



STATE OF MAINE
DEPARTMENT OF CONSERVATION
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JOHN ELIAS BALDACCI
GOVERNOR

ELIZA TOWNSEND
COMMISSIONER

TO: Commissioners
FROM: Marcia Spencer Famous, Senior Planner
DATE: November 29, 2010
SUBJECT: Deliberation notebook for revised Kibby Expansion Project, Development Permit DP 4860

A. Background and materials submitted regarding the revised proposal.

On December 23, 2009, staff accepted the application for Development Permit DP 4680 submitted by TransCanada Maine Wind Development, Inc. (hereinafter "TransCanada" or "the applicant") for the Kibby Expansion Project (KEP) for processing. State agencies, Intervening Parties, and the public submitted comments and testimony on the proposal, and on May 11 and 12, 2010, a public hearing was held, with the record closing on June 1st.

The Commission deliberated on the proposal at its July 7, 2010 regular monthly business meeting, with a final decision to be made at the August 4th monthly meeting. However, the applicant proposed that the record be re-opened to allow the submittal of a revised proposal, and the Commission granted approval. On August 16th, the applicant submitted a revised proposal, 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. On October 22nd, the applicant submitted a rebuttal to the agencies' and Parties' comments. On or before November 1st, three reviewing agencies responded to questions asked by LURC staff about their review comments.

The purpose of the deliberative session is to discuss and reach conclusions on key issues, and advise staff on drafting the decision document. Legal briefs were submitted by the Parties on November 17th, and closing arguments will be presented by each Party prior to the deliberative session on December 1st.

B. Contents of the deliberation notebook and enclosed CD

The materials in the record regarding the revised proposal have been compiled and summarized in the attached deliberation notebook. The legal briefs submitted by the applicant and the Parties are not summarized in this deliberation notebook, but are supplied on the enclosed CD. The materials in the record prior to re-opening the record for the revised proposal have not been included in this notebook, except as needed to assist you in your deliberations, because they were previously provided in the first deliberation notebook.

The enclosed deliberation notebook is divided into sections, starting with a brief project description in Section I, followed by the key issues in Sections II through VI, followed by the staff recommendations on key issues at the end of the notebook in Section VII.

The issues sections include:

- Tangible Benefits, including energy production
- Scenic Assessment, including historic resources
- Subalpine Spruce Fir Heart-leaved Birch Forest and Bicknell's thrush
- Vernal Pools and Wetlands, including Roaring Brook Mayfly and spring salamander
- Other Issues Raised by the Friends of the Boundary Mountains
 - Wildlife: bird, bat, and northern bog lemming impacts
 - Protection and re-vegetation of high mountain areas, phosphorus, and road construction/cut and fill

Each of the issue sections starts with the relevant review criteria, followed by findings summarizing the applicant's proposal and/or assessment, agency and Parties' comments, and the applicant's responses. Key maps or exhibits are attached at the end of some sections, although the supporting materials have generally been placed on the enclosed CD. Throughout the notebook, there are references to "original proposal" and "revised proposal". The "original proposal" means the 15-turbine layout, and the "revised proposal" means the 11-turbine layout.

The Table of Contents for the notebook is attached to this memo. The enclosed CD has its own Table of Contents, but the materials on the CD are summarized here for your reference:

The enclosed CD contains folders with:

- The revised proposal submitted by the applicant on August 16, 2010
- Agency reviewers' comments on the revised proposal, including LURC's third party scenic reviewer
 - This folder also includes the responses by three of the agency reviewers to staff's questions in the 10th Procedural Order
- Intervening Parties' comments on the revised proposal
- Applicant's responses to the agencies and rebuttal of the Parties' comments
- Legal briefs submitted by TransCanada and the Intervening Parties
- Public comments
- Procedural Orders #8 through #12
- Selected materials from the deliberation notebook for the original proposal

C. Public comments. All public comments on the revised proposal have been compiled and organized chronologically, and are included on the CD. The public comments received on the original proposal were supplied with the first deliberation notebook. These comments fall into three categories:

- Compiled comments from the general public
- Comments submitted by the Arnold Expedition Historical Society
- Comments submitted by the High Peaks Alliance

1. 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.
2. 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.
3. 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 restating 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 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.

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DELIBERATION NOTEBOOK REVISED PROPOSAL FOR THE KIBBY EXPANSION PROJECT

**December 1, 2010
Development Permit DP 4860
TransCanada Maine Wind Development, Inc.**

I. PROJECT DESCRIPTION

Tabbed at end of section

- Site location map
- Site plan showing revised layout

On enclosed CD

- Revised proposal, submitted August 16, 2010; with Exhibits 1 through 16

II. TANGIBLE BENEFITS [*Wind Energy Act exhibit*] (includes energy production)

In addition to the tangible benefits proposed in accordance with the Wind Energy Act, this section also includes discussion of energy production by the proposed Kibby Expansion Project (KEP).

On enclosed CD

- Revised proposal narrative
- Agency review comments [Bureau of Parks and Lands (BPL) and Maine Public Utilities Commission (PUC)], and applicant's response
- Public comments folder - Letters from High Peaks Alliance (HPA)
- Parties' comments – Friends of the Boundary Mountains (FBM)
- TransCanada's response to agencies and rebuttal to Parties
- Twelfth Procedural Order, issued November 10th

III. SCENIC ASSESSMENT [*Wind Energy Act exhibit*] (includes historic resources)

Tabbed at end of section

- Viewshed maps showing scenic impact areas for revised KEP
- Visual simulation from the revised application
- Maps showing the route of the Arnold Trail

On enclosed CD

- Revised proposal narrative, and Exhibits 6 through 10
- Agency comments [Jim Palmer, BPL, and Maine historic Preservation Commission (MHPC)]

- Parties' comments [Consolidated Parties (CP) and FBM]
- TransCanada's responses to agencies and rebuttal to Parties
- Public comments - Letters from the Arnold Expedition Historical Society (AEHS)
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 - Visual simulations from original application and pre-filed testimony, including viewpoint #6 from Vissering pre-filed testimony
 - Map showing cumulative impacts map

IV. SUBALPINE FIR/HEART-LEAVED BIRCH SUBALPINE FOREST AND BICKNELL'S THRUSH

Tabbed at end of section

- Maps from revised proposal showing extent of Subalpine Fir Forest natural community and Bicknell's thrush habitat

On enclosed CD

- Revised proposal narrative and Exhibits 3 through 5
- Agency review comments and responses to staff questions (Maine Department of Inland Fisheries and Wildlife (MDIFW) and Maine Natural Areas Program (MNAP) – includes map)
- Parties' comments (CP and FBM)
- TransCanada's responses to agencies and rebuttal to Parties

V. VERNAL POOLS AND WETLANDS (includes Roaring Brook mayfly and spring salamander)

Tabbed at end of section

- Map showing vernal pool locations
- Map showing wetlands in vicinity of turbines 7 through 11

On enclosed CD

- Revised proposal
 - Exhibit 13 - Map showing wetlands in part of the revised project area
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- MDIFW review comments and responses to staff questions
- TransCanada's response to agency (MDIFW) review comments
- In folder with selected materials from first deliberation notebook
 - Map showing vernal pool locations
 - Maps showing wetlands in project area
 - Commission's Land Use Districts and Standards, Section 10.25,P; wetland alteration standards
 - MDIFW - Maine State Vernal Pool Assessment Form

VI. OTHER ISSUES RAISED BY THE FRIENDS OF THE BOUNDARY MOUNTAINS

- A. Avian and bat surveys [*Wind Energy Act exhibit*], and northern bog lemming
- B. Protection and re-vegetation of high mountain areas; road construction/cut and fill; phosphorus loading

On enclosed CD

- Revised proposal, Exhibit 14
- Agency review comments (State Soil Scientist)
- Parties' comments (FBM)
- TransCanada's rebuttal to FBM
- In folder with sections copied from first deliberation notebook
 - BRI 2009 Bicknell's thrush/Breeding Bird survey report
 - MDEP/MDIFW guidance memo on avian and bat monitoring in application checklist, pp 20-23)
 - The Commission's Land Use Districts and Standards, Sections 10.25,G, K, L and M

VII. STAFF RECOMMENDATIONS ON KEY ISSUES

- Tangible benefits
- Scenic resources assessment
- Subalpine Fir Forest and Bicknell's thrush
- Vernal pools
- Roaring Brook mayfly and spring salamander
- Avian and bat surveys
- Northern bog lemming
- Protection and re-vegetation of high mountain areas

I. PROJECT DESCRIPTION

Tabbed at end of this section

- Site plan showing revised layout
- Site plan showing project overview

On the enclosed CD

Revised proposal, submitted August 16, 2010; with Exhibits 1 through 16

- 1. 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 proposed Kibby Expansion Project (KEP) was a grid-scale 45 MW wind energy development that would be sited within the expedited permitting area for wind energy development along the ridgeline north of Sisk Mtn. The project would be located in Kibby Twp. and Chain of Ponds Twp., Franklin County, in a P-MA Subdistrict; P-SL2 Subdistrict; P-WL1, 2 and 3 Subdistricts; and M-GN Subdistrict. The KEP would expand upon the Kibby Wind Project (reference Development Permit DP 4794) and would use the 115 kV generator lead line, Operations & Maintenance (O&M) building/construction control center, and certain lay-down areas constructed for the Kibby Wind Project.

The applicant submitted with its application the required exhibits in accordance with the Wind Energy Act (PL 2007, Ch. 661), as well as the other materials required by LURC’s application checklist for wind energy development. Many of these exhibits, but not all, are discussed in the sections of this notebook. The revised engineered plans, submitted August 16, 2010, are also included on the CD for reference.

- 2. Revised proposal.** 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 3 MW wind turbines, each within a cleared turbine pad area. The proposed revised layout consists of Turbines 1 through 11 of the original layout, with Turbines 12 through 15 and the associated segment of the ridgeline road removed from the proposal. There are no other changes to the proposed layout for Turbines 1 through 11 and the associated access road.
 - A. The revised KEP would include 2.1 miles of new 34 ft wide ridgeline road, 1.1 miles of new 20 ft wide access road, 2.2 miles of upgraded existing access roads, 7.5 miles of 34.5 KV collector and communication line, a new substation, and a 325 foot (ft) long segment of 115 KV transmission line to connect the new substation to the existing Kibby Substation.
 - B. The turbine towers would be 263 ft tall, for a total of 410 ft tall when the upward turned blade is included.
 - C. The 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.

- D. During construction, new and existing lay-down and storage areas would be used.
- E. The total new cleared area, including areas below 2,700 ft in elevation, during construction would be 102.3 acres, reduced to 46.8 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 become re-vegetated naturally. The areas to remain permanently altered would consist of 9.9 acres for the turbine pads and road above 2,700 ft in elevation, 1.4 acres for the new access road below 2,700 ft, 1.2 acres for the substation; 28.3 acres for the shrub-dominated power line both above and below 2,700 ft, and 6 acres for the met towers.
- F. The proposed KEP would be located at elevations ranging from 1,720 ft above mean sea level (msl) near the new substation to 3,357 ft msl at Turbine 9. All 11 turbines would be located above 2,700 ft msl. For a point of reference, the elevation is 1,400 ft msl at the existing O&M building located at the intersection of Gold Brook Road and Route 27.
- G. *Construction schedule.* The proposed start of construction is in 2011, with an in-service date in late summer of 2012.

Table 1. Comparison of the 15-turbine proposal with the revised 11-turbine proposal:

Activity	15 turbine project	11 turbine project
Turbine elevation range	2,978 to 3,395 ft msl	2,978 to 3,357 ft msl
Total cleared – temporary	140.2 acres	102.3 acres
Total cleared- permanent	54.1 acres	46.8 acres
New 34 ft wide ridgeline road	3.6 miles	2.1 miles
New 20 ft wide access road	1.1 miles	Same
Improved 20 ft wide access road	2.2 miles	Same
34.5 kV collector line	8.9 miles	7.5 miles
115 kV transmission line	325 ft	Same
O&M building	Existing Kibby Project facility	Same
Temporary lay-down areas	Existing 2.4 acre Kibby – B Series lay down area and new 2.5 acre lay-down area on Mile 5 Road (total 4.9 acres)	Same
Permanent met tower	1	Same
Temporary access trail	One 0.6 mile long trail	Delete 0.6 mile long trail

II. TANGIBLE BENEFITS [*Pursuant to the Wind Energy Act*] (includes energy production discussion)

On enclosed CD

- Revised proposal narrative
- Agency review comments (BPL and PUC), and applicant's response
- Public comments folder - Letters from High Peaks Alliance (HPA)
- Parties' comments - FBM
- TransCanada's response to agencies' and Parties' comments
- Twelfth Procedural Order, issued November 10th

1. Background.

- A. The applicant's proposal for Development Permit DP 4860 was accepted for processing in December of 2009, and a revised proposal was submitted on August 16, 2010. The application was not withdrawn in the interim. LD 1504, now PL 2009, Ch. 642, which revised the law with regard to tangible benefits, became effective on July 12, 2010 after the permit application had been accepted for processing. 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.
- B. Regarding energy production, although testimony has been received from Intervening Party Friends of the Boundary Mountains (FBM), and in rebuttal to FBM from the applicant, the issue of energy production is not directly relevant to the Commission's decision criteria (see Finding of Fact #8, below). Most recently, the 12th Procedural Order, issued on November 10th, 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."

2. Review Criteria

- A. 35-A MRS, Ch 34-A, section 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.

- B. *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.
- C. *12 MRSA §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:
- (1) 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;
 - (2) Will be designed and sited to avoid undue adverse shadow flicker effects;
 - (3) 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
 - (4) 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. (emphasis added)

4. Applicant's tangible benefits proposal in the revised proposal. The applicant noted the following regarding tangible benefits associated with the proposed revised KEP:

- A. *Application.* 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 turbine¹, and asserted that this would be an efficient use of land. The estimated capital costs of the 11 turbine project would be \$92 million.
- B. *Economic benefits.* The applicant asserted that the proposed revised KEP would provide significant economic benefits for Maine and the region, which they expect to be similar to the actual benefits resulting from the existing Kibby Project. As of December 2009

¹ As compared to lower wind resource sites, such as the Stetson project, with 4,400 MWh per turbine.

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 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 \$177,000 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:
 - \$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)
 - \$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);
 - \$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). The funds would be jointly administered by the Arnold Expedition Historical Society (AEHS) and the Maine Historic Preservation Commission (MHPC) (*see* Section III, Finding of Fact #10,B(2)).

- D. The contribution of \$100,000 for preservation of Bicknell's thrush winter habitat in the Caribbean that was included in the original proposal has been deleted from the revised proposal due to the reduced economics of the project and the lack of a nexus between Caribbean habitat preservation and impacts in Maine.

5. Agency and local government review comments

- A. *Maine Public Utilities Commission (PUC)*. PUC reviewed the revised application and commented on tangible benefit issues involving the electricity market and pricing, as summarized below:
- (1) "The [Wind Energy] Act specifies that the siting authority shall presume the general energy and emissions related benefits stated in statute...and make additional findings regarding other tangible benefits."
 - (2) In its revised application, the applicant has incorporated the presumed energy benefits by reference to its original application for the 15 turbine project, and noted the output of the 11 turbine project as estimated to be 92,000 MWh per year.
 - (3) PUC agrees that the revised projects will have the cited energy benefits, but notes that such benefits are not considered tangible benefits for the purpose of satisfying the significant tangible benefits requirement under the law.
 - (4) "PUC suggests that LURC consider as an electricity market tangible benefit the sale of a significant amount of the output of the [proposed] wind project to customers (particularly industrial and commercial customers) within the area or to the utility under PUC's long term contracting authority at fixed prices projected to below market prices or at a stated discount off of market prices. The PUC is not aware of any such benefit conferred by the revised KEP."
 - (5) PUC further 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."
- B. *Maine Bureau of Parks and Land (BPL)*. BPL reviewed the revised application and offered the following comments on tangible benefits, summarized below:
- (1) BPL asserted that it is unclear in the law "whether regulators can shape tangible benefit packages", for example "whether an impact on recreational enjoyment or scenic quality might be a basis to proactively shape tangible benefit packages"
 - (2) BPL asserted that any tangible benefit packages offered by developers that include land conservation should be shaped by LURC to ensure concrete outcomes. LURC should assure that the proposed contribution to the HPA results in measurable outcomes. For the contribution to the HPA, BPL proposed that LURC require conservation funding to be placed in escrow pending concurrence of various parties, and offered to serve as a party on an escrow agreement to ensure expenditures result in concrete outcomes.
 - (3) BPL asserted that although land conservation is more than mere "price at closing", because only modest funds are involved in this proposal BPL argues that "price at closing" is an important benchmark from which to mobilize additional funds. Additionally, land "stewardship" is an important component of land conservation.

- (4) BPL proposed that TransCanada's tangible benefit contribution to the HPA be conditioned as follows:
 - (a) "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."
 - (b) "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."
- (5) If LURC chooses to direct TransCanada toward BPL as an implementing party in any capacity, or if LURC itself requests a BPL role, the directive should clearly "allow other developers, LURC, or DEP to bring BPL to the table with no suggestion that BPL endorses or is complicit with any application, preliminary application, or preliminary scoping. In the alternative, the LURC Commission should expressly create an alternate model."

C. *Franklin County Commissioners.* The Franklin County Commissioners commented 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." The Commissioners further stated, "We are very fortunate to have such an environmentally conscious company as TransCanada working in Maine. The approval of this scaled-down project is important to Franklin County and the State of Maine. Thank you and the LURC Board for your diligence in making this happen."

D. *Town of Eustis/Stratton.* The Town of Eustis/Stratton selectman commented on the revised application as follows: "I am writing in support of the Sisk Mountain Wind expansion being proposed by TransCanada in northwestern Maine. 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. Please consider this worthy project as you do your mandatory site reviews and prepare to permit the expansion."

6. FBM comments on tangible benefits. FBM asserted the following on the applicant's tangible benefits proposal:

- A. "TransCanada continues to ignore the requirement that [tangible] benefits must be 'attributable to the construction, operation and maintenance' of the windpower project, not come from the applicant's wealth."
- B. Property values in the vicinity of the KEP will decrease as a result of the project.

7. Applicant's rebuttal to BPL and FBM comments on tangible benefits

- A. *BPL comments.* In response to BPL's recommendation on how to shape the contribution the High Peaks Alliance 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."

8. Energy production.

- A. *Sections of the statutes addressing energy production.*
- (1) *12 M.R.S.A., Section 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." (emphasis added)
 - (2) *PL 2007, Ch. 661 – 35-A M.R.S.A. §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:
 - (a) 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
 - (b) 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."
 - (3) *PL 2007, Ch. 661 – 35-A M.R.S.A. §3404.* Determination of public policy; state wind energy generation goals.

- (a) *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.
- (b) *State wind energy generation goals.* The goals for wind energy development in the State are that there be:
 - (i) At least 2,000 megawatts of installed capacity by 2015; and
 - (ii) 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.
- (4) *PL 2007, Ch. 661 – 35-A M.R.S.A. §3454. § 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.”

B. *FBM comments on energy production.* FBM asserted the following:

- (1) “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.
- (2) The proposed KEP site is 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.
- (3) 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.
- (4) 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 megawatt hours (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.

(4) 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.

C. *Applicant's response to FBM.* 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.

III. SCENIC IMPACT ASSESSMENT [*Wind Energy Act Exhibit*] (including historic resources)

Note: The terms “visual impact assessment” or “visual assessment” and “scenic impact assessment” or “scenic assessment” are used interchangeably herein, and are intended to mean the same thing.

Tabbed at end of section

- Viewshed maps (2) depicting scenic impact areas for 11 turbines and for 8 turbines
- Visual simulations (2), viewpoint #5 depicting 15 turbines and 11 turbines
- Map showing the route of the Arnold Trail

On enclosed CD

- Revised proposal narrative, and Exhibits 6 through 10
- Agency comments (Jim Palmer, BPL, and MHPC)
- Parties’ comments (CP and FBM)
- TransCanada’s responses to agencies and rebuttal to Parties
- Public comments - Letters from the Arnold Expedition Historical Society (AEHS)
- In folder with selected materials from original proposal
 - Narrative in the first notebook summarizing the applicant’s scenic assessment
 - Visual simulations from original application and pre-filed testimony, including viewpoint #6 from Vissering pre-filed testimony
 - Map showing cumulative impacts map

1. Review criteria - Scenic resources of state or national significance (includes historic resources on the National Register)

A. *12 MRS, § 685-B(4)(C)*. “Adequate provision has been made for fitting the proposal harmoniously into the existing natural environment in order 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. 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, the commission shall consider the development’s effects on scenic character and existing uses related to scenic character in accordance with Title 35-A, section 3452;” (emphasis added)

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

- (1) “*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.(emphasis added) 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.”
- (2) “*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.”
- (3) “*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: (emphasis added)
 - (a) The significance of the potentially affected scenic resource of state or national significance;
 - (b) The existing character of the surrounding area;
 - (c) The expectations of the typical viewer;
 - (d) The expedited wind energy development's purpose and the context of the proposed activity;
 - (e) The extent, nature and duration of potentially affected public uses of the scenic resource of state or national significance and the potential effect of the generating facilities' presence on the public's continued use and enjoyment of the scenic resource of state or national significance; and
 - (f) The scope and scale of the potential effect of views of the generating facilities on the scenic resource of state or national significance, including but not limited to issues related to the number and extent of turbines visible from the scenic resource of state or national significance, the distance from the scenic resource of state or national significance and the effect of prominent features of the development on the landscape.

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."

- (4) *“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.”

C. *Definitions: 35-A M.R.S., Ch 34-A, § 3451*

- (1) *Section (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: (emphasis added)
- (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:
 - (i) 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
 - (ii) 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;

- (e) 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;
- (f) 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;
- (g) 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
- (h) 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:
 - (i) 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
 - (ii) A scenic inventory developed by or prepared for the Executive Department, State Planning Office in accordance with section 3457."

2. Applicant's scenic assessment.

A. *Background.* For the original application, the applicant conducted a scenic assessment of the scenic resources of state or national significance (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.

- (1) A summary of the applicant's scenic impact assessment was contained within the first deliberation notebook. The narrative sections from the first deliberation notebook are included on the enclosed CD for your reference.
- (2) Please note that the materials submitted by MHPC to the LURC record assessing historic and archaeological resource impacts 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. MHPC's review comments were in the context of the federal criteria (*see* Finding of Fact #10, below).

B. *Summary of applicant's visual assessment, adjusted for the revised project.*

- (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 visual 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 (*previously 2.8*) miles to approximately 4 (*previously 3.5*) miles from 24% (*previously 31%*) 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. 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 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.
 - (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 revised KEP would be visible from the Trail at distances of approximately 2.9 (*previously 2.7*) miles to 4 (*previously 4*) miles at Chain of Ponds, and at 7 (*previously 7*) miles on Arnold Pond.
 - (a) 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.
 - (b) The applicant noted that the Trail is included as an historic and cultural resource in the "Flagstaff Region Management Plan" (Maine BPL/DOC, 2007), which includes a Special Protection Area consisting of a 100 ft buffer along the Trail within State land on the northeast side of the Chain of Ponds. The Plan discusses the visual character of the immediate shoreline, but does not provide guidance about the view of the surrounding mountains or development in the area (*see, Finding of Fact #4,A(5)(c)*).

- (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 Consolidated Parties do 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 revised 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, but this viewpoint is not a high value viewing location. The other potential view of the project 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.

3. LURC third party scenic assessment peer review by James F. Palmer, staff questions and responses, and applicant’s responses

- A. *Summary of Jim Palmer’s report conclusions*. The entire report submitted by Mr. Palmer is included on the enclosed CD for your reference. Mr. Palmer’s report is an update to his earlier review of the original proposal for a 15-turbine project. Mr. Palmer included a table summarizing his evaluation of the 11-turbine KEP, as well as the results of computer modeling.
 - (1) Mr. Palmer used an approach of systematically applying the scenic impact criteria and standards in Maine’s Wind Energy Act, noting the lack of quantitative “data documenting the use of the significant scenic resources, the users’ expectations and the role of scenery in their experiences of these places, and how the potential scenic impact may affect their future use and enjoyment.” Mr. Palmer applied approximations for these criteria, also noting that “assumptions regarding the interpretation of the law regarding legal public access to a scenic stream on private land (which could include following the stream from a Great Pond which is also surrounded by private land)” were used.
 - (2) Mr. Palmer concluded the following:
 - (a) “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.”

- (b) “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.”
 - (c) “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 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.”
 - (d) “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.”
 - (e) “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.”
- B. *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. Mr. Palmer questioned the legal access to Kibby Stream, necessary for it to be determined a jurisdictional “scenic resource of state or national significance”, but nevertheless assessed it as if it were jurisdictional because of the provisions of Maine law providing legal access across “navigable” waters. The applicant noted 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 (*see* Exhibits E and F of the applicant’s response, dated October 22nd).
- (a) For the Kibby Project, Ms. Vissering 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.

- (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 have determined is not undue. The views would include Turbines 1 - 3 and 5 - 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.

C. *Staff questions to Jim Palmer and response*. In the 10th 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 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 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 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.

4. 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 Kibby II application”. Selected BPL 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 withdrawal of the Kibby III rulemaking and its cumulative implications, and the scaling back of Kibby II collectively result in the scenic and recreational impacts of the revised Kibby II 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.
 - (c) BPL urged exclusion of any proposed finding that BPL's management plans are a factor into LURC's windpower siting decisions. BPL's asserted that its management plans should not be used to guide decision-making on adjacent private lands, noting that it recognizes this may limit the evidence available to the Commission for decision-making.
 - (6) BPL noted that the Commission appears to accept the analysis of the Attorney General that compensatory off-site mitigation for scenic impacts is not supported by Maine law, in the context of a determination of meeting scenic standards. As such, BPL stated it will no longer advance contrary arguments through the regulatory process, noting it is an appropriate discussion for future legislatures.

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 Kibby II application", and that "the removal of the Kibby III rulemaking and its cumulative implications, and the scaling back of Kibby II, collectively mean that the scenic and recreational impacts of the revised Kibby II 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.

5. 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 of state or national significance 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.* 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 – 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) CP contended there is very limited visibility of the Kibby Project turbines from the scenic resources of state and national significance 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.”

6. 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, on CD).
- 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.”

7. 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 (*see Denial*, 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 viewshed², and offered opinions about the visual impacts:
- (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) *Bigelow Preserve and the Appalachian Trail.* From the Bigelow Preserve’s campsites along Flagstaff Lake and the Appalachian Trail (AT) there are several existing Kibby Project turbines visible. From the Bigelow Preserve the Kibby Project’s ridgeline is visible from the Safford Brook campsite at a distance of 20 miles. From the Bigelow Range, Horns Pond, West Peak and Avery Peak all have clear visibility of the

² 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.

- existing Kibby Project's turbines on clear days. At night the blinking red lights of the Kibby Project's turbines are clearly visible to wilderness hikers, including AT thru hikers, from the Horns Pond's lean-tos. More would be visible from these viewpoints if the proposed KEP is approved.
- (a) "These points in the Bigelow Preserve, while outside the 8-mile evaluation criteria of Chapter 661, are more than just scenic views of statewide significance. They represent the most outstanding points of Maine's 'jewel' in its inventory of public lands."
 - (b) From the open summits of the AT 15 to 30 miles from Kibby there would be more views of the proposed turbines, from Cranberry Peak to Little Bigelow, from Saddleback Junior, and from Mount Abram.
 - (c) Compromising these outstanding views is a tremendous disservice to all those who have worked so hard to keep the Bigelow Preserve preserved and to the thousands of future hikers who look forward to one day transverse the Bigelow ridgeline and the other summits of Maine's High Peaks region.
- (7) *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.
 - (8) *Flagstaff Lake*. Flagstaff Lake is the most used lake in the region and is considered a management class 2, resource class 1A, with outstanding fisheries and wildlife values and significant scenic and shore character. Potential views of the Kibby Project are visible at 10 miles away.
 - (9) *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.
 - (10) *Tim Pond*. Tim Pond would have views up to 18 turbines, depending on the viewer's location on the pond.
 - (11) *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.
 - (12) *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.
 - (13) *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.
 - (14) *Canada*. A letter from Andre Blais, a Canadian citizen and founder of Sentiers Frontaliers (hiking club), which has been working with the AEHS in Maine, and the Cohos Trail in New Hampshire to create the first International Loop Trail in North America, provided LURC with several significant adverse impacts on the Canadian landscape and the panoramas of the township across the border from the 8 northern turbines in the revised KEP proposal. Consideration must be given to the ramifications of international law under the North American Agreement on Environmental Cooperation, as previously pointed out by FBM in its Post-Hearing Brief on DP 4860.

C. Maine's Wind Energy Act requires an applicant to demonstrate no unreasonable adverse impact to state or national 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 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 state or national 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."

8. 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.

9. 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. For example, both the Arnold Trail Snowmobile Club and the Arnold Expedition Historical Society have stated support for the project.

10. 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 identified 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* this Section, Finding of Fact #2,B(2)). 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 in a letter to the applicant, dated February 2, 2010 requested the applicant submit to MHPC additional materials pursuant to (federal) Section 106 of the National Historic Preservation Act. In this letter, MHPC made a finding of adverse effect in accordance with the federal Advisory Council on Historic Preservation's regulations in 36 CFR Part 800, which is the first step of the federal Section 106 consultation process that may be undertaken by the U.S. Army Corps of Engineers (Corps) as a part of its wetland (Section 404) permitting process. On April 9, 2010, the applicant submitted to MHPC and the Corps (and copied the report to LURC's file) the requested additional materials for review.
- (4) In a letter dated May 6, 2010, MHPC copied to the LURC record its review comments 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 its earlier finding of adverse effect (adverse effect as defined in 36 CFR Part 800.5(a)(1)), having reviewed the April 9th report submitted by the applicant. A representative of the Corps testified at the public hearing on May 12, 2010 describing the Corps' Section 106 historic resources review process.
- (5) On June 1, 2010, the Corps and MHPC submitted for the file updates on the Section 106 process being undertaken for the federal review of the proposed KEP. At that time, the Corps had not yet formally initiated the Section 106 review process stating that the formal Section 106 process first addresses avoidance and minimization, which then moves to considering mitigation if needed. MHPC stated that once the formal 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 review comments submitted during review of the revised proposal.*

- (1) On October 6, 2010, MHPC commented "[MHPC's] letter of September 27th explained the National Historic Preservation Act Section 106 adverse effect process, with adequate mitigation being the desired result. In negotiations between our office, the Arnold Expedition Historical Society, and Jay Clement of the Army Corps, TransCanada has developed two draft documents that in principle provide adequate and acceptable mitigation. These are a Memorandum of Agreement (MOA) between TransCanada and the Arnold Expedition Historical Society and a Memorandum of Agreement between the Army Corps and the Maine SHPO referencing the previously mentioned agreement. The drafts of these documents transmitted to us by Juliet Browne by email October 5 are acceptable, and we look forward to concluding this process." On October 12th, MHPC submitted copies of the MOA's referenced in their October 6th comments.
- (2) *Applicant's contribution to the AEHS.* The applicant's proposed \$110,000 lump sum payment to the High Peaks Alliance to support land conservation and trail corridor acquisition in Franklin County would be jointly administered by the Arnold

Expedition Historical Society (AEHS) and the Maine Historic Preservation Commission (MHPC) [*see* Tangible Benefits, Section II, Finding of Fact #4,B(4)(c)].

- C. *Applicant's response regarding MHPC's comments.* Although MHPC has made a finding under federal law of adverse impact, they have not offered any opinion on whether the visual impacts satisfy LURC's criteria. The applicant further noted that it has been working on an agreement with MHPC and AEHS for land acquisition along the Trail under the federal Section 106 process, and that AEHS does not object to the proposed revised KEP.

IV. FIR/HEART-LEAVED BIRCH SUBALPINE FOREST and BICKNELL'S THRUSH

Tabbed at end of section

- Maps (3) from revised proposal showing extent of Subalpine Fir Forest natural community and Bicknell's thrush habitat

On enclosed CD

- Revised proposal narrative and Exhibits 3 through 5
- Agency review comments and responses to staff questions (MDIFW and MNAP – includes map)
- Parties' comments (CP and FBM)
- TransCanada's responses to agencies and rebuttal to Parties

1. Review criteria and guidance.

- A. *12 M.R.S., Section 685-B(4)(C). "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. The commission may not approve an application, unless adequate provision has been made for fitting the proposal harmoniously into the existing natural environment in order to assure there will be no undue adverse effect (emphasis added) on existing uses, scenic character, and natural and historic resources in the area likely to be affected by the proposal."
- B. *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, (emphasis added) 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."
- C. *Section 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.A. §685-B, and subject to the applicable requirements set forth in Sub-Chapter III:
Wind energy development in accordance with Title 35-A, MRSA, Chapter 34-A in areas identified in Appendix F herein;"
- D. *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

2. Applicant's survey of Fir-Heart-leaved Birch Subalpine Forest and assessment of impacts due to the revised proposal.

- A. *Background and applicant's assessment submitted with the original application.*
- (1) *Subalpine Fir Forest.* The applicant surveyed the proposed development area and identified an approximately 150 acre Fir-Heart-leaved Birch Subalpine Forest (hereinafter Subalpine Fir Forest) natural plant community at elev. 3,250 ft msl or higher, applying the MNAP definition and definitions in the literature (Hudson et al. 1983; Thompson and Sorenson 2000; Sperduto and Nichols 2004; NatureServ 2004). The Subalpine Fir Forest on Sisk Mtn. in the proposed development area is dominated by balsam fir, with a minor component of heart-leaved birch, and frequent wind-throw disturbances. The summit of Sisk Mtn. is well below the elevation where “fir-waves” typically occur, although this occurrence was beginning in some areas. This Subalpine Fir Forest is rated as S-3 by MNAP. Down slope from Fir-Heart-leaved Birch Forest, the forest grades into the S-4 rated Spruce-Fir-Wood Sorrel-Feathermoss Forest.
 - (2) *Bicknell's thrush habitat.* As a part of the 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.
 - (a) 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).
 - (b) 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 the Sisk Mountain there are 357.3 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.”
 - (c) The applicant identified approximately 88 acres in the project area as Bicknell's thrush preferred habitat, of which approximately 8 acres would be altered. 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. For the original proposal, a total of 39 acres of Fir Subalpine Forest would be cleared (i.e. “direct impact”), leaving 317 acres; including the indirect impacts (so-called “edge effect”) up to 102 acres could be affected (*see* Table 2, below). 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 don't start rotating until the winds are 9 mph or greater), the potential for impact is low.

B. *Applicant's assessment for the revised proposal of the impacts to the Subalpine Fir Forest and Bicknell's thrush. (see maps at the end of this section)*

(1) *Subalpine Fir Forest.* The applicant stated that impacts to the Subalpine Fir Forest would be reduced by almost one-half in the revised proposal, with direct impacts of 20 acres and indirect impacts of 25 acres, for a total of 45 acres affected. The applicant based its indirect impact evaluation on a 50-ft wide buffer. The remaining Subalpine Fir Forest would be one 313 acre contiguous block. For comparison, as stated above the original 15-turbine proposal would have impacted 102 acres in total (39 direct, 63 indirect), and would have left intact two large habitat blocks of 183 acres and 73 acres (see Table 2).

(a) The applicant asserted that in the original 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.

(b) The CP argued that the fragmentation and impacts due to the southern four turbines (Turbines 12 through 15) and the associated ridge road would be unacceptable (*see* Finding of Fact #8). The draft denial document for the 15-turbine project had also reflected this concern. As a result, the applicant has now proposed an 11-turbine project that would eliminate the southern four turbines.

(c) The change eliminates 19 acres of direct impact, 28 acres of indirect impact, and also eliminates fragmentation, leaving one 313-acre contiguous block of Subalpine Fir Forest, or 87.5% of the original 358-acre mapped community. The applicant submitted maps showing the revised project area impacts and comparing the impacts due to the 11-turbine project to the 15-turbine project.

(2) *Bicknell's thrush habitat.* The reduction to the Subalpine Fir Forest will also reduce the potential for impacts to Bicknell's thrush. The applicant noted the steps it took (submitted for the original proposal) 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 (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.

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 and FBM)

Acres impacted	15 turbines				11 turbines		
	W/o buffer, direct impact only	W/buffer, direct and indirect impact	Bicknell's habitat, direct impact	Total impact area including fragmentation	W/o buffer, direct impact only	W/buffer, direct and indirect impact	Bicknell's habitat, direct impact
Subalpine fir forest – 358 acres Bicknell's thrush habitat – 88 acres							
TC (used a 50 ft buffer, per MNAP methodology for calculating indirect impacts)	39 acres, - 89.1% intact	63 acres, - 82.4% intact	8 acres	102 acres, -71.5% intact	20 acres - 94.4% intact	45 acres - 87.4% intact	5 acres
CP (used a 250 ft buffer)	39 acres	102 acres – 71.5% intact	---	144 acres - 59.7% intact	20 acres	55 acres - 84.6% intact	15 acres or more (10 a if 100 ft buffer used)
MNAP (w/50 ft buffer)	39 acres	80 acres	n/a	80 acres	23 acres - 93.6% intact	44 acres - 87.7% intact	

4. **Maine Department of Inland Fisheries and Wildlife (MDIFW).** MDIFW reviewed the revised proposal for the KEP and commented on Bicknell's thrush as follows:

A. "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."

B. *Bicknell's thrush habitat.*

(1) "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."

(2) "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."

(3) "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."

5. **Applicant's response to MDIFW comments.** The applicant did not submit a response to MDIFW's comments, but instead commented on impacts to Bicknell's thrush in its rebuttal to the CP's comments (see Finding of Fact #9 of this section).

6. **Maine Natural Areas Program (MNAP).** MNAP reviewed the revised proposal, and commented regarding the Subalpine Fir Forest, as summarized below:

A. *Review comments.* MNAP noted the Subalpine Fir Forest natural plant community at the proposed development site as having statewide ecological importance. This 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).

(1) 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.

- (2) MNAP stated that the applicant estimated 23 acres of the Subalpine Fir Forest would be cleared. The clearing for the project will fragment portions of the northern half of the natural community effectively isolating some areas so that their natural value will 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 ft 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.
- (3) 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.
- (4) 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.

B. *MNAP response to LURC staff questions in the 10th Procedural Order.*

- (1) 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."
- (2) 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 11th to 12th 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 12th 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.
- (3) 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."

7. Applicant's response to MNAP comments. The applicant responded to MNAP's review comments, as summarized below:

- A. 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 12th comments, MNAP used acreage amounts that are less conservative than the applicant's, and as such the applicant responded using its more conservative numbers³. The applicant noted that currently the 12th 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).
- B. 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 1/2 from 102 acres to 45 acres. The remaining 313-acre Subalpine Fir Forest would be the 12th 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.
- C. The applicant asserted that the impacts to the Subalpine Fir Forest at this site would not be undue because:
- (1) Turbine 11 was moved as recommended by MNAP to avoid impacts, and impacts have been further reduced by eliminating the four southern most turbines;
 - (2) The total area of the community to be impacted would be approximately 10%, leaving a 313-acre community intact;
 - (3) The overall "good" quality ranking will be retained;
 - (4) The remaining community will be almost equal in size to the community on Black Nubble; and
 - (5) The proposed impacts are similar to other impacts to this community previously permitted by LURC [*see* Finding of Fact #9,A(3)(e)].

8. 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

³ The applicant corrected the narrative of its August 16th revised proposal, stating that the indirect impacts would be 25 acres, not 35 acres.

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 11th 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 CO₂. 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 buffer to estimate indirect effect greatly underestimates the extent of this impact. There is no single accepted standard for estimating edge effects on forest communities, but commonly accepted practice indicates that a buffer wider than 50 ft is warranted⁴. A 250-foot buffer would increase the impact area by more than 10 acres, or 20%, as compared to the

⁴ MDIFW’s Beginning With Habitat Program uses a minimum 250-foot buffer around larger roads and developed areas when mapping Undeveloped Habitat Blocks.

- 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 ft 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 ft in elevation. The land above 3,350 ft. 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 community on Sisk Mountain is one of only 13 in the state ranked as a "good" or better quality occurrence 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 16th 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 ft 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 ft from the edge of forested habitat. Adding a 100 ft 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 ft to 250 ft 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 ft 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.

9. 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 12th largest example of this community in Maine (the 11th largest being the 316-acre community at Black Nubble in Redington Twp.), 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 his 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 ft 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 ft 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.

10. 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 11th 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.

11. 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 #8 and #9, above).

V. VERNAL POOLS AND WETLAND ALTERATIONS *(also includes comments regarding Roaring Brook mayfly and spring salamander in streams)*

Tabbed at the end of this section

- Map showing vernal pool locations
- Map showing wetlands in vicinity of turbines 7 through 11

On enclosed CD

- Revised proposal
 - Exhibit 13 - Map showing wetlands in part of the revised project area
 - Exhibit 12 - Table
- MDIFW review comments and responses to staff questions
- TransCanada response to agency (MDIFW) review comments
- In folder with selected materials from first deliberation notebook
 - Map showing vernal pool locations
 - Maps showing wetlands in project area
 - Commission's Land Use Districts and Standards, Section 10.25,P; wetland alteration standards
 - MDIFW - Maine State Vernal Pool Assessment Form

1. **Review criteria**

A. *12 M.R.S., Section 685-B(4)(C). "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.

The commission may not approve an application, unless adequate provision has been made for fitting the proposal harmoniously into the existing natural environment in order to assure there will be no undue adverse effect (emphasis added) on existing uses, scenic character, and natural and historic resources in the area likely to be affected by the proposal."

B. *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."

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

“P-WL1: Wetlands of special significance:

- (1) 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;
- (2) 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
- (3) Freshwater wetlands, as follows:
 - (a) Within 250' of a coastal wetland or of the normal high water mark of any body of standing water greater than 10 acres;
 - (b) Containing at least 20,000 square feet 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;
 - (c) That are inundated with floodwater during a 100 year flood event;
 - (d) Containing significant wildlife habitat; (emphasis added)
 - (e) 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
 - (f) Within 25' of a stream channel.

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

2. **Applicant's vernal pool and wetlands site survey.**

A. *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, 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 to determine if they were jurisdictional.
- (2) None of the man-made pools identified by the applicant would be impacted by the proposed project. For the forested upland buffer within 250 ft of these man-made pools, the applicant proposed 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 ft of these pools, less than 10% of the forest would be impacted.

B. *Wetland site survey.*

- (1) *Proposed wetland alteration.* A total of 4.34 (*previously 4.35*) acres of wetland would be altered for the revised project. Of the 4.34 acres, 3.49 acres would be

permanently cleared for the collector line corridor, 0.08 (*previously 0.08*) acre would be temporarily cleared, and 0.77 (*previously 0.78*) acre would be filled for wetland and stream crossings. The permanently cleared forested wetland areas would be maintained as a scrub-shrub wetland. The temporarily cleared areas would be allowed to fully re-vegetate. The power line corridors are treated as permanent clearing, but will be maintained with primarily shrub vegetation. Of the 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. Of the wetlands proposed to be permanently cleared, 0.94 is P-WL1 wetland, and 2.55 acres is P-WL2/3 wetland. For the temporarily cleared areas, 17 sq ft of P-WL1 wetland and 3,629 sq ft (0.083 acres) of P-WL 2/3 wetland will be affected but will be allowed to fully re-vegetate.

- (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 due to clearing along the collector line will alter, but not permanently remove, wetland habitat.

3. Maine Department of Inland Fisheries and Wildlife (MDIFW) review comments and response to staff questions. MDIFW commented on the revised proposal, 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 (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/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. MDIFW's initial 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.

(1) MDIFW also recommended that all collector line crossings of perennial streams should follow guidelines similar to DEP's Minimum Performance Standards for Electric Utility Corridors, found in Appendix A of Chapter 375 Rules. (http://www.maine.gov/dep/blwq/topic/site_storm_revisions/site_rules/fourth_informal_draft/APPENDIX_A_2_cl.pdf).

C. *MDIFW response to staff questions in 10th 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."

4. 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 SF. FBM also 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 also 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”. “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 revised 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.

5. 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.

VI. OTHER ISSUES RAISED BY THE FRIENDS OF THE BOUNDARY MOUNTAINS

This section includes:

- A. Avian and bat surveys [*Wind Energy Act exhibit*], and northern bog lemming
- B. Protection and re-vegetation of high mountain areas; road construction/cut and fill, phosphorus loading

On enclosed CD

- Revised proposal, Exhibit 14
- Agency review comments (State Soil Scientist)
- Parties' comments (FBM)
- TransCanada's rebuttal to FBM
- In folder with sections copied from first deliberation notebook
 - BRI 2009 Bicknell's thrush/Breeding Bird survey report
 - MDEP/MDIFW guidance memo on avian and bat monitoring in application checklist, pp 20-23)
 - The Commission's Land Use Districts and Standards, Sections 10.25,G, K, L and M

1. Review criteria.

- A. *12 M.R.S.A., Section 685-B(4)(C). "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.

The commission may not approve an application, unless adequate provision has been made for fitting the proposal harmoniously into the existing natural environment in order to assure there will be no undue adverse effect (emphasis added) on existing uses, scenic character, and natural and historic resources in the area likely to be affected by the proposal."

- B. Commission's Land Use Districts and Standards, Sections 10.25, G, K, L and M: Soil Suitability, Surface Water Quality, Phosphorus Control, and Erosion and Sedimentation Control.

2. Wildlife: Birds, bats, and northern bog lemming.

- A. *Applicant's avian and bat surveys [Wind Energy Act exhibit]; and assessment of State and federally listed species (including northern bog lemming).*
 - (1) In consultation with MDIFW and USFWS, the applicant conducted the following avian and bat surveys:
 - (a) *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.
 - (b) *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.

- (c) *Spring and fall nighttime migrant surveys (radar - bat monitoring, ceilometer and night vision survey).*
 - (i) *Nighttime avian radar survey:* Results of the 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.
 - (ii) *Bat survey:* The 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.
 - (d) *Breeding bird surveys.* The BRI Report (also see Section VII, Finding of Fact #3) 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).
- (2) The applicant assessed the development area for the presence of State and federally listed wildlife species for the following species:
- (a) *Canada lynx.* Canada lynx is federally endangered, and listed by Maine as a Species of Special Concern.
 - (b) *Golden and bald eagle.* Both species are federally threatened; the golden eagle is state endangered, and the bald eagle is not state listed.
 - (c) *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.
 - (d) *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 BMPs recommended by MDIFW will be followed to the extent practicable, including avoiding clearing within 250 ft of the stream.
 - (e) *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.

- B. *MDIFW review comments.* MDIFW reviewed the revised proposal, and submitted the following review comments regarding birds, bats, and northern bog lemming:
- (1) *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.]
 - (a) 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
 - (b) 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.
 - (2) *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/habitat.
- C. *FBM comments.* FBM commented on bird, bat, and northern bog lemming impacts, as summarized below:
- (1) 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.”
 - (a) *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.
 - (b) *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.

- (c) *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.

D. *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:

- (1) *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.
- (2) *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 ft.

3. Protection and re-vegetation of high mountain areas; phosphorus; road construction/cut and fill

A. *Applicant's proposal and assessment*. The soils and phosphorus assessments, and erosion and storm water control measures proposed in the original application are also relevant to the revised proposal. Summaries of relevant materials from the first notebook are included here for reference.

- (1) *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.
- (2) *Erosion/sedimentation and storm water control*. The applicant's temporary and permanent erosion and storm water control plan (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 erosion and storm water control measures are included on the engineered plans for the benefit of the contractor during construction.

(3) *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 an 11 turbine project.)

C. *Agency review comments*. The State Soil Scientist reviewed the revised proposal, commenting he had no objections to the revised Kibby Expansion project. The project revision eliminates several turbines, but the remainder of the proposed project is essentially the same as the original proposal.

(1) 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. That 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 29th where seeps and standing water were observed all along the way, the State Soil Scientist recommended the road base be constructed of blasted rock, and include numerous rock sandwiches. Ditching should not be used to collect ground water.

D. *FBM comments*. FBM submitted comments on road construction and phosphorus loading, as summarized below:

(1) *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.

(2) *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-ft wide roads, and a 0.27-acre gravel surface for each turbine site.

(a) The original KEP proposal export rate is 1.30 pounds per year with the allowable at 1.88 pounds per year.

(b) Cumulatively, over 14 pounds of phosphorus can be deposited into Flagstaff Lake.

(c) Flagstaff Lake is a part of the hydro-dam system and can have frequent drops in the water levels up to 25 ft, which can significantly impact the aquatic life and temperature of the lake.

- (d) 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.
- (3) *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 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.*
- (4) *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.”
- E. *Applicant’s rebuttal to FBM comments.* The applicant rebutted FBM’s comments on cut and fill for road construction, re-vegetation of areas of the Kibby Project, and wind power development in high mountain areas.
- (1) *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.
- (2) *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 ft 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.

- (3) *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.

VII. STAFF RECOMMENDATIONS ON KEY ISSUES

The following recommendations are based on the staff's analysis of the evidence in the record, and are directed primarily at the issues that were of most interest to the Commissioners during previous discussions. If there are other subjects that the Commission chooses to discuss during the deliberations, the staff will of course serve as a resource in locating any record materials that may be of help or answering questions to the best of our ability.

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>

Notebook Section II. Tangible benefits and energy production

- A. *Tangible Benefits.* Staff recommends the Commission conclude that the tangible benefits proposed by the applicant for the revised proposed Kibby Expansion Project (KEP) would meet the State definition of "tangible benefits" and would be significant [*see* 35-A M.R.S.A., Ch. 34-A, § 3451(10)].
- (1) 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; an estimated \$13 million in State income taxes over a 25-year period.
 - (2) 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 (see Section II of the notebook, Finding of Fact #5,B for additional comments from BPL).
 - (3) 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 \$1000 per MW, per year to the Town of Eustis/Stratton, in addition to the community benefit package associated with the Kibby Project, increasing the money being provided to the town annually from \$132,000 to \$177,000. Over a 20-year period, the \$33,000 annually would amount to \$660,000.
 - (4) The applicant did not include in their application an assessment of the affect of the KEP on local property taxes, but estimated the taxes to be paid to the State would be \$400,000 per year, or \$10 million over a 20-year period. How payment of those taxes to the State will affect the property taxes in the area of the project is not in the record.
- B. *Energy production.* The ruling by the Presiding Officer in the Twelfth Procedural Order is copied here, below:
- "In view of the Wind Energy Act's amendment to 12 M.R.S. § 685-B(4), namely that in accordance with 35-A M.R.S. § 3454 the Commission is to presume that expedited

wind energy developments provide the energy and emissions related benefits set forth in legislative findings of the Act, 35-A M.R.S. § 3402, issues related to the development's power production are not central to the Commission's decision."

Notebook Section III. Scenic resources assessment

- A. *Review criteria.* The Wind Energy Act provides that scenic impacts to viewpoints within 8 miles of the proposed project meeting the definition of 'scenic resources of state or national significance' (hereinafter "scenic resources") (*see* 35-A M.R.S., Ch. 34-A, § 3451(9)) are to be assessed for the review of a grid-scale wind energy development in accordance with the criteria list in 35-A M.R.S., Ch. 34-A, § 3452. The Act also provides: (1) that the Commission determine if a wind energy development would have an unreasonable adverse impact on these scenic resources; (2) that "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"; and (3) that "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.
- B. *Scenic resources.* The scenic resources within 8 miles of the KEP from which there would be a view of the project include three of the Chain of Ponds (Bag Pond, Long Pond, and Natanis Pond), the Arnold Trail, Arnold Pond, Crosby Pond, and Kibby Stream. Scenic resources from which no view of the KEP would occur include two of the Chain of Ponds (Round Pond and Lower Pond), the Natanis Pond Overlook along State Route 27, the Sarampus Falls Picnic Area, the North Branch of the Dead River⁵, and Spencer Stream.
- C. *Jim Palmer's report.* Jim Palmer, LURC's third party peer reviewer, evaluated the impacts to the affected scenic resources, assigning ratings of high, medium, or low, based on the criteria in the Wind Energy Act, as follows (*see* Section III, Finding of Fact #3; and Jim Palmer's full report on the enclosed CD)⁶:
- (1) The scenic impact to Long Pond and Bag Pond could be rated as "medium", but concluded that the visibility would be within the range anticipated by the Wind Energy Act. The distance to the turbines from the Chain of Ponds is approximately 3.5 miles.
 - (2) The scenic impact to Arnold Pond, Crosby Pond, Natanis Pond, and Kibby Stream could be rated as "low to medium". Any possible view from the North Branch of the Dead River would be rated as "low".

⁵ The applicant's visual expert determined that the canopy cover from this viewpoint would obscure any view of the project.

⁶ 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.

- (3) The scenic impact to the Arnold Trail could be rated as “low” because Mr. Palmer believes that the experience of scenic quality was not identified as a significant determinant on the historic site nomination forms.

- D. *BPL comments.* Although BPL acknowledged the scenic impacts that would occur due to the KEP, it did not see sufficient reason to reject the application. BPL offered the opinion that the impacts to the Chain of Ponds would not be unreasonably adverse. BPL also offered the opinion that the Chain of Ponds and the Arnold Trail should be treated as one scenic resource where the two coincide, but deferred to MHPC with regard to determining the extent of adversity. BPL opined that the withdrawal of the Kibby III rulemaking and scaling back of the KEP collectively resulted in the scenic and recreational impacts due to the KEP not being troublesome.
- E. *Parties’ comments.* The CP asserted that although the scenic impact due to the northern eight turbines (T-1 through T-8) would be reasonable, the addition of the southern three turbines (T-9 through T-11) would result in an unreasonably adverse scenic impact because they would be the closest turbines the Chain of Ponds and the Arnold Trail. The FBM expressed opposition to the entire project, asserting that the scenic impact of the KEP, including the cumulative impact due to the existing Kibby Project, would be unduly adverse. Although FBM also submitted testimony on the visibility of the proposed KEP from a number of viewpoints beyond 8 miles, those impacts are not addressed herein.
- F. Based on the record, staff recommends the Commission conclude that the visibility of the proposed KEP overall from all affected scenic resources would not be unreasonably adverse under the terms of the criteria set forth in the Wind Energy Act, 35-A M.R.S. Ch. 34-A, § 3452.
- (1) The proposed 11 turbines would be visible to some extent from 24% of the Chain of Ponds as compared to 31% for the original 15-turbine proposal, in particular Long Pond and Bag Pond, and the 4 turbines closest to the ponds have been removed.
 - (2) Both BPL and Jim Palmer reviewed the proposal with respect to the criteria in the Wind Energy Act, determining that the revised 11-turbine proposal would not be unreasonably adverse.
 - (3) The CP objected to the visual impact due to Turbines 9 through 11, now the closest to the Chain of Ponds, but found the impact due to Turbines 1 through 8 to be acceptable. The Wind Energy Act expressly states that being a highly visible feature of the landscape is not in itself sufficient for finding that a visual impact is unreasonably adverse. Given that the CP does not find Turbines 1 through 8 to be unreasonably adverse, the addition of 3 more turbines the viewshed (T9 - T11) does not cause the 11-turbine project to be unreasonably adverse because at a distance of 3 or more miles, the turbines are most likely to be viewed as a group.
 - (4) Although the Arnold Trail occupies the same geography as the Chain of Ponds within the viewshed of the project, Jim Palmer gave this resource a low rating for visual impact because scenic character was not a consideration in the nomination of the Trail to the National Historic Register. No evidence of high public use of this Trail exclusively because it is a historic resource was entered into the record.

- (5) The view of the 11-turbine project for the other affected scenic resources would not be unreasonably adverse because of distance (Arnold and Crosby Ponds), vegetative screening (Kibby Stream), or public use and accessibility (Kibby Stream).

Notebook Section IV. Subalpine Fir Forest and Bicknell's thrush

- A. The review criteria applicable to the consideration of the effects of the proposed KEP on both the Subalpine Fir Forest community and on the Bicknell's thrush habitat is the "undue adverse impact" criteria in 12 M.R.S. § 685-B(4). Staff recommends the Commission conclude that the impacts to both these resources as a result of the revised proposed KEP would not be unduly adverse, based on the following:
- B. *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 would not constitute an undue adverse impact. Furthermore, the difference between the sizes of the impact area asserted by the applicant compared to the area asserted by the CP is not significant when viewed as a percentage of area lost. Last, given the extent of known acreage in the state in combination with any possible additional acreage, 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, given its rating as an S-3 community⁷.
- (1) The existing 358-acre Subalpine Fir Forest on Sisk Mountain would be reduced in size to 313 contiguous acres of intact community with a "good" quality rating. The remaining community would be the 12th largest in the state, as opposed to its current status as 11th largest, with the next largest being 316 acres in size. The impacted area would be 45 acres if both direct and indirect impacts (50 ft buffer or "edge effect") were included. Based on the applicant's assessment, the percentage of the existing community to be impacted would be 87.4%. The CP's impact assessment used a 250 ft buffer area, resulting in 84.6% of the community being impacted. The difference between the two approaches is 2.8% of the community, or approximately 10 acres (*see* Section IV, Table 2).
- (2) MNAP acknowledged that the revised proposal would reduce the adverse impacts to the community, including the effect of fragmentation, leaving one contiguous block of intact Subalpine Fir Forest. 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* Section IV, Finding of Fact #6).
- (2) The CP and the FBM asserted that the impact to the Subalpine Fir Forest would be an undue adverse impact, both expressing concerns for impacts to sensitive resources in high mountain areas (*see* Section IV, Findings of Fact #8 and #10).
- C. *Bicknell's thrush.* Based on the record, staff recommends that the proposed alteration of Bicknell's thrush habitat for the 11-turbine project does not constitute an undue adverse impact. The direct alteration area has been reduced to 5 acres, and there is uncertainty as to how much "edge effect" (indirect) impact to this species would occur, with evidence

⁷ MNAP's rating system for natural plant communities ranges from S1 through S5, with S1 being endangered, and S-5 common and secure.

that the effect may be limited due to this species' habitat niche. The fragmentation of the habitat has been largely eliminated. Assuming that Bicknell's thrush can only breed in areas above 2,700 ft in elevation, the record shows that after the loss of 5 or 10 acres a large area of breeding habitat would still exist in the state, as well as elsewhere.

Although listed as one of many "Species of Special Concern", MDIFW has not deemed this species to be in immediate danger and as such has assigned it a rating in Maine of S-3. However, the post-construction monitoring and management plan recommended by MDIFW should be prepared.

- (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 four turbines would in turn eliminate the largest amount of fragmentation of this habitat. Including edge effect, the applicant assessed that the total impact 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* Section IV, Finding of Fact #8).
- (2) The record shows that there is evidence that Bicknell's thrush breeds in areas of disturbance as well as in areas below 2,700 ft in elevation. 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. Moreover, the total acre of undisputed habitat that has thus far been identified in Maine is 40,000 acres, with additional acreage up to as much as 90,000 acres possible. In addition, this species occurs in nearby Canadian provinces that abut the Maine border, with a substantial existing breeding population.
- (3) While every effort should be made to minimize the impacts to the habitat for this species, based on the above, the 5 acres of direct impact, coupled with the possible indirect impact area 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 which is protective of both the Bicknell's thrush habitat and the Subalpine Fir Forest of which it is a part (*see* Section IV, Findings of Fact #4 and #6).

Notebook Section V. Vernal pools, Roaring Brook mayfly, and spring salamander

- 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, with any area having the potential to be a vernal pool being noted. 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 ft, regardless of the pools not being jurisdictional under NRPA. 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 found are located along an existing well-used skidder trail, and were determined to be the result of frequent rutting along this track over an extended period of 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 are comparable to 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, staff recommends the Commission determine that there would be no 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*. Staff recommends that the Commission determine 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.

Notebook Section VI. Other issues raised by the Friends of the Boundary Mountains

- A. *Avian and bat impacts*. Staff recommends the Commission determine there is not likely to be an undue adverse impact to migrating birds or bats as a result of the revised 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. 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. MDIFW recommended that a post-construction avian monitoring plan for the KEP be developed in consultation with MDIFW (*see* Section IV, Subalpine Fir Forest and Bicknell's thrush for the conclusion specific to Bicknell's thrush).
- B. *Northern bog lemming*. Staff recommends that the Commission determine that there would be no undue adverse impact to the State threatened northern bog lemming as a result of the revised KEP. The record shows that the northern bog lemming was assumed to be possible in the identified habitat, but its presence was not verified. The revised

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 revised proposal from the nearest area of habitat is 1,700 ft. 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.

- C. *Protection and re-vegetation of high mountain areas.* Staff recommends that the Commission determine the provisions that would be put in place during construction of the proposed KEP 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 a sufficiently protective erosion and sedimentation control plan, and the project design includes means to handle subsurface seepage common in high elevation areas. For handling high elevation disturbed areas after construction, the applicant has coordinated with the State Soil Scientist, LURC staff, and MDIFW to find ways to treat these areas after construction that would be compatible with the adjacent undisturbed habitat. An evaluation of the phosphorus loading likely to result from the KEP was conducted, and 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 produce no on-going phosphorus carrying runoff.