vernal Pools standards, regardless of actual regulatory jurisdiction (DEP NRPA Chapter 335 Rules; Section 9, Significant Vernal Pools). The applicant consulted with MDIFW and applied the DEP NRPA standards to identify, map and characterize all vernal pools proximate to the proposed development area. Under NRPA rules, only SVPs are subject to habitat management standards.

37. *FBM comments on wetlands and vernal pools.* FBM’s comments on wetlands and vernal pools are summarized below:

A. *Wetlands.* FBM observed that of the 90 wetlands identified in the project area, 21 are wetlands of special significance. FBM asserted that for the 15-turbine project, there would have been 4.27 acres of permanent and 0.08 acres of temporary wetland impact, but for the 11-turbine project, the wetland impact area would be 4.34 acres. FBM further asserted that the 11-turbine project would increase wetland impacts by 0.007 acres, or approximately 3,000 sq ft. FBM asserted that wetland impacts include bog lemming habitat (listed as threatened and already impacted by the Kibby Project), spring salamander and Roaring Brook mayfly. FBM asserted that the impacts to wetlands, vernal pools, and streams along the collector line corridor due to herbicides and low canopy would be extensive.

- (1) FBM asserted that the project would cause large impacts to the Mile 5 Road because of “its location in the drainage pattern of the area. Reconnecting the hydrology and diverting run-off accumulation from upland will be a challenge and will require extensive maintenance. The possibility of the Roaring Brook mayfly and the spring salamander occurring on four of the five stream crossings [along] the Mile 5 Road is a concern noted by the MDIFW.” FBM asserted, “simply using bigger culverts does not insure safe passage of fish or decreased impact to other species of concern.”
- (2) Referencing mitigation required by the Corps for the Kibby Project, FBM asserted that “no amount of mitigation can replace the unique ecology of the subalpine biophysical region”, noting that “for the Kibby Project over 35 acres of forested wetland were changed to scrub-shrub [wetland]”. “The new roads, ditching, clearing

of wetlands, and clearing of turbine pads proposed for the KEP will allow invasive species to take hold and replace the native vegetation, altering the biodiversity and degrading habitats. Wetland habitats support many threatened, endangered or species of special concern. Common terrestrial invasive species found in wetlands are Purple Loosestrife, Common Reed and Glossy Buckthorn. Fanwort, Hydrilla and the Eurasian milfoil are aquatic invasive threats.”

- B. *Vernal Pools*. FBM observed that the 14 potential vernal pools that would have been affected by the 15-turbine project would continue to be affected by the 11 turbine proposal. FBM continued to maintain that the vernal pool surveys were conducted at the wrong time of year, and should be done in the spring. FBM asserted that vernal pool protocols call for mapping pools in spring because vernal pools disappear in dry seasons. (1) FBM asserted that the vernal pools will be significantly altered, and may be impacted by disconnected hydrology due to road construction on Mile 5 Road. FBM also expects that impacts to Gold Brook, where the Roaring Brook mayfly and spring salamander were documented, will occur.

38. *Applicant's rebuttal to FBM*. The applicant rebutted FBM's assertion that the impacts to wetlands and vernal pools remain the same. While the overall wetland impacts for the upgrade of the Mile 5 Road have not changed, the proposal involves putting hydrological features in place to improve the overall drainage of the areas adjacent to this existing logging road by reconnecting streams and wetlands on either side of that road that are currently discharging to ditches. The proposed road upgrades will also meet MDIFW recommendations for stream crossing for spring salamander and Roaring Brook mayfly habitat.

#### Wildlife: Avian and Bat Surveys and Impact Assessment; and State or Federally Listed Species

39. *Applicant's avian and bat surveys; and assessment of State and federally listed species (including northern bog lemming)*.
- A. In consultation with MDIFW and USFWS, the applicant conducted the following pre-construction avian and bat surveys:
- (1) *Rare raptor nesting surveys: bald eagle, golden eagle, and peregrine falcon (2005 through 2009)*. No rare raptor nesting activity was detected in the vicinity of the proposed development area, although occasional individuals were seen flying over the area.
  - (2) *Spring and fall daytime migrant surveys*. For hawks, 83 individuals (11 species) were documented. The average daily passage rate (total birds/total hours of effort for the entire season) was 0.38 and 0.39 birds per unit effort in spring 2009 and fall 2009, respectively. The survey found hawk use to be lower than other documented northeastern count sites. Overall, passage rates were low, and consistent with the 2005/2006 surveys done for the Kibby Project.
  - (3) *Spring and fall nighttime migrant surveys (radar - bat monitoring, ceilometer and night vision survey)*.

- (a) *Nighttime avian radar survey*: Results of the applicant's spring 2009 nighttime radar surveys showed the mean passage rates for migrants for the project area to be 207, as compared to previous surveys showing 456 for Kibby Mountain, 197 for the Kibby Project Series A, and 512 for the Kibby Project Series B in 2005. Results of the fall 2009 radar surveys showed the mean passage rates for migrants for the project area to be 458, as compared to 565 for Kibby Mountain and 201 for Kibby Range in 2005. Flight height for the nighttime migrants was estimated to be between 200 and 300 meters.
  - (b) *Bat survey*: The applicant's bat surveys detected low use of the project area, similar to the bat activity detected for the Kibby Project area. Of the eight species of bat on Maine's Species of Special Concern list that have the potential to occur in the project area, based on the monitoring which did not identify calls to species, there is potential for these species to occur. However, the overall use of the area by bats was low, greatly reducing the risk.
  - (4) *Breeding bird surveys*. The BRI Report stated that during the 2009 breeding bird survey, thirty-two (32) species were detected in the project study area, with an additional eight incidental species noted outside the survey period. Seven of the thirty-two species are listed by MDIFW as Species of Special Concern: least flycatcher, Bicknell's thrush, American redstart, black-and-white warbler, Tennessee warbler, fox sparrow, and white-throated sparrow (*see also Finding of Fact #29,B(2)*).
- B. The applicant assessed the development area for the presence of State and federally listed wildlife species for the following species:
- (1) *Canada lynx*. Canada lynx is federally endangered, and listed by Maine as a Species of Special Concern.
  - (2) *Golden and bald eagle*. The bald eagle was previously but is no longer listed as endangered under federal law or state law; the golden eagle is state endangered, but is not listed under federal law.
  - (3) As a part of the federal Section 404 wetlands permitting process, the applicant has had on-going dialogue with USFWS and the Corps, and has conducted a risk assessment regarding the potential impacts to the federally threatened golden eagle and bald eagle (in accordance with the federal Golden and Bald Eagle Protection Act), and the federally endangered Canada lynx (in accordance with the federal Endangered Species Act). On June 4<sup>th</sup>, at the request of USFWS, the applicant submitted a project information/habitat modeling/assessment for Canada lynx, and an assessment for golden and bald eagle.
  - (4) *Roaring Brook mayfly*. This invertebrate is listed in Maine as endangered. The applicant identified habitat in the project area likely to support this species, and has been consulting with MDIFW to determine the best methods to avoid impacts.
  - (5) *Spring salamander*. This amphibian is listed in Maine as a Species of Special Concern. One recent occurrence (2008) for spring salamander is known from Gold Brook. At MDIFW's request, the applicant assessed suitable habitats likely to be affected by the proposed project. The applicant searched four sites in Kibby Stream, but this species was not present. The applicant stated that the BMPs recommended by MDIFW would be followed to the extent practicable, including avoiding clearing within 250 feet of the stream.

(6) *Northern bog lemming*. This small mammal is listed in Maine as threatened. The applicant identified and assessed three wetlands in the project footprint with the potential to support this species. Although no evidence of this species' presence was found, the applicant has designed the project to avoid these wetlands, as well as their surrounding upland watersheds.

C. *State listed plant species*. The applicant surveyed the proposed development area for State or federally listed plant species, but none were found. However, of the State-listed boreal bedstraw and lesser wintergreen were found outside the development area at several locations on Sisk Mountain.

40. *MDIFW review comments*. MDIFW reviewed the revised proposal, and submitted the following review comments regarding birds, bats, and northern bog lemming:

A. *Avian monitoring*. Based on state regulations and review policies, additional pre-construction studies at this site are not necessary. Considerations relative to federal law (Migratory Bird Treaty Act, U.S. Endangered Species Act, or Bald Eagle – Golden Eagle Protection Act) are under the jurisdiction of the U.S. Fish and Wildlife Service.

- (1) MDIFW recommended that a detailed post-construction monitoring plan be developed and approved as part of the development permit. The plan should be developed in consultation with MDIFW, should be at least as rigorous as the pre-construction efforts, and should be conducted for a minimum of two years (preferably three) over a period of several years post-construction. The plan should be reviewed and approved by MDIFW and LURC prior to operation of any wind turbines
- (2) MDIFW noted that post-construction monitoring protocols for wind projects are rapidly evolving, with many of the same techniques used at the Mars Hill and Stetson Mountain Wind Power Facilities being used for the KEP, and refined through consultation with MDIFW. Adaptations as continued wind power projects shed new information on possible ways to minimize impacts on birds and bats may result in the modification of the proposed studies through discussions among the applicant, MDIFW, and DEP.

B. *Northern bog lemming*. MDIFW noted that the applicant identified several wetlands suitable for and potentially occupied by northern bog lemming. All access roads, turbine pads, and collector lines have been located outside the minor watersheds that contain these wetlands. Removal of the southern 4 turbines further separates any proposed development from a potentially occupied wetland. Therefore, MDIFW does not anticipate negative impacts this species [or its] habitat.

C. During review of the 15-turbine project, MDIFW submitted the following additional review comments:

- (1) "The findings presented in the application for development of the Sisk Mountain-Kibby Wind Expansion are consistent with other pre-construction studies conducted for wind power projects MDIFW has reviewed in Maine. As the project is currently proposed, MDIFW believes that additional pre-construction studies at this site are not necessary."

- (2) No negative impacts to northern bog lemming are expected. The KEP has been designed to protect the wetlands and surrounding uplands that provide suitable habitat for this species.
- (3) The applicant's assessed streams that may be affected by the proposed development, for habitat likely to support for Roaring Brook mayfly and spring salamander in the Kibby Stream Watershed found suitable habitat for both species. The suitable areas were surveyed for spring salamander. However, while neither species was found within the survey area, the applicant proposed to follow MDIFW management guidelines for these species.

41. *FBM comments.* FBM commented on bird, bat, and northern bog lemming impacts, as summarized below:

A. FBM noted that the applicant's "breeding survey documented seven species of special concern listed by MDIFW". Canada lynx, and migration of the golden and bald eagle, have been documented for the Kibby Project area. FBM asserted, "TransCanada has not done a comprehensive, seasonal, mammal survey in the [project] area other than for the Canada lynx."

- (1) *Birds.* FBM asserted that the potential of bird collision for all 11 turbines is moderate, but the average flight height is one of the lowest recorded in the northeast for forested ridges, resulting in an overall high number of targets passing through the rotor swept area per hour.
- (2) *Bats.* The hoary bat and the silver-haired bat, two species of concern throughout the United States, are likely in and around the proposed development area. Recent studies document mortality rates at one bat per turbine per day during a swarming period, and show that tree-species, like the hoary and silver-haired bats, are attracted to insects drawn by the lighting and heat of the nacelle.
- (3) *Northern bog lemming.* FBM asserted that wetland areas include bog lemming habitat (state threatened and already impacted by Kibby Project) as well as spring salamander and Roaring Brook mayfly. As such, wetland impacts will also adversely affect these species.

42. *Applicant's rebuttal to FBM comments regarding impacts birds, bats, and northern bog lemming.* The applicant provided the following rebuttal to FBM's testimony regarding birds, bat, and northern bog lemming, summarized below:

A. *Avian and bat use of the site.* The applicant asserted that FBM incorrectly states the average flight height as "one of the lowest recorded in the northeast for forested ridges, resulting in an overall high number of targets passing through the rotor swept area per hour." The applicant noted that this subject had been raised by the CP, and had been fully addressed during the hearing. Passage rates for the KEP are comparable to others the applicant has recorded, and in many cases lower than for some other projects in Maine. MDIFW commented on the applicant's avian survey analysis, stating that the findings for this site are consistent with other pre-construction studies in Maine, and as such, no additional pre-construction studies are needed. MDIFW re-confirmed this

conclusion in their comments on the revised proposal. Bat calls detected at the proposed KEP site indicated a low level of bat use.

- B. *Northern bog lemming habitat.* The applicant asserted FBM's statement that the wetland impacts will affect northern bog lemming habitat is incorrect. All access roads, turbine pads, and collector lines would be located outside of the minor watersheds that contain habitat likely to support this species, and the removal of the southern 4 turbines separates the proposed development from such areas by approximately 1,700 feet.

43. *Effects of noise on wildlife.*

- A. The issue of the effect of noise generated by wind energy development on wildlife was raised by FBM in its pre-filed testimony and discussed at the May 12<sup>th</sup> public hearing. After the hearing, the Presiding Officer issued the Sixth Procedural Order, which among other things, requested that MDIFW comment on the subject, and submit the titles of any literature it may be aware of regarding the effects of human produced noise on wildlife.
- B. *FBM pre-filed testimony.* In its pre-filed testimony, FBM asserted that sound produced by wind turbines has an adverse effect on wildlife, noting several references on the subject. FBM referred to a study published in the journal *Trends in Ecology and Evolution* (Barber, Crooks, Fristrup 2010) that shows that human background noise, including wind turbines, can have major impacts to animals by impacting their "effective listening area." This study found that an increase as low as 10dB (decibels) in background noise could reduce the listening area for animals by 90%.
- C. *MDIFW response to Sixth Procedural Order.* MDIFW commented they are aware of several studies written since 1970 on the effects of road, aircraft, and snowmobile/ATV noise on wildlife, and that recently several studies have focused on noise produced by wind power developments. MDIFW stated: "These studies indicate that wildlife will either respond behaviorally (avoiding adjacent habitats, increase vigilance, etc.) or will habituate and adapt to the noisier environment, and that responses are taxa-specific."
- (1) "Noise produced by operating wind facilities may have negative effects on certain species, but the full impact of these effects is unknown. The effect of anthropogenic noise on wildlife populations is difficult to measure and often confounded by other variables that cannot be teased out". "Most studies can only speculate about the impact of noise and the resulting survival and reproduction of specific study species. The challenge is to determine what level of impact is expected, but more importantly, what level of effect is acceptable. When reviewing large-scale wind projects, MDIFW has concentrated on protecting habitats for species with special conservation needs."
- (2) MDIFW supplied the titles and summaries of several recent peer-reviewed papers on noise and wildlife.



Soils, Phosphorus, Erosion & Sedimentation Control Measures, and Re-vegetation

44. *Applicant's proposal and assessment.* The soils and phosphorus assessments, and erosion and storm water control measures proposed in the original application for the original 15 turbine project remain relevant to the 11 turbine proposal.
- A. *Soils mapping.* During the summer of 2009, the applicant conducted a Class L Soil Survey, as requested by the State Soil Scientist, for the proposed KEP, and the soils mapping was overlaid on the engineered plans.
- B. *Erosion & sedimentation (E&S) and storm water control.* The applicant's temporary and permanent E&S and storm water control plans (collectively E&S Plan) employs, in addition to specific measures, a 'toolbox' approach allowing on-site decisions to be made as needed during construction should conditions warrant a change to the measure being used at a particular location. Details of the E&S Plan are included on the engineered plans for the benefit of the contractor during construction. The applicant also proposed detailed provisions for an environmental inspector to be employed during active construction and restoration after construction. Regarding LURC's third party erosion control inspector, the applicant also proposed that it would submit the names of at least two inspector candidates to LURC for review and approval at least 30 days prior to the start of construction. The proposed E&S Plan incorporates refinements of specific measures that resulted from experience gained during the construction of the Kibby Project, as well as being based on the site-specific soils mapping. The E&S Plan was received with the permit application for the 15-turbine project on December 22, 2009. See Exhibit B.11, Attachment B.14, and the engineered plans (Exhibit 13) for the narrative of the applicant's erosion, sedimentation and stormwater control measures proposal, and for the ES Plan and related details.
- C. *Phosphorus control.* The applicant conducted an assessment of the phosphorus export from the proposed project in accordance with the MDEP's Stormwater BMP Manual "Phosphorus Control in Lake watershed: A Technical Guide to Evaluating New Development". Phosphorus control is required for the portions of the proposed KEP in the Chain of Ponds and Gold Brook/Flagstaff Lake watersheds. In the Chain of Ponds watershed, this project's maximum permitted phosphorus export (ppe) is 7.36 lbs/yr; and the actual calculated ppe would be 7.22 lbs/yr. For the Gold Brook/Flagstaff Lake watershed, this project's maximum ppe is 1.88 lbs/yr; and the actual ppe calculated would be 1.30 lbs/yr (Note: These calculations were for the larger 15-turbine project, and would decrease for the proposed 11 turbine project).
- D. *Geotechnical assessment and "Acidic Rock Testing and Mitigation Plan".* Because the soil located at the KEP is expected to be very similar to the adjacent Kibby Project, the applicant proposed to use the same "Acidic Rock Testing and Mitigation Plan" (ARTM Plan, revised May 24, 2010) for the proposed KEP as the one reviewed and approved for the Kibby Project, with modifications to accommodate as appropriate. The applicant's on-going geotechnical investigation provides data to refine the ARTM Plan.

- E. *Re-vegetation in high mountain areas.* After construction has been completed, the applicant proposes to cover the majority of the exposed areas above 2,700 feet in elevation with erosion control mix and allowed to re-vegetate naturally; including turbine pads (except for the area immediately surrounding turbine foundation and the crane pad), 14 feet of the ridgeline road (leaving a 20 foot wide traveled surface), and any temporary work areas. Areas temporarily disturbed below 2,700 feet in elevation will be allowed to re-vegetate natural or seeded and mulched, as needed.

45. *Agency review comments - State Soil Scientist (SSS).*

- A. The SSS reviewed the application during the review of the original 15 turbine project, offering suggestions for the design and construction of various components of the E&S Plan and the ARTM Plan, with particular emphasis on the BMPs for handling seepage and wetland areas and how to stabilize high mountain areas after disturbance. The SSS emphasized that on-site flexibility is needed during construction.
- B. On April 9, 2010, the applicant responded to the SSS' January 29<sup>th</sup> comments, generally revising the E&S Plan and ARTM Plan as recommended. The applicant stated that the proposed ARTM Plan is the same Plan approved for, and used successfully during construction of the Kibby Project. The revised E&S Plan incorporating the requested clarifications and corrections would be prepared prior to construction.
- C. *SSS Response to the Commission's Sixth Procedural Order.* The SSS stated that his primary concerns for the construction of wind power facilities are the instability and fragility of high mountain soils, and the potential alteration of the natural hydrology in the mountains, developing the Class L Soil Survey specifically to be used in such areas. The applicant's soil survey, combined with training of contractors and third party inspectors on both the "tool box" approach to using BMPs, and on the use of blasted rock for the roads and turbine pads, is an approach that has been used successfully on three wind farm projects in Maine so far. The "tool box" approach is critical for successful construction in high mountain areas because it is not possible to predict exactly where each erosion control measure should be used. In addition, blasted rock provides a stable, porous road base material even when wet, and rock sandwiches are used to re-connect the natural hydrology where appropriate. The Sisk Mountain soils are typical of high mountain areas and are not any more unstable than the Kibby Range or Redington Range soils.
- D. The SSS reviewed the revised proposal for the 11-turbine project, stating that he had no objections, and noting that while the project revision eliminated several turbines, the remainder of the proposed project is essentially the same as the original 15 turbine proposal.
  - (1) The SSS stated that all wind development "on mountains includes construction in areas with unique hydrologic features and soils that need tailored construction techniques to minimize alteration of the natural hydrology and provide stable roads. The higher and steeper the mountain, the more likely and numerous the features and

- soils are. The SSS further stated this is the reason for the “tool box” approach,” and why he prefers “to do a site visit before making final comments on design of roads.”
- (2) On the basis of a site walk along the proposed access road on September 29<sup>th</sup> where seeps and standing water were observed all along the way, the SSS recommended the road base be constructed of blasted rock, and include numerous rock sandwiches. Ditching should not be used to collect ground water.

46. *FBM comments.* With respect to the proposed 11-turbine KEP, the FBM submitted comments on road construction, phosphorus loading, and protection/re-vegetation of high mountain areas, as summarized below:

- A. *Road construction/cut and fill.* FBM compared the amounts of cut and fill for the 15-turbine project to the 11-turbine project, and asserted that there would be more material moved per turbine for the smaller project, with a total of 91,000 cubic yards (CY) per turbine for the revised proposal.
- B. *Phosphorus.* FBM noted that the Flagstaff Lake watershed is 241,820 acres, and the KEP project footprint is 0.04% of that area, with the estimated export rate of phosphorus to Flagstaff Lake of 13.4 pounds per year, and the allowable export rate 26.4 pounds per year. The calculation of 13.4 pounds per year is based on the design of and maintenance of erosion control measures, on 20-foot wide roads, and a 0.27-acre gravel surface for each turbine site.
- (1) The original KEP proposal export rate is 1.30 pounds per year with the allowable at 1.88 pounds per year.
- (2) Cumulatively, over 14 pounds of phosphorus can be deposited into Flagstaff Lake.
- (3) Flagstaff Lake is a part of the hydro-dam system and can have frequent drops in the water levels up to 25 feet, which can significantly impact the aquatic life and temperature of the lake.
- (4) FBM asserted that the applicant has not evaluated cumulative impacts from phosphorus into the Gold Brook and the Flagstaff Lake watershed, or the cumulative load of phosphorus from logging operations and wind facilities.
- C. *Re-vegetation of high mountain areas.* FBM asserted that the applicant's claim that much of its disturbance of forest and ridgeline is only temporary and would re-vegetate rapidly is incorrect. FBM contended that the conditions above 2,700 feet in elevation are not conducive to rapid recovery, and in many cases, allow little or no recovery at all. As such, FBM asserted that such areas should be considered to be permanently altered, not temporary. FBM asserted that the failure of TransCanada's re-vegetative efforts casts significant doubt on the totals given in the revised application for permanently and temporarily impacted acreage. FBM quoted from a recent report by the third party inspector for the Kibby Project, excerpted below:
- “Erosion of the [soil material used for the pad sites and native soil material to narrow the crane road] is not an issue.” However, re-vegetation by native vegetative plants is questionable because the soil used did not contain sufficient woody debris to keep it from compacting. “The intent was to provide a material that would resemble*

*the native organic duff layer in the surrounding areas.” At three sites having gone through a 1-year growing season, the results were inconclusive.*

- D. *Protection of high mountain areas.* FBM asserted, “mountain areas are specifically listed among the ‘unique, high-value natural resources’ included in the principal values of the LURC jurisdiction.” “The 1997 CLUP consistently listed mountains as one of the specific resources that give the jurisdiction its special character. The applicant’s proposal would jeopardize the natural equilibrium of vegetation, geology, slope, soil and climate, water quality, vegetative communities, unique wildlife communities and low-impact recreational opportunities.” FBM further asserted, “both the original and revised proposal are a violation of LURC’s policy to “protect high-mountain resources with particularly high natural resource values or sensitivity, which are not appropriate for most development.”

47. *Applicant’s rebuttal to FBM comments.* The applicant rebutted FBM’s comments on the cut-and-fill areas for the road and turbine pad construction, re-vegetation of areas of the Kibby Project, and wind power development in high mountain areas.

- A. *Protection of high mountain areas.* The applicant rebutted FBM’s comments on the protection of high mountain areas, asserting that LURC’s standards do not preclude development in high mountain areas, noting that the CLUP requires the Commission to balance protection of high mountain areas with the state’s renewable energy goals. The applicant has conducted extensive field studies and has proposed the appropriate construction measures to properly address high mountain conditions, such as seeps and fragile soils.
- B. *Re-vegetation in high mountain areas.* The applicant asserted that FBM has taken the third party inspector’s statements about re-vegetation of high elevation areas above 2,700 feet out of context. The practice agreed to by staff of LURC and MDFIW, and the State Soil Scientist involved the use of native soils and erosion control mulch prepared on site to provide organic material and promote native vegetative growth, with the stated preference being to not use seed in these areas. It was expected that re-vegetation would not be immediate, and that these areas would be monitored until LURC is satisfied with the results.
- C. *Cut and fill.* The applicant asserted that FBM has misinterpreted the cut/fill quantities table in the revised proposal. The only earth materials that will be moved are the cut materials - 487,475 CY - which calculates to less than 45,000 CY per turbine, not 91,000 CY per turbine as was asserted by FBM.

#### Noise and shadow flicker assessments

48. *Noise assessment.*

- A. *Applicant’s assessment.* As required by 12 M.R.S., Section 685-B(4-B), the applicant assessed the sound to be produced by the proposed KEP’s wind turbines in accordance

with MDEP's "Comprehensive Noise Standards, Chapter 375.10, Control of Noise". MDEP's rules limit noise at protected locations (defined as any area accessible on foot containing a residence, house of worship, school, library, hospital, nursing home, etc.) based on existing ambient noise levels and existing zoning, and set higher limits for daytime than for nighttime. At a "quiet protected location", the limits are 55 dBA during the day and 45 dBA at night. However, the nighttime limits only apply within 500 feet of living or sleeping quarters on the protected location. The daytime limits apply to protected locations more than 500 feet from living or sleeping quarters regardless of the time of day. Also, the MDEP standards limit noise at the development property boundaries lines to no more than 75 dBA. Finally, no limits are set for construction noise produced from 7 am to 7 pm, or daylight hours, which ever are longer.

- (1) The applicant modeled the noise that would be likely to be produced by the proposed KEP (as a 15-turbine project) during operation at the nearest quiet protected locations, which are approximately 2.5 miles from the nearest turbine. The study included identification of the protected locations, monitoring of ambient noise to determine baseline conditions, computer modeling, and a demonstration of compliance with MDEP's rules. The predicted noise levels produced by the turbines during operation at the nearest quiet protected locations would range from 20.2 dBA to 25.4 dBA. The applicant does not propose nighttime construction, but if needed the noise produced would meet the MDEP standards for nighttime construction. The noise modeling indicated that the noise level at the parcel boundaries would be consistent with the limits set in the MDEP's rules.
- (2) The applicant's easement agreements with the underlying landowners include language providing for an exemption from the MDEP's property boundary noise limit (see Finding of Fact #10), in accordance with Section 5(s) of the MDEP's Chapter 375.10 Control of Noise rules.

B. *LURC third party review.* LURC established a contract with sound expert Warren Brown to conduct a third party peer review of the sound assessment section of the application. Mr. Brown submitted his report on the original 15-turbine project to the file on April 7, 2010.

- (1) Mr. Brown concluded "the Kibby Expansion Project noise will be well below MDEP standards". "The [KEP] noise assessment is reasonable and technically correct according to standard engineering practices required by LURC under 12 M.R.S. § 685-B(4-B)(A) Regulations on Control of Noise (06-096 CMR 375.10). The wind project prediction model is based on the following prediction assumptions:
  - (a) Ground absorption factor – reflective ( $G = 0$ ),
  - (b) 8 km turbine inclusion radius (included Kibby Project and KEP)
  - (c) 5 dB manufacturer and model uncertainty factor inclusion,
  - (d) Individual wind turbine spherical wave fronts,
  - (e) Atmospheric attenuation based on 50°F, 70% RH,
  - (f) No attenuation due to foliage,
  - (g) All wind turbines operating at maximum sound power output (107 dB - corrected April 6, 2010), and
  - (h) All wind turbines operating under moderate downwind conditions simultaneously."

- (2) Mr. Brown recommended the following:  
“It is the reviewer’s opinion compliance measurements should not be required. Very conservatively predicted operating sound levels are well below the standard limits even with an inclusion of tonal and SDRS penalties, which are not expected. Operating sound measurements attempted for sound levels near or below predominate ambient levels (nearby traffic, water flow, and foliage rustling) would be indistinguishable. All future sound measurements for LURC/MDEP submission associated with any project should be accompanied by local meteorological measurements (Chapter 375.10 H(2)(2.4)(f)).”
- (3) Regarding the revised proposal for an 11 turbine project, Mr. Brown commented as follows: “With the elimination of turbines 12 to 15, the sound impact to nearby protected locations will be likely diminished, but in no case increased. These turbine locations appear to be east of the ridge and may contribute little noise to the nearest protected locations.” “There is no need for additional review of the noise impact from the [KEP] revised proposal project.”

D. *Applicant and Parties’ testimony.* Based on their closing briefs submitted during the review of the 15-turbine project, with the exception of the possibility of effects of noise on wildlife (*see* Finding of Fact #43), noise expected to be produced by the proposed KEP’s turbines was not raised as an issue.

#### 49. *Shadow flicker.*

- A. *Applicant’s assessment.* The applicant’s shadow flicker analysis took into account the orientation of the sun relative to the turbines and sensitive receptors, the distance from the turbines to these receptors, the orientation of the blades as a result of wind direction, and the frequency of cloudiness/sunshine. Factors noted as generally affecting the intensity of shadow flicker effect included: the orientation of the blades and the distance to the receptor resulting in diffraction of the shadow and the addition of ambient background light to the shadow. The applicant’s analysis showed that at a distance of approximately 3,300 feet (1 km) and beyond, the “changing light intensity is low enough that a person does not perceive the turbine rotor as ‘chopping’ through the sun, but rather as an object with the sun behind it.”
- (1) MDEP’s guidance document recommends the use of the SHADOW module of the WindPRO 2.5 software, which incorporates the following factors into its flicker analysis: position of the WTGs; hub height and rotor diameter; topography including the USGS Digital Elevation Model terrain data; location, elevation, and orientation of the receptor; solar angle model; wind direction frequency; and monthly sunshine frequency. MDEP’s guidance document also recommends that the SHADOW module be conducted where there are receptors within 1,000 feet of the turbines.
  - (2) The applicant assessed an area around the project for a distance of 3,300 feet (1 km) from the turbines. The nearest residences/camps and the Route 27 Scenic Byway are approximately 2.5 miles to the south of the turbines. At this distance and orientation to the project area, the applicant determined that shadow flicker would not adversely affect these sensitive receptors. Based on this, the applicant did not employ the SHADOW analysis for the proposed KEP.

- B. No agency comment or testimony from the Parties was received regarding shadow flicker associated with the proposed KEP.

## Conclusions

Based on the above, with respect to the 11-turbine Kibby Expansion Project (KEP) proposal, the Commission finds and concludes that:

1. The Commission must evaluate wind energy development located in the State's expedited permitting area on the basis of its statutory authority, as revised in accordance with provisions of PL 2007, Ch. 661 (the so-called "Wind Energy Act"). Further, with respect to this project, the Commission must base its decision upon a record assembled in two parts: first with respect to the original 15-turbine project, and second with respect to the revised 11-turbine KEP. As footnoted at the beginning of this decision, the Commission has relied upon evidence submitted for the original application where that evidence remains relevant. Further, given this procedural context, *see* background discussion at Finding # 29, comparisons have been made between the impacts of the original project and the impacts of the revised project. The Commission's findings and conclusions, however, as stated above, are based upon the applicable legal criteria and the evidence in the record. The applicant has carried its legal burden of proof in showing that all applicable legal criteria, including the Commission's statute, 12 M.R.S., § 685-B(4) and (4-B), and 35-A M.R.S. § 3452 have been met.
2. The proposed KEP is a wind energy development, *see* 35-A M.R.S., § 3451(11), and would be located entirely within the area designated as the expedited permitting area, pursuant to the Wind Energy Act, and as such the Legislature has determined the KEP is a use allowed by permit in all the affected subdistricts, including the P-MA Mountain Area Protection Subdistrict. The proposed KEP meets the definition of an expedited, or "grid-scale" wind energy development, as defined in 35-A M.R.S., §§ 3451(4) and (6).
  - A. The proposed KEP would be located in Kibby Township and Chain of Ponds Township, Franklin County, which are included in the area of the Commission's jurisdiction designated by the Wind Energy Act for expedited permitting of wind energy development.
  - B. Wind energy development, including associated facilities, is a use allowed with a permit in the (P-MA) Mountain Area Protection Subdistrict, (M-GN) General Management, (P-SL) Shoreland Protection, and (P-WL) Wetland Protection Subdistricts, where such subdistricts are located within the areas of the Commission's jurisdiction designated for expedited permitting.
3. By including the P-MA Subdistrict in the expedited permitting area, the Legislature has determined that the P-MA may be appropriate for wind energy development. In the Wind Energy Act the Legislature was clear, however, that it did not intend to "diminish the importance of addressing as appropriate site-specific impacts on natural values, including but

not limited to, wildlife, wildlife habitats and other ecological values.” 35-A M.R.S. § 3402(2). Further, the Wind Energy Act did not remove the statutory requirement that the Commission, in reviewing development permit applications, determine whether a proposal is in conformance with the Commission’s regulations, standards, and Comprehensive Land Use Plan (CLUP). 12 M.R.S. §§ 685-B(4) & (4-B).

- A. At the time the Commission accepted the applicant’s application as complete for processing, the 1997 CLUP remained effective. The Commission adopted and the Governor approved the 2010 CLUP in March of 2010.
- B. While it appears the 1997 CLUP is applicable to this proceeding, *see* 1 M.R.S. § 302, the Commission does not reach the issue because the KEP, as discussed below, is in conformance with the 1997 CLUP - as read in light of the Wind Energy Act - and the 2010 CLUP.
- C. The 1997 CLUP provides for the environmentally sound and socially beneficial utilization of indigenous energy resources where there are not overriding, conflicting public values that require protection. It encourages energy conservation and diversification and the use of indigenous renewable resources to increase the State’s energy self-sufficiency, but also prohibits energy developments and related land uses in areas identified as environmentally sensitive where there are overriding, conflicting environmental and other public values requiring protection (1997 CLUP at p. 136). To that end, the CLUP sets policies of identifying and protecting high mountain resources with particularly high natural resource values or sensitivity that are therefore not appropriate for most development. The CLUP further seeks regulation of high mountain areas to preserve the natural equilibrium of vegetation, geology, slope, soil, and climate, to reduce danger to public health and safety posed by unstable mountain areas, to protect water quality, and to preserve scenic values, vegetative communities, and low-impact recreational opportunities (1997 CLUP at pp. 137-38). Finally, the CLUP sets policies of regulating land uses generally in order to protect natural aesthetic values and prevent incompatibility of land uses, and protecting the scenic values of, among others, mountain areas (1997 CLUP at pp. 139-40).
- D. While the 2010 CLUP expressly recognizes the statutory changes made by the Wind Energy Act with respect to wind energy development in the expedited permitting area, the CLUP is clear that “[g]iven the finite number of high mountain areas and the value of their scenic, recreational and natural resources, it is unlikely that the Commission will consider all mountain areas in the jurisdiction suitable for wind power development or comparable uses” because “wind turbines and associated infrastructure have the potential to compromise the resources the P-MA Subdistrict is designed to protect.” (2010 CLUP at p. 223). The CLUP continues to provide for the environmentally sound and socially beneficial utilization of indigenous energy resources where there are not overriding public values that require protection, and it clarifies that it seeks to accommodate energy generation installations that are consistent with the State’s energy policies, are suitable for the proposed location(s), and minimize intrusion on natural and cultural resources and values. The CLUP continues to prohibit energy developments and related land uses in



areas identified as environmentally sensitive when there are overriding environmental and other public values requiring protection (2010 CLUP at p. 13). The CLUP continues to identify policies of protecting high-mountain resources with particularly high natural resource values or sensitivity that are therefore not appropriate for most development, and it continues to seek regulation of high-mountain areas to preserve the natural equilibrium of vegetation, geology, slope, soil and climate, to reduce danger to public health and safety posed by unstable mountain areas, to protect water quality, and to preserve scenic values, vegetative communities, unique wildlife communities and low impact recreational opportunities (2010 CLUP at p. 16). Finally, the CLUP reflects the Wind Energy Act in setting the policy of identifying and protecting areas that possess scenic features and values of state or national significance (2010 CLUP at p. 18).

4. Thus, as discussed above in Sections 3(C) and (D), the Commission's 1997 and 2010 CLUPs recognize the need to protect sensitive resources when authorizing development in the high mountain areas identified as the P-MA Subdistrict. While development in these protected areas is not prohibited, the Commission is mindful that it must carefully consider, on a case-by-case basis, proposed impacts, including but not limited to impacts to animals and natural plant communities with a state rarity rating of S3. Not all sites proposed in the P-MA Subdistrict will be suitable for wind power development or other such comparable uses. In order for the appropriate balance to be struck and to achieve conformity with the goals and policies of the CLUP, applicants proposing projects in the P-MA Subdistrict must, to the extent reasonably possible, minimize impacts to the resources found in these high mountain areas. For the reasons discussed herein, the Commission concludes that the proposed KEP would be consistent with the goals and policies of the 1997 and 2010 CLUPs with respect to the balance of development, including wind energy development and achieving the State's energy goals, and the protection of natural resources.
5. In accordance with 12 M.R.S. § 685,B(4):
  - A. The applicant has demonstrated adequate provision for:
    - (1) Financial and technical capacity, as set forth in Finding of Fact #11,A and B;
    - (2) Loading, parking, and circulation of traffic in, on, and from the site; and the project will not will not cause congestion or unsafe conditions on existing or proposed transportation arteries or methods, as set forth in Finding of Fact #8,I and J; and
    - (3) Fitting the proposal harmoniously into the existing natural environment to assure there will be no undue adverse effect on existing uses, scenic character, and natural and historic resources in the area likely to be affected by the proposal, as set forth in Conclusions #12 through #24 [Note: See Conclusion #11 and Appendix I, Sections #6 to #8 regarding scenic character for a grid-scale wind energy development and the applicable statute.]
  - B. As set forth in Findings of Fact #44 and #45 and Conclusion #25, the proposal "will not cause unreasonable soil erosion or reduction in the capacity of the land to absorb and hold water; and suitable soils are available for a sewage disposal system."

- C. The proposal is “otherwise in conformance with [12 M.R.S., Chapter 206-A], and the regulations, standards, and plans adopted pursuant thereto,” as discussed herein.
6. The Commission finds that this proposal satisfies the requirements of Title 12 as modified by the Wind Energy Act as provided in 12 M.R.S., §§ 685-B(4) and (4-B). Specifically:
- A. *Tangible benefits*. The applicant provided evidence regarding significant tangible benefits to be realized by the people of Maine as a result of this project (*see* Conclusions #7 to #10).
- B. *Scenic impact assessment*. A scenic impact assessment was completed and reviewed for this project. The Commission finds that any adverse effect on the scenic character or existing uses related to scenic character would not be unreasonable (*see* Conclusion #11).
- C. *Avian and bat monitoring*. The applicant conducted avian and bat monitoring in accordance with the protocol recommended by MDIFW, and has proposed to conduct post-construction monitoring and to further develop a detailed protocol in consultation with MDIFW (*see* Conclusion #12,B and #15). The Commission finds that the pre-construction assessment, in combination with the implementation of a post-construction monitoring plan, indicates that there is a low risk to these species and therefore no undue adverse effect on avian and bat species occurring as a result of the proposed KEP.
- D. *Noise assessment*. Noise levels during operation at the closest quiet protected location (a residence) would be 25.4 dBA, which would be well below the level for a quiet protected location in MDEP’s rules regarding noise levels (*see* Conclusion #18).
- E. *Shadow flicker*. The project would be located considerably farther than 1 kilometer from any residence, eliminating the potential for an undue adverse effect due to shadow flicker (*see* Conclusion #19).
- F. *Public safety related setbacks*. The applicant has made adequate provisions for the turbines to be constructed with adequate set backs to ensure public safety (*see* Conclusion #20).
- G. *Decommissioning*. The applicant proposed a decommissioning plan, including a mechanism for funding (*see* Conclusion #21).

#### Tangible benefits and energy production

7. *Tangible benefits [12 M.R.S., § 685-B(4-B)D and 35-A M.R.S., § 3454]*. Section 685-B(4-B)D requires that an expedited (*i.e.*, “grid-scale”) wind energy development provide significant tangible benefits. Tangible benefits are defined as including “environmental or economic improvements attributable to the construction, operation, and maintenance of a 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, and natural resource conservation” (*see* Appendix I, Section

#4,B of this document, for the full definition). In addition, the Wind Energy Act also revised the Commission's criteria for approval of development in Title 12, § 685-B(4), as follows: "The burden is upon the applicant to demonstrate by substantial evidence that the criteria for approval are satisfied, and that the public's health, safety and general welfare will be adequately protected. Except as otherwise provided in 35-A M.R.S., § 3454, the Commission shall permit the applicant and other parties to provide evidence on the economic benefits of the proposal as well as the impact of the proposal on energy resources."

8. The Commission concludes that the tangible benefits proposed by the applicant for the proposed 11-turbine KEP would meet the State definition of "tangible benefits" and would be significant (*see* 35-A M.R.S., chapter 34-A, § 3451(10)). Furthermore, because the proposed 11 turbine KEP is not subject to the provisions of PL 2009 Ch. 642, no conclusions are reached herein with respect to that law.
  - A. Specifically, the proposed KEP is expected to result in the employment of several hundred workers during construction, with a large majority being from Maine (80% of the Kibby Project workers were from Maine); indirect benefits to local businesses during the construction period; 1 additional permanent job in operations and maintenance, with a \$110,000 lump sum payment to the Maine Department of Labor to support green job education and training in Franklin County; and an estimated \$13 million in State income taxes over a 25-year period.
  - B. The applicant has also proposed to contribute \$110,000 to the High Peaks Alliance (HPA) for land conservation and trail corridor acquisition in Franklin County. HPA has discussed the use of this money with the Maine Bureau of Parks and Lands (BPL), who recommended that 80% be designated for acquisition of land for trail corridors, and 20% to be designated for stewardship of these lands.
  - C. Although a community benefits package in accordance with PL 2009, Ch. 642 is not required for this project, the applicant has proposed to contribute an additional \$33,000, or \$1,000 per MW, per year to the Town of Eustis/Stratton, in addition to the benefits associated with the Kibby Project, increasing the money being provided to the town annually from \$132,000 to \$165,000. Over a 20-year period, the \$33,000 annually would amount to \$660,000.
  - D. The applicant estimated the taxes to be paid to the State from the proposed KEP would be \$400,000 per year, or \$10 million over a 20-year period.
9. *Energy production.* As set forth at 12 M.R.S. § 685-B(4), "[e]xcept as otherwise provided in [35-A M.R.S. § 3454], the Commission shall permit the applicant and other parties to provide evidence on the economic benefits of the proposal as well as the impact of the proposal on energy resources." As stated in the Twelfth Procedural Order regarding information on energy production, in view of the Wind Energy Act's incorporation of 35-A M.R.S. § 3454 into Title 12, the Commission is to presume that expedited wind energy developments provide the energy and emissions related benefits set forth in the legislative findings of the Act at 35-A M.R.S. § 3402. Thus, issues related to the development's power production are

not central to the Commission's decision, and while the record of this proceeding contains information on energy production and resources, the Wind Energy Act requires the Commission to presume that expedited wind energy developments such as the KEP provide the energy and emissions related benefits identified in the Act, 35-A M.R.S. §§ 3402, 3454.

10. *Annual report.* The Commission also concludes that the applicant must provide a report to the Commission annually for the first two years of operation on the project's contribution to the State's economic, environmental and energy policies. The applicant's annual reports must include, but not be limited to, the total MWh of generation during the year, calculation of emissions reduced or displaced as a result of operating the project, companies used during construction, the number of Maine residents hired, total dollars spent in Maine during construction, the progress of any TIF program established should one be pursued, and property taxes and income taxes to be paid to the State. Any other tangible benefits realized as a result of operating the project may also be included in the report.

The applicant must also include in the report a summary of the progress of the program to be conducted by the Maine Department of Labor to provide green energy industry education and training in Franklin County, the date of signing of the final community benefits agreement with the Town of Eustis/Stratton, the progress of land conservation/trail corridor acquisition projects pursued by the HPA, and the date of signing of the memorandums of agreements between AEHS and MHPC.

#### Natural resources assessments

11. *Scenic resources impact assessment: evaluation of effects on scenic character [12 M.R.S., § 685-B(4)(C) and 35-A M.R.S. § 3452].* Based on the applicable review criteria and the record, the Commission concludes that the visibility of the proposed KEP from all relevant affected scenic resources, including the cumulative effect of the proposed KEP in combination with the existing Kibby Project, would not be unreasonably adverse under the criteria set forth in the Wind Energy Act, 35-A M.R.S. § 3452.

A. *Review criteria.* The Commission's criteria for approval for an expedited wind energy development set forth at 12 M.R.S., § 685-B(4)(C), as amended by the Wind Energy Act provide: "In making a determination under this paragraph regarding an expedited wind energy development, as defined in 35-A M.R.S., § 3451, subsection 4, the Commission shall consider the development's effects on scenic character and existing uses related to scenic character in accordance with 35-A M.R.S., § 3452."

(1) The Wind Energy Act provides that scenic impacts to viewpoints within 8 miles of the proposed KEP meeting the definition of "scenic resources of state or national significance" (hereinafter "scenic resources") (*see* 35-A M.R.S. § 3451(9)) are to be assessed during the review of a grid-scale wind energy development in accordance with the criteria set forth at 35-A M.R.S. § 3452. The Act also provides the following:

- (a) Section 3452(1) requires the Commission to determine if a wind energy development would have an unreasonable adverse effect on these scenic resources;

- (b) Further, “[d]etermination 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”; and
  - (c) Section 3452(3) states that a “finding by the [Commission] 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 . . . .”
- (2) 35-A M.R.S. § 3452(3) further requires that when making a determination on impacts of an expedited wind energy development on scenic character, the Commission shall consider the following:
- (a) The significance of the potentially affected scenic resource;
  - (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 the potentially affected public uses of the scenic resource and the potential effect of the generating facilities’ presence of the public’s continued use and enjoyment of the scenic resource; and
  - (f) The scope and scale of the potential effect of views of the generating facilities on the scenic resource, including but not limited to issues related to the number and extent of the turbines visible from the scenic resource, the distance from the scenic resource, and the effect of prominent features of the development on the landscape.

B. *Mitigation.* The record in this proceeding contains argument to the effect that the scenic impacts caused by the proposed KEP are sufficiently significant such that mitigation is required. And, presumably the argument goes, if such impacts were appropriately mitigated, the KEP could be properly permitted. While the Wind Energy Act requires an applicant to demonstrate a project will provide “significant tangible benefits” to the host and neighboring communities (*see* 12 M.R.S. § 685-B(4-B)(D) & 35-A M.R.S. § 3451(10)), there is no provision in the Act for mitigation. In other words, if the applicant fails to demonstrate the applicable scenic standard has been met, the project is not approvable through resort to compensation intended to redress the unreasonable scenic impact.

C. *Impacts to the affected scenic resources.*

- (1) *Character of the surrounding area.* The Commission recognizes that the Chain of Ponds and surrounding area is a recreational and historic destination known for its scenic character, with a natural landscape of mountains, lakes and forest important to the existing uses of the area, including use of the area by those interested in experiencing the historic and federally listed Arnold Trail. Although development in the Chain of Ponds area has occurred, the unique historic and scenic character of the distinctive Chain of Ponds area has generally not been compromised with respect to the integrity of the historic Arnold Trail.
- (2) *Chain of Ponds/Arnold Trail.* The above notwithstanding, the Wind Energy Act provides that wind generating facilities being a highly visible feature of the landscape

is not in itself sufficient for finding that a visual impact is unreasonably adverse. In this proceeding, the record shows that the proposed KEP turbines would be visible from only approximately 24% of the length of Chain of Ponds, and only portions of the KEP would be seen from several viewpoints. The predominant view point is from the south shore and adjacent open water of Long Pond where portions of up to all 11 turbines would be visible between Mt. Pisgah and Sisk Mountain at a distance of approximately 3 miles or more. Only 3 of the turbines would be fully visible at a distance of 3 or more miles, and the remainder would only be partially visible. At the other points on Long, Bag, and Natanis Ponds where the turbines would be visible, fewer and less of the turbines would be visible than from the viewpoint on Long Pond. Turbines 9 through 11, the closest turbines to the Chain of Ponds, are most likely to be viewed in combination with Turbines 1 through 8 as a group at this distance. This differs from the original proposal, where Turbines 12 through 15, which were viewable as a separate group of 4 turbines, have been removed from the project, along with the access road leading to those turbines. The visual effect of the proposed group of 11 turbines would not significantly compromise the view from the Chain of Ponds such that the effect is unreasonably adverse. The effect of the proposed KEP on the Arnold Trail is similar to the effect on the Chain of Ponds within the viewshed of the project because it occupies the same general geography as the Chain of Ponds.

- (3) *Arnold Pond, Crosby Pond, and Kibby Stream.* From Arnold and Crosby Ponds, only portions of up to 6 and 9 turbines, respectively, would be visible at a distance of 7 to 8 miles. Similarly, only portions of the KEP turbines would be visible at a distance of approximately 7 to 8 miles from Kibby Stream. With respect to Kibby Stream, the turbines are largely obscured by forest cover until an open marshy area is reached at approximately 8 miles. In addition, there is limited public use of Kibby Stream. Thus, the view of the proposed 11-turbine KEP for these affected scenic resources would not be unreasonably adverse because of distance, screening, and with respect to Kibby Stream because of limited public use.

D. *Cumulative impacts.* Where the record shows the proposed KEP would be visible in combination the existing Kibby Project, the Commission has considered the cumulative scenic impact of the two projects on the scenic resources relevant to this proceeding. Although the proposed KEP would, in combination with the Kibby Project, increase the extent of the views of wind turbines on Chain of Ponds, the Arnold Trail, and Kibby Stream, due to distance and obstruction of the view by topography and forest canopy, the overall impact would not be unreasonably adverse.

- (1) Where the proposed 11-turbine KEP is visible, it is generally only visible in part. It would be visible to some extent from 7 of the 13 scenic resources of state or national significance located within 8 miles of the project, namely: the Chain of Ponds (Long Pond, Bag Pond, and Natanis Pond) and the Arnold Trail at 3 or more miles; and Arnold Pond, Crosby Pond, and Kibby Stream at 7 to 8 miles. The existing Kibby Project is visible from various locations along the Arnold Trail and Chain of Ponds (Round Pond, Natanis Pond, Long Pond, Bag Pond, and Lower Pond) at a distance ranging from approximately 4 to 7 miles; and from Kibby Stream at a distance of 1.5 miles to 3 miles.

- (2) Although more turbines would be visible from the affected scenic resources as a result of the proposed KEP, when added to those visible due to the Kibby Project, there are only a few relevant scenic resources where the two projects would be seen in combination, namely the south shores of Long Pond and Bag Pond, and Kibby Stream. The Kibby Project turbines that are partly visible from these areas are generally limited to the B Series turbines 1 through 13, not all 44 turbines. Views of the remainder of the Kibby Project turbines are largely blocked by topography.
- (3) Although the turbines of the KEP within 8 miles of Arnold and Crosby Ponds would be visible, the turbines of the Kibby Project that would be viewable at the same locations are located more than 8 miles from both ponds, and as such the cumulative impact to those ponds would be minimal.
- (4) Within 8 miles of the proposed KEP, Kibby Stream is mostly forested except for an open marshy area at approximately 8 miles. From forested portions of the stream, little if any view of either project would be likely. However, both projects would be viewable in combination at two locations.
  - (a) At the Gold Brook Road stream crossing, which is used for timber harvesting activities, turbines of the Kibby Project are visible at varying distances up to 3 miles, and the KEP turbines would be visible at approximately 3 miles.
  - (b) At the marshy open area along Kibby Stream, which could be utilized by fishermen, some of the Kibby Project turbines would be visible at approximately 1.5 to 3 miles, and while portions of the proposed KEP turbines will also be partially visible, they will be at a further distance of approximately 7 to 8 miles.

E. *Associated facilities.* The Commission concludes that the visual impact to scenic resources due to the associated facilities (roads, power lines) would not cause the impact due to the KEP to be unreasonably adverse. The record shows that the associated facilities were factored into the visual impact assessment and photo-simulations. When the project was reduced in size from 15 turbines to 11 turbines, the majority of cut and fill areas that may have been visible from the Chain of Ponds was eliminated. Even assuming that some of the cut and fill for the turbine 11 pad and access road is visible from Chain of Ponds, because of the viewing angle and distance, the impact to the scenic character due to this portion of the project does not elevate the overall scenic impact to the level of being unreasonably adverse. Otherwise, any additional scenic impact due to turbine pads, roads, and the collector line would be minimal, in particular as viewed from Kibby Stream at a distance of 7 to 8 miles.

12. *Subalpine Fir Forest and Bicknell's thrush.* The review criteria applicable to the consideration of the effects of the proposed KEP on both the Subalpine Fir Forest natural community and on the Bicknell's thrush habitat is the "undue adverse impact" standard set forth in 12 M.R.S. § 685-B(4). While the Commission recognizes the significance of the rare, high value, Subalpine Fir Forest natural plant community at the site, in combination with the Bicknell's thrush, a Species of Special Concern documented at this site and dependent upon the Subalpine Fir Forest, the Commission concludes that the impacts to both these resources as a result of the revised proposed KEP would not be unduly adverse.

- A. *Subalpine Fir Forest*. The Subalpine Fir Forest natural community that would remain after construction of the 11-turbine project would be of a size and quality such that the proposed impacts to the northern 45 acres of the Forest would not constitute an undue adverse impact. The size of the impact area would not significantly adversely affect the ecologic value of the remaining 313-acre plant community. In addition, given the extent of known acreage in the state, the direct loss of 20 acres and indirect affect on an additional 25 acres would not constitute an undue adverse impact on this natural plant community in Maine.
- (1) The existing 358-acre Subalpine Fir Forest on Sisk Mountain would be reduced in size to 313 contiguous acres of intact community, but according to MNAP would retain its “good” quality rating. This change constitutes a loss of approximately 13% of the natural plant community at this site due to direct and indirect impacts. The remaining 313-acre community would be the 12<sup>th</sup> largest in the state, as opposed to its current status as 11<sup>th</sup> largest, with the next largest being 316 acres in size. As calculated by MNAP, the impacted area would be 45 acres, including both direct and indirect impacts (using a 50 foot wide buffer or “edge effect” for the calculation), leaving the percentage of the existing community that would remain unaffected at 87.4%. The Commission notes that even under CP’s calculation, the percentage of the existing community that would remain unaffected would be 84.6% (*see* Finding of Fact #29, Table 2).
  - (2) MNAP acknowledged that the revised proposal would reduce the adverse impacts to the community, including the extent of the effect of fragmentation, leaving one contiguous block of intact Subalpine Fir Forest. The elimination of this fragmentation by changing to the project impact area within this community significantly reduced the extent of indirect impact when compared to the 15 turbine project. MNAP further recommended that, if the project is approved, a plan be prepared to be implemented both during and post-construction to assure that the impacts will be minimized (*see* Finding of Fact #30, C, D and E).
- B. *Bicknell’s thrush*. The MDIFW has rated the Bicknell’s thrush as a Species of Special Concern, not threatened or endangered, and thus this species has been assigned a rating in Maine of S-3 and is not in immediate danger. The total acreage of undisputed habitat for this species that has thus far been identified in Maine is 40,000 acres. Nevertheless, impacts to this species must be scrutinized because of its limited breeding range in the northeastern U.S. and Canada, and its typical breeding habitat in high elevation areas. The proposed direct alteration area is 5 acres, and there is conflicting evidence in the record as to how much “edge effect” (indirect) impact to this species would occur, with some evidence indicating that the effect may be limited due to this species’ habitat preference. The fragmentation of the Bicknell’s thrush “preferred habitat,” as was previously proposed for the 15 turbine project, has been largely eliminated with respect to the 11-turbine project, and the record shows that large areas of breeding habitat will remain, the KEP impacts notwithstanding. MDIFW stated that the risk of impacts to Bicknell’s thrush had been significantly reduced, but because there is still some potential for impacts at 2 of the turbine sites, recommended that post-construction monitoring and a management plan be required (*see* Finding of Fact #30,A). Based on the record, in combination with the conditions set forth in this permit, the Commission concludes the



proposed alteration of Bicknell's thrush habitat for the 11-turbine project does not constitute an undue adverse impact.

- (1) The proposed 11-turbine KEP would directly impact 5 acres of the 88-acre area of Bicknell's Thrush "preferred habitat" that was identified within the Subalpine Fir Forest. The direct impact area has been reduced for the 11-turbine project, down from 8 acres for the original 15-turbine proposal. Also, the elimination of the southern 4 turbines would in turn eliminate the largest area of fragmentation of this habitat. Including edge effect, the applicant assessed that the total impact area to the Bicknell's thrush preferred habitat area would be 8 acres. The CP also assessed the impact area, asserting that the total area of Bicknell's thrush habitat affected would be at least 10 to 15 acres because they included a larger area of edge effect and included in their assessment any use areas that are unknown because they were not included in the field investigation (*see* Finding of Fact #31).
- (2) The Commission finds the stronger evidence in the record shows that Bicknell's thrush sufficiently uses areas of disturbance as well as areas below 2,700 feet in elevation as breeding habitat, and to show that a large area of this species' preferred habitat would remain intact. The record also shows that while this species is listed by MDIFW as a species of special concern, has been identified by several non-government groups for protection, and is endemic to a limited habitat niche, the population is not enough at risk to have been elevated to the status of threatened or endangered by the State, nor is it federally listed.
- (3) While every effort should be made to minimize the impacts to the habitat for this species, the direct and indirect impacts of the KEP would not rise to the level of an undue adverse impact. MDIFW advised that a post-construction avian monitoring plan be prepared in consultation with MDIFW. The construction and post-construction plan advised by MNAP should be combined with the monitoring plan advised by MDIFW to prepare a joint plan that is protective of both the Bicknell's thrush habitat and the Subalpine Fir Forest of which it is a part (*see* Finding of Fact #30).

13. *Vernal pools, Roaring Brook mayfly, and spring salamander (see Conclusion #14 for wetlands).*

- A. *Vernal pools.* The applicant conducted surveys to identify vernal pools in the project area during its wetland surveys and other field investigations, in consultation with MDIFW. The applicant mapped all wetlands in or near all of the project area, identifying any area having the potential to be a vernal pool. MDIFW staff have reviewed the results of that work, stated they are satisfied with the survey, and determined that the pools in the vicinity of the project are not jurisdictional under the DEP-NRPA rules because they are man-made. Nonetheless, the applicant has designed the project to avoid all of the identified vernal pools and to limit clearing within 250 feet. Because the identified vernal pools are not jurisdictional, MDIFW determined there was no need to survey the pools during the amphibian breeding season in the spring. All of the pools identified are located along an existing well-used skidder trail, and were determined to be the result of frequent rutting along this track over time. The applicant mapped all wetlands in or near all of the project area, with any area having the potential to be a vernal pool being noted.

- (1) Although LURC has not yet adopted rules regulating vernal pools that area consistent with the DEP-NRPA rules, the state resource agencies' science, policy, and rule-based practices can be a guide for LURC in interpreting its statute. At present, the Commission's rules applicable to vernal pools include the statutory "no undue adverse impact" criteria and the wetland alterations standards in Chapter 10, Section 10.25,P.
- (2) Based on the record and the considerations cited above, the Commission concludes that there would not be an undue adverse impact to vernal pools in the project area because a survey to locate pools in the project area was done under the guidance of MDIFW, MDIFW reviewed the results and deemed all the pools to be non-jurisdictional, none of the identified pools would be impacted in any event, and a forested buffer would be maintained around each pool.

B. *Roaring Brook mayfly and spring salamander.* The Commission concludes that the stream crossings where Roaring Brook mayfly and spring salamander habitat may occur would not sustain an undue adverse impact. MDIFW has recommended best management practices to be followed to protect these species, should they occur in or near streams crossings affected by the project, and the applicant has agreed to follow those guidelines.

14. *Wetlands.* The Commission concludes that the wetland impacts due to the proposed 11-turbine KEP would be most appropriately reviewed as a Tier 2 project, and that no mitigation for losses of wetland functions and values is needed<sup>11</sup>.

A. *Review criteria.*

- (1) Section 10.25,P,1(c) of the Commission's Land Use Districts and Standards states that "Tier 3 reviews are for projects altering any area of P-WL1 wetland, 15,000 sq ft up to 43,560 sq ft of P-WL2 or P-WL3 wetland containing critically imperiled or imperiled natural communities, or one acre or more of P-WL2 or P-WL3 wetlands."
- (2) Section 10.25,P,1(c) also provides for alterations to P-WL1 wetlands to be eligible for a "Tier 1 or 2 review if the activity will not have an undue adverse impact on the freshwater wetlands or other protected natural resources present. To make this determination, consideration shall be given to the size of the alteration, functions of the impacted area, existing development or character of the area in and around the alteration site, elevation differences and hydrological connection to surface water or other protected natural resources."
- (3) Section 10.25,P,1,c(2) states that Tier 2 reviews are for projects altering 15,000 sq ft up to 43,560 sq ft of P-WL2 or P-WL3 wetlands not containing critically imperiled (S1) or imperiled (S2) natural communities.
- (4) In accordance with Section 10.25,P,2, projects eligible for a Tier 2 review must meet the standards for avoidance of wetland impacts, minimal alteration of wetlands, protection of water quality, erosion control, and compensation if applicable.

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<sup>11</sup> Although not yet issued, the U.S. Army Corps of Engineers' Clean Water Act section 404 permit is expected to require the applicant to contribute to Maine's in lieu fee mitigation program for the clearing of the wetlands along the power line corridor.

(5) Section 10,25,P,2(e) provides that projects requiring a Tier 2 review, the Commission may require compensation when it determines that a wetland alteration will cause a wetland function or functions to be lost or degraded as identified by an assessment of wetland functions and values in accordance with application requirements or by the Commission's evaluation of the project. The Commission may waive the requirement for a functional assessment, compensation, or both. The Commission may waive the requirement for a functional assessment if it already possesses the information necessary to determine the functions of the area proposed to be altered. The Commission may waive the requirement for compensation if it determines that any impact to the wetland functions and values from the activity will be insignificant.

B. *Project wetland alterations.* The total area of wetland proposed to be affected by the 11-turbine KEP would be 4.34 acres, of which 3.49 acres would be permanently cleared for the power line corridor, converting those wetlands from forest dominated to scrub-shrub dominated. Of the remaining 0.85 acres, 0.083 acre (3,646 sq ft) would be temporarily cleared and 0.77 acre would be filled for stream and wetland crossings by the proposed access roads. Of the 0.77 acre of fill, 0.06 acre of P-WL1 wetland would be impacted for access road stream crossings, and 0.64 acre of P-WL2 or P-WL3 wetlands would be impacted by the access road, and 0.08 acre would be impacted by the turbine pads and the crane path. Of the permanently cleared areas, 0.94 acre would be P-WL1 wetland, and 2.55 acres would be P-WL2 or P-WL3 wetlands. Of the temporarily cleared areas, 17 sq ft would be P-WL1 wetlands, and 0.083 (3,629 sq ft) would be P-WL2 or P-WL3 wetlands.

C. *Conclusions.* The 11 turbine KEP as proposed would meet the standards for avoidance of wetland impacts and minimal alteration, and erosion control. The applicant has shown that there is no practicable alternative to the proposed alterations, alternatives to the proposal were evaluated, and the project layout limits the amount of wetland to the minimum amount needed. The applicant has proposed erosion control measures that would prevent sedimentation to surface waters. Based on meeting these first three standards, the project would not be expected to violate any state water quality law, including those governing the classification of the State's waters.

(1) *Tier of review.* Based on the above, the proposed wetland alterations for the 11-turbine KEP is most appropriately reviewed as a Tier 2 project. The majority of the proposed wetland alteration is for clearing of P-WL2/3 wetlands within the power line corridor, which will convert the wetlands from forested to scrub shrub wetlands, but will not result in an overall loss of wetland functions and values. The fill alterations are largely for road crossings, as described in Section (2), below.

(2) *Compensation.* The requirement for compensation may be waived for this project because of the total proposed wetland alteration area, the following is not counted toward compensation:

(a) The filling of P-WL1 wetlands for crossings of minor flowing waters because this activity is a use allowed without a permit if the provisions of Section 10.27,D of the Commission's Land Use Districts and Standards are met.

(b) The permanent clearing of P-WL2/3 wetlands converting them to P-WL2 wetland would not cause an overall loss of wetland functions and values. Likewise, any

areas of these wetlands that already meet the definition of a P-WL2 wetland would not be permanently affected.

- (c) The temporary clearing of P-WL1, 2 or 3 wetlands would not cause a permanent loss of wetland functions or values.
  - (d) The applicant proposes to fill 0.08 acre (3,343 sq ft) of wetland to construct the turbine pads and crane path. The remaining filling of 0.68 acre of P-WL2 or P-WL3 wetlands is for the purpose of access road construction, of which 0.004 acre (160 sq ft) is for the new access road and the remainder is to upgrade the existing Mile 5 Road and Wahl Road. Level A road construction in a wetland does not require a LURC permit, subject to standards. The fill of most of the 0.68 acre of wetlands is to upgrade an existing road, and as such would not be counted toward compensation. The wetland fill for new activities would be in total 3,503 sq ft of P-WL2 or P-WL3 wetland, which is less than the 20,000 sq ft required to trigger the need for compensation.
15. *Avian and bat impact assessment and monitoring.* The Commission concludes there is a low risk to these species and therefore no undue adverse impact to migrating birds or bats as a result of the proposed 11-turbine KEP. The record shows that the passage rates and flight heights for migrating birds and numbers of bats using the area are comparable to the nearby permitted Kibby Project. The risk of an undue level of avian and bat impacts for the Kibby Project was also determined to be low. MDIFW determined that the surveys conducted for the KEP, in combination with those previously conducted for the adjacent Kibby Project, were sufficient to assess the project's potential for impacts to migrating birds and bats, breeding birds, and raptors, and that no additional pre-construction monitoring is needed. MDIFW recommended that a post-construction avian monitoring protocol for the KEP be developed in consultation with MDIFW (*see Conclusion #12,B regarding Bicknell's thrush*).
- A. The applicant conducted pre-construction avian and bat monitoring for the KEP, adding to it the data to the avian and bat monitoring conducted for the adjacent Kibby Project. The avian and bat monitoring was conducted in accordance with the protocol recommended by MDIFW. The applicant has proposed post-construction monitoring for the KEP, and plans to consult with MDIFW and USFWS to assure that those agencies' concerns are addressed.
  - B. The applicant must develop the avian monitoring protocol as recommended by MDIFW, and must report at least annually to LURC staff, MDIFW, and USFWS the results of such monitoring for review. In addition, the applicant must consult more often than annually with MDIFW and LURC staff if any avian or bat impacts occur to determine if remedial measures are needed. After three years of post-construction monitoring, LURC staff and MDIFW may review the cumulative results to determine if changes in the level or frequency of monitoring are warranted.
16. *Northern bog lemming.* The Commission concludes that there would not be an undue adverse impact to the State threatened northern bog lemming as a result of the proposed KEP. The record shows that the northern bog lemming was assumed to be possible in the identified habitat, but its presence was not verified. Nevertheless, the proposed 11-turbine KEP would

avoid all areas along the Sisk Mountain ridgeline within the surveyed project area that were identified as having the potential to support this species. Moreover, the distance of the development area from the nearest habitat area is 1,700 feet. The wetland survey conducted for this project would have delineated any other habitat areas within and adjacent to the proposed project footprint, and none were found.

17. *Protection and re-vegetation of high mountain areas.* If conducted as proposed, the protective measures that would be put in place during construction of the proposed KEP, and the treatment of disturbed areas after construction is completed, would be sufficiently protective of high mountain resources. The proposed wind energy development is an activity that has been deemed by Legislature to be an allowed use in all subdistricts, including the (P-MA) Mountain Area Protection Subdistrict. The applicant has proposed sufficiently protective erosion and sedimentation control measures, which includes the use of a third party inspector during construction, and the project design includes the means to handle the subsurface seepage common in high elevation areas. For handling disturbed areas after construction, the applicant consulted the State Soil Scientist, LURC staff, MNAP and MDIFW to determine ways to treat these areas after construction that would be compatible with the adjacent undisturbed habitat. Furthermore, an evaluation of the phosphorus loading likely to result from the KEP was conducted. During construction of the Kibby Project it became apparent that the crushed rock used for the roads and turbine pads was not only stable, but would not produce phosphorus-carrying runoff. In order to assure that the sensitive high mountain resources adjacent to the development area are adequately protected, the applicant shall:
- A. Develop a construction plan, as recommended by MNAP and including recommendations for provisions for protection of state-listed species as recommended by MDIFW, to be reviewed and approved by LURC staff prior to the start of construction;
  - B. Develop a detailed post-construction re-vegetation plan in consultation with the State Soil Scientist, LURC staff, MDIFW, and MNAP. The plan must be timely submitted to LURC staff for review and approval, and shall include, at a minimum, on-site inspections of re-vegetation and remedial measures must be recorded and reported to the Commission bi-annually for the first year of operation, and annually thereafter until 90% vegetation cover of disturbed areas is achieved or these areas are otherwise stable, with the exception of roads, parking areas, walkways, and open portions of the turbine pads. Once approved, any substantial changes to the re-vegetation plan must be submitted to LURC staff for review and approval.
  - C. Develop a post-construction avian monitoring protocol as recommended by MDIFW to be reviewed and approved prior to the facility becoming operational.

#### Other Wind Energy Act required demonstrations

18. *Control of noise (12 M.R.S., § 685-B(4-B)A).* The applicant conducted a noise analysis to determine the expected noise levels to be produced by routine operation of the KEP, and compared them with MDEP's noise control rules (*see* MDEP's "Comprehensive Noise

Standards, Chapter 375.10, Control of Noise”). The Commission concludes that the applicant’s pre-construction noise monitoring indicates that the sound produced by the KEP during construction and operation of the generating facility would meet the provisions of MDEP’s noise standards. The Commission also concludes for the reasons below, that no compliance sound motoring during operation is necessary.

- A. The MDEP’s noise control rules state that the noise level during operation must be no more than 55 dBA during the day and 45 dBA at night (within 500 feet of living or sleeping quarters on the protected location) at the nearest quiet protected location (in this case, 2.5 miles from the turbines), and no more than 75 dBA at the development property line. The predicted sound level of the KEP during full operation at the nearest quiet protected location was estimated to range from 20.2 dBA to 25.4 dBA, which is below the MDEP limit of 45 dBA. At the development property line (easement boundary in this case) the predicted sound level would be no more than 50 dBA, and under 30 dBA at most locations, which is considerably lower than the MDEP limit of 75 dBA. In all cases, the noise level produced by the proposed KEP would meet the MDEP’s noise control rules. The applicant also obtained an agreement from underlying/adjacent landowners Plum Creek and Kennebec West Forest providing for those parcel boundaries to be exempt from the noise level limits (*see* Findings of Fact #10 and #48).
  - B. In estimating the noise levels, the applicant conservatively added 5 dBA to the predicted levels, and did not factor in a mitigating effect due to foliage. The applicant also modeled pre-construction ambient sounds, which was factored into the assessment (*see* Finding of Fact #47).
  - C. The MDEP’s noise regulations exempt noise produced during construction between 7 am and 7 pm, or daylight hours, whichever is longer. For the KEP, nighttime construction is not proposed, but if needed the noise produced would meet the MDEP standards for nighttime construction.
  - D. All sound produced by the proposed KEP during routine operation must meet the provisions of MDEP’s rules for the “Control of Noise, Sound Level Limits” (reference MDEP 06-096, Chapter 375.10.C). During construction, from 7 pm to 7 am or non-daylight hours (nighttime), sound levels must not exceed 45 dBA within 500 feet of living or sleeping quarters on protected locations, except as needed for safety signals, warning devices, emergency pressure relief valves, other emergency activities, and traffic on roadways (reference MDEP 06-096, Chapter 375.10.C).
19. *Shadow flicker (12 M.R.S., § 685-B(4-B)B)*. The applicant assessed the shadow flicker effects expected to be produced by the proposed KEP to determine if modeling of the effects using the SHADOW module of the WindPro software would be needed. All receptors are located approximately 2.5 miles to the south, considerably more than 3,300 feet (1 kilometer (km)) from the closest proposed turbine, and are not likely to be adversely affected. The distance of 1 km was determined by the applicant as the distance beyond which shadow flicker is not expected to cause an effect. The Commission concludes that the applicant has

demonstrated the proposed KEP would not cause undue adverse shadow flicker effects, and would meet the provisions of § 685-B(4-B)B (*see* Finding of Fact #48).

20. *Public safety related setbacks (12 M.R.S., § 685-B(4-B)C)*. To meet the provisions of 12 M.R.S., § 685-B(4-B)C, wind turbines must be constructed with setbacks adequate to protect public safety. The Commission concludes that the distance of the proposed turbines from any areas used by the public would be sufficient to provide for public safety.
- A. LURC and MDEP's windpower permitting guidance document (*see* Appendix I, Section #20) recommends a turbine setback of 1.5 times the turbine height, which is also the industry standard. In the case of the proposed KEP, 1.5 times the turbine height would be 615 feet, based on the maximum turbine height of 410 feet at the upward extended tip of the blade.
  - B. The guidance document also recommends that turbines be set back from property boundary lines at least 1.5 times the tower height, but states that alternatively the applicant may obtain consent from the adjacent landowner for a decreased setback, or may submit evidence (*i.e.* operating protocols, safety programs, recommendation of a licensed professional engineer with appropriate expertise and experience with wind turbines, or relevant manufacturer recommendations) that the setback proposed is appropriate.
    - (1) For the distances of the turbines from the development parcel boundary lines of the adjacent/underlying landowners, the applicant stated that eight of the 11 proposed turbines would be located more than 1.5 times (615 feet) the turbine height from the boundary lines. However, the easement agreements with the underlying landowners include consent to allow the turbines to be closer than the recommended 615 foot setback (*see* Finding of Fact #10).
    - (2) The fully extended blade tip of Turbines 1 through 4 and 6 would be located less than 100 feet from the U.S./Canada boundary, but at no point would any part of any of the turbines be set back less than 25 feet (*see* Conclusion #22 for discussion of the setbacks to the U.S./Canada boundary).
    - (3) All of the turbines, including those located nearest to the U.S./Canada border, are located within and adjacent to non-residential land used for timber harvesting and primitive recreation such as hunting.
    - (4) There are no publicly used roads proximate to the development area. The closest publicly used road is located approximately one mile from the proposed turbines.
    - (5) The applicant submitted the IEC Design Evaluation Statement and systems information showing that the Vestas V90 3 MW turbines likely to be used for the KEP meet accepted safety standards and include over-speed control to shut down the turbines when wind speeds are very high.
21. *Decommissioning (PL 2007 Chapter 661, section B-13, subsection 6)*. The applicant submitted a decommissioning plan for the proposed KEP, including a mechanism for financing (*see* Finding of Fact #19). The plan demonstrates current financial capacity and future financial capacity that would be unaffected by the applicant's future financial condition to fully fund the decommissioning costs. Specifically, the applicant submitted a

plan to provide for funds to cover the costs of the decommissioning including a periodic review and update of the amount in the decommissioning fund, and a time period and provisions regarding contacting the Commission if the project has ceased to generate electricity. The proposed plan is similar to the plan approved for the Kibby Project. The decommissioning plan proposed by the applicant is appropriate and sufficient for this project at this time, given the uncertainty of whether decommissioning will eventually be necessary, and if so, the 20 to 25 year period until such decisions would need to be made.

- A. *Financing.* The applicant's proposal to put in place a Parental Guarantee from the parent company, TransCanada Corporation, or a Letter of Credit (LOC) if TransCanada's credit rating falls below investment grade, to assure funds will be available if decommissioning is needed is acceptable. The applicant also assessed the cost of the decommissioning based on 2009 US dollars, and proposed that the amount of the Parental Guarantee or LOC would be 50% of the estimated decommissioning costs, submitted by December 31<sup>st</sup> of the first year of commercial operation. No later than year 15 of operation, the applicant has proposed to reassess the decommissioning costs and put in place a financial assurance for 100% of the then estimated decommissioning costs, less salvage value.
- B. *Decommission plan.* The plan to dismantle, remove, and dispose of the turbines (nacelles, blades and towers), the above-ground collector system, the met tower, the substation, all buildings and associated facilities (unless otherwise placed into productive use), is appropriate. It is appropriate to remove the foundations to two feet below grade with the intent of assuring protection of natural resources in high elevation areas, and it is appropriate to allow to naturally re-vegetate all portions of the project associated with the turbine strings, including the collector lines and the substation. In areas above 2,700 feet in elevation, all areas from which structures are removed should additionally be monitored to assure the soils are stabilized and natural vegetation is becoming re-established (*see* Conclusion #17 regarding re-vegetation of high mountain areas). However, the applicant must submit a detailed plan for the decommissioning if decommissioning becomes necessary, which must also include how the site would be restored.
- C. *Notification process.* The applicant's proposed notification process should the KEP cease to produce electricity is acceptable, as modified and set forth in the conditions section below. Specifically, the applicant would notify LURC no later than 60 days after the date the KEP ceases to generate electricity as set forth in a written notice from the applicant to LURC stating an intention to cease generating electricity. Or if no notice is given, 60 days after the KEP ceases to generate electricity for 12 consecutive months, unless the operator demonstrates to LURC that the project has not been abandoned and should not be decommissioned.

#### Chapter 10 Standards

- 22. *Setbacks.* The proposed KEP meets the minimum dimensional requirements of Section 10.26 of the Commission's Land Use Districts and Standards.



- A. *Section 10.26,D – Minimum setbacks.* With the exception of roads and utility lines, all proposed permanent structures must meet the minimum setback requirements from standing and flowing bodies of water in Section 10.26,D,2 of the Commission's Land Use Districts and Standards, which require commercial structures to be setback at least 100 feet from the normal high water mark (nhwm) of a minor flowing water, a standing body of water less than 10 acres in size, and the upland edge of a P-WL1 wetland; at least 150 feet from the nhwm of a major flowing water and a standing body of water 10 acres or more in size; and at least 25 feet from property boundary lines. The 100 foot stream and P-WL1 wetland setback must be maintained to assure vegetated buffers are not compromised, except as needed to meet legal requirements for the collector transmission line corridor. Conclusion #20,B, above, addresses the public safety related setbacks for wind turbines required under 12 M.R.S., § 685-B(4-B)C.
- B. Sections 10.26,G,5 and 13 of the Commission's Land Use Districts and Standards provide an exception to the minimum setback requirement for a structure that must be located closer to the property boundary line due to the nature of its use, or when there is no practicable alternative, to be setback less than the minimum property boundary line setback. As such, the one pole structure identified by the applicant as needing to be set back less than 25 feet from a property boundary line may be allowed at the proposed location.
- C. *Section 10.26,F - Dimensional requirements, maximum building height.* At the extended tip of the blade, the proposed turbines would be 410 feet high, which exceeds the Commission's maximum building height of 100 feet as provided for commercial or industrial buildings in Section 10.26,F,1,b. However, although the turbine base is 13.5 feet across, due to the height, the turbines are essentially structures that contain no floor area (such as chimneys, towers, ventilators and spires). The Commission may allow such structures that exceed the height limit of 100 feet with a permit.
23. *Section 10.25,F,2 - Lighting.* The applicant has made adequate provisions for lighting.
- A. The Commission concludes that the FAA required lighting is necessary for aviation safety, that the applicant's plan takes into account the lessening of potential for avian impacts, and that the amount and type of lighting to be used has been minimized and mitigated to the extent possible. Therefore, the turbine lighting as proposed will not cause an undue adverse impact.
- B. The applicant proposed external lighting at the entrance at the base of the turbines and for the Kibby Expansion Substation that would be motion sensitive or manually controlled. Lighting that is activated by motion sensors is exempt from the lighting standards under Section 10.25, F,2,a through d. However, if the applicant installs manually controlled exterior lighting, it must be full cut-off, be designed, located, installed and directed so as to illuminate only the target area, and be turned off after business hours.
24. *Section 10.27,J – Signs.* The Commission concludes that the signage proposed by the applicant would conform with Section 10.27,J of the Commission's Land Use Districts and

Standards, and would not have undue adverse impacts upon resources and uses in the area. All proposed signage would be located within the development area and would be limited to informational signs associated with site activities, such as traffic control, warning, or directional signs. Section 10.27,J,1(e) of the Commission's Land Use Districts and Standards provides that information signs on a site do not require a permit. Any informational sign remaining on-site after construction not visible from a public road must be no more than 12 sq ft in size, except that directional signs visible from a public road must not exceed 4 sq ft in size.

25. *Monitoring of post-construction erosion/sedimentation, storm water control measures, and acidic rock testing.* All monitoring of post-construction erosion/sedimentation and storm water control measures, and acidic rock testing; and subsequent reporting to the Commission, are the responsibility of the applicant. All monitoring and inspection reports must be kept on-site for a three-year period after the facility becomes operational. Once the areas of exposed soils at the site are 90% re-vegetated, excluding roads and other areas that have been identified to remain un-vegetated, the applicant must re-assess the project to assure that additional monitoring and reporting are not necessary, and report its determinations to LURC staff.

**Therefore, the Commission APPROVES Development Permit DP 4860 submitted by TransCanada Maine Wind Development, Inc. for the 11-turbine Kibby Expansion Project, as proposed, subject to the findings of fact and conclusions contained herein and the following conditions:**

1. The Standard Conditions (ver. 10/90), attached. With respect to Standard Condition #4, the permittee shall submit the dates of signing of any other state or federal permits obtained for this project for the file.
2. Only those uses, structures and activities described in this permit are approved. The associated protective measures, monitoring, and reporting as described within this permit are also approved, and are considered to be a part of the project. Any changes to the project are subject to review and approval by the Commission or the LURC Director, as applicable.
  - A. In accordance with Section 10.06, A of the Commission's Land Use Districts and Standards, "the description of permitted uses herein does not authorize any person to unlawfully trespass, infringe upon or injure the property of another, and does not relieve any person of the necessity of complying with other applicable laws and regulations."
  - B. Unless otherwise granted permit approval, all approved activities and uses proposed must meet the standards of Section 10.27 of the Commission's Land Use Districts and Standards (as may be amended from time to time).

- C. The permittee is responsible for all activities that were proposed as a result of consultation with State agencies, any recommendations agreed to, as reflected in the record, including, but not limited to, the State Soil Scientist, MNAP, and MDIFW.
3. *Setbacks.* All temporary and permanent structures, including the turbines, met tower, the Kibby Expansion Substation, and temporary areas, must be set back at least 75 feet from the traveled surface of all roads used by the public, and 100 feet from all streams and P-WL1 wetlands, except as noted herein.
    - A. Roads and power lines may be located as proposed (*see* Finding of Fact #8,B); and may cross property boundary lines, streams, and any P-WL1 wetlands within 25 feet of the crossed stream as needed.
    - B. Except where Wahl Road and Mile 5 Road cross wetlands and streams, the traveled surface of these existing roads must be located no closer to Kibby Stream than 100 feet.
    - C. Where the turbines would be located proximate to the U.S./Canada border, the tips of the turbine blades must be set back at least 25 feet from the edge of the cleared corridor maintained along the border.
    - D. Notwithstanding the provisions of Section C of this condition, Turbines 1 – 7 and 10 must be set back at least 615 feet from the other property boundary lines. Turbines 8, 9 and 11 maybe located less than 615 feet from the property boundary lines, but not less than 25 feet. All other structures must be set back at least 25 feet from property boundary lines.
  4. *Traffic flow and informational signs.* The permittee shall provide for safe traffic flow throughout the development area. The permittee shall prevent congestion due to heavy equipment and construction vehicles leaving or entering the site onto public roads, or onto private roads used by the public, by making provisions for adequate site distances and by the use of informational signs. The permittee shall comply with the Standards for Signs, as set forth in Section 10.27, J of the Commission's Land Use Districts and Standards. Any information or directional signs remaining on-site after construction not visible from a public road must be no more than 12 sq ft in size. Information or directional signs visible from a public road must not exceed 4 sq ft in size.
  5. *Lighting.* Lighting on the outside of the turbines at the entrance to the tower at the base, and at the Kibby Expansion Substation must be motion sensitive or manually controlled. Alternatively, if the permittee installs manually controlled exterior lighting, such lighting must be full cut-off; be designed, located, installed and directed so as to illuminate only the target area; and be turned off after business hours, in accordance with Section 10.25,F,2 of the Commission's Land Use Districts and Standards.
  6. *Solid waste disposal.* All solid waste produced during construction and all waste produced during operation of the KEP must be disposed of in accordance with Maine's Solid Waste Disposal Rules.

- A. *Stump disposal.* All stumps produced during construction must be buried in place, ground and incorporated into erosion control mix to be used for erosion control on-site, or disposed of in accordance with Maine's Solid Waste Disposal rules, and Sections 10.22,A and 10.25,H of the Commission's Land Use Districts and Standards.
- B. *Handling of concrete.* Wash-down of concrete trucks and equipment must be done on-site such that the runoff water is contained within the turbine pads, and covered when the pads are back-filled.

7. *Erosion, sedimentation and storm water control.*

- A. The permittee shall implement the erosion, sedimentation and storm water control measures as proposed, incorporating the recommendations made by the State Soil Scientist (*see* Finding of Fact #45), and all such measures must be shown or described on the final engineered plans and in an updated E/S Plan. All contractors used for this project, including those conducting clearing activities, are subject to the approved erosion and sedimentation control plan.
- B. The permittee shall implement the erosion and sedimentation control inspection and reporting program as proposed (*see* Finding of Fact #44). The third party on-site inspections of erosion and storm water control measures during construction must, at a minimum, be implemented as proposed and in accordance with Section 10.25,M,4 of the Commission's Land Use Districts and Standards. The name of the individual or firm selected by the permittee for third-party inspection must be submitted to the Commission for review and approval no less than 30 days prior to commencement of construction. If the third party inspections reveal that the erosion and sedimentation control measures are not functioning properly, remedial measures must be taken immediately. Inspections of erosion and storm water control measures must also be conducted by the permittee's on-site staff and its primary contractor's personnel as proposed (*see* Exhibit B.11 of the application).
- C. The rock sandwich road design recommended by the State Soil Scientist, or other measures described in the "toolbox" of erosion/sedimentation and stormwater control measures for this project, must be employed as proposed to maintain subsurface and surface hydrology where seepages and wetlands occur and to control runoff from all project areas. Existing stream crossings and drainage swales employing culverts may continue to be culverted, if appropriate (*see also* Condition #10).
- D. *Winter construction.* Winter construction activities must be conducted as proposed (*see* Finding of Fact #8,G(1)).
- E. The permittee shall conduct testing, analysis, and handling of bedrock during construction as proposed in the Acidic Rock Testing and Mitigation Plan (*see* Finding of Fact #44,D). The permittee shall report to LURC staff upon completion of construction the locations where any management measures were employed, and why.

F. With the exception of road and power line crossings, all areas to be filled and graded must be no closer than 100 feet from streams, and 250 feet from bodies of standing water.

8. *Construction plan, and post-construction environmental restoration, maintenance, monitoring and reporting.*

A. *Construction plan.* Prior to the start of construction, the permittee shall prepare a plan to be used during and after construction to assure that impacts to the Subalpine Fir Forest and Bicknell's thrush habitat adjacent to the development area are minimized to the extent possible. At a minimum, the plan must address the construction/project components as advised by MNAP, include a post-construction monitoring protocol for Bicknell's thrush to be prepared in consultation with MDIFW, and include provisions for protection of State-listed species (*see* Conclusions #12,B(3), #15 and #17). The plan must address disturbance minimization for high elevation soils and vegetation, erosion control, especially on steep high elevation roads, off-site disposal of construction debris and cleared vegetation, an access plan to prevent irresponsible use of unauthorized motorized vehicles in sensitive habitats, invasive plant control, and a vegetation restoration plan.

B. *Re-vegetation monitoring and reporting.* The permittee shall develop a detailed post-construction re-vegetation plan in consultation with the State Soil Scientist, LURC staff, MDIFW, and MNAP (*see* Finding of Fact #30,C), to be submitted to LURC staff for review and approval. The plan must include on-site inspections of re-vegetation, and remedial measures to be employed if needed. The results of the inspections must be recorded and reported to the Commission bi-annually for the first year of operation, and annually thereafter until 90% vegetation cover of disturbed areas is achieved or these areas are otherwise stable, with the exception of roads, parking areas, walkways, and open portions of the turbine pads. Once approved, any substantial changes to the re-vegetation plan must be submitted to LURC staff for review.

- (1) After construction has been completed, exposed soil areas above 2,700 feet in elevation must be covered with erosion control mix and allowed to re-vegetate naturally, including: turbine pads (except for the area immediately surrounding turbine foundation and the crane pad), 14 feet of the ridgeline road (leaving a 20 foot wide traveled surface), and any temporary work areas. Areas temporarily disturbed below 2,700 feet in elevation must be allowed to re-vegetate naturally or be seeded and mulched, as needed to stabilize these areas.
- (2) A detailed operational vegetation management plan for the permanently cleared power line corridors must be prepared, and submitted to LURC staff for review and approval.
- (3) Any decommissioning plan, should one be prepared, must include provisions for re-vegetating the high mountain areas, addressing the re-colonization by species that typically occur in the Subalpine Fir Forest.

C. *Avian monitoring.* The permittee shall, at a minimum, prepare a monitoring protocol in consultation with MDIFW, conduct post-construction avian mortality monitoring as

recommended by MDIFW, and submit annual reports to LURC staff and MDIFW for review. The permittee shall consult with LURC staff and MDIFW annually, and upon request, on the results of the avian mortality monitoring to determine if adjustments to the level or frequency of the monitoring or any remedial measures are needed. Should the monitoring reveal that significant impacts have occurred, the permittee shall consult with LURC staff and MDIFW to determine what remedial measures, if any, are necessary. After three years of post-construction monitoring, LURC staff and MDIFW may review the cumulative results to determine if changes in the level or frequency of monitoring are warranted.

- D. *Retention of monitoring and inspection reports.* All erosion and sedimentation control monitoring and inspection reports, and acidic rock testing records must be kept on-site for a three-year period after the facility becomes operational.
  - E. *Road maintenance.* The permittee shall be responsible for the maintenance of the new access roads constructed, both during and after construction.
  - F. *Reporting during construction.* The applicant proposed a system of routine quarterly, material change, and as-built reporting to LURC. Post-construction monitoring would begin following the completion of construction. *See* Exhibit B.11 of the application for the details of the reporting proposal. The permittee shall contact LURC staff if changes to the project design or layout are identified in excess of the maximum disturbance areas identified in this permit.
9. *Control of noise.* All sound produced by the proposed KEP during routine operation must meet the provisions of MDEP's rules for the "Control of Noise, Sound Level Limits" (reference MDEP 06-096, Chapter 375.10.C). The noise level at the nearest quiet protected location must not exceed 45 dBA at night (within 500 feet of living or sleeping quarters on the protected location), and 55 dBA during the day during operation of the wind energy generating facility. The daytime limit of 55 dBA applies to portions of protected locations more than 500 feet from living or sleeping quarters regardless of the time of day. *See* Chapter 375.10, G(F)(16) of Site Law regulations. In the event that a new residence is located closer than the identified nearest existing quiet protected location, the permittee shall be responsible for informing the new resident(s) of the level of sound produced by the KEP. During construction, the sound produced as a result of construction activities from 7 pm to 7 am, or non-daylight hours, must not exceed 45 dBA at locations within 500 feet of living or sleeping quarters on protected locations, except for sound produced by safety signals, warning devices, emergency pressure relief valves, other emergency activities, and traffic on roadways.
10. *Wetlands and vernal pools.*
- A. *Wetland alterations.* The total area of permanent wetland fill as a result of the project must be no more than 0.77 acre, and must be limited to the areas proposed. The total area of permanent wetland clearing must be no more than 3.49 acres, and must be limited to the areas proposed. The total area of temporary wetland clearing must be no more than

- 0.08 acre, and must be limited to the areas proposed (*see* Finding of Fact #35,A). Any additional wetland impacts must be submitted to the Commission for review and assessment of whether permit approval is needed, in accordance with Section 10.25,P of the Commission's Land Use Districts and Standards. All additional wetland impacts will be evaluated cumulatively with the wetland alterations approved herein.
- B. *Vernal pools*. The fourteen identified man-made vernal pools must not be filled. Within 250 feet of these pools, a partially closed canopy of no less than 75% cover must be maintained, forest floor disturbance must be minimized, and native understory vegetation and woody debris must be maintained. Within 750 feet of these pools, no more than 10% of the forest canopy may be impacted.
- C. *In-stream work window*. The permittee shall incorporate into its construction plan an in-stream work window from June 15<sup>th</sup> to September 15<sup>th</sup>, or if work outside that period is required, consultation with MDIFW on a case-by-case basis.
- D. The MDIFW's guidelines for work affecting streams containing Roaring Brook mayfly and spring salamander habitat must be used for crossing streams containing habitat for these species, unless otherwise reviewed and approved by MDIFW.
- E. Crossings of perennial streams by the power lines must utilize Best Management Practices that are protective of stream habitat, as recommended by MDIFW (*see* Finding of Fact #36,B).
- F. The permittee shall limit opportunities for inadvertent access through wetlands by recreational vehicles created as a result of construction of the collector line corridor.
11. *Historic and archaeological resources*. During construction, the permittee shall monitor the development areas for historic and archeological resources. If such resources are encountered construction in the area of the resource must cease, and the permittee shall contact MHPC and LURC staff for assessment prior to continuing.
12. *Engineered plans*. The engineered plans accepted for processing on January 22, 2010, as updated on May 6<sup>th</sup> and August 16<sup>th</sup>, are the plans approved for construction.
- A. The permittee shall submit a final complete and updated set of the approved engineered plans to the project file prior to construction.
- B. The final, as-built engineered plans must be submitted to LURC staff upon completion of construction.
13. *Project benefits report*. The permittee shall submit to the Commission annually for the first two years of operation a report on the project's contribution to the State's economic, environmental and energy policies, including but not limited to, the total MWh of generation during the year, calculation of avoided emissions resulting from operation of the project, companies used during construction, the number of Maine residents hired, total dollars spent

in Maine, the progress of any TIF program established should one be pursued, and the amount of property and income taxes to be paid to the State. Any other tangible benefits realized as a result of operating the project may also be included in the report. Except that the permittee shall submit to the Commission annually for the first five years of operation a report on the total MWh of generation during each year, and a calculation of the avoided emissions resulting from the operation of the project.

- A. The permittee shall also include in the first annual report a summary of the progress of the program to be conducted by the Maine Department of Labor to provide green energy industry education and training in Franklin County, the date of signing of the final community benefits agreement with the Town of Eustis/Stratton, the progress of land conservation/trail corridor acquisition projects pursued by the HPA, and the date of signing of the memorandums of agreements between AEHS and MHPC.
- B. The funds contributed to the High Peaks Alliance must be held in escrow and shall not be released without the concurrence of BPL, and a determination by BPL that the transaction will permanently protect conservation and recreation interests. Eighty percent (80%) of the funds must be dedicated to value at closing, toward conservation or recreation land or interest in land in Franklin County. Twenty percent (20%) of the funds must be dedicated to land conservation stewardship or recreational stewardship, of those interests in land acquired with the 80% above, held in escrow until land or interests in land have been acquired.

#### 14. *Decommissioning.*

- A. If it becomes necessary for the KEP to be decommissioned, the permittee shall decommission, or provide for the decommissioning of, the KEP. The permittee shall fully fund decommissioning regardless of the type or amount of the funding mechanism secured and regardless of whether the funding mechanism has yet been put in place, as set forth below. The permittee shall submit a final detailed decommissioning plan and schedule no later than:
  - (1) 60 days after the date the project ceases to generate electricity as set forth in a written notice to LURC; or
  - (2) If no such notice has been provided and the project has not generated electricity for 12 consecutive months, 60 days after the permittee receives a written request from LURC to decommission the project, unless the operator demonstrates to LURC that the project has not been abandoned and should not be decommissioned.
- B. If it becomes necessary for the KEP to be decommissioned, the permittee shall submit to the Commission for review and approval a detailed decommission plan in substantial compliance with the decommissioning proposal summarized in Finding of Fact #11,C. The plan must include a detailed plan describing how the site would be restored (*see also* Condition #8).
- C. The permittee shall secure a signed parental guarantee from TransCanada Corporation, or an irrevocable standby letter of credit in favor of the State of Maine Land Use Regulation



Commission to fund decommissioning of the project. The amount of the Parental Guarantee or letter of credit must be at least 50% of the estimated decommissioning costs (*see* Finding of Fact #11,A), and submitted by December 31<sup>st</sup> of the first year of commercial operation. No later than year 15 of operation, the decommissioning costs must be re-assessed and a financial assurance put in place for 100% of the then estimated decommissioning costs, less salvage value.

- D. To demonstrate the ongoing creditworthiness of TransCanada Corporation, each year following execution of the parental guarantee and for such period that the parental guarantee remains in place, permittee shall provide to the Commission (a) a copy of TransCanada Corporation's annual audited financial statements within 30 days of when such statements are released publicly, and (b) verification that TransCanada Corporation's credit rating as determined by Moody's Investor Service, Standard & Poor, or other comparable rating service has not fallen below investment grade.
- (1) The permittee shall notify the Commission within 30 days if TransCanada Corporation's credit rating falls below investment grade as determined by Moody's Investor Service, Standard & Poor, or other comparable rating service.
  - (2) If TransCanada Corporation's credit rating falls below investment grade, within 30 days of such determination permittee shall secure an irrevocable letter of credit as described above.
  - (3) The permittee shall notify the Commission of the availability on line of quarterly financial statements within 30 days of when such statements are filed with the U.S. Securities and Exchange Commission (SEC). If quarterly financial statements become unavailable on line, permittee shall submit the statements to the Commission in writing within 30 days of when such statements are filed with the SEC.

In accordance with 12 M.R.S.A. section 689, 5 M.R.S.A. section 11002, and Maine Rules of Civil Procedure 80C, this decision by the Commission may be appealed to the Law Court within 30 days after receipt of notice of the decision by a party to this proceeding, or within 40 days from the date of the decision by any other aggrieved person.

DONE AND DATED AT BANGOR, MAINE THIS 5<sup>th</sup> DAY OF JANUARY, 2011.

By: Catherine M. Carroll  
Catherine M. Carroll, Director

## APPENDIX I – REVIEW CRITERIA AND GUIDANCE DOCUMENTS

1. *§ 10.23, G,3,c(12) of the Commission’s Land Use Districts and Standards.* “The following uses may be allowed within P-MA subdistricts upon issuance of a permit from the Commission pursuant to 12 M.R.S. § 685-B, and subject to the applicable requirements set forth in Sub-Chapter III:  
Wind energy development in accordance with 35-A, M.R.S., Chapter 34-A in areas identified in Appendix F herein;”
2. *12 M.R.S., § 685,B, sub-§ 4. Criteria for approval.* In approving applications submitted to it pursuant to this section, the commission may impose such reasonable terms and conditions as the commission may consider appropriate. In making a decision under this subsection regarding an application for a community-based offshore wind energy project, the commission may not consider whether the project meets the specific criteria designated in section 1862, subsection 2, paragraph A, subparagraph (6), divisions (a) to (d). This limitation is not intended to restrict the commission's review of related potential impacts of the project as determined by the commission. The commission may not approve an application, unless:
  - A. Adequate technical and financial provision has been made for complying with the requirements of the State's air and water pollution control and other environmental laws, and those standards and regulations adopted with respect thereto, including without limitation the minimum lot size laws, sections 4807 to 4807□G, the site location of development laws, Title 38, sections 481 to 490, and the natural resource protection laws, Title 38, sections 480□A to 480□Z, and adequate provision has been made for solid waste and sewage disposal, for controlling of offensive odors and for the securing and maintenance of sufficient healthful water supplies;
  - B. Adequate provision has been made for loading, parking and circulation of land, air and water traffic, in, on and from the site, and for assurance that the proposal will not cause congestion or unsafe conditions with respect to existing or proposed transportation arteries or methods;
  - C. Adequate provision has been made for fitting the proposal harmoniously into the existing natural environment in order to ensure there will be no undue adverse effect on existing uses, scenic character and natural and historic resources in the area likely to be affected by the proposal. In making a determination under this paragraph regarding development to facilitate withdrawal of groundwater, the commission shall consider the effects of the proposed withdrawal on waters of the State, as defined by Title 38, section 361□A, subsection 7; water-related natural resources; and existing uses, including, but not limited to, public or private wells, within the anticipated zone of contribution to the withdrawal. In making findings under this paragraph, the commission shall consider both the direct effects of the proposed withdrawal and its effects in combination with existing water withdrawals.

In making a determination under this paragraph regarding an expedited wind energy development, as defined in Title 35-A, section 3451, subsection 4, or a community-based offshore wind energy project, the commission shall consider the development's or project's effects on scenic character and existing uses related to scenic character in accordance with Title 35-A, section 3452.

In making a determination under this paragraph regarding a wind energy development, as defined in Title 35-A, section 3451, subsection 11, that is not a grid-scale wind energy development, that has a generating capacity of 100 kilowatts or greater and that is proposed for location within the expedited permitting area, the commission shall consider the development's or project's effects on scenic character and existing uses relating to scenic character in the manner provided for in Title 35-A, section 3452;

- D. The proposal will not cause unreasonable soil erosion or reduction in the capacity of the land to absorb and hold water and suitable soils are available for a sewage disposal system if sewage is to be disposed on-site;
- E. The proposal is otherwise in conformance with this chapter and the regulations, standards and plans adopted pursuant thereto; and
- F. In the case of an application for a structure upon any lot in a subdivision, that the subdivision has received the approval of the commission.

The burden is upon the applicant to demonstrate by substantial evidence that the criteria for approval are satisfied, and that the public's health, safety and general welfare will be adequately protected. Except as otherwise provided in Title 35-A, section 3454, the commission shall permit the applicant and other parties to provide evidence on the economic benefits of the proposal as well as the impact of the proposal on energy resources.

- 3. *12 M.R.S. § 685-B, sub-§ 4-B. Special provisions; wind energy development.* In the case of a wind energy development, as defined in Title 35-A, section 3451, subsection 11, with a generating capacity greater than 100 kilowatts, the developer must demonstrate, in addition to requirements under subsection 4, that the proposed generating facilities, as defined in Title 35-A, section 3451, subsection 5:
  - A. Will meet the requirements of the Board of Environmental Protection's noise control rules adopted pursuant to Title 38, chapter 3, subchapter 1, article 6;
  - B. Will be designed and sited to avoid undue adverse shadow flicker effects;
  - C. Will be constructed with setbacks adequate to protect public safety, as provided in Title 35-A, section 3455. In making findings pursuant to this paragraph, the commission shall consider the recommendation of a professional, licensed civil engineer as well as any applicable setback recommended by a manufacturer of the generating facilities; and

- D. Will provide significant tangible benefits, as defined in Title 35-A, section 3451, subsection 10, within the State, as provided in Title 35-A, section 3454, if the development is an expedited wind energy development, as defined in Title 35-A, section 3451, subsection 4.

#### Tangible benefits and energy production

#### 4. *Tangible benefits.*

A. *12 M.R.S., § 685,B(4-B)* (See Section 3, above)

B. *35-A M.R.S., Ch 34-A, § 3451(10). Definition.* "Tangible benefits" means 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.

C. *35-A M.R.S., Ch 34-A, § 3454. Determination of tangible benefits.* In making findings pursuant to Title 12, section 685-B, subsection 4 or Title 38, section 484, subsection 3, the primary siting authority shall presume that an expedited wind energy development provides energy and emissions-related benefits described in section 3402 and shall make additional findings regarding other tangible benefits provided by the development. The Department of Labor, the Executive Department, State Planning Office and the Public Utilities Commission shall provide review comments if requested by the primary siting authority.

#### 5. *Sections of the statute addressing energy production.*

A. *12 M.R.S., § 685,B,4.* "The burden is upon the applicant to demonstrate by substantial evidence that the criteria for approval are satisfied, and that the public's health, safety and general welfare will be adequately protected. Except as otherwise provided in Title 35-A, section 3454, the commission shall permit the applicant and other parties to provide evidence on the economic benefits of the proposal as well as the impact of the proposal on energy resources."

B. *35-A M.R.S. §3402, sub-§1.* "Contribution of wind energy development. The Legislature finds and declares that the wind energy resources of the State constitute a valuable indigenous and renewable energy resource and that wind energy development, which is unique in its benefits to and impacts on the natural environment, makes a significant contribution to the general welfare of the citizens of the State for the following reasons: (1) Wind energy is an economically feasible, large-scale energy resource that does not rely on fossil fuel combustion or nuclear fission, thereby displacing electrical energy

provided by these other sources and avoiding air pollution, waste disposal problems and hazards to human health from emissions, waste and by-products; consequently, wind energy development may address energy needs while making a significant contribution to achievement of the State's renewable energy and greenhouse gas reduction objectives, including those in Title 38, section 576; and

- (2) At present and increasingly in the future with anticipated technological advances that promise to increase the number of places in the State where grid-scale wind energy development is economically viable, and changes in the electrical power market that favor clean power sources, wind energy may be used to displace electrical power that is generated from fossil fuel combustion and thus reduce our citizens' dependence on imported oil and natural gas and improve environmental quality and state and regional energy security.”

C. *35-A M.R.S. §3404. Determination of public policy; state wind energy generation goals.*

- (1) *Encouragement of wind energy-related development.* It is the policy of the State that, in furtherance of the goals established in subsection 2, its political subdivisions, agencies and public officials take every reasonable action to encourage the attraction of appropriately sited development related to wind energy consistent with all state environmental standards; the permitting and financing of wind energy projects; and the siting, permitting, financing and construction of wind energy research and manufacturing facilities.

- (2) *State wind energy generation goals.* The goals for wind energy development in the State are that there be:

- (a) At least 2,000 megawatts of installed capacity by 2015; and
- (b) At least 3,000 megawatts of installed capacity by 2020, of which there is a potential to produce 300 megawatts from generation facilities located in coastal waters, as defined by Title 12, section 6001, subsection 6, or in proximate federal waters.

D. *35-A M.R.S. §3454. . Determination of tangible benefits.* “In making findings pursuant to Title 12, section 685-B, subsection 4 or Title 38, section 484, subsection 3, the primary siting authority shall presume that an expedited wind energy development provides energy and emissions-related benefits described in section 3402 and shall make additional findings regarding other tangible benefits provided by the development. The Department of Labor, the Executive Department, State Planning Office and the Public Utilities Commission shall provide review comments if requested by the primary siting authority.”

Scenic resources of state or national significance (includes historic resources on the National Register)

6. *12 M.R.S., § 685-B(4)(C) Criteria for Approval.* (See Section 2, above)

7. *35-A M.R.S., Ch 34-A, § 3452. Determination of effect on scenic character and related existing uses.*

- A. *“Application of standard.* 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 12, section 685-B, subsection 4 or Title 38, section 484, subsection 3 or section 480-D, the primary siting authority 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 of the scenic resource of state or national significance. 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 either Title 12, section 685-B, subsection 4, paragraph C or Title 38, section 484, subsection 3.”
- B. *“Exception; certain associated facilities.* The primary siting authority shall evaluate the effect of associated facilities of a wind energy development in terms of potential effects on scenic character and existing uses related to scenic character in accordance with Title 12, section 685-B, subsection 4, paragraph C or Title 38, section 484, subsection 3, in the manner provided for development other than wind energy development, if the primary siting authority determines that application of the standard in subsection 1 to the development may result in unreasonable adverse effects due to the scope, scale, location or other characteristics of the associated facilities. An interested party may submit information regarding this determination to the primary siting authority for its consideration. The primary siting authority shall make a determination pursuant to this subsection within 30 days of its acceptance of the application as complete for processing.”
- C. *“Evaluation criteria.* In making its determination pursuant to subsection 1, and in determining whether an applicant for an expedited wind energy development must provide a visual impact assessment in accordance with subsection 4, the primary siting authority shall consider:
- (1) The significance of the potentially affected scenic resource of state or national significance;
  - (2) The existing character of the surrounding area;
  - (3) The expectations of the typical viewer;
  - (4) The expedited wind energy development's purpose and the context of the proposed activity;
  - (5) 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
  - (6) 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.

A finding by the primary siting authority 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 primary siting authority 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.”

- D. *“Visual impact assessment; rebuttable presumption.* An applicant for an expedited wind energy development shall provide the primary siting authority with a visual impact assessment of the development that addresses the evaluation criteria in subsection 3 if the primary siting authority determines such an assessment is necessary in accordance with subsection 3. There is a rebuttable presumption that a visual impact assessment is not required for those portions of the development's generating facilities that are located more than 3 miles, measured horizontally, from a scenic resource of state or national significance. The primary siting authority may require a visual impact assessment for portions of the development's generating facilities located more than 3 miles and up to 8 miles from a scenic resource of state or national significance if it finds there is substantial evidence that a visual impact assessment is needed to determine if there is the potential for significant adverse effects on the scenic resource of state or national significance. Information intended to rebut the presumption must be submitted to the primary siting authority by any interested person within 30 days of acceptance of the application as complete for processing. The primary siting authority shall determine if the presumption is rebutted based on a preponderance of evidence in the record.”
8. *35-A M.R.S., Ch 34-A, § 3451 (9).* *“Scenic resource of state or national significance.* "Scenic resource of state or national significance" means an area or place owned by the public or to which the public has a legal right of access that is:
- A. A national natural landmark, federally designated wilderness area or other comparable outstanding natural and cultural feature, such as the Orono Bog or Meddybemps Heath;
  - B. A property listed on the National Register of Historic Places pursuant to the National Historic Preservation Act of 1966, as amended, including, but not limited to, the Rockland Breakwater Light and Fort Knox;
  - C. A national or state park;
  - D. A great pond that is:
  - E. One of the 66 great ponds located in the State's organized area identified as having outstanding or significant scenic quality in the "Maine's Finest Lakes" study published by the Executive Department, State Planning Office in October 1989; or
  - F. One of the 280 great ponds in the State's unorganized or deorganized areas designated as outstanding or significant from a scenic perspective in the "Maine Wildlands Lakes Assessment" published by the Maine Land Use Regulation Commission in June 1987;

- G. A segment of a scenic river or stream identified as having unique or outstanding scenic attributes listed in Appendix G of the "Maine Rivers Study" published by the Department of Conservation in 1982;
- H. A scenic viewpoint located on state public reserved land or on a trail that is used exclusively for pedestrian use, such as the Appalachian Trail, that the Department of Conservation designates by rule adopted in accordance with section 3457;
- I. A scenic turnout constructed by the Department of Transportation pursuant to Title 23, section 954 on a public road that has been designated by the Commissioner of Transportation pursuant to Title 23, section 4206, subsection 1, paragraph G as a scenic highway; or
- J. Scenic viewpoints located in the coastal area, as defined by Title 38, section 1802, subsection 1, that are ranked as having state or national significance in terms of scenic quality in:
  - (1) One of the scenic inventories prepared for and published by the Executive Department, State Planning Office: "Method for Coastal Scenic Landscape Assessment with Field Results for Kittery to Scarborough and Cape Elizabeth to South Thomaston," Dominie, et al., October 1987; "Scenic Inventory Mainland Sites of Penobscot Bay," Dewan and Associates, et al., August 1990; or "Scenic Inventory: Islesboro, Vinalhaven, North Haven and Associated Offshore Islands," Dewan and Associates, June 1992; or
  - (2) A scenic inventory developed by or prepared for the Executive Department, State Planning Office in accordance with section 3457."

Fir/Heart-leaved Birch Subalpine Fir Forest.

- 9. *12 M.R.S., § 685-B(4)(C) Criteria for approval.* (See Section 2, above)
- 10. *Natural plant communities: Section 10.25,E,2 of the Commission's Land Use Districts and Standards. "Natural Features.* If any portion of a subdivision or commercial, industrial or other non-residential project site includes critically imperiled (S1) or imperiled (S2) natural communities or plant species, the applicant shall demonstrate that there will be no undue adverse impact on the community and species the site supports and indicate appropriate measures for the preservation of the values that qualify the site for such designation."
- 11. *Bicknell's Thrush. MDIFW's "Comprehensive Wildlife Conservation Strategy (Sept. 2005), Chapter 5, Problems, Priority Research, and Survey Efforts".*  
[http://www.maine.gov/ifw/wildlife/groups\\_programs/comprehensive\\_strategy/pdfs/chapter5.pdf](http://www.maine.gov/ifw/wildlife/groups_programs/comprehensive_strategy/pdfs/chapter5.pdf)

Wetlands, streams, and vernal pools.

- 12. *12 M.R.S., Section 685-B(4)(C) Criteria for approval.* (See Section 2, above)
- 13. *Commission's Land Use Districts and Standards, Section 10.02(173) - Significant Wildlife Habitat (definition).*



“The following areas to the extent that they have been identified by the Department of Inland Fisheries and Wildlife: habitat, as determined by the Department of Inland Fisheries and Wildlife, for species appearing on the official state or federal lists of endangered or threatened animal species; deer wintering areas and travel corridors as determined by the Department of Inland Fisheries and Wildlife; high and moderate value water fowl and wading bird habitats, including nesting and feeding areas as determined by the Department of Inland Fisheries and Wildlife; critical spawning and nursery areas for Atlantic sea run salmon as determined by the Atlantic Sea Run Salmon Commission; shorebird nesting, feeding and staging areas and seabird nesting islands as determined by the Department of Inland Fisheries and Wildlife; and significant vernal pools (emphasis added) as defined and identified in specific locations by the Department of Inland Fisheries and Wildlife.”

14. *Chapter 10, Section 10.23,N,2,a(1) – Description of the P-WL1 Subdistrict.*

“P-WL1: Wetlands of special significance:

- A. Areas enclosed by the normal high water mark of flowing waters, stream channels, and bodies of standing water, except for constructed ponds less than 10 acres in size which are not fed or drained by flowing waters;
- B. Coastal wetlands, together with areas below the high water mark of tidal waters and extending seaward to the limits of the State's jurisdiction; or
- C. Freshwater wetlands, as follows:
  - (1) Within 250' of a coastal wetland or of the normal high water mark of any body of standing water greater than 10 acres;
  - (2) Containing at least 20,000 sq ft in total of the following: aquatic vegetation, emergent marsh vegetation, or open water, unless the wetlands are the result of constructed ponds less than 10 acres in size which are not fed or drained by flowing waters;
  - (3) That are inundated with floodwater during a 100 year flood event;
  - (4) Containing significant wildlife habitat;
  - (5) Consisting of, or containing, peatlands, except that the Commission may determine that a previously mined peatland, or portion thereof, is not a wetland of special significance; or
  - (6) Within 25' of a stream channel.

15. *Commission's Land Use Districts and Standards, Section 10.25,P; wetland alteration standards*

Decommissioning and financial capacity: Review criteria and MDEP guidance.

16. *Commission's Land Use Districts and Standards, Section 10.25,C,2: Financial Capacity.*

“The standards set forth below must be met for all subdivisions and commercial, industrial, and other non-residential development.

The applicant shall have adequate financial resources to construct the proposed improvements, structures, and facilities and meet the criteria of all state and federal laws and the standards of these rules. In determining the applicant's financial capacity, the Commission shall consider the cost of the proposed subdivision or development, the amount and strength of commitment by the financing entity, and, when appropriate, evidence of sufficient resources available directly from the applicant to finance the subdivision or development.”

17. *PL 2007 Ch 661, Section B-13, Submission requirements.* No later than September 1, 2008, the Department of Environmental Protection and the Maine Land Use Regulation Commission shall, jointly and to the extent not already addressed in existing agency guidance, specify the submission requirements for the following matters for applications for wind energy development, including, but not limited to, expedited wind energy development as defined in the Maine Revised Statutes, Title 35-A, section 3451, subsection 4, in accordance with the recommendations of the February 2008 final report of the Governor's Task Force on Wind Power Development in Maine created by Executive Order issued on May 8, 2007, and the provisions of this Act, as applicable:

- A. Effects on scenic character and existing uses related to scenic character;
- B. Tangible benefits, including post-construction reporting of tangible benefits realized;
- C. Noise and shadow flicker effects;
- D. Effects on avian and bat species (emphasis added);
- E. Public safety-related setbacks; and
- F. Decommissioning plans (emphasis added), including demonstration of current and future financial capacity that would be unaffected by the applicant's future financial condition to fully fund any necessary decommissioning costs commensurate with the project's scale, location and other relevant considerations, including, but not limited to, those associated with site restoration and turbine removal.

18. *MDEP guidance on decommissioning (see LURC wind energy development application checklist, pp 26-27).* <http://www.maine.gov/tools/whatsnew/attach.php?id=61044&an=1>

Setbacks: Public safety-related setbacks, and LURC Chapter 10 rules

19. *12 M.R.S., § 685,B(4-B)* (See Section 3, above)

20. *MDEP guidance (from LURC wind power permitting application checklist, p 23).*

*Public safety related setbacks.* Attachment H to the “Report of the Governor’s Task Force on Wind Power Development (2-14-2008)”. Guidelines for Wind Power Project Ecological

Study by the Maine Department of Environmental Protection and Maine Department of Inland Fisheries and Wildlife; February 1, 2008.

“Public safety related setbacks: Provide documentation in the form of a site plan and a certificate of design provided by the manufacturer of the generating facility that document that the proposed wind energy development has been designed to conform to applicable industry standards and that the proposed wind energy development will not present an unreasonable safety hazard to adjacent properties or adjacent property uses. Documentation provided by the applicant must include, but is not limited to, the following:

Design Safety Certification: Evidence that the turbine design meets acceptable safety standards; such evidence may include submission of certificates of design compliance obtained by the equipment manufacturers from Underwriters Laboratories, Det Norske Veritas, Germanischer Lloyd Wind Energies, or other similar certifying organizations.

Overspeed Control: Evidence from the manufacturer or other licensed civil engineer describing the design and function of overspeed control (*i.e.* aerodynamic overspeed controls such as variable pitch and mechanical brakes) and related safety mechanisms that are part of the turbine design.

Public Safety-related Setback: Evidence that the wind turbines have been sited with appropriate safety related setbacks from adjacent properties and adjacent existing uses; including a site plan and applicable documentation as necessary to show that the proposed wind generation facility turbines have been sited in such a manner as to provide a minimum set back from the nearest property line, roads, other structures, etc. The setback distance must be measured to the center of the wind turbine base.

For turbine property boundary line setbacks less than 1.5 times the tower height, the applicant may obtain a waiver from the adjacent landowner; or may submit evidence (*i.e.* operating protocols, safety programs, recommendation of a licensed professional engineer with appropriate expertise and experience with wind turbines, or relevant manufacturer recommendations) that the setback proposed is appropriate.”

21. *Commission’s Land Use Districts and Standards, Section 10.26,D,2.*

“The minimum setbacks for multi-family dwellings and commercial, industrial, and other non-residential principal and accessory structures are:

- A. 100 ft from the nearest shoreline of a flowing water draining less than 50 square miles, a body of standing water less than 10 acres in size, or a tidal water, and from the upland edge of wetlands designated as P-WL1 subdistricts;
- B. 150 ft from the nearest shoreline of a flowing water draining 50 square miles or more and a body of standing water 10 acres or greater in size;

- C. 75 ft from the traveled portion of the nearest roadway except as provided for in Section 10.26,D,2,d below;
- D. 20 ft from the traveled portion of all roadways on coastal islands; and
- E. 25 ft from the side and rear property lines.

Except as provided for in Section 10.26,D,1 above, these setbacks also apply to all parking areas associated with multi-family dwellings and commercial, industrial, and other non-residential uses, and all other structures within a sporting camp complex, including, but not limited to, a main lodge, dining area, workshop and parking area.”

#### Noise and Shadow Flicker

- 22. *12 M.R.S., § 685,B(4-B)* (See Section 3, above)
- 23. *MDEP Comprehensive Noise Standards, Chapter 375.10, Control of Noise.*
- 24. *Shadow flicker: MDEP guidance document. Attachment I from the “Report of the Governor’s Task Force on Wind Power Development (2-14-2008)”*. MDEP Standards on Noise and Shadow Flicker at Wind Power Projects (January 10, 2008) [From LURC wind power permitting application checklist, pp 18 - 20]

“*Shadow flicker.* There has been some comment provided to the Department that wind turbines have caused impacts on private residences from shadow flicker when sun shines behind an operating turbine. Maine’s northern latitude may make wind power projects susceptible to causing irritating shadow flicker as a result of low altitude sun during certain times of year. Shadow flicker is described as “moving shadow on the ground resulting in alternating changes in light intensity” and has been noted to cause concern in Northern Europe (NRC 2007). The NRC report notes that there is available modeling software that allows for shadow flicker to be assessed and mitigated in the layout and design of wind power projects that are near developed areas.”

“To ensure that shadow flicker is not an adverse impact on protected locations, applicants for wind power projects in either LURC or DEP jurisdiction should demonstrate where shadow falls will occur and to what extent shadow flicker will result. Shadow flicker should be considered in the design of any project and minimized to the extent practicable. There is sufficient statutory authority in DEP and LURC law to request and review this information.”

#### Avian and Bat Monitoring

- 25. *12 M.R.S., § 685,B(4)* (see Section 2, above)
- 26. *PL 2007 Ch. 661, Section B-13.* (see Section 17, above)

#### Soil Suitability, Surface Water Quality, Phosphorus Control, and Erosion and Sedimentation Control

- 27. *Commission’s Land Use Districts and Standards, Sections 10.25, G, K, L and M*

## APPENDIX II – BACKGROUND AND ADMINISTRATIVE HISTORY

1. *Development Permit for the Kibby Project.* Final Development Plan Permit DP 4794 (as amended) was granted by the Commission to TransCanada Maine Wind Development, Inc. (hereinafter “the applicant”) on July 9, 2008 for the 132 megawatt (MW) Kibby Project in Kibby and Skinner Twps., Franklin County.
  - A. The Kibby Project includes forty-four 410 ft tall wind turbines, approximately 18 miles of new gravel access roads and 19 miles of improved existing roads, 34.5 kV collector lines interconnecting the turbines and the Kibby Substation, 27.7 miles of above-ground 115 kV transmission (generator lead) line, and associated facilities and activities.
  - B. The wind energy facility was constructed in two phases, Series A and Series B, with each phase containing 22 turbines. Series A was completed, and went on-line in January of 2009, and Series B went on-line in the fall of 2010.
  - C. With the exception of three, the turbines are located in the D-PD Subdistrict, but the 115 kV transmission line connecting the Kibby Project to the New England grid at the Bigelow Substation in Carrabassett Valley is largely located outside the D-PD Subdistrict. With the passage of the Wind Energy Act (PL 2007, Ch. 661) on April 18, 2008, all of the Kibby Project turbines are now located in the wind energy development expedited permitting area.
  - D. Final Development Plan Permit DP 4794 has been amended several times (Amendments A through E, G, and H) for minor adjustments to the design and layout of the Kibby Project. The total number of turbines approved has not increased, and the amendments in large part reduced the size of the impact areas. Amendment F is currently pending, and includes minor changes to the KIBBY PROJECT needed to construct the proposed Kibby Expansion Project (KEP) (Development Permit DP 4860).
2. *Development Permit DP 4860.* On December 23, 2009, the Commission accepted for processing the application submitted by the applicant for Development Permit DP 4680, for the proposed KEP, consisting of fifteen (15) 3MW turbines to be located in a P-MA Mountain Area Protection Subdistrict, a road, a 34.5 kV collector line, and other supporting structures and activities.
  - A. *Requests for public hearing and Intervenor status.* The Commission received several requests for a public hearing and petitions requesting Intervenor status.
    - (1) On February 3, 2010, within 45 days of accepting the application as complete, the Commission granted a public hearing. The public hearing date was set at a later time.
    - (2) On February 3, 2010, the Commission also granted Intervenor status to four Parties, all of whom voiced opposition to the project:
      - (a) Friends of the Boundary Mountains (FBM) [opposed]
      - (b) Appalachian Mountain Club (AMC) [opposed in part]
      - (c) Maine Audubon Society (MAS) [opposed in part]
      - (d) Natural Resources Council of Maine (NRCM) [opposed in part]

3. *Public hearing.*

- A. *Pre-hearing conference.* The pre-hearing conference was held on February 24, 2010, at which various procedural matters were discussed and dates set, including the dates for submittal of pre-filed testimony and witness lists. The public hearing and Commission site visit were set for May 11 and 12, 2010, with May 11<sup>th</sup> designated for the Commissioner's site visit. Three Parties, MAS, AMC, and NRCM were consolidated for the purposes of conducting the public hearing (collectively the "Consolidated Parties" or CP). FBM was not consolidated with any other Party. A Pre-hearing Conference Memorandum and Order was distributed to the Parties on March 9, 2010.
- B. Pre-filed testimony was submitted by the Parties on April 21, 2010.
- C. Between April 1 and May 5, 2010, three additional Procedural Orders were prepared in response to the Parties' requests and objections.
- D. The Fifth Procedural Order, dated May 7, 2010, includes the final hearing schedule, designating the amounts of time allotted for presentation of summaries of pre-filed testimony and cross-examination of witnesses and State agencies at the hearing.
- E. On May 11<sup>th</sup>, a site visit, which was open to the public, was conducted for the Commissioners to visit the existing Kibby Project and to view the proposed KEP location.
- F. On May 11 and 12, 2010, a public hearing was held at the Sugarloaf Ski Resort in Carrabassett Valley, Franklin County.
- G. *Sixth and Seventh Procedural Orders.*
  - (1) On May 19, 2010, the Sixth Procedural Order was issued, among other things, addressing several questions that came up during the May 12<sup>th</sup> hearing, in particular requesting that MDIFW submit additional information regarding vernal pools and that the State Soil Scientist submit additional information about soil stabilization at the proposed KEP development site.
  - (2) On June 11, 2010, the Seventh Procedural Order was issued addressing questions by the Parties about their post-hearings briefs.
- H. Post-hearing written comments were received on May 24<sup>th</sup>, and rebuttal to post hearing comments on June 1<sup>st</sup>. The record closed on June 1, 2010.

- 4. *Deliberative session on the 15 turbine project.* The Commission deliberated on the 15 turbine proposal at its July 7, 2010 regular monthly business meeting, with the final decision to be made at the August 4<sup>th</sup> monthly meeting. At that session, after deliberation the Commission directed staff to draft a decision document denying the proposed 15 turbine KEP.

5. *Record re-opened for revised proposal.* Prior to the final decision on the 15 turbine project, the applicant requested that the record be re-opened to allow the submittal of a revised proposal, and the Commission granted approval of that request.
6. *Revised proposal submitted.* On August 16<sup>th</sup>, the applicant submitted a revised proposal for an 11 turbine project, eliminating 4 of the turbines and the associated access road. The revised proposal was reviewed by the public, the outside reviewing agencies, and the Parties, who submitted comments in accordance with several procedural orders.
  - A. Comments on the revised proposal from the agencies, Intervening Parties, and the public were received until October 12<sup>th</sup>.
  - B. On October 22<sup>nd</sup>, the applicant submitted a rebuttal to the agencies' and Parties' comments.
  - C. On or before November 1<sup>st</sup>, three reviewing agencies responded to questions asked by LURC staff about their review comments.
  - D. Legal briefs were submitted by the Parties on November 17<sup>th</sup>, and closing arguments were presented by each Party on December 1<sup>st</sup>.
  - E. On December 1<sup>st</sup>, the Commission deliberated on the revised proposal, directing staff to prepare an approval of the proposed 11 turbine KEP.
  - F. The Eighth through the Twelfth Procedural Orders were issued during the review of the reviewed proposal, setting the dates for submittal of comments and responses, the date when the record would close, and responding to requests by the Parties and the applicant, among other things.



STATE OF MAINE  
DEPARTMENT OF CONSERVATION  
22 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333-0022

STANDARD CONDITIONS OF APPROVAL FOR ALL DEVELOPMENT PERMITS

1. The permit certificate must be posted in a visible location on your property during development of the site and construction of all structures approved by this permit.
2. This permit is dependent upon and limited to the proposal as set forth in the application and supporting documents, except as modified by the Commission in granting this permit. Any variation therefrom is subject to the prior review and approval of the Maine Land Use Regulation Commission. Any variation from the application or the conditions of approval undertaken without approval of the Commission constitutes a violation of Land Use Regulation Commission law.
3. Construction activities permitted in this permit must be begun within two (2) years of date of issue and completed within five (5) years from date of issuance of this permit. If such construction activities are not begun and completed within this time limitation, this permit shall lapse and no activities shall then occur unless and until a new permit has been granted by the Commission.
4. The recipient of this permit ("permittee") shall secure and comply with all applicable licenses, permits, and authorizations of all federal, state and local agencies including, but not limited to, natural resources protection and air and water pollution control regulations and the Subsurface Wastewater Disposal Rules of the Maine Department of Environmental Protection and the Maine Department of Human Services.
5. Setbacks of all structures, including accessory structures, from waterbodies, roads and property boundary lines must be as specified in conditions of the permit approval.
6. In the event the permittee should sell or lease this property, the buyer or lessee shall be provided a copy of the approved permit and advised of the conditions of approval. The new owner or lessee must contact the Land Use Regulation Commission to have the permit transferred into his/her name and to reflect any changes proposed from the original application and permit approval.
7. The scenic character and healthful condition of the area covered under this permit must be maintained. The area must be kept free of litter, trash, junk cars and other vehicles, and any other materials that may constitute a hazardous or nuisance condition.
8. The permittee shall not advertise Land Use Regulation Commission approval without first obtaining Commission approval for such advertising. Any such advertising shall refer to this permit only if it also notes that the permit is subject to conditions of approval.
9. Once construction is complete, the permittee shall notify the Commission that all requirements and conditions of approval have been met. The permittee shall submit all information requested by the Commission demonstrating compliance with the terms of the application and the conditions of approval. Following notification of completion, the Commission's staff may arrange and conduct a compliance inspection.

Administrative Policy  
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MAINE LAND USE REGULATION COMMISSION



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