



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

JOHN ELIAS BALDACCI
GOVERNOR

ELIZA TOWNSEND
COMMISSIONER

TO: Commission Members
FROM: Marcia Spencer Famous, Senior Planner
DATE: July 7, 2010
SUBJECT: Development Permit DP 4860; deliberation notebook

On December 23, 2009, the application for Development Permit DP 4680 submitted by TransCanada Maine Wind Development, Inc. for the Kibby Expansion Project (KEP) was accepted 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. Closing briefs were submitted by the Parties on June 8th, and summaries will be presented by each Party today.

The Commission voted to deliberate on the proposal for DP 4860 at its July 7, 2010 regular monthly business meeting, and to make a decision on the proposal at the August 4th meeting. The intent of the deliberative session is to discuss and reach conclusions on key issues, and advise staff on drafting the decision document.

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 XI. Each of the issue sections start with the review criteria in the first numbered finding, followed by findings summarizing the applicant's proposal and/or assessment, review comments and responses, and the Parties arguments. Key maps or exhibits are attached at the end of some sections, although most supporting materials are contained on the two enclosed CDs. A Table of Contents for the notebook and the enclosed CDs is included with this memo for reference.

Contents of the enclosed CDs (see Table of Contents for details)

The enclosed CDs are organized chronologically. CD #1 is a copy of the CD sent to you prior to the May 11th - 12th public hearing, containing: the application, agency review comments and applicant responses, additional materials submitted by the applicant in response to agency comments, reports by LURC's third party sound and scenic reviewers, the pre-filed testimony, and Procedural Orders #1 through #5.

CD #2 contains the materials submitted by the Parties after the hearing (post-hearing written comments, rebuttal, and closing briefs), the Sixth and Seventh Procedural Orders, and submittals by State agencies. CD #2 also contains the hearing transcript, and all letters or testimony submitted by the general public (in chronological order, but letters from legislators are broken out separately for your convenience).

The following questions may assist the Commission in its deliberation, and is intended to serve as guidance. The Commission may also discuss any other issues, either among Commissioners or with staff, at the deliberation. References below 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>

Section II. Tangible benefits

1. Which of the benefits cited by the applicant meet the definition of a “tangible benefit” (*see* 35-A M.R.S., Ch 34-A, § 3451(10))?
2. Would the tangible benefits to be provided by this project be significant? Do impacts on real estate values and TIFs affect if the tangible benefits will be significant?
3. Does the Wind Energy Act, with respect to whether the project will provide significant tangible benefits, also require the Commission to determine if the development may cause negative impacts (*e.g.*, economic or scenic), such that mitigation can be required?

Section III. Power production and transmission congestion

1. 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, are issues related to the development’s power production and impact to transmission congestion central to the Commission’s decision-making process?

Sections IV and V. Scenic assessment and historic resources

1. Which “scenic resources of state or national significance” (as defined in 35-A M.R.S., Ch. 34-A, § 3451(9)) will be adversely affected by the proposed KEP, and to what extent?
2. Based upon the scenic evaluation criteria set forth in the Wind Energy Act (*see* 35-A M.R.S. § 3452(3)), would the proposed KEP have an unreasonable adverse effect on the scenic character or existing uses related to scenic character of the “scenic resources of state or national significance” *see* 35-A M.R.S. § 3452(1)?
3. Do the Wind Energy Act’s standards for determining “the effect [of a grid-scale wind energy development] on scenic character and related existing uses” (*see* 35-A M.R.S., Ch. 34-A, § 3452) provide opportunity for mitigation of scenic impacts?
4. Because the effect on the historic Arnold Trail is related to scenic character, should this impact be considered under the Wind Energy Act’s scenic character standard as an existing use related to scenic character (*see* 35-A M.R.S., Ch. 34-A, § 3452(1)), or under

LURC's Chapter 10 standards (*see* Section 10.25,E,2(b)) and 12 M.R.S., § 685-B(4), the so-called “harmonious fit and undue adverse impact standard”?

5. Should the Commission be informed by the Army Corps of Engineers/Maine Historic Preservation Commission on-going process considering the effect on the Arnold Trail?

Section VI. Vernal pools and wetlands

1. Because LURC has not yet adopted vernal pool rules similar to the Maine Department of Environmental Protection's (MDEP) under the Natural Resources Protection Act (NRPA), to what extent should LURC be informed by those rules?
2. Because the Maine Department of Inland Fisheries and Wildlife (MDIFW) bases its review on the MDEP/NRPA rules, to what extent should LURC be guided by MDIFW's review comments?

Section VII. Subalpine Fir Forest and Bicknell's thrush

1. Because the applicable review criteria for consideration of the effects of the proposed KEP on both the so-called “Subalpine Fir Forest” community and on the Bicknell’s thrush is the “undue adverse impact standard in 12 M.R.S., § 685-B(4), based on the testimony of the applicant and the opposing Parties, would the proposed development constitute an “undue adverse impact” to either of these natural resources? For example:
 - A. Where the Subalpine Fir Forest in the project area represents a portion of the larger natural community state-wide, does the proposed impact constitute an undue adverse impact to this natural resource?
 - B. Would the development directly and/or indirectly impact the Bicknell’s thrush species to the extent that the impact would constitute an undue adverse impact to this natural resource?

Section VIII. Other wildlife issues

1. Is the applicant’s pre-construction and proposed post-construction avian and bat monitoring sufficient, and is the applicant's risk assessment reasonable regarding the potential for impacts?
2. Regarding the state listed species possibly occurring in the project area (northern bog lemming, Roaring Brook mayfly, spring salamander, various bat species), are the surveys conducted, risk assessments, and mitigating factors identified or proposed adequately protective?
3. Regarding the federally listed species addressed by the applicant’s surveys (golden and bald eagle, Canada lynx), should LURC be informed by the on-going Army Corps of Engineers review process pursuant to the federal Endangered Species Act?

4. Should the concern raised by FBM about the possible effect of noise on wildlife be considered, given the lack of a noise standard in MDEP's rules for wildlife? If so, what are the relevant review criteria?

Section IX. Soil suitability

1. In view of the erosion and storm water control methods proposed, including but not limited to the tool box approach, will the wind energy development satisfy the applicable LURC rules, chapter 10 §§ 25(K), (L), (M), and not cause an undue adverse impact on natural resources?

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DELIBERATION NOTEBOOK

July 7, 2010

Development Permit DP 4860

TransCanada Maine Wind Development, Inc.

I. PROJECT DESCRIPTION

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- Site location map (also on CD #2)
- Site plan showing revised layout with turbine #11 relocated (also on CD #2)

CD #2

- Revised engineered plans, submitted May 24, 2010
- Expedited wind energy development application checklist and guidance

II. TANGIBLE BENEFITS [*Wind Energy Act exhibit*]

In addition to the tangible benefits proposed, this section also includes discussion of effects of wind energy development on real estate values; and Tax Incremental Financing (TIF).

CD #2

- Guidance memo on tangible benefits prepared by MDEP and various agencies (*see* Section I, application checklist, pp. 24-26)
- Reference materials on real estate values and TIFs
 - TransCanada's "Summary of Studies" (on real estate values); included with its post-hearing comments, dated May 24, 2010 (*see* General Section)
 - Friends of the Boundary Mountains (FBM) post-hearing comments on real estate values and studies, dated May 24, 2010
 - FBM post-hearing comments on TIFs (Fecteau), dated May 31, 2010
 - Letter and data sheets submitted by Karen Pease on May 19, 2010; follow up on her May 12th oral testimony on impacts to real estate values
 - Letter submitted by Andre Blais, dated May 20, 2010
 - Letter submitted by Larry Warren, dated May 24, 2010; follow up on his May 12th oral testimony on TIF's
 - Letter submitted by the Franklin County Commissioners on the Kibby Project TIF, dated May 21, 2010
 - Boralex letter, dated May 24th (public comment) (*see* Section III)
 - TransCanada rebuttal to letter submitted by Boralex (*see* section III)

III. POWER PRODUCTION AND TRANSMISSION CONGESTION

At end of section

- Boralex letter, dated May 24th (also on CD #2)
- TransCanada response letter submitted by Boralex (also on CD #2)

CD #2 – Procedural Order from Zoning Petition ZP 702

IV. SCENIC ASSESSMENT [*Wind Energy Act exhibit*]

At end of section

- Map showing scenic impact areas for Kibby Expansion Project (KEP) (also on CD#2)
- Map showing cumulative impact for KEP and Kibby Project (also on CD #2)
- Visual simulations from application and pre-filed testimony (not on CD #2)

CD #1

- Jim Palmer (LURC third Party peer reviewer) report, submitted April 16, 2010
- Bureau of Parks and Lands (BPL) review comments
- TransCanada response to BPL review comments

CD #2

- Map showing scenic impact areas for Kibby Expansion Project (KEP)
- Map showing cumulative impact for KEP and Kibby Project
- Excerpt from “*Report of the Governor’s Task Force on Wind Power Development*” on the approach to scenic impacts, (*see* Section I, application checklist, p.17-18)

V. HISTORIC RESOURCES

At end of section - Maps showing the route of the Arnold Trail

CD #2

- Attachment to Consolidated Parties’ (CP) pre-filed testimony containing section of the BPL Flagstaff Region Management Plan
- Flagstaff Region Management Plan, included with TransCanada written comments (*see* General Section of this CD)
- Maine Historic Preservation Commission (MHPC) letters, February 2nd and May 6th
- Army Corps of Engineers email (5.28.10) and MHPC email (6.1.10)
- Letters from the Arnold Expedition Historical Society, dated January 8 and June 1, 2010
- Email from Arnold Trail Snowmobile Club

VI. VERNAL POOLS AND WETLANDS

At end of section

- Map showing vernal pool locations (also on CD #2)
- Maps showing wetlands in project area
- Maine Department of Environmental Protection (MDEP) rules - 06-096, Chapter 335. Significant Wildlife Habitat, *see* Section 9

CD #2

- Map showing vernal pool locations
- Maine Department of Inland Fisheries and Wildlife (MDIFW) Maine State Vernal Pool Assessment Form
- Sixth Procedural Order (*see* General Section)

- MDIFW response to Sixth Procedural Order and rebuttal to FBM
- FBM rebuttal to MDIFW response to Sixth Procedural Order
- Commission's Land Use Districts and Standards, Section 10.25.P, wetland alterations

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

At end of section - Maps showing extent of Subalpine Fir Forest natural community and Bicknell's thrush habitat (also on CD #2)

CD #1

- Maine Natural Areas Program (MNAP) review comments
- TransCanada response to MNAP review comments
- MDIFW review comments
- TransCanada response to MDIFW review comments

CD #2

- Maps showing extent of Subalpine Fir Forest natural community and Bicknell's thrush habitat
- BRI 2009 Bicknell's thrush/Breeding Bird survey report

VIII. OTHER WILDLIFE ISSUES

- A. Avian and bat surveys [*Wind Energy Act exhibit*]
- B. State and federally listed species – Golden and bald eagle, Canada lynx, Northern bog lemming, Roaring Brook mayfly and spring salamander
- C. Effects of noise on wildlife

CD #2 [*Note: All CD files for this section are contained in other sections, as noted. Therefore, CD #2 does not include a separate folder for Section VIII.*]

- BRI 2009 Bicknell's thrush/Breeding Bird survey report (*see* Section VII)
- MDEP/MDIFW guidance memo on avian and bat monitoring (*see* Section I, application checklist, pp 20-23)
- MDIFW response to Sixth Procedural Order (May 24th), and rebuttal to FBM comments (June 1) (*see* Section VI)
- FBM response to Sixth Procedural Order, and May 30th rebuttal to MDIFW May 24th comments (*see* Section VI)

IX. SOIL SUITABILITY

Soils mapping, erosion and storm water control, phosphorus export, acidic rock testing and management plan

CD #1

- State Soil Scientist (SSS) review comments
- Applicant response to SSS' review comments

CD #2

- Revised engineered plans, submitted May 24, 2010 (*see* Section I)
- Revised acid rock management plan, submitted May 24, 2010
- SSS' response to Sixth Procedural Order, and response to FBM
- FBM response to SSS' oral testimony at May 12th hearing
- FBM rebuttal to SSS' response to Sixth Procedural Order
- SSS' guidance on soils mapping for wind energy development (*see* Section I, application checklist, pp 27-28)

X. OTHER EXHIBITS REQUIRED BY THE WIND ENERGY ACT

Assessment of sound impacts in accordance with MDEP's rules, assessment of shadow flicker, public safety-related setbacks, decommissioning

At end of subsection

- Sound assessment maps from application (also on CD #2)
- Shadow flicker assessment map from application (also on CD #2)

CD #1 - Warren Brown's (LURC third party peer reviewer) report on sound assessment

CD #2

- Sound assessment maps from application
- Shadow flicker assessment map from application
- MDEP's Control of Noise rules, 06-096, Chapter 375.10
- MDEP guidance on noise and shadow flicker (pp 18-20), public safety related setbacks (p 23), decommissioning (pp 26-27) (*see* Section I, application checklist)

XI. PUBLIC COMMENTS

CD #2 - Scanned letters, emails, and written materials submitted at the hearing; with legislators' letters broken out separately

GENERAL: MISCELLANEOUS MATERIALS ON CD #2 NOT LISTED IN THE SECTIONS ABOVE - Post-hearing and supporting materials

1. Transcript from May 11 to 12, 2010 public hearing
2. Sixth Procedural Order (relevant to Sections VI, VIII and IX), issued May 19, 2010
3. Seventh Procedural Order and Amendment, issued June 11th and June 14th, respectively
4. TransCanada post-hearing written comments
 - Terry Bennett, Jean Vissering, and Dana Valleau
 - List of references used by Peter Vickery in his pre-filed testimony
 - Summary of studies on residential real estate values
 - PL 2007 Ch 661 and PL 2009 Ch. 642

- Governor's Task Force Report, February 2008
- Vermont Center for Ecostudies letter to TransCanada re Bicknell's thrush
- Flagstaff Region Management Plan, BPL, June 12, 2007
- PUC comments on TransCanada petition for rulemaking, April 16, 2010

5. Consolidated Parties rebuttal to post-hearing written comments

- Comments by Maine Audubon Society (MAS), Appalachian Mountain Club (AMC), and Natural Resources Council of Maine (NRCM)
- Attachments - Studies on New England forests and climate change, high elevation vegetation in New Hampshire, and climate change

6. Closing Briefs

TransCanada
Consolidated Parties (MAS, AMC, NRCM)
Friends of Boundary Mountains

MATERIALS ON CD #1 - Pre-hearing materials: CD #1 is a copy of the CD that was supplied to you in advance of the May 11-12, 2010 public hearing. This CD contains the following materials submitted the file prior to the hearing:

1. Application - accepted for processing December 23, 2009
2. Agency review comments and communications (State Soil Scientist, MDIFW, MNAP, BPL, PUC, SPO/DOL, MHPC)
3. Applicant's response to agency review comments (MDIFW, MNAP, State Soil Scientist, BPL)
4. Pre-filed testimony (TransCanada, Consolidated Parties, FBM)
5. LURC third party reviewers' scenic and sound reports
6. Procedural Orders #1 through #5



I. PROJECT DESCRIPTION

Tabbed at end of section

Site plans showing project location and revised layout with turbine #11 relocated

CD #2

- Revised engineered plans, submitted May 24, 2010
- Expedited wind energy development application checklist; and guidance prepared by MDEP and others

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) is 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 building/construction control center, and certain lay-down areas constructed for the Kibby Wind Project.

The proposed KEP would consist of fifteen 3 MW wind turbines each within a cleared turbine pad area, 3.6 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, 8.9 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. The turbines towers would be 263 ft tall, and total 410 ft tall when the upward turned blade is included. The collector line would be placed adjacent to the new ridgeline road and existing roads to the extent possible, to minimize the clearing needed for the power line corridor. During construction, several new lay-down and storage areas would be used. 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 re-vegetate. The total new cleared area during construction would be 140.2 acres, reduced to 54.1 acres after construction.

The proposed KEP would be located at elevations ranging from 1,720 ft mean sea level (msl) near the new substation to 3,420 ft msl near Turbine 15. All 15 turbines would be located above 2,700 ft msl. For comparison, the elevation at the existing Kibby O&M building located at the intersection of Gold Brook Road and Route 27 is 1,400 ft msl.

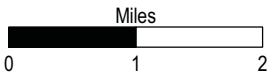
The applicant submitted with its application the required exhibits in accordance with the Wind Energy Act (PL 2007, Ch. 661), as well as the other materials required by LURC’s application checklist for wind energy development. Many of these exhibits, but not all, are discussed in the sections of this notebook. The Table of Contents details the layout of the notebook and the enclosed CDs. LURC’s “Wind Power Permitting Checklist and Guidance” is included on CD #2 for reference. The revised engineered plans, submitted May 24, 2010, are also included on CD #2 for reference.





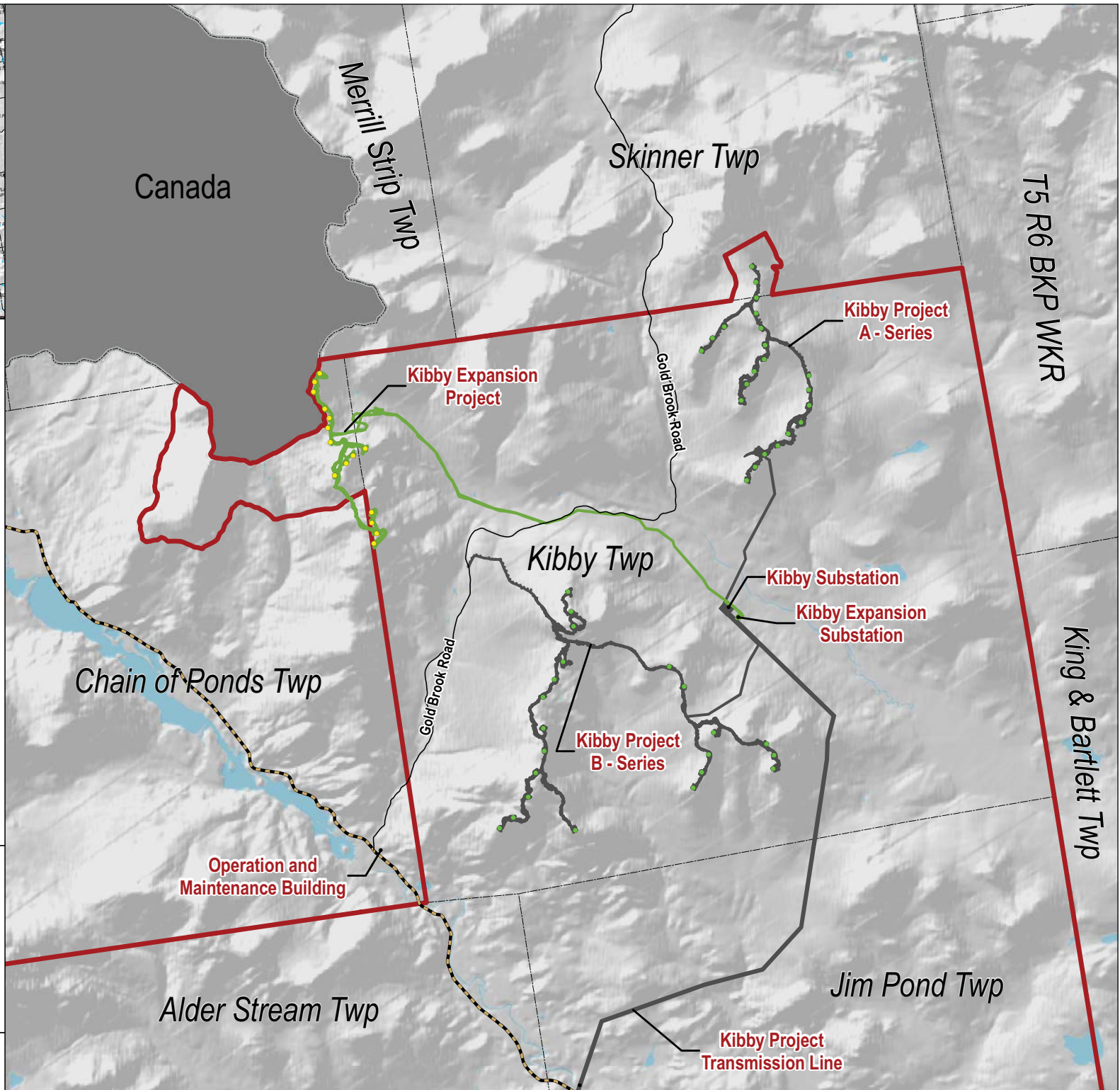
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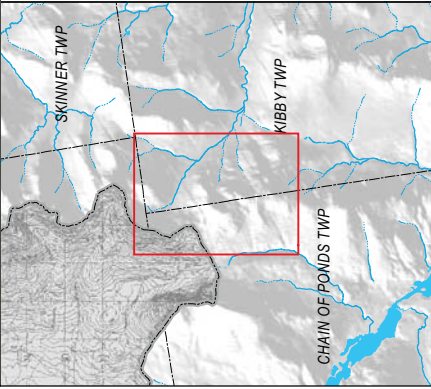
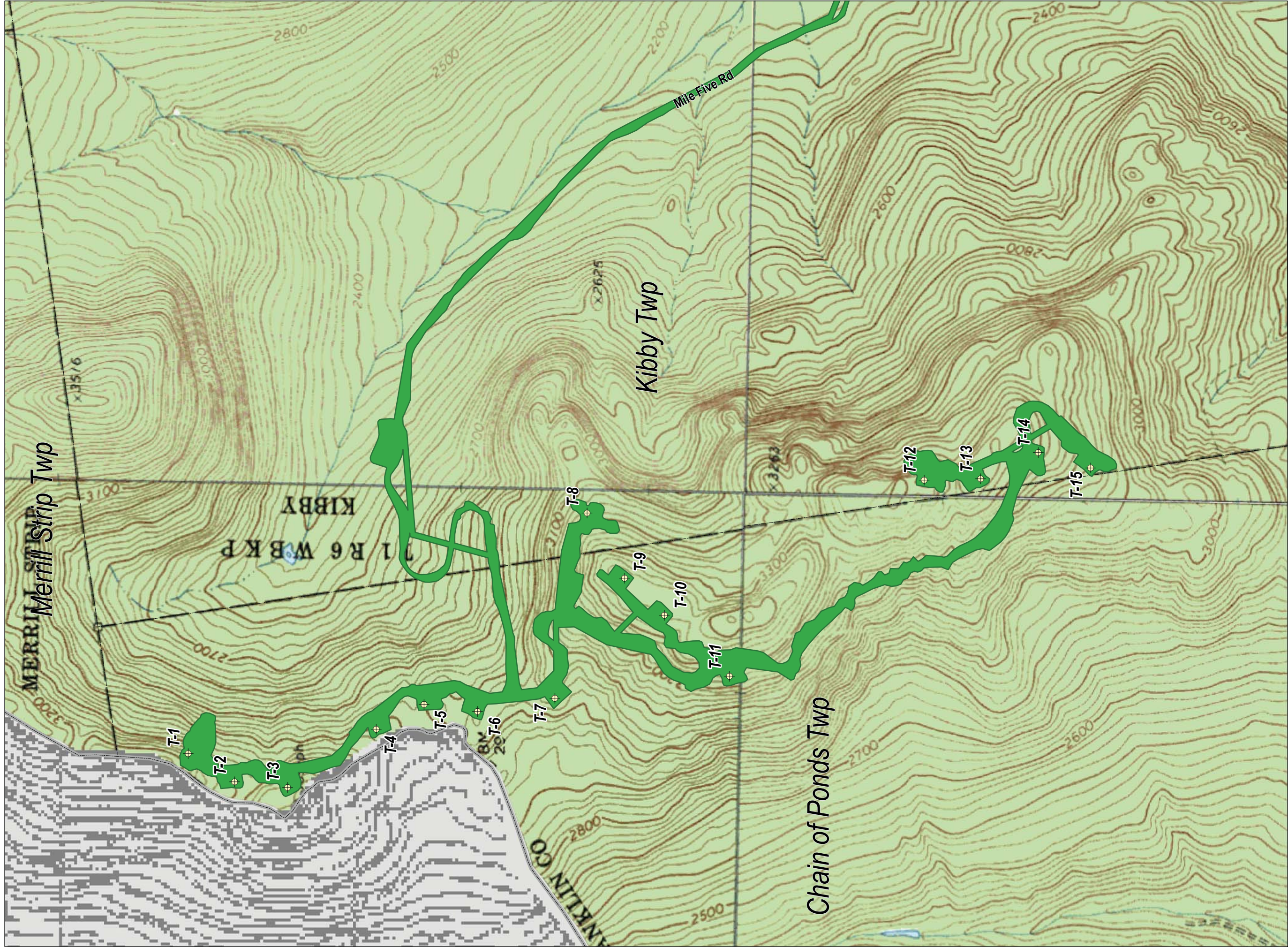
- Kibby Expansion Project Footprint
- Kibby Expansion Turbine Layout
- Kibby Wind Power Project Footprint
- Kibby Turbine Layout
- Expedited Wind Energy Project Permitting Area





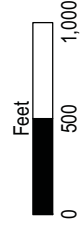
Sources: Maine OGIS, USGS, LURC, TRC

**Kibby Expansion
Wind Power Project
-
EXHIBIT D
Project Overview**





-  Kibby Expansion Turbine Layout
-  Kibby Expansion Project Footprint



Kibby Expansion
Wind Power Project

Project Layout



14 Gabriel Drive
Augusta, ME 04330

Created: 4/20/2010

Sources: Maine OGIS, USGS, TRC

II. TANGIBLE BENEFITS [*Wind Energy Act exhibit*]

CD #2

- Guidance memo on tangible benefits prepared by MDEP and various agencies (*see* Section I, application checklist, pp. 24-26)
- Reference materials
 - TransCanada's "Summary of Studies" (on real estate values); included with its post-hearing comments, dated May 24, 2010
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 - Letter submitted by the Franklin County Commissioners on the Kibby Project TIF, dated May 21, 2010

1. 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 M.R.S., 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.

D. *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)

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

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

2. **Tangible benefits proposal in the application and pre-filed testimony.** (CD #1) The applicant noted the following as tangible benefits associated with the proposed KEP:

A. *Application.* The proposed KEP would generate up to 45 MW of clean, renewable energy, resulting in (a) avoidance of air pollution and emissions that would otherwise be

produced by a fossil fuel source, (b) no fuel wastes to dispose of, and (c) contribution to Maine's goals of greenhouse gas reduction, increased diversification of energy sources, and reduced dependence on foreign fossil fuel-based energy production. The proposed KEP would generate up to 120 million kilowatt hours per year, equivalent to the power used by 17,000 Maine homes per year.

(1) *Economic benefits.* The proposed KEP would provide significant economic benefits for Maine and the region. The economic benefits of the proposed KEP are expected to be similar to the actual benefits resulting from the Kibby Wind Power Project (Kibby Project), which over the past 20 months resulted in \$109 million spent in Maine (of which \$9 million was spent in Franklin and Somerset Counties). During peak construction last summer, 315 workers were employed, with an average annual employment of 176 workers, of which 80% were from Maine. The actual construction period data from the Kibby Project are consistent with predictions by State economist Charles Colgan during review of the Kibby Project (reference Zoning Petition ZP 709).

- (a) Direct and indirect employment during construction consists of temporary construction industry jobs, and also indirectly supports businesses in the local area. Maine companies such as construction or environmental companies were used for the Kibby Project, and are expected to be used for the KEP.
- (b) During operation, 9 people from Maine (most from Franklin County) were hired for the Kibby Project, with several more to be hired as the B Series comes on-line in fall of 2010. For the proposed KEP, 1 additional permanent employee would be needed.
- (c) 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. The applicant noted, however, that wind energy tends to stabilize prices, mitigating other destabilizing forces.
- (d) Several real property taxes and local benefits were noted:
 - The community benefits package to Eustis/Stratton would be increased from \$132,000 to \$177,000 for the additional 45 MW (\$1,000 per MW).
 - 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 \$500,000 per year in property taxes for the KEP.
 - There would be additional State income tax revenues paid over the life of the project, estimated to be at least \$25 million over a 25-year period.
 - The applicant estimates that over a 20-year period it will pay more than \$40 million in taxes.

B. *Additional tangible benefits noted in the applicant's pre-filed testimony.* In its pre-filed testimony, submitted on April 21, 2010, the applicant proposed several additional tangible benefits. Although not applicable to this proposal, Maine's legislature recently passed LD 1504, requiring a wind energy development project to establish a community benefits package of no less than \$4,000 per turbine, consisting of payments to the

- community as well as land or natural resource conservation (*see* (PL 2009, Ch. 642, Section A-7). Consistent with the new law, the applicant has proposed to contribute:
- (1) \$150,000 for green job education and training in Franklin County through the Maine Department of Labor;
 - (2) \$150,000 to the High Peaks Alliance for land conservation and trail corridor acquisition;
 - (3) \$100,000 to the Arnold Expedition Historical Society; and
 - (4) \$100,000 to the Bicknell's Thrush Habitat Protection Fund, which was established in 2007 to conserve this species' wintering grounds in the Caribbean.

3. Agency review comments. (CD #1)

A. *State Planning Office/Maine Department of Labor (SPO/DOL)*. SPO and DOL reviewed the application, and provided the following comments:

- (1) On February 26, 2010, SPO and DOL commented jointly on tangible benefits, as follows:
 - (a) "The proposed development will undoubtedly have economic benefits to the State of Maine."
 - (b) "Permitting for other types of development in Maine does not include any requirement that a development produce significant tangible benefits." "By incorporating this requirement for wind power development, applicants are asked to provide benefits above and beyond those that would naturally result from their project."
 - (c) "Contributing to property tax revenues and reducing the tax burden of residents is a benefit to the community," but this "benefit...flows naturally from the scale of the development" and "is not above and beyond the scope of what residents could naturally expect to enjoy."
 - (d) "The [applicant's] proposed increase to the 'community benefits package' (an additional \$45,000 annual payment distributed to the communities of Eustis and Stratton)" is "a unique benefit that would not naturally result from a wind power development. It is unclear whether that agreement has been finalized."
 - (e) "The magnitude of tangible benefits resulting from a project should be proportionate to the scale of the proposed development." "Tangible benefits were meant to be perpetual in nature, and not subject to changes in ownership, operation, or market conditions."
 - (f) The application "would be stronger if it ensured additional tangible benefits, to a broader population of Maine residents, with stronger guarantees, and for a longer period of time. For example, the DOL continues to advocate for a portion of dedicated community benefits (*e.g.*, 10% of \$ 45,000) to be applied to a statewide green jobs scholarship fund to ensure the future workforce for Maine's evolving energy sector."
- (2) On April 21, 2010, DOL further commented that the applicant had approached them "to make a contribution of \$150,000 to the DOL in support of training Maine workers in the new green and clean job skills". The contribution was triggered by DOL's review comments submitted jointly with the SPO (summarized in Section (1)).

B. *Maine Public Utilities Commission (PUC)*. PUC reviewed the application and on February 25, 2010 commented on tangible benefit issues involving the electricity market and pricing, as summarized below:

- (1) The applicant makes statements regarding benefits to the electricity market and pricing, stating that the project will increase diversification and reduce dependence on fossil fuel-based electricity generation, will help reduce the level and volatility of electricity prices in the region, and will assist Maine in reaching its renewable energy portfolio standards. However, the Wind Energy Act provides that these benefits are assumed and do not constitute tangible benefits for the purpose of satisfying the tangible benefits requirement.
- (2) PUC suggested “sale of a significant amount of the output to customers (particularly commercial and industrial) within the area or to the utility under PUC’s long-term contracting authority at fixed process projected to below market prices or at a stated discount off of market prices.”
- (3) PUC also noted that the Wind Energy Act does not require a wind energy project to provide tangible benefits from each category listed in the definition [*see* 35-A M.R.S., Ch 34-A, section 3451(10)] to meet the overall requirement, and that the Commission must determine if the benefits package offered would constitute a “significant tangible benefit”.

C. *Maine Bureau of Parks and Land (BPL)*. BPL reviewed the application and offered the following comments on tangible benefits on February 26, 2010, summarized below:

- (1) BPL noted that no tangible benefits related to recreation or land conservation were offered by the applicant, and opined that such conservation should have been included.
- (2) BPL stated that its understanding of the legislative and regulatory intent of the tangible benefits provision is to mitigate the negative effects of the turbines on the host community. As such, benefits to Eustis/Stratton instead of the Chain of Ponds area are not sufficient.
- (3) BPL asserted that one-time cash settlements to NGOs for programmatic needs or simple brochures do not suffice unless accompanied by credible demonstration and affirmative reporting requirements of measurable results.
- (4) BPL contended that “last minute conservation packages negotiated with NGOs or potential opponents should be reviewed suspiciously. LURC should establish clear regulatory standards, precedence, or expectations.” “The Kibby Project escrow payment for alpine conservation was not for mitigation of scenic impacts.” “Mitigation requirements as compared to tangible benefits should be clearly delineated and accounted for.”

4. **Applicant response to BPL or SPO/DOL review comments.** (CD #1) The applicant did not directly respond to either BPL or SPO/DOL review comments on tangible benefits, but instead submitted additions to its proposal for the proposed KEP in its pre-filed testimony (*see* this Section, Findings of Fact #2,B(2); #3, and #5).

5. **Applicant testimony and post-hearing comments.**

- A. *Copied from closing brief. (CD #2)* “[The applicant] will provide extensive tangible benefits in connection with the Kibby Expansion Project, which include:
- (1) Displacement of air pollution associated with fossil-fuel based generation and contribution towards the State’s greenhouse gas reduction objectives;
 - (2) Energy benefits related to increased diversification of energy sources; direct and indirect;
 - (3) Direct and indirect economic benefits related to construction;
 - (4) Creation of at least one additional permanent employment position;
 - (5) Property tax contributions in excess of \$500,000 per year of operation;
 - (6) State income taxes on the income generated from operation of the project;
 - (7) A host community benefit payment of \$45,000 per year or \$900,000 over a 20-year period;
 - (8) \$150,000 contribution to the Department of Labor to support green jobs education and training in Franklin County;
 - (9) \$150,000 contribution to the High Peaks Alliance for land conservation and trail corridor acquisition in Franklin County;
 - (10) \$100,000 contribution to the Arnold Expedition Historical Society for use in land protection surrounding the Arnold Trail north of the Chain of Ponds or other projects that will enhance the mission of the Society to interpret and share with the public the history of the Arnold Trail; and
 - (11) \$100,000 contribution to the Bicknell’s Thrush Habitat Protection Fund for conservation of wintering habitat in the Caribbean. (Pre-Filed Direct Testimony of Bennett et al. at 10-15).
- B. *Copied from closing brief. (CD #2)* “[The applicant], although not required to do so, will meet the requirements of a recent amendment to the Wind Energy Act requiring applicants to establish a community benefits package of no less than \$4,000 per turbine per year averaged over a 20-year period. Specifically, through an annual payment of \$45,000 per year to the Town of Eustis, a one-time contribution of \$150,000 for renewable jobs in Franklin County and \$150,000 for trail corridor acquisition in Franklin County, totaling \$1,200,000 over a 20- period, TransCanada will exceed this requirement. (Pre-Filed Direct Testimony of Bennett et al. at 14 and P.L. 2009, Ch. 642).”
- C. *Response to Sixth Procedural Order, on real estate values. (CD #2)* With its post-hearing comments submitted on May 24, 2010, the applicant included the titles and summaries of five papers that address impacts of wind energy development on real estate values. The applicant noted that the results of the studies, which were done at a variety of locations in the U.S., indicate that any adverse impacts on real estate values are inconsistent, and that the evidence does not support that there is necessarily an adverse effect.
- D. *Terry Bennett testimony on Tax Incremental Financing (TIF).* The applicant testified at the May 12th hearing that it does not currently have plans to pursue a TIF for the KEP. However, several statements were contained in its pre-filed testimony regarding the projected taxes expected to be paid for the KEP (*see* Section A, above).

6. Parties' testimony and post-hearing comments, as summarized from their closing briefs.
(CD #2)

A. *Consolidated Parties (CP)*. Although the CP did not submit comments specifically on the subject of tangible benefits, NRCM included in its pre-filed testimony a discussion of mitigation for impacts to "scenic resources of state or national significance" (defined in 35-A, Ch 34-A, § 3541(9)). This testimony is summarized in Section IV, "Scenic Assessment", Finding of Fact #7,A.

B. *Friends of the Boundary Mountains (FBM)*. The following are excerpted or summarized from FBM's closing brief (CD #2):

- (1) "[The applicant] has failed to demonstrate that the project will result in 'tangible benefits' because [it] misunderstand the tangible benefits test." FBM cited 12 M.R.S.A. § 685-B,4-B (*see* Finding of Fact #1,D of this Section) in support of its statement.
- (2) Tangible benefits must be "attributable to the construction, operation and maintenance" of the expedited wind project, not the applicant, and must actually benefit the community. The Tangible benefits test cannot be satisfied by cash payments to stakeholders in the hope of lessening opposition to the project. For example, the \$100,000 payment by TransCanada to the Arnold Expedition Historical Society, or the purchase of solar panels for the private owners of Natanis Campgrounds do not qualify as "tangible benefits".
- (3) The Commission must consider the public costs of the project as well as its benefits. The applicant will receive "public subsidies from taxpayers at the federal, state and, probably, the county level. If these public costs exceed the public benefits provided by the project, the public receives a net loss *not* a net benefit from the project." "The Legislative goal" ... "is for expedited wind projects to benefit the public. The Commission should respect this legislative intent by requiring TransCanada to submit a full accounting of all the public costs of the project, including the stimulus and tax breaks it will receive, as well as the projected benefits 'attributable to the construction, operation and maintenance' of the project."
- (4) TransCanada seems unwilling to discount its tangible benefits analysis by the impacts the project is going to have on Canada. At the May 12, 2010 public hearing, the applicant testified, "We've looked across the border of what might be present there. There is nothing that would raise any issues." (transcript, p. 97)

The testimony of André Blais, Canadian citizen (*see* letter, CD #2), discusses several significant adverse impacts on Canadian resources entailed in the proposed Kibby expansion. Mr. Blais points to the impact of the turbines on the scenic landscape and panoramas of the township across the border.

James Palmer, LURC's Scenic Quality Consultant, points out that a limitation of his assessment is that "Scenic resources in Canada are not inventoried or otherwise considered. It might not only be a "good neighbor policy" to inventory and consider the impacts on Canada but also a consideration of international law under the North American Agreement on Environmental Cooperation (NAAEC). Nothing in the statute or regulations that allows it to ignore the impact on adjacent Canadian land,

impacts that may considerably diminish the tangible benefits from this project when properly considered.

- (5) “The residents of Chain of Ponds must be considered when calculating whether this project will provide a net value of real tangible benefits. As testimony presented by Dr. William Baker”...“illustrates, the draw of unspoiled Chain of Ponds for seasonal residents and tourist alike will be lost if the Kibby expansion is allowed.” “On May 12th, Wendy Glenn, seasonal resident in Chain of Ponds Township”, asserted that “Chain of Ponds Township would be the host community of the proposed [KEP] and questions the *lack of tangible benefits* for the host community”. “As a long-time real estate agent in the area, Ms. Glenn observes that windmills will decrease the value of property.” “Karen Pease, of Lexington Township”...”testified on May 11th before the Commission and pointed to the very early results of a survey of the impressions of real estate buyers she is coordinating that indicated buyers are leery of buying property in areas where industrial wind is being considered for the mountaintops.” (see letter, CD #2)

“Studies and data concerning the impact of wind energy projects on real estate values that were submitted into the record of DP 4860 by FBM support the contentions of our local real estate professionals. These include the AGO-Wind-Turbine-Impact-Study by Appraisal Group One, 9/9/2009; Impact of Wind Turbines on Market Value of Texas Rural Land by Gardner Appraisal Group Inc., 2/2009; and Living with the impact of Windmills by Chris Luxemburger, Sutton Group – Professional Realty Inc.” (see FBM post-hearing comments, May 24, 2010, CD #2)

- C. *FBM post hearing submittal responding to Terry Bennett testimony on TIFs, submitted May 31, 2010.* (CD #2) On May 31st, Richard Fecteau representing FBM submitted comments regarding TransCanada and TIFs, responding to Terry Bennett’s pre-filed testimony on the estimated taxes to be paid for the KEP. Mr. Fecteau, during the public session on May 12th, presented the same oral testimony. Mr. Fecteau conjectured that the applicant applied for a TIF for the Kibby Project because it had failed to properly estimate the time involved with permitting, and that certified accounting of the costs of the Kibby development should be shared publicly. Mr. Fecteau asserted that the applicant should, but did not support its claim that the Kibby Project mutually benefits both the applicant and Franklin County with hard data. Mr. Fecteau also conjectured that the applicant’s only interest is its own profit.
- D. *Larry Warren letter discussing the Kibby Project TIF, submitted on May 24, 2010.* At the May 12th hearing, Larry Warren, as a member of the public, presented oral testimony on TIFs (CD #2). After the May 12th hearing, Mr. Warren submitted in writing a letter containing the information he discussed in his oral testimony on May 12th. In that letter he stated: “TransCanada has taken a responsible role in the absence of a State policy on tangible benefits. Their contributions under the Kibby project were in excess of \$3.1 million. Their proposed contributions under the Sisk project are \$1.4 million. Their application for a TIF in Franklin County resulted in a \$4 million benefit package to Franklin County that could have been greater had the County opted to capture more of the project under the TIF. TransCanada locked in to an 8 mill rate for twenty years when the impact of their investment in the unorganized territories would have significantly

reduced the mill rate and their net long term tax payments.” Mr. Warren’s letter also contains information on TIFs in Maine in general.

- E. On May 21, 2010, the Franklin County Commissioners submitted a letter supporting the proposed KEP, and discussing the economic benefits of the Kibby Project and the development of that TIF agreement, including accounting from its May 2010 report. (CD #2)



III. POWER PRODUCTION AND TRANSMISSION CONGESTION

At end of section

- Letter from Boralex, dated May 24, 2010
- Letter from TransCanada responding to Boralex, dated June 1, 2010

CD #2 - Procedural Order from the Zoning Petition ZP 702 proceedings

1. Review criteria

- A. *12 MRSA, 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.”
- B. *PL 2007, Ch. 661 – 35-A MRSA §3402, sub-§1.*
- (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.”
- C. *PL 2007, Ch. 661 – 35-A MRSA §3404.* Determination of public policy; state wind energy generation goals.
- (1) *Encouragement of wind energy-related development.* It is the policy of the State that, in furtherance of the goals established in subsection 2, its political subdivisions, agencies and public officials take every reasonable action to encourage the attraction of appropriately sited development related to wind energy consistent with all state environmental standards; the permitting and financing of wind energy projects; and

the siting, permitting, financing and construction of wind energy research and manufacturing facilities.

- (2) *State wind energy generation goals.* The goals for wind energy development in the State are that there be:
 - (a) At least 2,000 megawatts of installed capacity by 2015; and
 - (b) At least 3,000 megawatts of installed capacity by 2020, of which there is a potential to produce 300 megawatts from generation facilities located in coastal waters, as defined by Title 12, section 6001, subsection 6, or in proximate federal waters.

D. Procedural Order from Zoning Petition ZP 702 (on CD #2) on the relevancy of transmission congestion to that proceeding.

2. **Application.** The applicant stated that the size of the proposed KEP would be 45 MW, comprised of fifteen 3 MW Vestas V90 (or similar brand) wind turbines. The 45 MW output of the KEP equates to an annual energy output of 120 million kWh (@ 8 million per turbine). In its discussion of tangible benefits, the applicant summarized the contribution of the proposed KEP to the State's energy goals (*see* Section II, Finding of Fact #2,A).
3. **Agency review comments.** The PUC review comments are also presented in Section II, Finding of Fact #3,B, because they were made with regard to the applicant's tangible benefits demonstration. PUC commented as follows:
 - A. The applicant makes statements regarding benefits to the electricity market and pricing, stating that the project will increase diversification and reduce dependence on fossil fuel-based electricity generation, will help reduce the level and volatility of electricity prices in the region, and will assist Maine in reaching its renewable energy portfolio standards. However, the Wind Energy Act provides that these benefits are assumed and do not constitute tangible benefits for the purpose of satisfying the tangible benefits requirement.
 - B. PUC suggested "sale of a significant amount of the output to customers (particularly commercial and industrial) 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."
 - C. PUC also noted that the Wind Energy Act does not require a wind energy project to provide tangible benefits from each category listed in the definition [*see* 35-A M.R.S., Ch 34-A, section 3451(10)] to meet the overall requirement, and that the Commission must determine if the benefits package offered would constitute a "significant tangible benefit".
4. **Letter from Boralex.** On May 24, 2010, a letter was submitted to the record by Boralex Stratton Energy LP, opposing the project and commenting on issues related to energy production in Maine, in particular to the proposed KEP. Boralex contends that "If built, the corresponding transmission line congestion will result in a degradation of reliability, loss of renewable generation into the grid, and ultimately loss of energy jobs in the region."

5. **Applicant's post-hearing submittal.** On June 1, 2010, the applicant responded to the May 24th Boralex letter, asserting that the presence or absence of transmission congestion is not relevant to any review criteria in this proceeding, stating that "The planning, need for, and operation of electricity transmission lines as well as the economic issues associated with the generation and distribution of electricity are regulated by the federal Energy Regulatory Commission, the Maine PUC, and, since deregulation, the market place."
6. **FBM closing brief.** In its closing brief FBM stated: "The problems raised by Boralex", "need to be taken seriously when calculating whether this project will provide real tangible benefits to the community". "Boralex's concern is that the expanded Kibby project will create congestion on the transmission lines it shares with Kibby." "Boralex concludes that if DP 4860 is approved, there will be a 20% reduction in the ability of the biomass plant to generate electricity necessitating the plant to close down," and "create a net reduction in renewable energy for Maine and a significant job loss for the region."



BORALEX

May 24, 2010

Marcia Spencer-Famous
Maine Land Use Regulation Commission
22 State House Station
Augusta, Maine 04333-0022

RE: TransCanada Maine Wind Development, Inc. Kibby Expansion Project – DP 4860

Ms. Spencer-Famous,

Thank you for the opportunity to comment on the TransCanada Kibby Wind Power Expansion Project (“Kibby”) application in front of the Maine Land Use Regulation Commission (“Commission”). As a renewable power company, Boralex shares the enthusiasm of many others in growing the renewable energy platform of Maine in order to stabilize energy costs and reduce reliance on fossil fuels. That being said, we believe that this expansion project has not demonstrated that there is sufficient transmission capacity to bring to market the renewable energy from both its own project and the existing nearby Boralex Stratton biomass facility. If built, the corresponding transmission line congestion will result in a degradation of reliability, loss of renewable generation onto the grid, and ultimately loss of renewable energy jobs in the region. Thus we respectfully urge the Commission to deny the Kibby expansion application.

About Boralex

Boralex is an independent power producer specializing in renewable energy. Boralex owns and operates electrical generating facilities in the United States, Canada, and France. Boralex owns operating power stations having a total capacity of over 400 MW from biomass, wind, hydro and natural gas cogeneration sources. With a combined owned capacity of over 200 MW in the biomass sector (mostly in Maine), Boralex uses over 2 million tons of wood residues per year and is the largest biomass power producer in the United States.

About Boralex Stratton Energy LP

Boralex Stratton Energy LP (“BSE”) is a 50 MW gross/46 MW net biomass-fueled renewable power facility located in Stratton, Maine. The facility started operation in 1989 and has continuously provided the system with approximately 300,000 MWh of renewable and carbon-neutral energy per year. BSE employs 28 full-time employees for the facility proper and further hosts 16 staff members as the operations center for operations for the entire Boralex fleet of biomass facilities in the U.S. BSE also has a close symbiotic relationship with Stratton Lumber, where BSE provides Stratton Lumber with long-term stable power in exchange for long term stable fuel supplies.

BSE has recently completed a multi-million dollar investment in state-of-the-art emission reduction technology in order to improve the plant's operating capabilities as well as to participate in renewable energy incentive programs. The investment is a sign of Boralex's commitment to the long-term success of biomass energy in Maine. The incentive programs that Boralex participates in are based on total MWh production levels, and serve as an incentive for the facility to operate at 100% capacity for the entire year with the exception of brief maintenance outages.

Congestion on Section 215

The transmission line connecting the Bigelow substation to the Wyman substation (section 215) serves as the only conduit of power from the BSE and Kibby facilities to the rest of the ISO-NE grid. Specifics are not available to us, but it is our understanding that the maximum rating of this section of line is in the range of 135-164 MVA in the summer and a range of 178-200 MVA in the winter. The net capacity of BSE (46 MW), the existing phase I and II of Kibby (132 MW), and the Kibby expansion (45 MW) would bring the total local generation to 223 MW. There is simply not sufficient transmission capacity to service this expansion.

The magnitude of the constraint mentioned above leads us to believe that there will be a substantial congestion problem any time that the combined Kibby project operates at 50% capacity in the summer and 75% capacity in the winter. This is quite troubling. If two generators connected to the rest of the grid in a radial fashion are constantly forced to dispatch down (reduce load or shut down), not only will there be grid integrity problems, but the operating conditions will quickly become unworkable.

Consequences

A reasonable estimate using the lower line ratings mentioned above would result in congestion occurring 20% of the time (1750 hours per year). If BSE were mandated to cut production or shut down entirely 20% of the time with little to no notice, the plant would no longer be viable to operate. The end result in this scenario would be a loss of jobs in the region and a net loss in total MWh of renewable energy delivered to Maine customers.⁴ This point is important to emphasize: total renewable energy generated in Maine would fall due to this expansion project if renewable congestion left the Boralex Stratton facility mothballed.

Again, Boralex encourages the development of wind and other renewable resources in Maine, but this specific expansion project has a glaring error in that the transmission in the region is simply not sufficient to support development. We believe that if TransCanada wants this project to succeed, it is incumbent on them to step forward and fund an appropriate transmission upgrade to allow their incremental generation to flow. Otherwise we respectfully request the Commission to deny this permit application for being fundamentally infeasible.

⁴ This is true because a biomass facility is a baseload unit instead of an intermittent one.

Thank you again for this opportunity to provide comment.

Sincerely,



Nathan Hebel
Boralex Stratton Energy L.P.



STATE OF MAINE
LAND USE REGULATION COMMISSION

IN THE MATTER OF DEVELOPMENT)	Post-Hearing Testimony of
APPLICATION DP 4860)	Nick Di Domenico on behalf of
TRANSCANADA MAINE WIND)	TransCanada
DEVELOPMENT, INC.)	

I, Nick Di Domenico, am providing this testimony on behalf of TransCanada in response to the post-hearing comments submitted by Boralex in its May 24, 2010 letter and their concerns about potential congestion on the CMP transmission line connecting the Bigelow substation to the Wyman substation (Line 215).

As a threshold matter, the existence or absence of transmission congestion is not relevant to any review criteria at issue in this proceeding, which is not a rezoning but is an application for something that is an allowed use. The planning, need for, financing, and operation of electricity transmission lines as well as the economic issues associated with the generation and distribution of electricity are regulated by the Federal Energy Regulatory Commission (FERC), the Maine Public Utilities Commission (PUC) and, since deregulation, the market place. This issue was discussed in the prior Kibby Project proceeding, and attached for reference is TransCanada's August 22, 2007 letter in that proceeding, which discusses those issues more fully. Moreover, as it did in the original Kibby Project, Boralex raises the issue for the first time at the 11th hour in what has been a months-long and very public permitting process. Nonetheless, and for informational purposes only, TransCanada is providing the following response to the issues raised by Boralex.

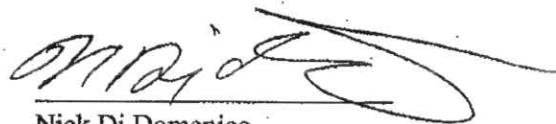
The suggestion that approval of the Kibby Expansion project will cause the Boralex plant to shut down is hyperbole completely unsupported by the facts. First, TransCanada has already

substantially increased the capacity of Line 215. Specifically, as part of the work done in connection with the Kibby Project, TransCanada upgraded Line 215 from its prior 57 MVA rating to the upper end of the ranges identified by Boralex in its comments. Second, TransCanada has evaluated the potential for transmission congestion and while there is the potential for transmission congestion if the Boralex plant, the Kibby Project, and the Kibby Expansion Project are simultaneously operating at maximum output, actual congestion should be relatively minimal. This conclusion is based in part on an analysis of the historical production of the Boralex plant and the hour-by-hour expected output of the Kibby and the Kibby Expansion projects. In any event, as a practical matter, in many instances Boralex is unlikely to be adversely impacted by congestion due to the way in which generators are dispatched.

Finally, Boralex suggests that there will be grid integrity problems based on potential congestion of Line 215. Again, that assertion is completely unsupported by the facts. As the Commission is aware from prior proceedings, in order to connect a new generating resource with a capacity greater than 20 MW to the high-voltage grid, the proponent must follow a specific sequence of applications, studies and approvals, as approved by FERC and administered by Independent System Operator for New England ("ISO-NE"). This process is designed to ensure that the proposed project will have no adverse effect upon the reliability of the bulk transmission grid. Specifically, for interconnecting generators, the interconnection process is an engineering, reliability-based analysis focused on the Minimum Interconnection Standards ("MIS") all of which relate to the stability and reliability of the transmission system. Any system upgrades required to ensure the stable and reliable operation of the system will be identified as part of that process and the generator will be required to implement such upgrades as a condition of connecting to the system. As a result, there is no basis for the claim by Boralex that there will be

“grid integrity problems” or that the system will quickly “become unworkable.” As Boralex knows, the appropriate forum for raising and resolving concerns about interconnection with the electrical grid is before ISO-NE, specifically, the Committee structure of the New England Power Pool (NEPOOL). That is where the technical studies are reviewed, the policy and technical experts on these matters reside, and where Boralex may voice its concerns. Instead, Boralex appears to be trying to avoid that appropriate forum and process by raising these technical issues before an agency that does not have the regulatory authority to evaluate or resolve such issues. By doing so, they introduce confusion and doubt into TransCanada’s pending application on an issue for which appropriate regulatory consideration exists elsewhere.

Date: June 1/2010


Nick Di Domenico

Verrill Dana_{LLP}

Attorneys at Law

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August 22, 2007

BY ELECTRONIC MAIL

Bart Harvey, Chair and Presiding Officer
Land Use Regulation Commission
22 State House Station
Augusta, ME 04333

Re: Zoning Petitions ZP 702 and ZP 709

Dear Chairman Harvey:

For all the reasons set forth in its prior July, 2006 Request for an Evidentiary Ruling in ZP 702, attached as Exhibit A and incorporated by reference herein, TransCanada believes that the existence or absence of transmission congestion is not relevant to any regulatory criteria to be applied by the Commission. We appreciate your prior ruling that consideration of such issues, while not central to the Commission's decision, are tangentially relevant. Presiding Officer's July 13, 2006 Ruling in ZP 702. Accordingly, to the extent that the Commission considers issues concerning the existence or absence of transmission congestion, TransCanada requests that it do so in a consistent manner in both the Black Nubble (ZP 702) and the Kibby (ZP 709) proceedings. To that end, TransCanada requests that the Commission consider the following.

First, the Kibby Project is not a speculative future project and should be accorded equal standing with the Black Nubble project in any consideration by the Commission of potential transmission congestion issues. TransCanada filed its initial rezoning application ZP 709 in January, 2007. Pre-filed testimony in that proceeding is due on August 28, 2007, and a public hearing is scheduled to begin on October 2, 2007. Thus, while the Presiding Officer's prior ruling stated that "speculation about possible future conditions and circumstances of other windpower projects and implications for the future condition of New England's power grid under various speculative scenarios are not relevant to the Commission's decision on Zoning Petition ZP 702," July 13, 2006 Ruling of the Presiding Officer in ZP 702, the Kibby Project is not a speculative future project.

Second, neither TransCanada nor MMP have rights to utilize existing transmission line capacity by virtue of where their projects are in the regulatory review process. For example, neither MMP nor TransCanada paid for the existing transmission line between Bigelow and Wyman, which is owned by CMP and was paid for by Maine ratepayers, and neither MMP nor TransCanada have priority to that existing transmission capacity. Indeed, as Chairman Adams from the Maine Public Utilities Commission explained in his presentation to the Commission on August 1, 2007, each generator competes hour by hour for access to existing transmission

Bart Harvey, Chair and Presiding Officer
August 22, 2007
Page 2

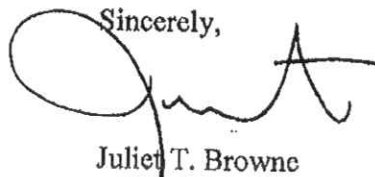
capacity, and no generator has priority to existing transmission capacity by virtue of when its facility was permitted, built or commenced operation. Transmission capacity is equally available to all generators irrespective of when their facility is permitted or built.

Third, to the extent they exist now or occur in the future, congestion issues will be managed under the congestion management rules and procedures approved by the Federal Energy Regulatory Commission (FERC) and administered by ISO-New England (ISO-NE). Neither the Commission nor the State of Maine have authority over allocation of the transmission capacity among the Black Nubble and Kibby projects. That issue lies clearly with the FERC and the rules it approved for New England, which already apply to this matter. Furthermore, MMP and TransCanada agree that congestion issues will be resolved in the marketplace, if and when they occur.

Accordingly, to the extent that the Commission considers issues of transmission congestion, TransCanada requests the following: (i) the Commission not factor in the existence or absence of transmission congestion in applying the applicable LURC criteria in either proceeding; (ii) the Commission not directly or indirectly apportion existing transmission capacity to either project; and, (iii) consistent with the above and its prior determination in ZP 702, the Commission not spend significant time or resources in hearing testimony on issues relating to potential transmission congestion in either proceeding.

Finally, TransCanada expects to work with MMP to address potential issues related to transmission congestion and has been engaged in discussions with MMP concerning that issue since last summer. Similarly, TransCanada is working with MMP to explore whether there are opportunities to share transmission line rights-of-way in areas where the generator leads associated with the two projects come together. While we did not think these issues required the submission of pre-filed testimony, TransCanada will be present during the public hearing in ZP 702 if Commissioners or staff have questions about those issues. Similarly, if the Commission or staff would like additional information on these issues prior to the public hearing, we would be happy to accommodate such a request. Mindful of the Presiding Officer's prior ruling in ZP 702 however, we did not think it necessary to submit additional testimony at this juncture.

Thank you for your consideration of these issues.

Sincerely,

Juliet T. Browne

Cc: Service List in ZP 702
Service List in ZP 709

EXHIBIT A

STATE OF MAINE
LAND USE REGULATION COMMISSION

In the Matter of
Rezoning Application ZP 702
Maine Mountain Power, LLC

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**TransCanada's Request
for an Evidentiary Ruling**

Pursuant to 5.06(2) of the Commission's Rules, TransCanada hereby requests a ruling by the Presiding Officer that the absence or existence of electric transmission congestion¹ is not relevant to the demonstrated need criteria or any other regulatory criteria to be applied by the Commission in its review of this or other wind power projects.² The basis for this request is as follows. First, the Commission does not have jurisdiction over and does not have regulatory criteria that address the planning, need for, financing, construction or operation of electric transmission lines or the economic issues associated with the generation and distribution of electricity. These issues are regulated by the Federal Energy Regulatory Commission (FERC), the Maine Public Utilities Commission (PUC) and, since deregulation, the market place. Second, if the Commission were to apply its existing environmental and other land use criteria in a manner that took into account the existence or absence of transmission congestion, it would potentially interfere with the regulatory and market mechanisms that are intended to govern the generation, distribution, and sale of electricity. Finally, because the Commission does not have jurisdiction over these issues, a ruling to that effect prior to

¹ Electric transmission congestion occurs when there is insufficient transmission capacity to accommodate all available power generation. As multiple new generators connect to the transmission system, congestion may occur during at least some periods of time unless and until the capacity of existing transmission system is expanded.

² Both the Redington Project and TransCanada's Kibby Wind Power Project require a showing that the proposal satisfies a demonstrated need in the community. 12 M.R.S.A. § 685-A(8-A). Similarly, both projects will be reviewed under the Commission's planned development subdistrict (D-PD), and must demonstrate compliance with the specific criteria in Chapter 10.21, G, as well as the more general rezoning criteria, 12 M.R.S.A. §§ 685-A(8-A) and 685-B(4).

the hearing and, in particular, prior to the July 14 deadline for submitting pre-filed testimony, will facilitate an orderly hearing and eliminate the need to present evidence on issues outside the proper scope of these hearings.

I. The Commission Does Not Have Jurisdiction Over Economic And Other Issues Related To The Electric Transmission System

The Federal Energy Regulatory Commission (FERC) and the Maine Public Utilities Commission (PUC) have primary jurisdiction over planning, construction, financing, and operation of electric transmission lines. Each transmission owner is required to receive a Certificate of Public Convenience and Necessity (CPCN) from the PUC prior to construction of significant new transmission lines. 35-A M.R.S.A. § 3132. Approval from the PUC is also required prior to exercising the right of eminent domain to acquire a corridor for a transmission line (§ 3136); prior to the financing of a transmission line (§ 901); and, prior to any transfer of ownership of a transmission line (§ 1101). In addition, the rates to be charged by the transmission owner for use of the transmission line must be approved by FERC. 16 U.S.C. § 824(b).

Although various local, state and federal agencies have jurisdiction over the environmental and land use issues related to construction and operation of transmission lines, PUC and FERC have exclusive jurisdiction over all of the economic issues related to the need for new transmission lines; the impact of new transmission lines on the stability or reliability of the existing transmission grid; and the overriding issue of whether electricity consumers are better off with or without a proposed new transmission line. The Maine Legislature has specifically recognized this division of authority over transmission lines between the PUC on the one hand and environment and land use regulatory agencies on the other. 35-A M.R.S.A. § 3132(6) and (7).

By law, all electric transmission line owners are fully regulated public utilities. In the case of the Redington Project, the local transmission owner is Central Maine Power Co. (CMP). CMP is a public utility regulated by both PUC and FERC. CMP has placed certain of its largest transmission lines under the operation and control of ISO-New England, a regional independent system operator. ISO-New England has put in place detailed rules governing the process by which a new generator connects to the transmission grid. To the extent transmission congestion may adversely affect a proposed generator, it will be the responsibility of CMP and ISO-New England to respond to that congestion in accordance with the detailed and complex state and federal statutes and regulations governing transmission. Their responses will then be subject to review by the PUC and/or FERC.

The Commission does not have the legislative mandate or expertise to analyze these public utility issues, which are within the exclusive domain of PUC and FERC. Moreover, even if the Commission retained the necessary outside experts to advise it on such matters, ultimately the determination of whether and how to resolve transmission congestion issues is beyond the Commission's jurisdiction.

II. The Commission's Consideration of Existing Transmission Capacity Would Interfere With The Market Mechanisms Set In Place Through Restructuring

Since 2000, Maine's electricity market has been substantially deregulated. The generation and sale of electricity was largely deregulated, while the sale of transmission and distribution delivery services remains fully regulated. In the 1997 Restructuring Act in Maine, the Legislature concluded that allowing buyers and sellers of electricity to participate in a competitive market was preferable to a government agency continuing to set the price to be charged by a single monopoly provider. In response, PUC, FERC and

the newly restructured transmission and distribution utilities, including CMP and ISO-New England, have worked hard over the last six years to promote a competitive market. The 1997 Restructuring Act and the efforts to implement the Act have all been premised on the belief that the public interest is best served by a competitive market and a competitive market depends on a significant number of buyers and sellers voluntarily participating in the market. It is this newly developed market into which any new wind power development will be selling the output of their projects. Each wind generator will be competing with dozens of other electricity suppliers to meet the needs of Maine's electricity consumers. In order for the market to function properly and attract new suppliers, it is important that government regulation not undermine appropriate market considerations.

Because the Maine Legislature has placed great faith in the market system, the Commission should be cautious of inadvertently according one project an advantage of another based on transmission congestion and other economic considerations outside the Commission's jurisdiction. The Commission's review should and must evaluate the environmental and other land use impacts of a project, but the market place and the PUC, ISO and FERC should and must address the need for expanded transmission to accommodate multiple generators and other economic and market issues.

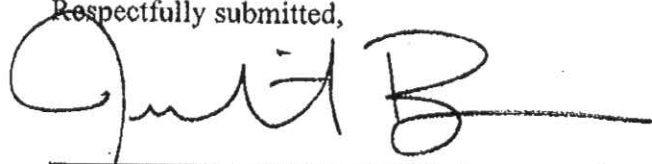
In summary, there is no doubt that some combination of market forces and action by utility regulatory agencies will resolve any issues associated with transmission congestion. Over time the proper functioning of the competitive market and the regulatory agencies will ensure that sufficient transmission capacity is developed by public utilities to best serve the consuming public. As a result, the Commission should

not allow the introduction into the record, in this case or other cases involving proposed new generators of electricity, evidence of transmission congestion or the absence of congestion that may affect the proposed generator.

III. The Requested Evidentiary Ruling Will Facilitate an Orderly Public Hearing

If the Commission disagrees and concludes that the existence or absence of transmission congestion is relevant to any of the criteria to be applied in this case, then it is essential that the Commission understand the impact not only of the Redington Project on the existing transmission system, but the ability of that infrastructure to accommodate other proposed generation. Failure to do so will potentially prejudice subsequent generation to come before the Commission and, as a result, if necessary, TransCanada intends to present evidence on the following issues: the impact of the Redington Project on existing infrastructure; the capacity of existing infrastructure to accommodate the Redington Project and other existing and proposed generation; and the regulatory and market mechanisms for resolving transmission congestion issues. If the Commission concludes that transmission congestion is not relevant to its review of this or other wind power projects, then TransCanada will not submit any pre-filed testimony in this matter. This should allow for a more streamlined and orderly public hearing.

Respectfully submitted,



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July 6, 2006

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IV. SCENIC IMPACT ASSESSMENT; Pursuant to the Wind Energy Act (also see Section V regarding Historic Resources)

At end of section

- Maps showing scenic impact areas
- Visual simulations from application and pre-filed testimony

CD #1

- Jim Palmer's report, submitted April 16, 2010
- BPL review comments
- TransCanada response to BPL review comments

CD #2

- Visual simulations from application and pre-filed testimony
- Excerpt from "*Report of the Governor's Task Force on Wind Power Development*" on the approach to scenic impacts, (see Section I, application checklist, p.17-18)

1. Review criteria

- 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 (emphasis added) such that the development has an unreasonable adverse effect on the scenic character or existing uses related to scenic character of the scenic resource of state or national

significance. Except as otherwise provided in subsection 2, determination that a wind energy development fits harmoniously into the existing natural environment in terms of potential effects on scenic character and existing uses related to scenic character is not required for approval under either Title 12, section 685-B, subsection 4, paragraph C or Title 38, section 484, subsection 3.”

- (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:
 - (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:
- (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 (emphasis added) pursuant to the National Historic Preservation Act of 1966, as amended, including, but not limited to, the Rockland Breakwater Light and Fort Knox; (emphasis added)
 - (c) A national or state park; (emphasis added)
 - (d) A great pond that is: (emphasis added)
 - (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; (emphasis added)
 - (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; (emphasis added)
 - (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; (emphasis added)

- (g) A scenic turnout (emphasis added) 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," Dominic, 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."
- (3) *PL 2007 Ch. 661, Sec. B-13. Submission requirements.* No later than September 1, 2008, the Department of Environmental Protection and the Maine Land Use Regulation Commission shall, jointly and to the extent not already addressed in existing agency guidance, specify the submission requirements for the following matters for applications for wind energy development, including, but not limited to, expedited wind energy development as defined in the Maine Revised Statutes, Title 35-A, section 3451, subsection 4, in accordance with the recommendations of the February 2008 final report of the Governor's Task Force on Wind Power Development in Maine created by Executive Order issued on May 8, 2007, and the provisions of this Act, as applicable:
- (a) Effects on scenic character and existing uses related to scenic character; (emphasis added)
 - (b) Tangible benefits, including post- construction reporting of tangible benefits realized;
 - (c) Noise and shadow flicker effects;
 - (d) Effects on avian and bat species;
 - (e) Public safety-related setbacks; and
 - (f) Decommissioning plans, including demonstration of current and future financial capacity that would be unaffected by the applicant's future financial condition to fully fund any necessary decommissioning costs commensurate with the project's scale, location and other relevant considerations, including, but not limited to, those associated with site restoration and turbine removal.

D. Approach to Scenic Impacts [From the "*Report of the Governor's Task Force on Wind Power Development*" (2-14-2008)] (CD #2, Section I, application checklist, pp 17-18)

2. **Applicant's scenic assessment.** 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.

- A. *Chain of Ponds*. Chain of Ponds is a great pond rated by the *Maine Wildlands Lakes Assessment* (1987) as having outstanding scenic value. The applicant's assessment determined there would be visibility of the proposed KEP at distances ranging from 2.8 miles to 3.5 miles from 31% of the ponds' area. The most extensive view of the turbines would be from the southeastern portion of Long Pond.
- (1) *Natanis Pond*. From the southeastern part of Natanis Pond, the tops of 1 to 4 turbines 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.
 - (2) *Long Pond*. Portions of up to 14 turbines would be visible from Long Pond, primarily on the lake and from the eastern shore. During and immediately after construction, areas of cut and fill may also be visible, although such visibility would be reduced upon re-vegetation of these areas. From the western shore, there would only be a very limited view of the turbines.
 - (3) *Bag Pond*. Portions of up to 12 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.
- B. *Arnold Trail*. The proposed KEP would be visible from the Trail at distances of 2.7 miles to 4 miles (and at 7 miles on Arnold Pond).
- (1) 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.
 - (2) The applicant noted that the Trail is included as an historic and cultural resource in the "Flagstaff Region Management Plan" (Maine BPL/DOC, 2007) (CD #2, General Section), 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.
- C. *Arnold Pond*. Portions of 1 to 3 turbines would be visible from Arnold Pond at a distance of 6.5 to 7 miles. Arnold Pond is a great pond rated by the "Maine Wildlands Lakes Assessment" as having outstanding scenic value, and is included along the route of the Arnold Trail.
- D. *Kibby Stream*. Portions of up to 9 turbines may be visible from Kibby Stream at a distance of approximately 3 to 4 miles, depending on the extent of canopy cover from any

particular viewpoint. Within 3 miles of the proposed KEP, Kibby Stream is located within forestland, but beyond 3 miles there are open areas.

- E. *Crosby Pond*. Crosby Pond is a great pond rated by the “Maine Wildlands Lakes Assessment” as having outstanding scenic value. Portions of 1 to 3 turbines would be visible at a distance of 7.5 miles from Crosby Pond.

3. LURC third party peer review by James F. Palmer (CD #1)

- A. James F. Palmer was contracted by LURC to conduct a third party peer review of the applicant’s scenic impact assessment, entitled “Kibby Expansion Wind Project Aesthetic Impact Assessment”. Mr. Palmer’s review report, submitted on April 16, 2010, addressed (1) the adequacy of the applicant’s visual assessment with respect to the completeness of each step in the process, (2) a summary of the changes implemented by the “Act to Implement Recommendations of the Governor’s Task Force on Wind Power Development” (hereinafter the “Wind Energy Act”), and its effect on evaluating scenic impacts from expedited grid-scale wind energy development in the context of a standard process of visual impact assessment, (3) a discussion of the field work and additional studies conducted for his review, and (4) a discussion of additional issues.
- B. *Conclusions and recommendations*. Mr. Palmer offered the following observations, conclusions, and recommendations:
 - (1) The Wind Energy Act’s criteria and standards can be integrated into a standard visual impact assessment process, and establishes some useful limits: only impacts to eight types of state or nationally significant scenic resources are considered, and turbines seen from more than 8 miles away are not considered. However, the Wind Energy Act also requires consideration of information that is not readily available: the extent, nature and duration of affected public uses of the scenic resources and viewer expectations. The standard of “harmonious fit” is abandoned, and a new undefined standard of “unreasonably adverse” is introduced. While some aspects of the visual assessment process are simplified and clarified, questions about how to fulfill both the letter and the spirit of the law are raised. However, the Act does not challenge using the standard assessment process that involves: (a) Project Description, (b) Landscape Character, (c) Visibility Analysis, (d) Significant Scenic Resources, (e) Public Use and Expectations, (f) Evaluation of Potential Impacts, and (g) Mitigation.
 - (2) Many visual aspects of the proposed KEP are not fully described by the applicant, and the landscape character description is more a list of landscape elements than a description of visual character. The visibility analysis assumes harvested areas will have the same screening effect as an undisturbed forest canopy. The viewshed map combines the results of two separate analyses, and does not indicate if a blade tip or a whole turbine would be visible. The assessment does identify all significant scenic resources within 8 miles of the wind turbines, as specified by law, but it does not always identify the basis of their scenic value. The public use of the scenic resources and how viewer expectations may be impacted are not documented. No systematic approach to evaluating potential scenic impacts is presented, even though the conclusion is reached that “the proposed KEP would not significantly compromise

views from scenic resources of state or national significance, or have an unreasonable adverse effect on the scenic character of the area or uses related to this scenic character.”

- (3) Mr. Palmer’s independent fieldwork and additional analyses determined that the primary visual impacts would be to Chain of Ponds and Kibby Stream (which has the potential for large cumulative impacts). The applicant’s visualizations were generally accurate, although the turbines in several of the simulations had lower contrast than would be indicated under the principle of representing the “worst case” view. However, the simulation viewpoints on Chain of Ponds provide a good representation of the “worst case” conditions. Finally, it is clear that there may be significant visual impacts to Kibby Stream that were not fully investigated.
- (4) Mr. Palmer’s review of the applicant’s visual assessment did not find any serious errors or misrepresentations. He noted that the public use of the scenic resources and how viewer expectations may be impacted were not documented, but this information is not readily available for scenic resources in this area. The visual simulations from Chain of Ponds will be particularly helpful in evaluating the seriousness of the scenic impacts. It is unfortunate that simulations for Kibby Stream were not similarly prepared.

4. **Agency review comments: Maine Bureau of Parks and Lands (BPL).** BPL reviewed the applicant’s scenic impact assessment, and on February 26, 2010 offered the following comments, summarized below: (CD #1)
 - A. BPL stated that it does not oppose the KEP, but noted several on-site mitigation opportunities that should be pursued to ameliorate visual impacts due to the KEP. BPL asserted that the Commission should pursue this option to set a precedence to mitigate for impacts to scenic resources due to wind energy development (*see* Section II, Finding of Fact #3,C for comments by BPL on mitigation as a part of the tangible benefits demonstration).
 - B. BPL asserted that the proposed KEP would have a more significant scenic impact on BPL’s land than previous wind power projects proposed under the Wind Energy Act.
 - C. Although BPL has limited expertise at scenic assessment, and did not participate in the review of the scenic assessments conducted prior to the new law, it is concerned about the precedent regarding scenic analysis under this new law because there is no particular protocol to measure pending applications.
 - D. BPL asserted that the applicant’s scenic assessment did not assess the cumulative impacts in terms of the existing Kibby Project, the proposed KEP, and any project constructed if the expedited permitting area is expanded; or take into account any other development likely to occur within the same viewshed.
 - E. *Kibby Stream.* The applicant’s discussion of Kibby Stream is too vague, and more information should be submitted. BPL did not agree that the existing visual impact to Kibby Stream due the Kibby Project justifies the proposed KEP. BPL has no vested

interest in or knowledge of Kibby Stream, but questioned the extent of public use of this area for angling or hiking.

- F. *Scenic road turnout.* BPL contended that, although jurisdiction over the Route 27 Scenic Byway under the new wind energy law is limited to only the turnouts, the presence of the Scenic Byway helps establish “viewer expectation,” and that the Scenic Byway and the Arnold Trail are intertwined and should be considered equally. As such, the Byway should have been addressed. BPL disagreed with the applicant that the sound of traffic on Route 27 adversely affects the overall experience of those using the area, and is a positive effect because of the Byway’s purpose to increase tourism and use of the area.
 - G. *Arnold Trail.* BPL asserted that the historic significance of the Trail, or important points along the Trail were not adequately addressed. BPL has an interest in the Trail due to ownership of the Coburne House, on-staff historic expertise, collaborations with Trail and Byway groups, and ownership of the Public Reserve Lands at Chain of Ponds. BPL noted that its management plan for this area does not address views because it does not own the views. Nevertheless, BPL asserted that the Trail and the Chain of Ponds are synonymous, and should have been addressed jointly. Because of the significance of the Trail, on-site mitigation should be required.
 - H. *Chain of Ponds.* The applicant did not adequately describe the extent of the visual impact to the Chain of Ponds. BPL disagreed with the applicant that mobile campers on a scenic byway compromise views.
 - I. *Arnold Pond.* BPL asserted that even a modest visual impact to this pond deserves rigorous analysis, which was not done; and that mitigation for such impacts should be considered.
 - J. *Maine Public Reserve Lands.* Although there were no viewpoints identified by BPL in the study area (*see* PL 2007, Ch. 661, § 3457, sub-§ 1), several non-regulatory scenic viewpoints exist, such as the three campsites along the shoreline of Long Pond at Upper Farm. BPL contended that if the KEP would be visible from this location, then the impact should be mitigated by improving these campsites, which are in poor condition but located along the Scenic Byway.
 - K. *Cumulative impacts.* BPL asserted that cumulative scenic impacts due to wind energy development must be assessed to help prevent Maine from unintentionally subjecting its scenic resources to views impacted by multiple sequential decisions.
 - L. *BPL conservation strategies.* BPL does not have conservation interests in the project area, but asserted that lands within the viewshed may score less well for any future land conservation effort, and may be less likely to attract popular or institutional interest.
5. **Applicant response to BPL.** On April 9, 2010, the applicant responded to BPL’s review comments, as summarized below: (CD #1)

- A. The KEP application does not re-state in its entirety the scenic impacts analysis submitted for the Kibby Project (reference Zoning Petition ZP 709), which addressed those impacts fully. The Commission determined that the visual impact due to the Kibby Project “would not have an undue adverse impact on scenic resources.”
- B. Based on DEP’s guidance definition for a “reasonably foreseeable future project”, there are no other future wind energy projects in the vicinity of the development that should have been included in the visual impacts analysis¹.
- C. *Kibby Stream*. “Kibby Stream is not addressed in great detail because the watershed map and aerial photographs indicated a lack of significant visibility. Kibby Stream is small and heavily wooded, except near where it is crossed by Gold Brook Road and along the wetlands east of the Kibby Range. The area where the stream passes under the logging road is not scenic, with logging equipment frequently stored in the open areas nearby. Although the entire stream was not inventoried for potential views, and small openings might occur in the tree canopy, otherwise, the stream banks are heavily wooded such that there would be at most limited or infrequent visibility of the proposed KEP. At about 7 to 8 miles, east of Kibby Range and Kibby Mountain, views would be possible where open wetlands border the stream. The mitigation suggested by BPL to “salvage the aesthetic angling experience” is not necessary.
- (1) The applicant did not intend to imply that once a view is compromised, further compromise is not adverse. However, roads and other existing development are part of the surrounding landscape that is analyzed when assessing a scenic impact.
 - (2) Regarding cumulative scenic impacts to Kibby Stream, there are two areas where views of both the KEP and Kibby would be possible (both described above). The first is where Kibby Stream crosses Gold Brook Road; and at the wetlands 7 to 8 miles from the KEP and from the Kibby Project, with Kibby Range and Kibby Mountain in the foreground at 3 miles away. From forested portions of the stream, views of either project would be unlikely.
- D. *Scenic impacts from a road turnout*. Although the law requires evaluation of visual impacts to scenic turnouts on the State’s scenic highways, but *not* to the highway itself, the application included information about visibility along Route 27 generally. The KEP “would not be visible from any of the numerous locations along Route 27 overlooking Chain of Ponds or Arnold Pond, and the scenic overlook by Natanis Pond would remain unchanged”. The wind turbines would not be visible from the Natanis Pond overlook due to the foreground ridges located to the rear of the viewer.
- (1) The potential for tourism or for experiencing the beauty of these ponds and their historical context would not be compromised by the KEP. With the exception 0.1 mile at Upper Farm where portions of 3 to 6 turbines could be viewed, there would be no views of the KEP from the remaining 16.6 miles of Route 27 in the study area.

¹ “The activity will proceed or there is a high probability that the activity will proceed, i.e., valid permits have been granted for projects in the vicinity of the proposed project; projects are constructed or under construction, or applications for permits to construct projects in the vicinity of the proposed project are currently under consideration.”

- (2) Regarding the significance of the Route 27 Scenic Byway because of its role in tourism, although it does benefit tourism and enhance opportunities to enjoy the landscape, a nearby major State highway that is visible and audible provides a different experience than canoeing or kayaking on a pond accessible only by trail or back road. When assessing a visual impact, the existing landscape must be defined to assess the degree of contrast.

E. *Scenic impact from the Arnold Trail.*

- (1) The visual assessment's note of a lack of historic structures associated with the Arnold Trail in the study area was not intended to "minimize" the historic significance of the Trail, but was merely a factual statement repeated from the historical impacts analysis. The visual assessment was informed by the "Arnold's Wilderness March" brochure published by the Arnold Expedition Historical Society.
- (2) The purpose of a visual impact assessment is not to provide a history of the Trail, but to examine the extent of compromise to its historical significance and the experience of users interested in the historical context by the proposed KEP. Whether the surrounding landscape is documented as a critical part of the historic context was considered. Route 27 and its scenic turnout, parking areas, and facilities; the commercial campground; and private residences along Chain of Ponds did not exist at the time Arnold made his journey and have altered the "vast wilderness" the Arnold company encountered on its northward march. The historic significance of the Trail and the environs immediately surrounding it could continue to be enjoyed in the same manner it is today with the distant and limited views of wind turbines several miles away, receding well behind the foreground features.
- (3) The historical documentation of the Trail does not identify the northern Sisk ridgeline as a critical part of the Arnold Trail, and does not provide specific information about Chain of Ponds or Arnold Pond. There is no evidence to suggest that wind turbines located 3 to 8 miles away and behind the more prominent foreground peaks would compromise the historical experience.
- (4) The Arnold Trail and Chain of Ponds were addressed separately in the application because a visual impact assessment and a historic/cultural impact assessment are conducted separately, and the features addressed individually. The Trail is inextricably related to Chain of Ponds, and the application included a thorough assessment of the aesthetic impacts from Chain of Ponds.

F. *Scenic impact to Chain of Ponds.* In response to BPL's assertion the visual assessment is not specific enough, the applicant noted the visual assessment states the project would be visible from approximately 31% of Chain of Ponds, and includes significant written text, photographs and visual simulations detailing how the project would impact the surrounding scenic resources.

- (1) The applicant's assessment was informed by the new evaluative guidelines developed by MDEP under 35-A M.R.S.A. § 3451 to address unique aspects of wind turbines (CD #2, application checklist, pp 17-18): wind energy projects cannot be screened; are a relatively new technology; and their color, form, line and texture differ from most existing built landscape elements. These differences do not, on their own, make wind turbines visually incompatible with all landscapes, but require us to think

differently about their aesthetic impacts, such as considering if they are the only human-made objects in the surrounding landscape, and the scale of the visible portions of the turbines compared to the surrounding landscape.

- (2) Visual impact assessment is a rational and systematic process, and numerical associations cannot adequately convey the degree of impact. For example, although 31% of Chain of Ponds is in the viewshed of the proposed KEP, this number includes even when only a tip of a single blade is visible. The narrative discussion and visual simulations illustrate how the major foreground focal points of Mt. Pisgah and Sisk Mtn. dominate the view; and that from the majority of the ponds there is no or very little visibility of the turbines. Where there is visibility, the turbines appear lower in elevation/height than the mountains in the foreground.
- (3) The evaluative criteria in the new wind energy laws state that because a wind turbine is “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 impact.” 35-A M.R.S.A. § 3452 (3). BPL’s insistence that a “rigorous review of mitigating strategies” must be undertaken if there is any visual impact whatsoever is misplaced. The statute and associated regulations protect against an unreasonable adverse impact, but do not require a total absence of impact.
- (4) The mobile seasonal campers are a part of the visual context of the setting, and compromise the views. The existing landscape includes structures, roads, and other facilities, and is not a wild landscape with little evidence of man.

G. *Scenic impact to Arnold Pond.* Regarding the impacts to Arnold Pond, BPL stated: “The entirety of the wilderness scenic experience on this wilderness military trail is [being] thrown under the bus for modern industrial development.” The applicant’s visual analysis of impacts to Arnold Pond was more limited than for Chain of Ponds (3 to 5 miles from of the nearest turbines) because of the greater distance from Arnold Pond to the turbines (7 to 8 miles). Arnold Pond is a Management Class 4 (developed) Lake, and Mt. Pisgah stands between Arnold Pond and much of the ridgeline of Sisk Mtn., further limiting the potential scenic impact of the KEP on that pond.

In response to BPL comments, the applicant conducted a more detailed analysis of Arnold Pond, and noted an error in the estimate of project visibility. The application stated that only the southern turbines would be visible. However, the additional analysis indicated that portions of up to 9 of the northernmost turbines may be visible to the north of Mt. Pisgah at a distance of 7 to 8 miles, while views of the southerly turbines will likely be blocked by Mt. Pisgah (the dominant landform visible from the pond, with any turbines visible well below the height of land). A simulation illustrating the views from Arnold Pond was prepared and submitted by the applicant with its pre-filed testimony.

H. *Scenic impact to Maine Public Reserve Lands.* DOC, through BPL, adopted a rule (effective April 4, 2010) designating scenic resources on public reserved lands, but did not include any such areas in the viewshed of the KEP. Nevertheless, the visual impacts to the Public Reserve Lands in the study area were addressed in the visual assessment. In its comments, BPL requested clarification of the impacts to views from its three campsites in the Upper Farm area off Route 27, suggesting the applicant improve and relocate these campsites as mitigation for potential impacts. Field investigation revealed

no obvious campsites at Upper Farm. The application's statement that the three campsites at the Upper Farm area are "in need of upgrading," was merely quoted from BPL's Flagstaff Region Management Plan. Campsites located along the northeastern shore of Long Pond, on Bag Pond, and on the northwest shore of Lower Pond would have no view of the KEP. Because of the very minimal visibility of the KEP from the Upper Farm area, and because of this area's close proximity to Route 27, the KEP would not have an unreasonable adverse effect on the scenic values and existing uses related to scenic character of the Upper Farm campsite area.

- I. *Scenic mitigation.* BPL objected that "[t]he applicant makes no attempt whatsoever to mitigate admitted scenic impacts," and stated that visibility of a project likely requires some offsetting mitigation. This position is not supported by the regulatory requirements or by the principles of visual assessment analysis. The law clearly states that visibility, alone, is not sufficient basis to determine that a project has an unreasonable adverse impact. Likewise, both LURC and MDEP regulations distinguish between absolute impacts and unreasonable impacts.
- J. *Cumulative impacts.*
 - (1) The applicant noted that BPL raised policy-level issues not relevant to the pending application, and asserted that cumulative impacts were not considered at all in the application.
 - (2) The applicant responded that cumulative impacts were considered in the context of existing conditions, specifically, the existing Kibby Project turbines within which the proposed KEP would be viewed. The applicant contended that it considered the number of turbines within each view; the overall area of the view occupied; if scenic views not impacted by turbines are available; and the sequential experience of adding additional visual impacts to demonstrate that the combined impact of the Kibby Project and KEP would not result in undue visual impacts.
 - (3) The applicant conducted additional studies of the extent of visibility of the existing Kibby Project turbines from Chain of Ponds and Arnold Pond, and how the two projects might be seen in combination. Additional simulations illustrating the views of Kibby and the KEP were submitted with the applicant's pre-filed testimony.
 - (a) *Bag Pond.* The most significant combined impact would be in a small portion of the southwest bay of Bag Pond where portions of 10 KEP turbines would be visible, as well as portions of up to 6 existing Kibby Project turbines. Far fewer turbines would be visible from the rest of Bag Pond.
 - (b) *Lower Pond.* No proposed KEP turbines would be visible from Lower Pond. The upper portions of thirteen existing Kibby Project turbines will be seen from the small southeast corner of Lower Pond where Kibby Range is visible. Moving north along Lower Pond the number visible will decrease, with portions of only 1 to 3 turbines visible at the northern end.
 - (c) *Long Pond.* From Long Pond portions of up to 15 KEP turbines would be visible along the south shore at the east end, but decreases to 1 to 4 turbines at the northern end. No turbines would be visible from the narrows or the northern shore. At most, portions of 1 to 3 existing Kibby Project turbines may be visible from Long Pond at a limited area at the southern end.

- (d) *Natanis Pond*. Visibility of turbines from Natanis would be minimal, with the tops of 4 KEP turbines visible from a small area at the southeast end, and possibly the tips of the blades of 1 to 2 existing Kibby Project turbines visible from a limited area.
- (e) *Arnold Pond and Chain of Ponds*. At a distance of 7 to 8 miles, the KEP turbines would be visible along portions of Arnold Pond. Existing Kibby Project turbines would be visible at a distance of 10.7 miles. At both Arnold Pond and Chain of Ponds, only a few turbines would be visible from most areas, with each project occupying a relatively narrow angle of view. The turbines would always be seen behind the prominent foreground mountains.

K. *Impact on BPL conservation strategies*. In response to BPL's comments on conservation strategies, the applicant responded:

- (a) It is not possible to address BPL's future unidentified conservation initiatives in the pending application.
- (b) BPL's comments in this regard are policy-level concerns that are not relevant to a visual assessment.

6. Applicant's testimony and post-hearing comments; copied from Attachment A to its closing brief. (CD #2)

- A. "There are nine scenic resources of state or national significance located within the 8-mile visual impact study area for the Project. There will be no Project visibility from four of these resources: the Dead River, Spencer Stream, the Natanis Pond overlook and the Sarampus Falls overlook. (Application Attachment A.1, Aesthetic Impact Assessment (AIA), TransCanada Hearing Ex. 6).
- B. "There are five scenic resources of state or national significance with some Project visibility: Arnold Pond, Crosby Pond, Kibby Stream, Chain of Ponds and the Arnold Trail. (TransCanada Hearing Ex. 6)."
- C. "Views from Arnold Pond and Crosby Pond would be very limited, seen at a distance of 6.5 miles away and diminished by the prominent landform of Mount Pisgah. (Vissering Pre-Filed Direct Testimony at 37)."
- D. "Minimal views of the Project are possible from two viewpoints on Kibby Stream. The first is a location where Gold Brook Road crosses over the stream approximately three miles from the Project area and the second an open wetland area approximately eight miles away. (Vissering Pre-Filed Direct Testimony at 37, 38)."
- E. "The Project will not be visible from more than two-thirds of Chain of Ponds. (Vissering Pre-Filed Direct Testimony at 5,6)."
- F. "Chain of Ponds is designated as having outstanding scenic values primarily due to its scenic foreground features, including very dramatic relief, cliffs, ledges, beaches, boulders, diverse shoreline, and excellent water quality, rather than for views of distant

- mountains or other scenery. (Maine State Planning Office Critical Areas Program, 'Maine's Finest Lakes, The Results of the Maine Lake Study' (Oct. 1989) at 86.)”
- G. “Other natural foreground features contribute to and enhance the overall scenic quality of Chain of Ponds, including Mount Pisgah, Sisk Mountain, and the Bigelow Mountains, which provide strong focal points and reduce the visual impact of the turbines. (Vissering Pre-Filed Direct Testimony at 9; Palmer Comments p. 18).”
- H. “The existing viewer experience along Chain of Ponds already includes human development, including the constant presence of Route 27 and its heavy traffic, several privately-owned camps, the developed campground at Natanis Point, and motorized recreational use of the water and adjacent land. (Vissering Pre-Filed Direct Testimony at 9-10, John Titus Pre-Filed Direct Testimony p. 7, Palmer comments, pp. 18-19).”
- I. “Of the five ponds that constitute Chain of Ponds, visibility of the Project is limited only to portions of Bag, Natanis, and Long Ponds. (Application Attachment A.1 (AIA) at 7).”
- J. “The Project will not be visible from roughly two thirds of Bag Pond and visibility is minimized the prominent landforms of Mount Pisgah and the southern peak of Sisk Mountain dominate views toward the Project, making the turbines appear much less prominent and lower in elevation. (Vissering Pre-Filed Direct Testimony at 14).”
- K. “The Project will not be visible from the vast majority of Natanis Pond, including the commercial campground and all of the State’s primitive campsites. There also will be no visibility of the Project when looking south toward the very distant peaks of the Bigelow range. Where there is visibility, only the tops of four turbines (behind Mount Pisgah) will be visible from a very small area along the southeastern-most shore of Natanis Pond. (Vissering Pre-Filed Direct Testimony at 25).”
- L. “The majority of views of the Project occur from Long Pond, where there will be visibility from approximately half of Long Pond. Long Pond also is the only area from where the entire Project can be viewed. (Vissering Pre-Filed Direct Testimony at 17).”
- M. “From Bag, Natanis and Long Ponds, views will include the more dominant landforms of Mount Pisgah and/or Sisk Mountain, making the Project turbines appear more distant, lower in elevation, and less prominent (Vissering Pre-Filed Direct Testimony at 14, 17, 25).”
- N. “In total, there will be no views of the Project from more than two-thirds of Chain of Ponds. Where there are views, they are primarily of only portions of the Project and often include only the tops of turbines or tips of blades. (Vissering Pre-Filed Direct Testimony at 5,6, Palmer Comments pp. 18-19).”
- O. “With regard to “cumulative impacts,” as noted by Mr. Palmer and Ms. Vissering, because the Kibby Project will be visible from Long Pond, locating additional turbines in this area (even when visible) is appropriate as the incremental impacts will not be

significant, and locating the projects in proximity will reduce the overall impact of wind energy projects in the state. (Vissering Pre-Filed Direct Testimony p. 39, 40, transcript [testimony of Jean Vissering pp. 315-316]).”

- P. “It is possible to travel the entire length of Chain of Ponds without seeing a single turbine. Where there is visibility, turbines will enter and recede from view across a changing landscape, and will not have an unreasonable adverse effect on the scenic character. (Testimony of Jean Vissering p. 303).”
- Q. “The Arnold Trail shares much of the route in the study area with Chain of Ponds and, for this reason, the visual impacts are similar. The Project will be visible only from a 1.6 mile developed section of a 194 mile trail, resulting in 0.8% visibility. (Vissering Pre-Filed Direct Testimony at 37, [Testimony of Jean Vissering at 298]).”
- R. “As noted by both Ms. Vissering and Mr. Palmer, distant views were likely of little concern to Arnold’s company, and the presence of turbines in portions of the Arnold Trail viewshed is unlikely to materially diminish the historic experience along the Arnold Trail. (Vissering Pre-Filed Direct Testimony at 37, (transcript p. 298 [testimony of Jean Vissering]).”
- S. “The Wind Energy Act states “[a] finding by [the Commission] that the development’s generating facilities are a highly visible feature in the landscape,” is not by itself a “sufficient basis for a determination that the proposed wind development has an unreasonable adverse effect on scenic character or existing uses related to scenic character.” (35-A M.R.S.A. § 3452 (3)).”

7. Parties’ pre-filed testimonies and post-hearing comments; from closing briefs. (CD #2)

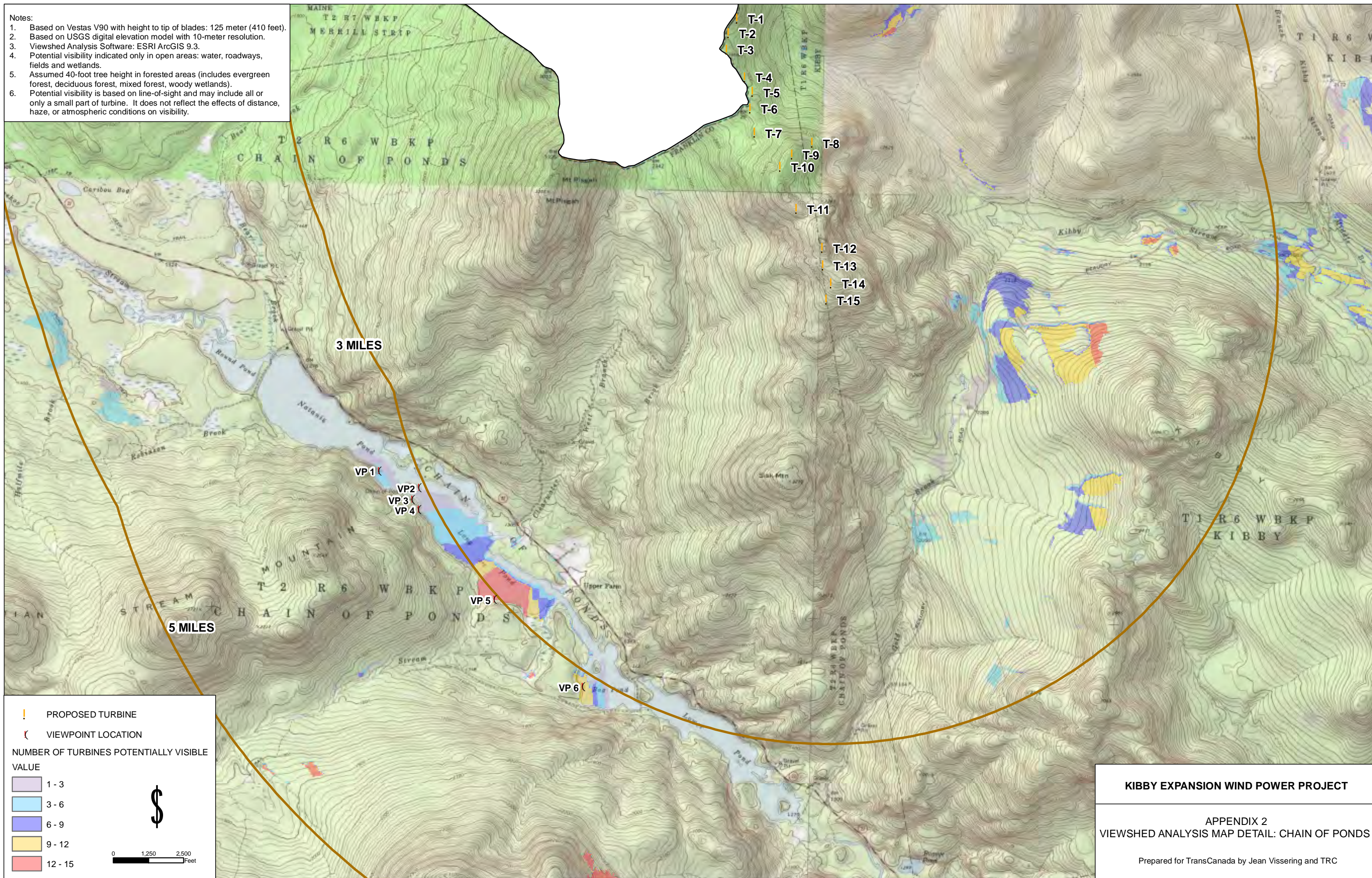
- A. *Consolidated Parties, findings copied from their closing brief.*
- (1) “Seven ponds (Round, Natanis, Long, Bag, Lower, Crosby, and Arnold) rated Class 1A indicating that they have two or more “outstanding” values of statewide significance are within 8 miles of the proposed project. (Testimony of Catherine Johnson, April 21, 2010, pp. 3, 4)”
 - (2) “Seven ponds (Round, Natanis, Long, Bag, Lower, Crosby, and Arnold) are rated “outstanding” for their scenic value by the Wildlands Lakes Assessment. (Testimony, Johnson, pp. 3, 4)”
 - (3) “The five ponds comprising the Chain of Ponds have “outstanding” scenic value, physical features, fisheries, wildlife, significant shoreline character and cultural features. (Testimony, Johnson, pp. 3, 4)”
 - (4) “Chain of Ponds are used by the public for camping, fishing and paddling. (BPL Management Plan, p. 92, 95 - 100; Testimony, Johnson, p. 4)”
 - (5) “Chain of Ponds is known for its “highly scenic character” including its “rugged landscape” and “mountain summits and ridges surround[ing] the narrow ribbon of water.” (BPL Management Plan, p. 92; Comments, Kathy Eickenberg, May 12, 2010, p. 1)”

- (6) “The Chain of Ponds Public Lands Unit located on the northern and eastern shores of Chain of Ponds is noted for its “highly scenic” character. (BPL Management Plan, p. 92; Comments, Eickenberg, p. 1)”
- (7) “The Chain of Ponds Public Lands Unit is managed for its “wild and scenic” character, its primitive nature, and for its remote-feeling recreation experiences, valued by all types of recreationists, including ATV users. (BPL Management Plan, p. 31, 100, 113; Comments, Eickenberg, p. 1; Testimony, Johnson, p. 8)”
- (8) “Users of Chain of Ponds expect to see undeveloped mountains and forests and completely dark night skies. (Testimony, Johnson, p. 6)”
- (9) “The Benedict Arnold Trail to Quebec Historic District is listed on the National Register of Historic Places. (Letter, Kirk Mahoney, May 6, 1012, p.1)”
- (10) “The undeveloped wilderness character and the mountains, bodies of water, and forested landscapes of the Chain of Ponds region through which the Arnold Trail passes are important aspects in determining the “integrity” of the historic trail. (Letter, Mahoney, p. 2; Comments by BPL, Alan Stearns, Feb. 26, 2010, pp. 3-4)”
- (11) “The seven “outstanding” scenic ponds and the Arnold Trail are located in an area traversed by a scenic byway, also noted for its “outstanding” scenery, and one of only 12 scenic byways in the state. (BPL Plan, p. 92; Testimony, Johnson, p. 5)”
- (12) “Route 27 is not visible from Long and Bag Ponds. (Transcript of May 12, 2010, p. 128)”
- (13) “The proposed turbines would be most certainly prominent by any definition from the southern end of Long Pond. (Review of the Kibby expansion Wind Project Aesthetic Impact Assessment, James F. Palmer, April 16, 2010, p. 8; Testimony, Johnson, pp. 7-8)
- (14) “The proposed turbines are prominent from the southern end of Natanis Pond, all of Long Pond and the western half of Bag Pond. (Review, Palmer, p. 8; Testimony, Johnson, pp. 7-8)”
- (15) “The proposed turbines would be visible from approximately one third of the length of Chain of Ponds. (Testimony, Johnson, p. 7)”
- (16) “The southern seven turbines would be within three miles of the Chain of Ponds, the Arnold Trail, and the Public Lands Unit. (Testimony, Johnson, p.7)”
- (17) “The road connecting the southern seven turbines would be highly visible to users of Chain of Ponds. (Testimony, Johnson, p. 8)”
- (18) “The road connecting the seven southern turbines would cross slopes up to 45% and would require significant blasting of bedrock above the road level and fill below the road level. (Transcript of May 12, 2010, p. 129; Testimony, Johnson, p. 23)”
- (19) “The unvegetated cut and fill areas along the road connecting the seven southern turbines could be as much as 100 vertical feet. (Transcript of May 12, 2010, p.129)”
- (20) “The scars caused by the blasting and filling for the road connecting the southern seven turbines cannot be revegetated and will be permanently visible to users of Chain of Ponds. (Testimony, Johnson, p. 8)”
- (21) “The northern eight turbines would be visible from only about 10% of the Chain of Ponds and would be further from the Chain of Ponds than the southern seven turbines. (Testimony, Johnson, p. 7 and Attachment C-2)”
- (22) “Adverse scenic effects from the northern eight turbines would be significantly less than from the southern seven turbines. (Testimony, Johnson, p. 9)”

- B. *FBM, closing brief.* FBM opposes the proposed KEP, submitting the following, which was summarized from their closing brief, in support of that position:
- (1) FBM cited the relevant criteria for evaluation of a wind energy development in the expedited permitting area, (*see* 35-A MRSA Section 3402(2)(C) and 3451 *et seq.*) (*see* Review Criteria, Finding of Fact #1 of this section). However, FBM noted that “this aspect of the [law] only affects review of scenic impacts; the traditional ‘harmonious fit’ criteria in 12 MRSA § 685-B (4)(C) on existing uses, ... natural and historic resources remains intact.”
 - (2) The proposed KEP will create an undue adverse effect on natural resources such as the Chain of Ponds and the Arnold Trail. The adverse visual impact of the proposed project would be significant from the Chain of Ponds, an outstanding scenic resource of statewide significance. The public purposefully travels to the region specifically to boat on Chain of Ponds. There would be significant undue adverse scenic impacts and to the traditional uses of the area, that would be particularly acute on Long Pond and Bag Ponds. The KEP would impact 31% of the Chain of Ponds and would "collectively dominate" the views from Long and Bag Ponds. An adverse impact on 31% of the length of the ponds constitutes an “undue” adverse visual impact, particularly in an environment with little other human visual impact.
 - (3) FBM encourages the Commission to give great weight to the MHPC objections. The Arnold Expedition Historical Society, in its Jan. 8, 2010 letter from its President Steve Clark to LURC states, “We are particularly concerned with the visual impact of the huge proposed industrial power production facility will have on a generally pristine area, of great National Historical significance... LURC has previously recognized the importance of this historical route as they have designated a protective zone from the end of the Chain of Ponds to the U.S., Canadian border in Coburn Gore. The proposed development would visually impact the entire Chain of Ponds and this protective zone, as it is approximately 3 miles or less from this area”. The problems and objections raised by the Arnold Expedition Historical Society should be considered even if TransCanada has succeeded in tempering the Society itself with its promised payoff of \$100,000 (*see* June 1, 2010 letter from the Arnold Expedition Historical Society, Section V, Finding of Fact #6).
 - (4) In addition to the evidence submitted by FBM, the conclusion that the project has unacceptable effects on the Chain of Ponds is supported by the pre-filed testimony and rebuttal testimony of NRMC (*see* Finding of Fact #7,A of this section), the review comments submitted by BPL (*see* Finding of Fact #4 of this section), the May 6, 2010 letter from MHPC (*see* Section V, CD #2), and the January 8th letter from the Arnold Expedition Historical Society (*see* Section V, CD #2).



- Notes:
1. Based on Vestas V90 with height to tip of blades: 125 meter (410 feet).
 2. Based on USGS digital elevation model with 10-meter resolution.
 3. Viewshed Analysis Software: ESRI ArcGIS 9.3.
 4. Potential visibility indicated only in open areas: water, roadways, fields and wetlands.
 5. Assumed 40-foot tree height in forested areas (includes evergreen forest, deciduous forest, mixed forest, woody wetlands).
 6. Potential visibility is based on line-of-sight and may include all or only a small part of turbine. It does not reflect the effects of distance, haze, or atmospheric conditions on visibility.



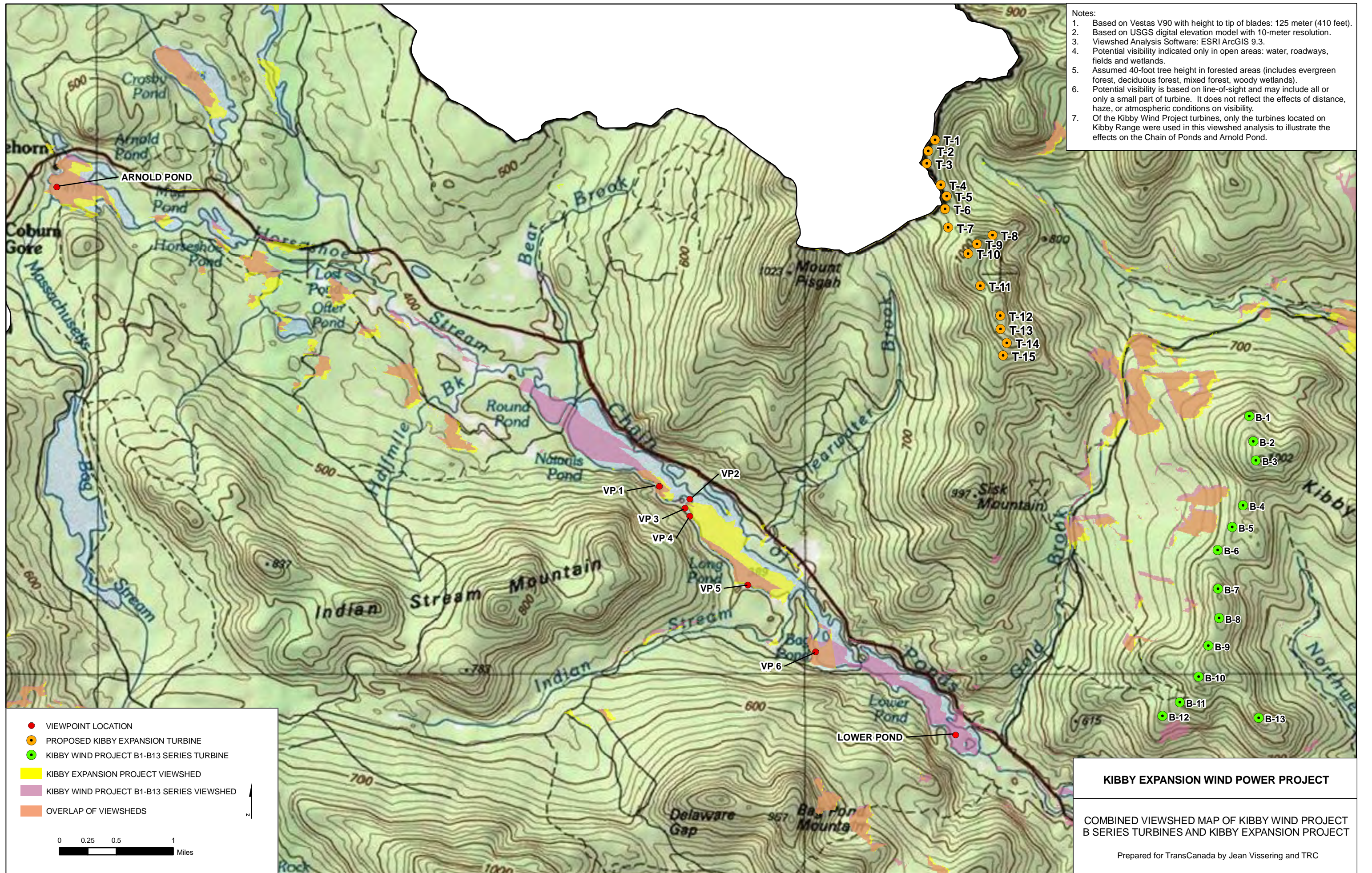
! PROPOSED TURBINE
 X VIEWPOINT LOCATION
 NUMBER OF TURBINES POTENTIALLY VISIBLE
 VALUE
 1 - 3
 3 - 6
 6 - 9
 9 - 12
 12 - 15

0 1,250 2,500
 Feet

KIBBY EXPANSION WIND POWER PROJECT

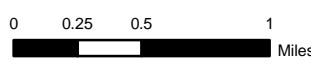
APPENDIX 2
 VIEWSHED ANALYSIS MAP DETAIL: CHAIN OF PONDS

Prepared for TransCanada by Jean Vissering and TRC



- Notes:
1. Based on Vestas V90 with height to tip of blades: 125 meter (410 feet).
 2. Based on USGS digital elevation model with 10-meter resolution.
 3. Viewshed Analysis Software: ESRI ArcGIS 9.3.
 4. Potential visibility indicated only in open areas: water, roadways, fields and wetlands.
 5. Assumed 40-foot tree height in forested areas (includes evergreen forest, deciduous forest, mixed forest, woody wetlands).
 6. Potential visibility is based on line-of-sight and may include all or only a small part of turbine. It does not reflect the effects of distance, haze, or atmospheric conditions on visibility.
 7. Of the Kibby Wind Project turbines, only the turbines located on Kibby Range were used in this viewshed analysis to illustrate the effects on the Chain of Ponds and Arnold Pond.

- VIEWPOINT LOCATION
- PROPOSED KIBBY EXPANSION TURBINE
- KIBBY WIND PROJECT B1-B13 SERIES TURBINE
- KIBBY EXPANSION PROJECT VIEWSHED
- KIBBY WIND PROJECT B1-B13 SERIES VIEWSHED
- OVERLAP OF VIEWSHEDS



KIBBY EXPANSION WIND POWER PROJECT

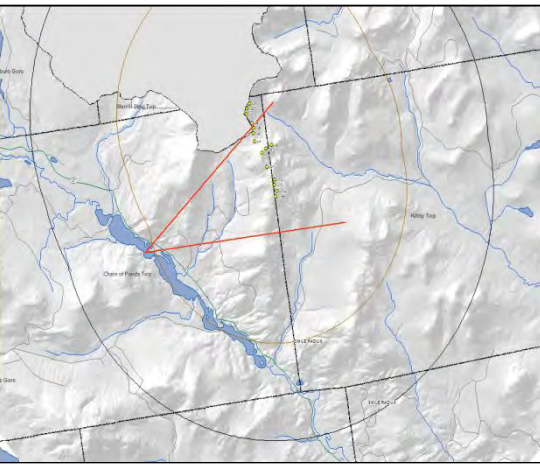
COMBINED VIEWSHED MAP OF KIBBY WIND PROJECT B SERIES TURBINES AND KIBBY EXPANSION PROJECT

Prepared for TransCanada by Jean Vissering and TRC



Panoramic View from Natanis Pond, Southeast

VIEWPOINT LOCATION MAP



EXISTING CONDITIONS



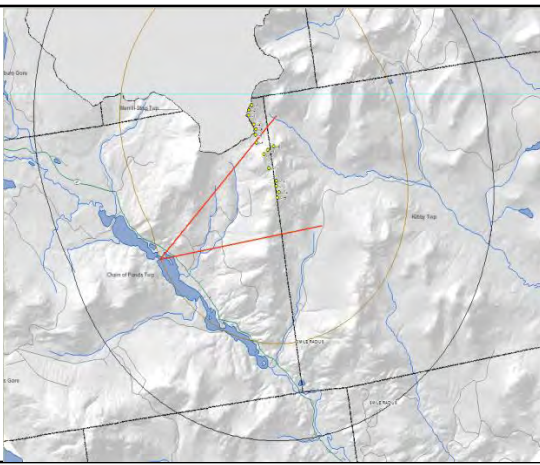
TECHNICAL INFORMATION

<i>Turbine Model</i>	Vestas V90 3 MW
<i>Hub Height</i>	80 meters
<i>Rotor Diameter</i>	90 meters
<i>Viewpoint Coordinates</i>	368016.8 E
<i>In UTM 19</i>	5022873.6 N
<i>Viewpoint Location</i>	Natanis Pond, SE
<i>Viewer Elevation</i>	1274 ft msl
<i>Distance to Closest Turbine</i>	3.2 miles
<i>Distance to Furthest Turbine</i>	3.3 miles
<i>Number of Visible Turbines</i>	4
<i>Camera Model</i>	Nikon D200
<i>Lens Setting</i>	50 mm (equivalents)
<i>Date/Time</i>	10.21.09/11:34 am

KIBBY EXPANSION WIND POWER PROJECT
 Photosimulations Prepared for TransCanada
 by Jean Vissering and TRC



VIEWPOINT LOCATION MAP



EXISTING CONDITIONS



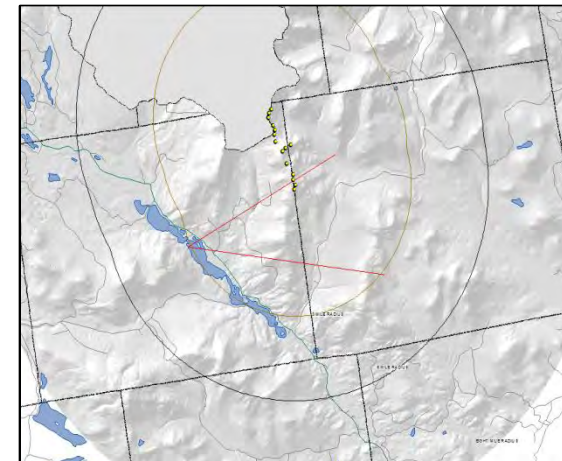
TECHNICAL INFORMATION

<i>Turbine Model</i>	Vestas V90 3 MW
<i>Hub Height</i>	80 meters
<i>Rotor Diameter</i>	90 meters
<i>Viewpoint Coordinates</i>	368449.4 E
<i>In UTM 19</i>	5022689.9 N
<i>Viewpoint Location</i>	The Narrows, Natanis to Long Pond
<i>Viewer Elevation</i>	1274 ft msl
<i>Distance to Closest Turbine</i>	3.0 miles
<i>Distance to Furthest Turbine</i>	3.1 miles
<i>Number of Visible Turbines</i>	0
<i>Camera Model</i>	Nikon D200
<i>Lens Setting</i>	50 mm (equivalents)
<i>Date/Time</i>	10.21.09/1:39 pm

KIBBY EXPANSION WIND POWER PROJECT
 Photosimulations Prepared for TransCanada
 by Jean Vissering and TRC



VIEWPOINT LOCATION MAP



EXISTING CONDITIONS



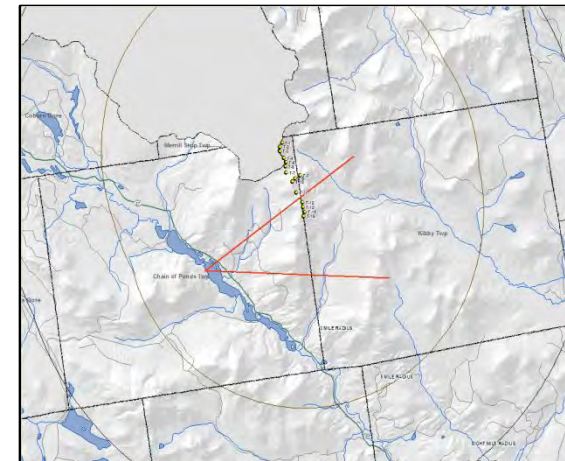
TECHNICAL INFORMATION

<i>Turbine Model</i>	Vestas V90 3 MW
<i>Hub Height</i>	80 meters
<i>Rotor Diameter</i>	90 meters
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<i>In UTM 19</i>	5022560.9 N
<i>Viewpoint Location</i>	Long Pond, NW 1
<i>Viewer Elevation</i>	1274 ft msl
<i>Distance to Closest Turbine</i>	3.1 miles
<i>Distance to Furthest Turbine</i>	3.2 miles
<i>Number of Visible Turbines</i>	2
<i>Camera Model</i>	Nikon D200
<i>Lens Setting</i>	50 mm (equivalents)
<i>Date/Time</i>	10.21.09/2:19 pm

KIBBY EXPANSION WIND POWER PROJECT
 Photosimulations Prepared for TransCanada
 by Jean Vissering and TRC



VIEWPOINT LOCATION MAP



EXISTING CONDITIONS



TECHNICAL INFORMATION

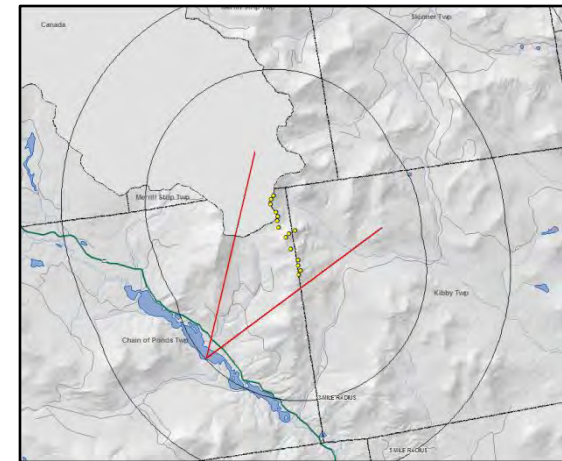
<i>Turbine Model</i>	Vestas V90 3 MW
<i>Hub Height</i>	80 meters
<i>Rotor Diameter</i>	90 meters
<i>Viewpoint Coordinates</i>	368447.4 E
<i>In UTM 19</i>	5022451.2 N
<i>Viewpoint Location</i>	Long Pond, NW 2
<i>Viewer Elevation</i>	1274 ft msl
<i>Distance to Closest Turbine</i>	3.1 miles
<i>Distance to Furthest Turbine</i>	3.2 miles
<i>Number of Visible Turbines</i>	4
<i>Camera Model</i>	Nikon D200
<i>Lens Setting</i>	50 mm (equivalents)
<i>Date/Time</i>	10.21.09/2:53 pm

KIBBY EXPANSION WIND POWER PROJECT

Photosimulations Prepared for TransCanada
by Jean Vissering and TRC



VIEWPOINT LOCATION MAP



EXISTING CONDITIONS



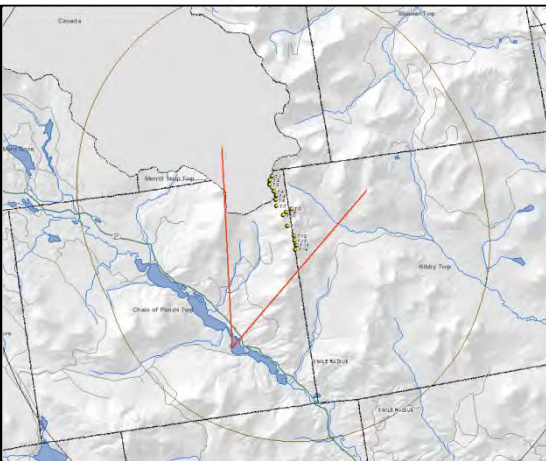
TECHNICAL INFORMATION

<i>Turbine Model</i>	Vestas V90 3 MW
<i>Hub Height</i>	80 meters
<i>Rotor Diameter</i>	90 meters
<i>Viewpoint Coordinates</i>	369271.3 E
<i>In UTM 19</i>	5021474.5 N
<i>Viewpoint Location</i>	Long Pond, SE
<i>Viewer Elevation</i>	1274 ft msl
<i>Distance to Closest Turbine</i>	3.0 miles
<i>Distance to Furthest Turbine</i>	4.25 miles
<i>Number of Visible Turbines</i>	14
<i>Camera Model</i>	Nikon D70
<i>Lens Setting</i>	50 mm (equivalents)
<i>Date/Time</i>	11.09.09/11:46 am

KIBBY EXPANSION WIND POWER PROJECT
 Photosimulations Prepared for TransCanada
 by Jean Vissering and TRC



VIEWPOINT LOCATION MAP



EXISTING CONDITIONS



TECHNICAL INFORMATION

<i>Turbine Model</i>	Vestas V90 3 MW
<i>Hub Height</i>	80 meters
<i>Rotor Diameter</i>	90 meters
<i>Viewpoint Coordinates</i>	370228.8 E
<i>In UTM 19</i>	5020527.8 N
<i>Viewpoint Location</i>	Bag Pond
<i>Viewer Elevation</i>	1274 ft msl
<i>Distance to Closest Turbine</i>	3.5 miles
<i>Distance to Furthest Turbine</i>	4.6 miles
<i>Number of Visible Turbines</i>	10
<i>Camera Model</i>	Nikon D70
<i>Lens Setting</i>	50 mm (equivalents)
<i>Date/Time</i>	11.09.09/10.37 am

KIBBY EXPANSION WIND POWER PROJECT
 Photosimulations Prepared for TransCanada
 by Jean Vissering and TRC

V. HISTORIC RESOURCES IMPACT ASSESSMENT

At end of section - Map showing the route of the Arnold Trail

CD #1 - Attachment to CP pre-filed testimony containing section of the BPL Flagstaff Region Management Plan

CD #2

- BPL Flagstaff Region Management Plan (2007) (*see* General Section)
- Maine Historic Preservation Commission (MHPC) letters, February 2nd and May 6th
- Army Corps of Engineers and MHPC emails, June 1st
- Letters from the Arnold Expedition Historical Society, dated January 8 and June 1, 2010
- Email from Arnold Trail Snowmobile Club in support of the project

1. Review criteria

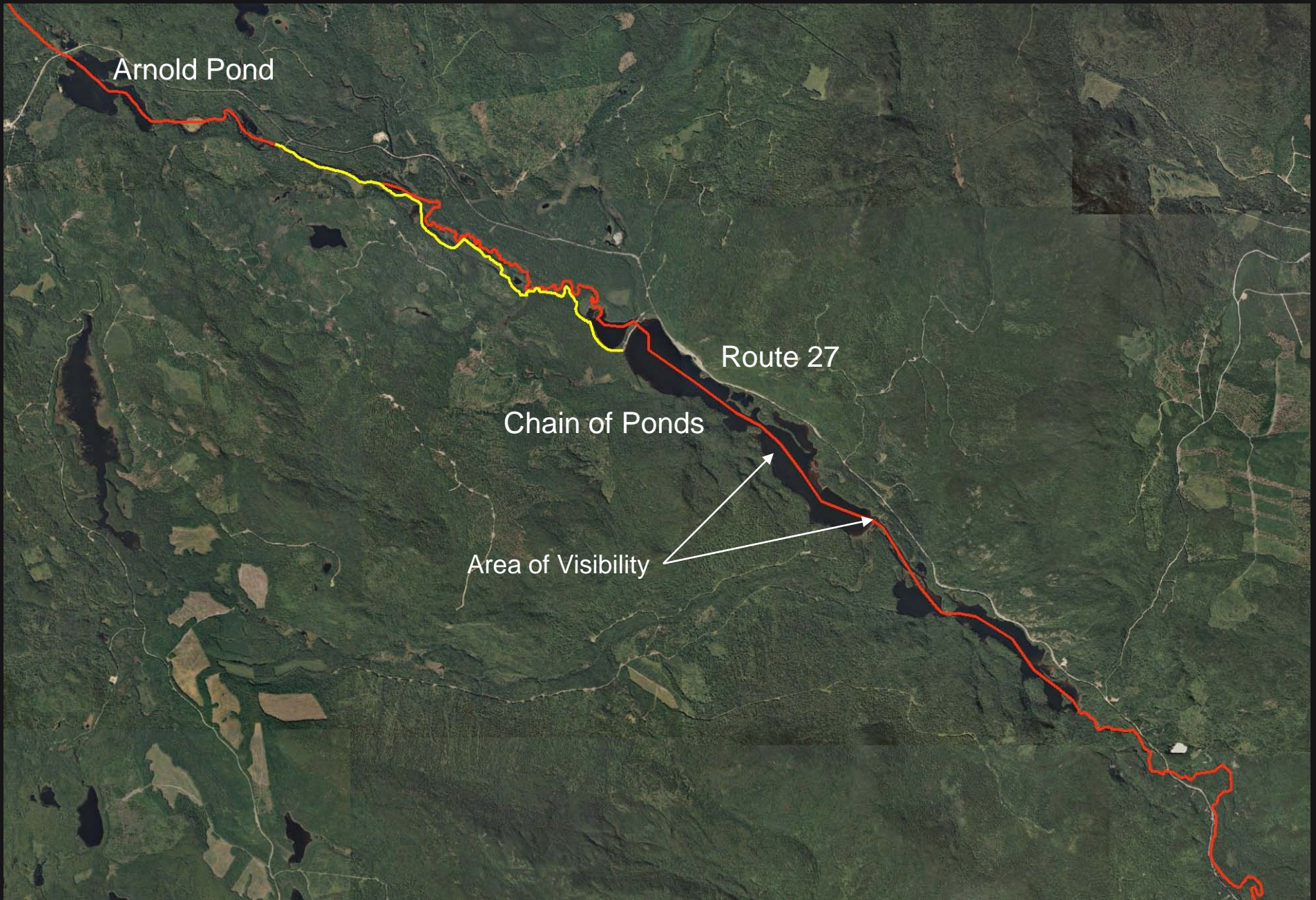
- A. In addition to the consideration of visual impacts to historic features as discussed in Section II under the Wind Energy Act scenic standards, the Commission's statute and Land Use Districts and Standards also address impacts to historic features. It should also be noted that the materials submitted to the LURC record assessing historic and archaeological resource impacts were concurrently submitted to the U.S. Army Corps of Engineers for its federal Section 106 consultation process with MHPC on historic impacts, which is a part of their Section 404 wetland permit review.
- B. *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."
- C. *Commission's Land Use Districts and Standards, Section 10.25,E,2(b).* "Historic Features. If any portion of a subdivision or commercial, industrial or other non-residential project site includes an archaeologically sensitive area or a structure listed in the National Register of Historic Places, or is considered by the Maine Historic Preservation Commission or other pertinent authority as likely to contain a significant archaeological site or structure, the applicant shall conduct archaeological surveys or submit information on the structure, as requested by the appropriate authority. If a significant archaeological site or structure is located in the project area, the applicant shall demonstrate that there will be no undue adverse impact to the archaeological site or structure, either by project design, physical or legal protection, or by appropriate archaeological excavation or mitigation."

2. Application and supplemental materials; and consultation with MHPC

- A. 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 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* Section IV, Finding of Fact #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 the Maine Historic Preservation Commission (MHPC) that no known archaeological site would be affected.
- B. MHPC reviewed the applicant's November 25th 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.
- C. On April 9, 2010, the applicant submitted to MHPC and the Corps the requested additional materials for review. A copy of the submittal was sent to LURC on June 7, 2010.
- D. 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 reiterated 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.
- E. A representative of the Corps testified at the public hearing on May 12, 2010 describing the Corps' Section 106 historic resources review process.
- F. 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 (CD #2). At that time, the Corps had not yet formally initiated the Section 106 review process, but was anticipating doing so sometime in June when it issues its public notice. The Corps stated that the formal Section 106 process first addresses avoidance and minimization, and 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."

- G. The applicant included in its pre-filed testimony as a tangible benefit the donation of \$100,000 to the Arnold Expedition Historical Society (*see* Section II, Finding of Fact #2,B,3. Previously, the applicant had contributed funds and support to the Society for preparation of a brochure on the Trail.
3. **BPL review comments.** (CD #1) BPL's comments on the impacts to the Arnold Trail are summarized in Section IV, Finding of Fact #4, above. The applicant's response to BPL's comments regarding the Trail is summarized in Finding of Fact #5 of that section.
4. **Applicant's pre-filed testimony and post-hearing comments, as summarized in Attachment A to its closing brief.** (CD #2) In addition to the summary of its comments regarding visual impact in Section IV, Finding of Fact #6, above, the applicant submitted the following regarding historic resources:
- A. "The Arnold Trail shares much of the route in the study area with Chain of Ponds and, for this reason, the visual impacts are similar. The Project will be visible only from a 1.6 mile developed section of a 194 mile trail, resulting in 0.8% visibility. (Vissering Pre-Filed Direct Testimony at 37, [Testimony of Jean Vissering at 298])."
- B. "As part of a parallel federal permitting process, the Maine Historic Preservation Commission ("MHPC") made a determination that the Project will have an adverse effect on an approximately 1.6 mile section of the Arnold Trail. (Letter from Kirk Mohny, MHPC, to TRC dated May 6, 2010). MHPC's determination of adversity is not a finding of undue or unreasonable adverse impact under LURC's (or any other State review) criteria."
5. **Parties' pre-filed testimony and post hearing comments; summarized from closing briefs.** (CD #2)
- A. *Consolidated Parties.* The Consolidated Parties' (CP) comments with regard to impacts to the Arnold Trail are summarized in Section IV, Finding of Fact #7,A.
- B. *FBM.* FBM's post-hearing comments with regard to impacts to the Arnold Trail are summarized in Section IV, Finding of Fact #7,B.
6. **Public comments specific to the Arnold Trail.** Letters from the public were received both in opposition to the KEP and in support with respect to the potential for a change to the character of the Trail. 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, the president of the Arnold Trail Snowmobile Club stated that the club supports the KEP, and in a letter dated June 1, 2010, the treasurer of the Arnold Expedition Historical Society stated support for the KEP. (CD #2)






Arnold Pond

Route 27

Chain of Ponds

Area of Visibility

Arnold Trail (water route) 

Arnold Trail (land trail) 

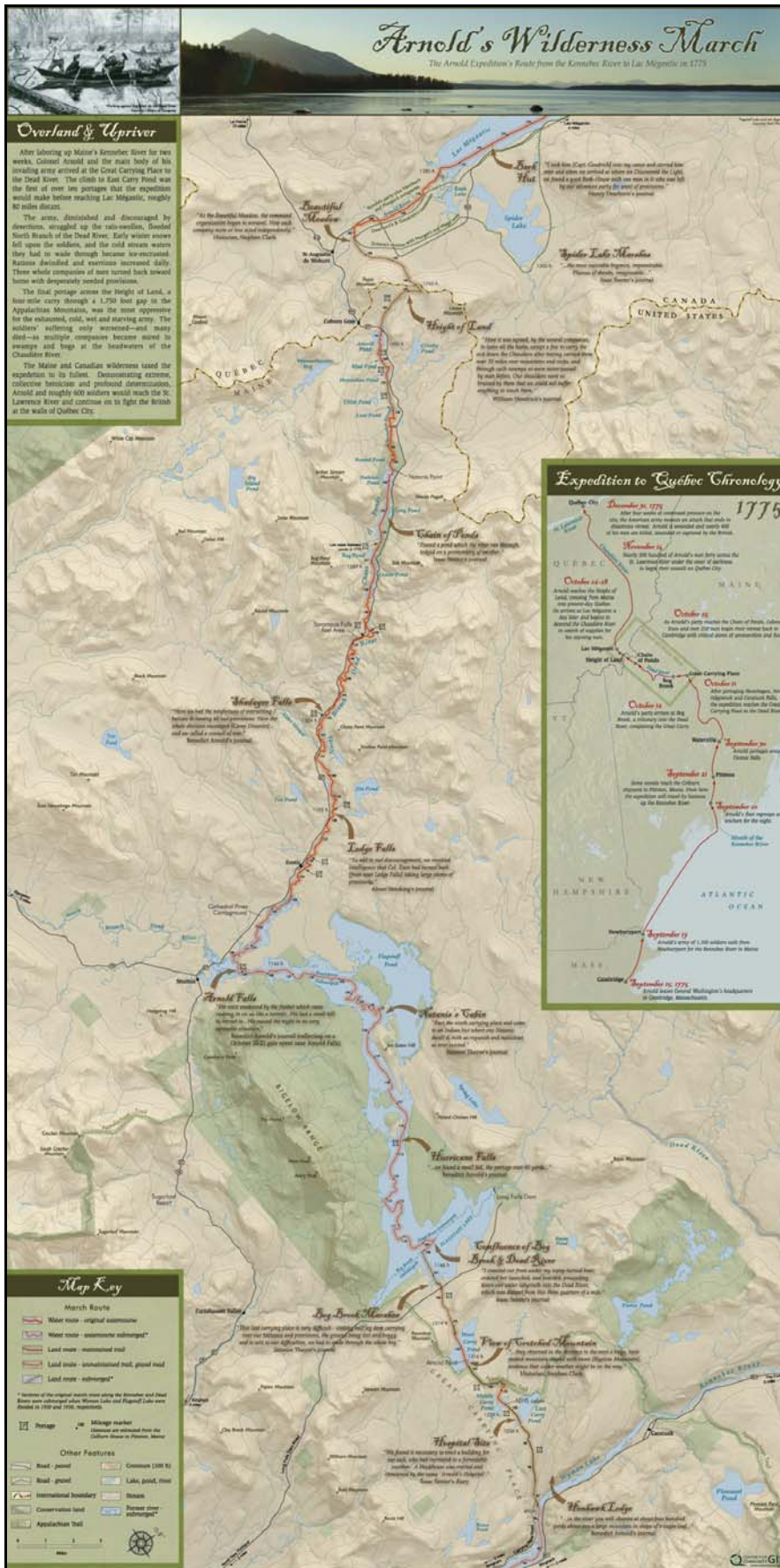




Figure 7. Arnold Trail Map and Guide (Source: Center for Community GIS in Farmington, Maine using funds donated by TransCanada)

ARNOLD TRAIL MAP & GUIDE


Arnold's Wilderness March

Family Williams Home

On the left of this map, a small inset map shows the location of the Arnold Expedition route in the state of Maine. The main map shows the route from the Kennebec River in Maine and the Atlantic Ocean. The route is marked with a red line and includes various landmarks and points of interest. The map is titled 'Arnold's Wilderness March' and includes a compass rose and a historical photograph of a forest.

Following Arnold Today




About this Map

This map generally follows the Arnold Expedition's "wilderness march" between the Kennebec River in Maine and the Atlantic Ocean. The route is marked with a red line and includes various landmarks and points of interest. The map is titled 'Arnold's Wilderness March' and includes a compass rose and a historical photograph of a forest.

The Secret Expedition to Quebec

In 1775, the British held an expedition to Quebec City, Quebec, and another general in the Lake Umbagog region. The expedition was successful in capturing the city of Quebec and the surrounding area. The map shows the route of the expedition and the locations of the various battles and events.



Driving Directions


- Start at the junction of Route 27 and the village of Shelburne. The route is marked with a red line and includes various landmarks and points of interest.
- Follow the route through Shelburne, then through the village of Shelburne Falls, and finally to the village of Shelburne Falls.

Additional Reading

For more information on the Arnold Expedition, see the following resources:


- Arnold's Wilderness March: A History of the Expedition
- The Secret Expedition to Quebec

Explore by Automobile



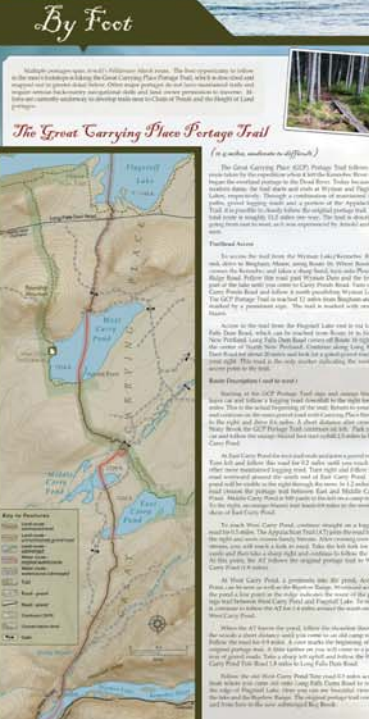
Driving Directions Continued

- Follow the route through Shelburne Falls, then through the village of Shelburne Falls, and finally to the village of Shelburne Falls.
- Follow the route through Shelburne Falls, then through the village of Shelburne Falls, and finally to the village of Shelburne Falls.




By Tance

Explore the route by canoe or kayak. The route is marked with a red line and includes various landmarks and points of interest.




The Great Carrying Place Portage Trail

The Great Carrying Place Portage Trail is a 12-mile trail that connects the Kennebec River in Maine and the Atlantic Ocean. The trail is marked with a red line and includes various landmarks and points of interest.




Playstovf Lake (a mile a day)

Playstovf Lake is a 12-mile lake that connects the Kennebec River in Maine and the Atlantic Ocean. The lake is marked with a red line and includes various landmarks and points of interest.



Chain of Ponds (a mile a day)

The Chain of Ponds is a 12-mile trail that connects the Kennebec River in Maine and the Atlantic Ocean. The trail is marked with a red line and includes various landmarks and points of interest.



Arnold Expedition Historical Society

The Arnold Expedition Historical Society is a 12-mile trail that connects the Kennebec River in Maine and the Atlantic Ocean. The trail is marked with a red line and includes various landmarks and points of interest.

Figure 7. Arnold Trail Map and Guide (Source: Center for Community GIS in Farmington, Maine using funds donated by TransCanada)

VI. VERNAL POOLS AND WETLAND ALTERATIONS

At end of section

- Map showing vernal pool locations (also on CD #2)
- Maps showing wetlands in project area
- MDEP rules - 06-096, Chapter 335. Significant Wildlife Habitat, reference Section 9

CD #2

- Map showing vernal pool locations
- MDIFW Maine State Vernal Pool Assessment Form
- Sixth Procedural Order
- MDIFW response to Sixth Procedural Order and rebuttal to FBM
- FBM rebuttal to MDIFW response to Sixth Procedural Order
- Commission's Land Use Districts and Standards, Section 10.25,P, wetland alterations

1. Review Criteria and Reference Materials

- 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); (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 (CD #2)*

E. *Maine Department of Environmental Protection rules - 06-096, Chapter 335. Significant Wildlife Habitat, reference Section 9. (CD #2)*

F. *Maine Department of Inland Fisheries and Wildlife (MDIFW) - Maine State Vernal Pool Assessment Form (CD #2)*

2. **Applicant's vernal pool site survey.** (CD #1) 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. A map showing the locations of the identified pools is attached at the end of this section.
 - A. 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 (SVP), but nevertheless the applicant choose to treat these pools as jurisdictional. The applicant did not conduct additional surveys of each pool during the amphibian breeding season.
 - B. None of the pools identified by the applicant would be impacted by the proposed project. The applicant proposed to (1) maintain with at least a partially closed canopy no less than 75% of the upland forested habitat buffer within 250 ft of the pools, (2) maintain or restore forest corridors connecting wetlands and any significant vernal pools, (3) minimize forest floor disturbance within the upland buffer; and (4) maintain native

understory vegetation and woody debris within the upland buffer. Less than 10% of the forested buffer within 750 ft of the pools would be impacted.

- C. *Maine Department of Environmental Protection (MDEP)*. In a letter dated May 21, 2010, MDEP stated, and included a copy of its database record, that it has recorded the 14 vernal pools identified in this project area, and that these pools have all been deemed as not significant. Under NRPA, habitat within 250 ft of each pool would not be regulated unless another protected resource, such as a stream or a wetland, is present within that area. MDEP advised that a non-significant vernal pool can be regulated as a freshwater wetland.

3. Applicant wetland site survey. (CD #1)

- A. *Proposed wetland alteration*. A total of 4.36 acres of wetland would be altered. Of the 4.36 acres, 3.49 acres would be permanently cleared for the collector line corridor, 0.09 acre would be temporarily cleared, and 0.78 acre would be filled for stream crossings. The permanently cleared areas would be maintained as a scrub shrub wetland. The temporarily cleared areas would be allowed to fully revegetate. Of the wetlands proposed to be filled, 0.06 acre is P-WL1 wetland (includes stream channels), and 0.72 acre is P-WL2/3 wetland. All of the proposed P-WL1 wetland fill impact is for stream crossings. 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, 417 sq ft of P-WL1 wetland will be affected.
- B. *Functional assessment*. The applicant conducted a functional assessment for the proposed KEP wetland impacts associated with the [proposed KEP, separating the impacts into three types: areas associated with new roads or turbine pads, with collector line clearing, and 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.
- C. *U.S. Army Corps of Engineers (Corps), Section 404 wetland permit application*. The applicant submitted a permit application to the Corps for the proposed wetland alteration in February 2010. Due to the extent of the wetland to be altered (including the cleared areas) and the other matters of public interest, in particular scenic and historic resources impacts, the Corps determined that this application qualified as an individual permit. The Corps has anticipated publishing its public notice in June, which will mark the initiation of the formal review of TransCanada's Section 404 wetland permit application for the KEP. The permit is currently pending. As a Section 404 Individual Permit review, an alternatives analysis, mitigation for wetland alterations, and possibly mitigation for historic resources impacts are being considered. See Section V, Finding of Fact #2 regarding the review of the affected historic resources.

4. Maine Department of Inland Fisheries and Wildlife (MDIFW) review comments on vernal pools (CD #1) and response to Sixth Procedural Order. (CD #2) MDIFW did not

include comments on vernal pools in their agency review comments dated March 8, 2010. On May 17, 2010, MDIFW confirmed that no comments had been submitted to LURC because it had determined that the identified pools in the project area were not jurisdictional.

- A. On February 3, 2010, MDIFW staff stated: "I reviewed all the vernal pool data submitted for the Kibby Wind Expansion Project in Kibby and Chain of Ponds and concur with the applicants that all 14 of the surveyed potential vernal pools are unnatural and therefore do not qualify as SVPs. I have forwarded the data to Don Katnik for entry as Non-significant Vernal Pools into the state vernal pool database. I have no further concerns with vernal pool issues on this project."
- B. On May 17th, MDIFW forwarded the February 3rd communication to LURC staff, stating: "Assuming that all the pools are of human origin then I believe you are correct that MDIFW would have no further recommendation for further survey, regardless of previously poor-timed surveys. However, my understanding is that our federal partners (ACOE/EPA) can assume jurisdiction and do require specific performance standards over some (at their discretion) vernal pools regardless of origin."
- C. On May 24, 2010 MDIFW responded to the Sixth Procedural Order regarding vernal pools identified for the KEP, stating:
 - (1) "MDIFW utilizes Natural Resources Protection Act- Significant Vernal Pools standards, regardless of actual regulatory jurisdiction (DEP NRPA Chapter 335 Rules; Section 9, Significant Vernal Pools). TransCanada, through consultation with MDIFW, adopted a protocol to identify vernal pools as part of their pre-construction study package based on NRPA standards. The objective of the protocol employed by TransCanada was to identify, map, and characterize all vernal pools that are in proximity to their proposed development. This is typical of vernal pool surveys for large development applications. MDIFW and MDEP have developed a 'Maine State Vernal Pool Assessment Form' to aid in characterization of the vernal pools."
 - (2) "Under NRPA rules, only Significant Vernal Pools are subject to habitat management standards. There are several criteria used to determine significance of a vernal pool (outlined in Section 9 of Chapter 335 rules). It is important to note that official determination of pool Significance is made by MDIFW and not the applicant or the certified professional conducting the survey."
 - (3) "TransCanada submitted their vernal pool data forms to MDIFW. All pools submitted were determined to be non-significant, because the vernal pools identified in the survey were all of unnatural origin. Therefore, additional surveys during the identification period for pool-breeding amphibians are unnecessary, and would not change the determination of Significance. In most circumstances, unnatural vernal pools are not determined to be Significant or subject to habitat management standards (under NRPA rules). Regardless of this determination, TransCanada is applying the NRPA habitat management standards to all identified vernal pools."
- D. On June 1st, MDIFW responded to FBM's rebuttal (*see* Finding of Fact #6,B(1)(b), below), re-stating: "MDIFW is satisfied with TransCanada's effort to document wetlands

associated with the project area, including vernal pools. Therefore, we did not request additional pre-construction studies.”

5. **Applicant’s pre-filed testimony and post-hearing comments; copied from Appendix A to its closing brief. (CD #2)**
 - A. “TransCanada conducted vernal pool surveys in accordance with IF&W guidance, which expressly allows surveys to occur outside of the spring amphibian identification period and these surveys have been affirmatively approved by IF&W. (e-mails from Mr. Cordes, IF&W to Ms. Spencer-Famous dated May 24, 2010 and June 1, 2010).”
 - B. “TransCanada identified 14 man-made, non-state regulated, vernal pools in the Project area. (Application Section b.15.6.10, Cinnamon et al. Direct Pre-Filed Testimony at 10 and e-mail from Mr. Cordes, IF&W, to Ms. Spencer-Famous dated May 24, 2010).”
 - C. “TransCanada will treat all man-made and, therefore, non-state regulated vernal pools as though they were significant by applying the habitat management standards required under the Natural Resources Protection Act to all identified vernal pools. (Cinnamon et al. Direct Pre-Filed Testimony at 10 and e-mail from Mr. Cordes, IF&W, to Ms. Spencer-Famous dated May 24, 2010).”
6. **Intervenors’ pre-filed testimony and post-hearing submittals; summarized from their closing briefs. (CD #2)**
 - A. *Consolidated Parties (CP)*. The CP did not submit comments regarding vernal pools or wetland impacts in the project area in their closing brief, which summarizes the key points raised in their pre-filed testimony and post- hearing submittals.
 - B. *Friends of the Boundary Mountains (FBM)*.
 - (1) In its closing brief, which summarizes the points raised in its pre-filed testimony and post hearing submittals, FBM commented with regard to vernal pools as follows:
 - (a) FBM has “concern about the impact of the of the proposed Kibby expansion on the breeding habitat for several rare and endangered species in the Northeast, such as the Blue-Spotted Salamander, Blanding’s Turtle and Eastern Ribbon Snake that breed in vernal pools”. FBM asserted that “MDIFW’s recommended surveying and mapping procedure for locating significant vernal pools must be done during certain precise time periods, depending on geography and altitude”, and that the applicant “did not follow these recommendations”. FBM contended that “the lack of an appropriately timed and full vernal pool survey conducted for this project jeopardizes the breeding of these species.”
 - (b) FBM asserted that “the MDIFW response [to the Sixth Procedural Order] only speaks to TransCanada’s identified unnatural vernal pools, which cannot be determined as Significant Vernal Pools. Because there was never a vernal pool field survey done during the appropriate spring periods when wood frog and spotted salamander egg masses (May 5 to May 20 for wood frogs, May 15th to June 5th for salamanders) are present then pools with open canopy, and shorter

hydroperiods could have been missed. If the project goes forward as scheduled these possible unidentified vernal pools may be lost.” “Short - cycle vernal pools that may have been missed in the late season (July-September) vernal pool surveys that were done by the applicant.”

- (2) FBM comments with regard to wetland impacts are contained in Section IX, Finding of Fact #7, on soils and erosion.

of Maine provide a setting free of mammalian predators such as foxes, coyotes, and raccoons. Flying distance from the mainland discourages avian predators such as great horned owls. Many seabird species nearly eradicated in Maine by the end of the 19th century have recovered dramatically, thanks to the passage of state and federal conservation laws and the restoration efforts of dedicated scientists. In 1998, 234 seabird nesting Islands in Maine were afforded protection as Significant Wildlife Habitat under the Natural Resource Protection Act.

A. Definitions. As used in this chapter, unless the context otherwise indicates, the following terms have the following meanings.

- (1) Seabird. Colonial nesting waterbirds including Leach's Storm-petrel, Great Cormorant, Double-crested Cormorant, Laughing Gull, Herring Gull, Great Black-backed Gull, Common Tern, Arctic Tern, Roseate Tern, Razorbill, Black Guillemot, Atlantic Puffin, and Common Eider.
- (2) Seabird nesting island. (a) An island, ledge, or portion thereof in tidal waters that has documentation of 25 or more: nests or seabirds, adult seabirds displaced from nests, or in combination (single species or aggregate of different species) in any nesting season during, or since, 1976; provided that the island, ledge, or portion thereof continues to have suitable nesting habitat. (b) An island, ledge, or portion thereof in tidal waters that has documentation of one or more nests of a seabird that is a Maine endangered or threatened species in any year during, or since, 1976 provided that the island, ledge, or portion thereof, continues to have suitable nesting habitat.

B. Maps. Seabird nesting islands are delineated on 7.5 minute U.S. Coast and Geodetic Survey maps developed by the Maine Department of Inland Fisheries and Wildlife. The maps are identified as Significant Wildlife Habitat Seabird Nesting Island Maps #1-55, January 1998.

NOTE: The criteria used to define seabird nesting islands was developed by the Maine Department of Inland Fisheries and Wildlife (09-137 CMR 10.02(F)). Maps of seabird nesting islands are available from the Department of Environmental Protection or the Maine Department of Inland Fisheries and Wildlife (IF&W).

C. Removal or displacement of vegetation. For seabird nesting islands, removal or displacement of vegetation does not include:

- (1) Gardening, lawn cutting, removal of fallen vegetation, and tree and shrub pruning within an existing development area as of September 15, 1998.
- (2) Removal of an entire tree when it threatens a building.

D. Seabird critical nesting period. The seabird critical nesting period is from April 15 to August 31 each year unless otherwise approved by the Maine Department of Inland Fisheries and Wildlife.

- **9. Significant vernal pool habitat.** A vernal pool, also referred to as a seasonal forest pool, is a natural, temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet or outlet and no viable populations of predatory fish. A vernal pool may provide the primary

breeding habitat for wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*Ambystoma laterale*), and fairy shrimp (*Eubranchipus* sp.), as well as valuable habitat for other plants and wildlife, including several rare, threatened, and endangered species. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition.

Whether a vernal pool is a significant vernal pool is determined by the number and type of pool-breeding amphibian egg masses in a pool, the presence of fairy shrimp, use by rare, threatened or endangered species, or other criteria as specified in Section 9(B). Significant vernal pool habitat consists of a vernal pool depression and that portion of the critical terrestrial habitat within 250 feet of the spring or fall high water mark of the depression. An activity that takes place in, on, or over a significant vernal pool habitat must meet the standards of this chapter.

NOTE: The term vernal (vernal = spring) pool is used in the Natural Resources Protection Act, and has typically been used to discuss the types of pools described in Section 9. However, because some pools are wet in both spring and fall, and others are never dry, they have also been referred to as “seasonal forest pools.” Vernal pool is still a common term, and will continue to be used in this section.

NOTE: The 250 feet of critical terrestrial habitat protected as significant vernal pool habitat is only a portion of the habitat used by adult wood frogs, ambystomatid salamanders, and rare, threatened and endangered species. Tracking studies of adult pool-breeding amphibians have shown that they can travel over a third-mile away from their breeding pool, and that the area within 750 feet of the pool is valuable for protecting viable amphibian populations. The department encourages efforts to protect more habitat adjacent to a vernal pool than this rule has authority over.

NOTE: For more information on identifying vernal pools, see “Maine Citizen’s Guide to Locating and Documenting Vernal Pools.” Maine Audubon Society, 2003.

A. Definitions. As used in this section, unless the context otherwise indicates, the following terms have the following meanings.

- (1) Critical terrestrial habitat. Uplands and wetlands associated with significant vernal pools used by pool breeding amphibians for migration, feeding, and hibernation, in particular, forested wetlands and forested uplands that provide deep organic litter, coarse woody debris and canopy shade.
- (2) Egg mass. Three or more individual eggs clumped in a gelatinous matrix constitute an egg mass. Egg masses often occur in clusters, but each mass within a cluster must be counted as an individual egg mass.
- (3) Natural. A natural vernal pool includes pools of natural origin that have been modified or excavated. A natural vernal pool does not include other natural wetland types (wet meadows, marshes, etc.) that have been altered and currently function as vernal pools.
- (4) Pool-breeding amphibians. Animals that, as part of their life cycle, reproduce in vernal pools. Most pool-breeding amphibians return to reproduce in the pool where they originated. Most

adult pool-breeding amphibians spend less than one month in breeding pools; the rest of their annual cycle is spent in critical terrestrial habitat.

- (5) Qualified individual. An individual who has experience and training in either wetland ecology or wildlife ecology and therefore has qualifications sufficient to identify and document a significant vernal pool.
- (6) Significant vernal pool. The vernal pool depression within a significant vernal pool habitat.
- (7) Significant vernal pool habitat. A significant vernal pool and that portion of the critical terrestrial habitat within 250 feet of the spring or fall high water mark of the vernal pool depression.
- (8) Vernal pool depression or vernal pool. This area includes the vernal pool depression up to the spring or fall high water mark, and includes any vegetation growing within the depression.

B. Significant vernal pool habitat identification criteria. Vernal pool habitat significance must be determined and documented by a qualified individual.

- (1) Abundance. Any one of or combination of the following species abundance levels, documented in any given year, determine the significance of a vernal pool habitat.

Species	Abundance Criteria
Fairy shrimp	Presence in any life stage.
Blue spotted salamanders	Presence of 10 or more egg masses.
Spotted salamanders	Presence of 20 or more egg masses.
Wood frogs	Presence of 40 or more egg masses.

- (2) Rarity. A pool that has documented use in any given year by a rare species, or state-listed endangered or threatened species that commonly requires a vernal pool to complete a critical portion of its life-history is part of a significant vernal pool habitat. Examples of vernal pool dependent state-listed endangered or threatened species include, but are not limited to, Blanding's turtles, Spotted turtles, and Ringed Boghaunter dragonflies. The rare species that must be considered are limited to: Ribbon Snakes, Wood Turtles, Swamp Darner Dragonflies and Comet Darner Dragonflies.
- (3) Identification period. Egg masses must be counted just past the peak breeding period of pool-breeding amphibians. Abundance of pool-breeding amphibians can only be used to determine the presence of a significant vernal pool during the identification period. The presence of fairy shrimp, rare species listed in paragraph (2), or a state-listed endangered or threatened species may be used to determine the presence of a significant vernal pool at times of the year other than the identification period.

NOTE: Optimal times for counting egg masses of pool-breeding amphibians vary according to geographic location and weather. For instance, during cold springs, breeding can begin as much as 2 weeks later than it does in warm, wet springs. The optimal time to count masses is just past the peak breeding period. For wood frogs, this occurs approximately 2 weeks after they start full choruses. Wood frog egg masses hatch very quickly and are difficult to count much past peak breeding. Salamanders have a

more extended breeding period and their eggs do not hatch as quickly as those of wood frogs. Therefore, surveys to count salamander egg masses should be conducted slightly later in the breeding season, generally 2-3 weeks following wood frog egg mass counts. The following are rough guidelines for optimal times for counting egg masses:

Geographic Region	Wood Frogs	Spotted & Blue Spotted Salamanders
Northern Maine	May 5 – May 20	May 15 – June 5
Central Maine	April 25 – May 10	May 5 - May 25
Southern Maine	April 10 – April 25	April 20 – May 10

Note that optimal egg mass counting dates for high elevation localities are likely to be delayed by up to one or two weeks from the suggested dates provided within each geographic region above.

(4) Geographic regions.

(a) The three geographic regions used in Section 9(B)(3) are as follows.

- (i) The Northern Maine region is approximately that part of the state north of a line extending from Rangeley to Dover-Foxcroft to Howland to Calais.
- (ii) The Central Maine region is approximately that part of the state south of that same line and north of a line extending from Fryeburg to Augusta to Belfast.
- (iii) The Southern Maine region is approximately that part of the state south of the line extending from Fryeburg to Augusta to Belfast.

(b) The two geographic regions used in Section 9(B)(4-A) are as follows.

- (i) The Northern Maine region is approximately that part of the state north of a line extending from Rangeley to Dover-Foxcroft to Howland to Calais.
- (ii) The Southern Maine region is approximately that part of the state south of the line described in (i).

(4-A) Drying. When a vernal pool habitat has not previously been determined to be significant, and the department or the Maine Department of Inland Fisheries & Wildlife (IF&W) makes a determination concerning whether the vernal pool habitat is significant, either department may determine that the vernal pool habitat is not significant if:

- (a) The vernal pool is located in northern Maine and dries out after spring filling and before July 31st based on winter, spring and early summer precipitation; or
- (b) The vernal pool is located in southern Maine and dries out after spring filling and before July 15th based on winter, spring and early summer precipitation.

- (4-B) Lack of permanent flowing inlet or outlet. In order to be identified as part of a significant vernal pool habitat, the vernal pool may not have a permanent flowing inlet or outlet.
- (5) Seasonality. The department may require an assessment of significance by a qualified individual during the identification period. In any season, indicators of a potentially significant vernal pool habitat may include flat topography with depressions or pit-and-mound topography, wetland flora, fingernail clams, caddisfly cases, and evidence of temporary flooding.
- (6) Voluntary identification. A landowner may voluntarily submit documentation to the department or IF&W regarding the significance of a vernal pool on that individual's property. Documentation must be completed by a qualified individual, or field-verified by either the department or IF&W prior to its inclusion on a Geographic Information System (GIS) data layer maintained by either IF&W or the department. A landowner will receive written confirmation of such documentation from the department.
- (7) Verification of significance. A significant vernal pool documented on a Geographic Information System (GIS) data layer maintained by either IF&W or the department is eligible for removal from that data layer following IF&W verification of three consecutive years of data demonstrating that a vernal pool no longer meets the criteria in Sections 9(B)(1) or (2). A written request to remove a significant vernal pool from the data layer must be submitted to both IF&W and the department and include documentation made during the identification period by a qualified individual. A written department determination that a vernal pool is not significant remains valid regardless of timeframe.

NOTE: For more information on managing the critical terrestrial habitat surrounding vernal pools, see:

Calhoun, A.J.K. and M.W. Klemens. 2002. Best development practices: Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.

Calhoun, A.J.K. and P. deMaynadier. 2004. Forestry habitat management guidelines for vernal pool wildlife. MCA Technical Paper No. 6, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.

Calhoun, A.J.K. and P.G. deMaynadier (Editors). 2008. Science and Conservation of Vernal Pools in Northeastern North America. CRC Press, Boca Raton, FL.

C. Habitat management standards for significant vernal pool habitat. To the greatest extent practicable, the following management practices must be followed within significant vernal pool habitat.

- (1) No disturbance within the vernal pool depression;

- (2) Maintain a minimum of 75% of the critical terrestrial habitat as unfragmented forest with at least a partly-closed canopy of overstory trees to provide shade, deep litter and woody debris.
- (3) Maintain or restore forest corridors connecting wetlands and significant vernal pools;
- (4) Minimize forest floor disturbance; and
- (5) Maintain native understory vegetation and downed woody debris.

If more than 25% of the critical terrestrial habitat has been previously developed, restoring a portion of that area through supplemental planting or regrowth of native forest species may be considered toward meeting these standards, or towards standards for avoidance, minimization, or compensation. For purposes of this section, developed area includes disturbed areas excluding areas that are returned to a condition with the same drainage patterns and the same or improved cover type that existed prior to the disturbance.

D. Permit by Rule. An activity occurring in, on, or over a significant vernal pool habitat or a potential significant vernal pool habitat is eligible for a Permit by Rule (PBR) as described in Chapter 305, Section 19, provided that the habitat management standards in Section 9(C) above are met. An applicant submitting a Permit by Rule notification pursuant to Chapter 305, Section 19, is not required to provide a seasonal assessment of significance.

Submission of a PBR notification pursuant to Chapter 305, Section 19 does not negate an applicant's ability to submit subsequent documentation to verify or negate applicability of Section 9 of this chapter provided that documentation is completed during the identification period by a qualified individual. GIS data points specific to Chapter 305, Section 19, will be uploaded to the GIS data layer maintained by IF&W or the department only following submission and verification of such documentation by the department or IF&W.

This subsection does not apply to an activity that is not or will not be in compliance with the terms and conditions of a permit issued under the Site Location of Development Law, 38 M.R.S.A. §§ 481 to 490, the Stormwater Management Law, 38 M.R.S.A. §420-D, or the Natural Resources Protection Act, 38 M.R.S.A. §§ 480-A to 480-FF.

E. Permit not required. A permit is not required from the department under the following circumstances.

- (1) Forest management activities. Forest management activities in, on, or over a significant vernal pool habitat do not require a permit pursuant to this section if the significant vernal pool is not defined and mapped according to 38 M.R.S.A. §480-I.
- (2) Location of pool. If an activity is located in, on, or over a vernal pool habitat but the significant vernal pool depression is not located on a parcel owned or controlled by the person carrying out the activity, then a permit is not required pursuant to this section unless:
 - (a) The significant vernal pool is defined and mapped according to 38 M.R.S.A. §480-I or is located on a Geographic Information System (GIS) data layer maintained by either IF&W or the department; or

- (b) Evidence of property transfers indicates an intent to evade regulation under the Natural Resources Protection Act.
- (3) Department determination. If, upon request from a landowner, department staff provide a written field determination or advisory opinion regarding the presence or absence of a significant vernal pool, a landowner acting on that determination or advisory opinion by carrying out an activity subsequently found to be in violation is not required to obtain a permit for that activity and will not be subject to enforcement action if jurisdiction or penalty would be based solely on that activity.
- (4) Communications and electric facilities. Construction of overhead communications and electric lines, poles, guy anchors, and related overhead infrastructure located within a public or private right of way, within 25 feet of the edge of the road right of way, or within an existing clearing created for a public or private road does not require a permit pursuant to this section provided that poles are not placed within a significant vernal pool depression.

NOTE: GIS data layer information may be obtained at IF&W and MDEP offices.

F. Implementation date. Section 9 may not be enforced or implemented until September 1, 2007.

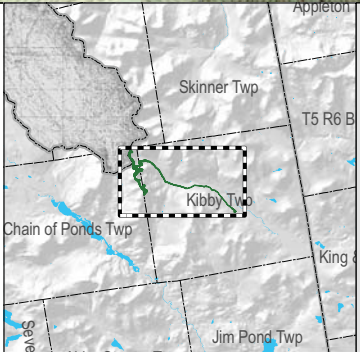
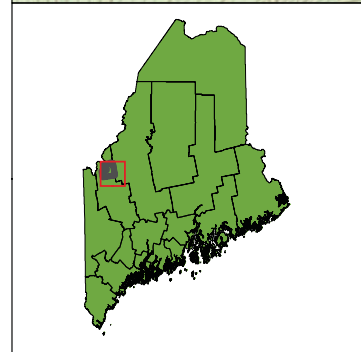
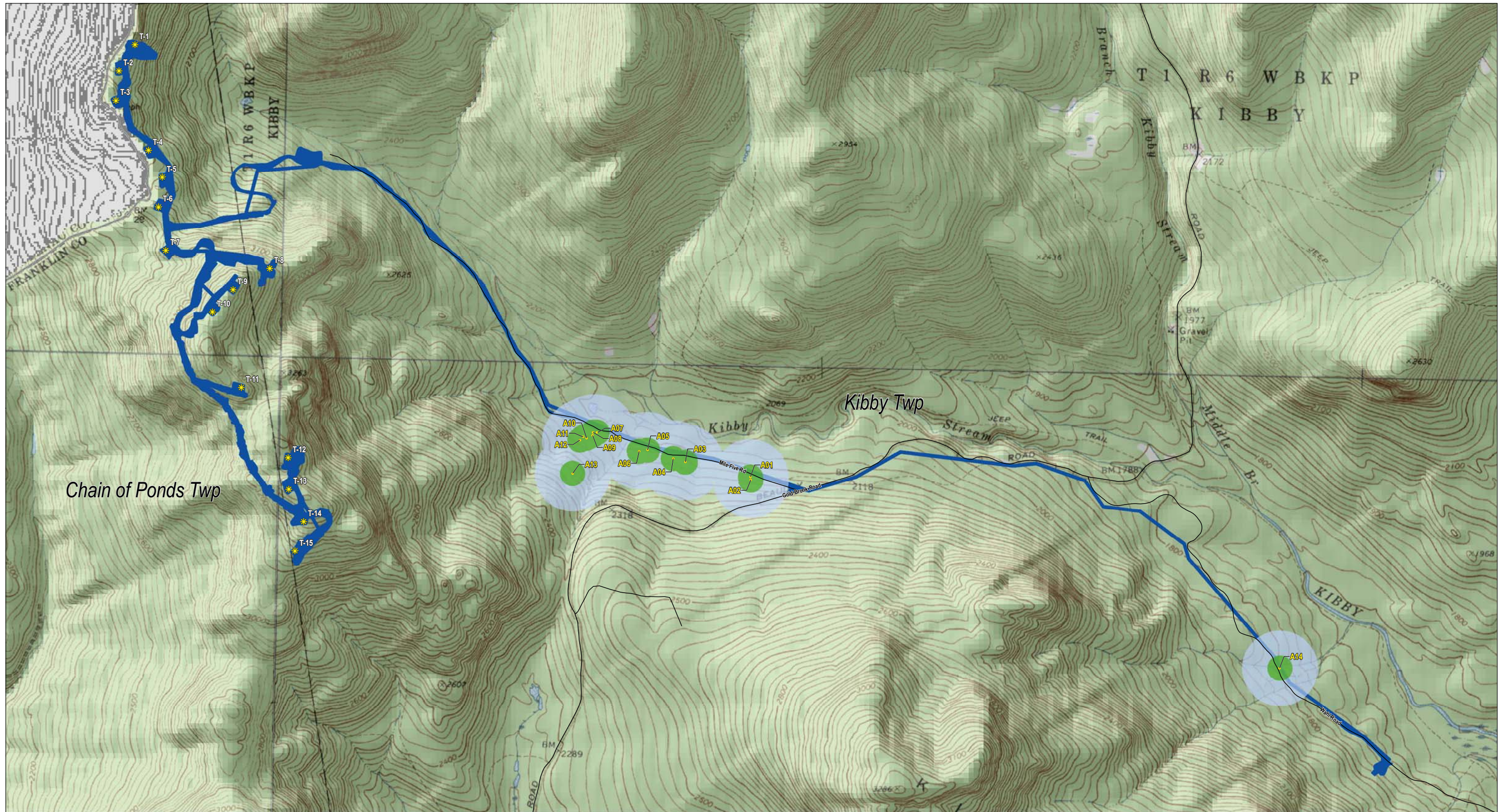
- 10. High and moderate value waterfowl and wading bird habitat.** High and moderate value waterfowl and wading bird habitats are significant wildlife habitats. Waterfowl are members of the family Anatidae including but not limited to brant, wild ducks, geese, and swans. Wading birds include but are not limited to herons, glossy ibis, bitterns, rails, coots, common moorhens, and sandhill cranes. An activity that takes place in, on, or over a high and moderate value waterfowl and wading bird habitat must meet the standards of this chapter. High and moderate value waterfowl and wading bird habitats subject to this chapter are depicted on a GIS data layer maintained by IF&W and available from either IF&W or the department.

NOTE: The IF&W rating procedure and list of waterfowl and wading bird species was created December 22, 1993, updated September 1, 2005, and is available at IF&W offices and on line at <http://www.maine.gov/ifw/index.html>.

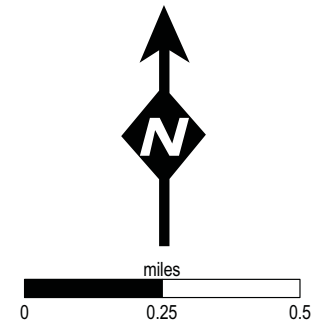
A. Inland habitat identification criteria. A high to moderate value inland habitat is an inland wetland complex, and a 250 foot wide zone surrounding the wetland complex, that through a combination of dominant wetland type, wetland diversity, wetland size, wetland type interspersion, and percent open water meets IF&W guidelines or is an inland wetland complex that has documented outstanding use by waterfowl or wading birds. Determination of high to moderate value inland habitat is based on the following.

- (1) Wetland type. Dominant wetland type is rated by the assigned score for the wetland type of greatest area in the wetland. Wetland type is determined using the classification system published by IF&W based on McCall, 1972, for waterfowl and wading bird habitat rating. A score for the value to waterfowl and wading birds is assigned to each type using the IF&W rating procedure.





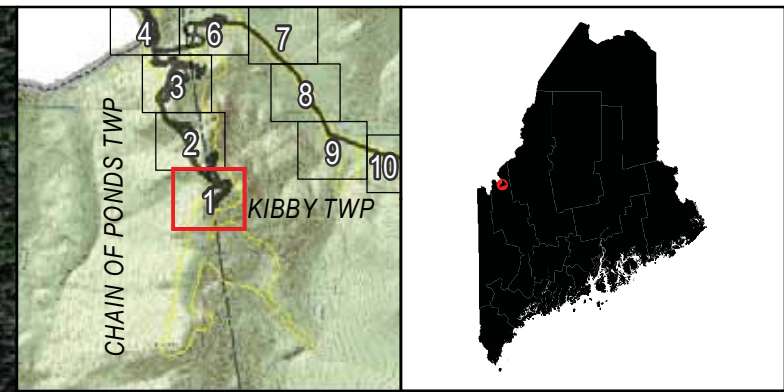
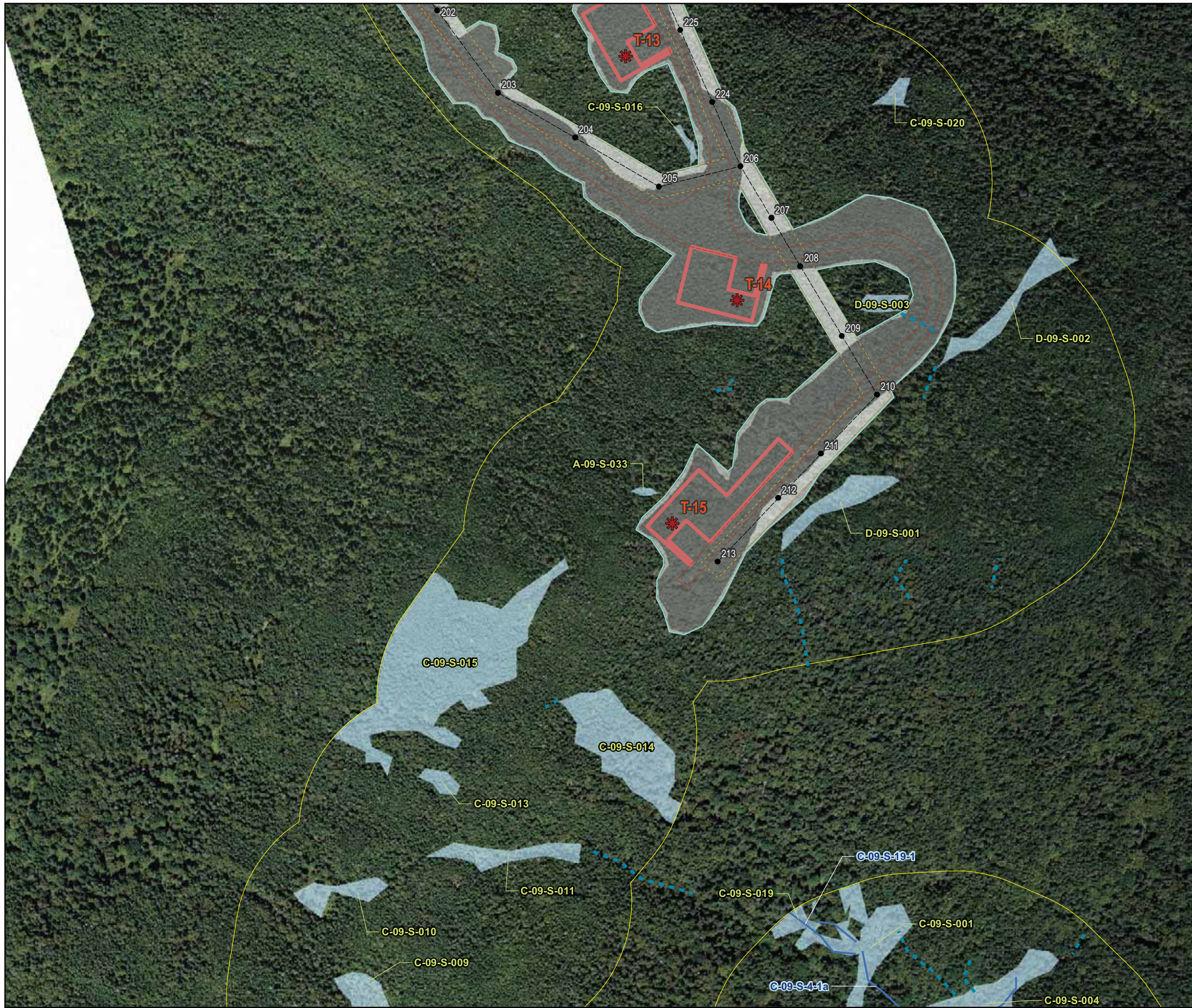
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- ★ Turbine Locations
- 250ft Pool Buffer
- 750ft Pool Buffer
- Project Footprint
- Road



Kibby Expansion Wind Power Project

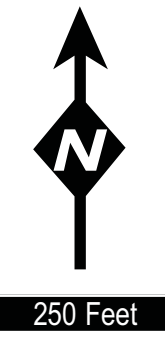
Figure B.15-6
Pool Habitat Overview Map

Sources: Maine OGIS, USGS, TRC



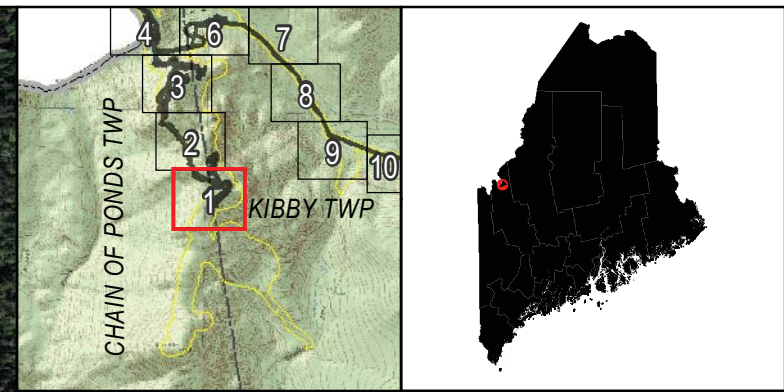
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 - Streams
 - Non-Jurisdictional Drainages
 - Wetlands
 - Wetland Survey Limits
 - Turbine Pad
 - Substation Area
 - Project Access
 - Collector Corridor
 - Proposed 34.5kV Collector Transmission Line
 - Proposed Collector Structure Locations
 - Existing Transmission Line
- Project Footprint by Impact Type**
- Collector
 - Grading
 - Temp

Sources: Maine OGIS, TRC, Color Orthophotography, Aerial Survey 2009



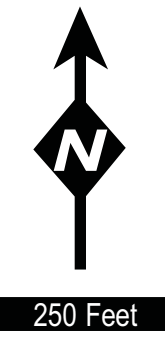
**Kibby Expansion
Wind Power Project**

*Figure B.15-5
Wetland and Stream Maps*



- Proposed Turbine Locations
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Sources: Maine OGIS, TRC, Color Orthophotography: Aerial Survey 2009

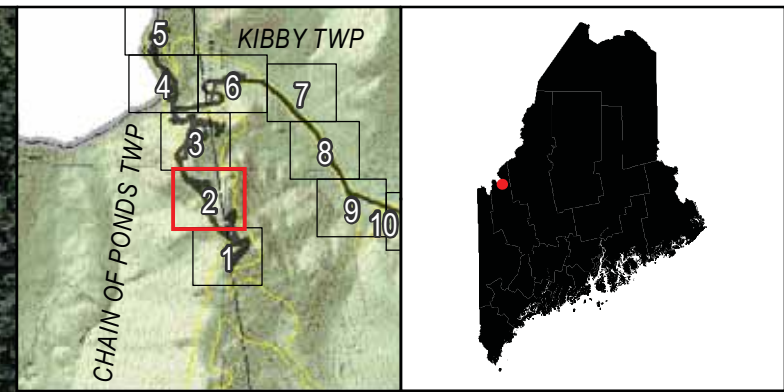


**Kibby Expansion
Wind Power Project**

Figure B.15-5
Wetland and Stream Maps

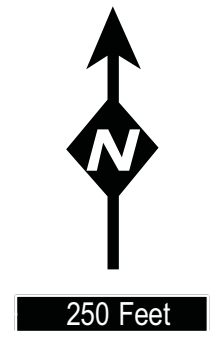
Revised 4-21-10

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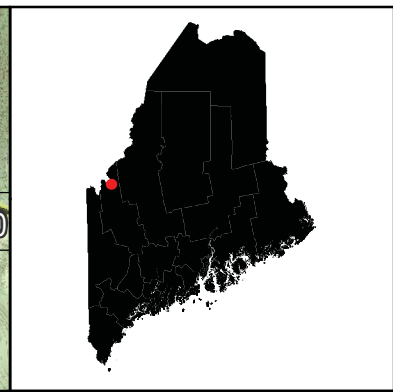
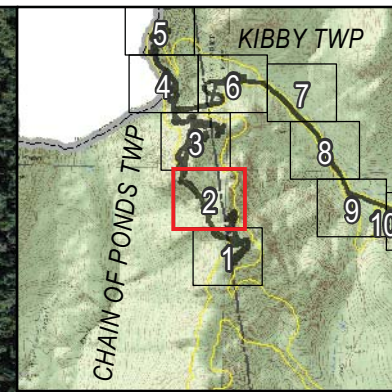


Kibby Expansion
Wind Power Project

Figure B.15-5
Wetland and Stream Maps

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249 Western Ave
Augusta, ME 04330



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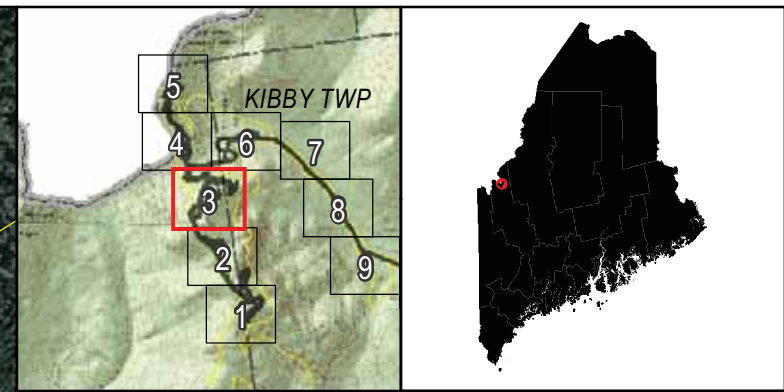
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**Kibby Expansion
Wind Power Project**

Figure B.15-5
Wetland and Stream Maps

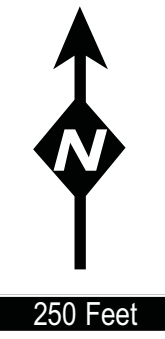
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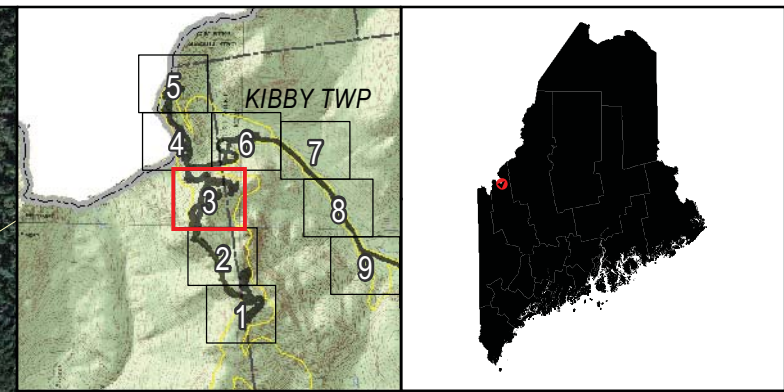
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Kibby Expansion
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Figure B.15-5
Wetland and Stream Maps



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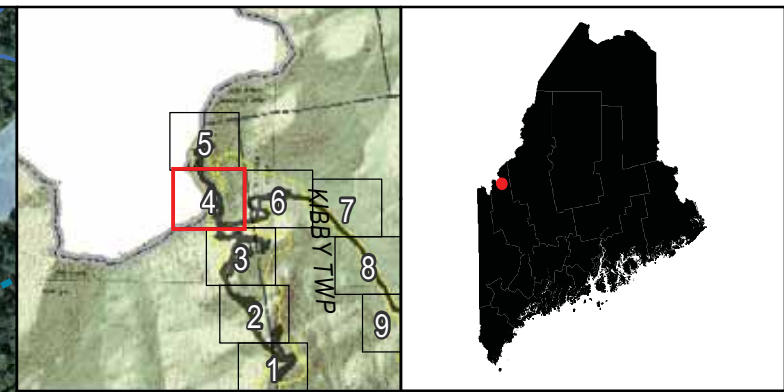
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**Kibby Expansion
Wind Power Project**

Figure B.15-5
Wetland and Stream Maps

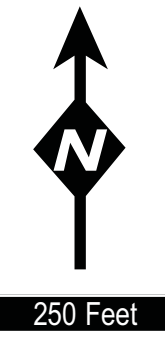
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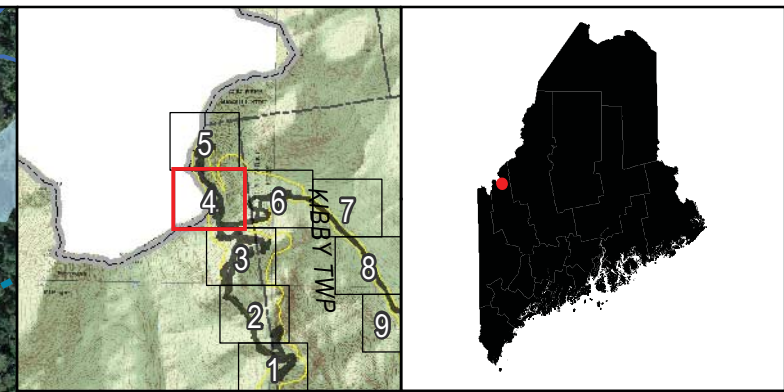
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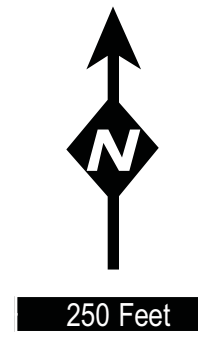
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Wind Power Project**

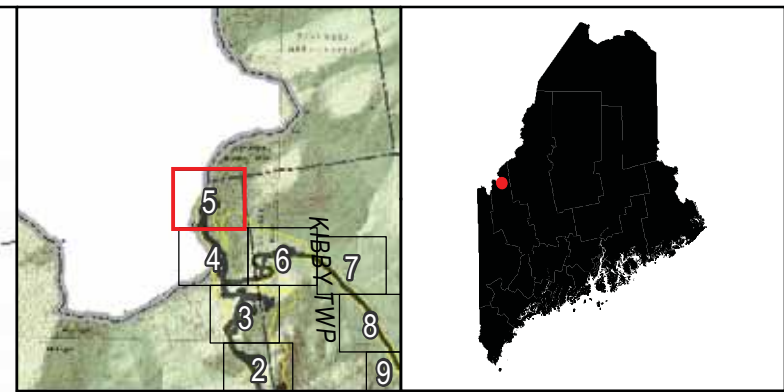
Figure B.15-5
Wetland and Stream Maps



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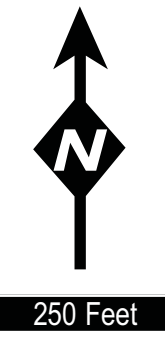
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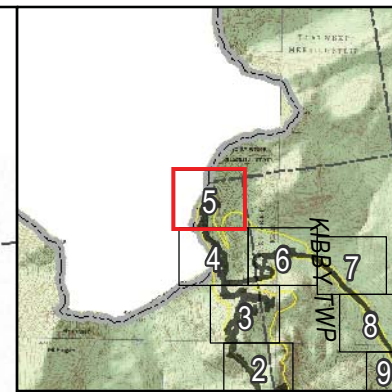


Kibby Expansion
Wind Power Project

Figure B.15-5
Wetland and Stream Maps

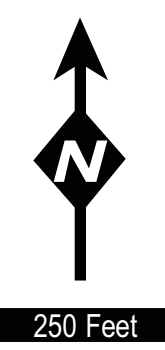
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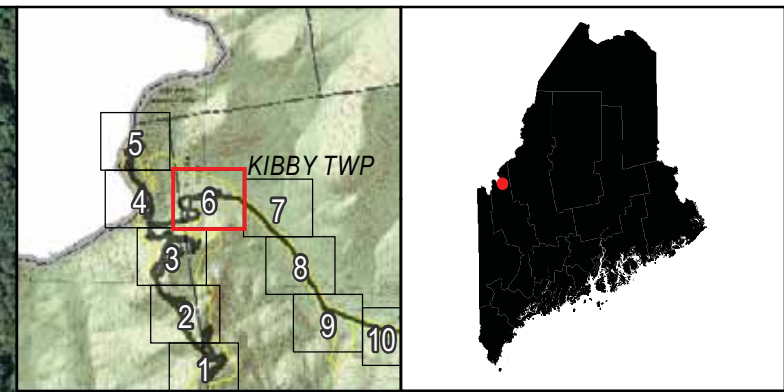
249 Western Ave
Augusta, ME 04330



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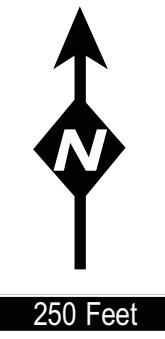
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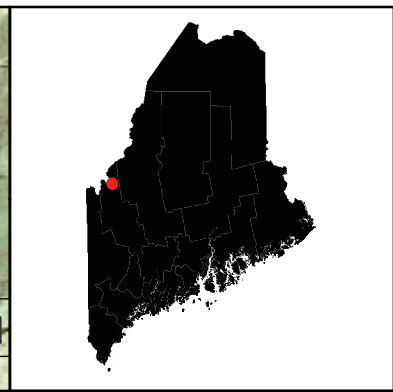
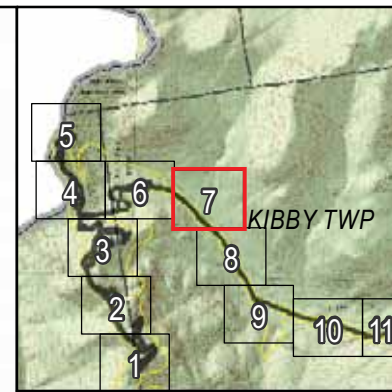
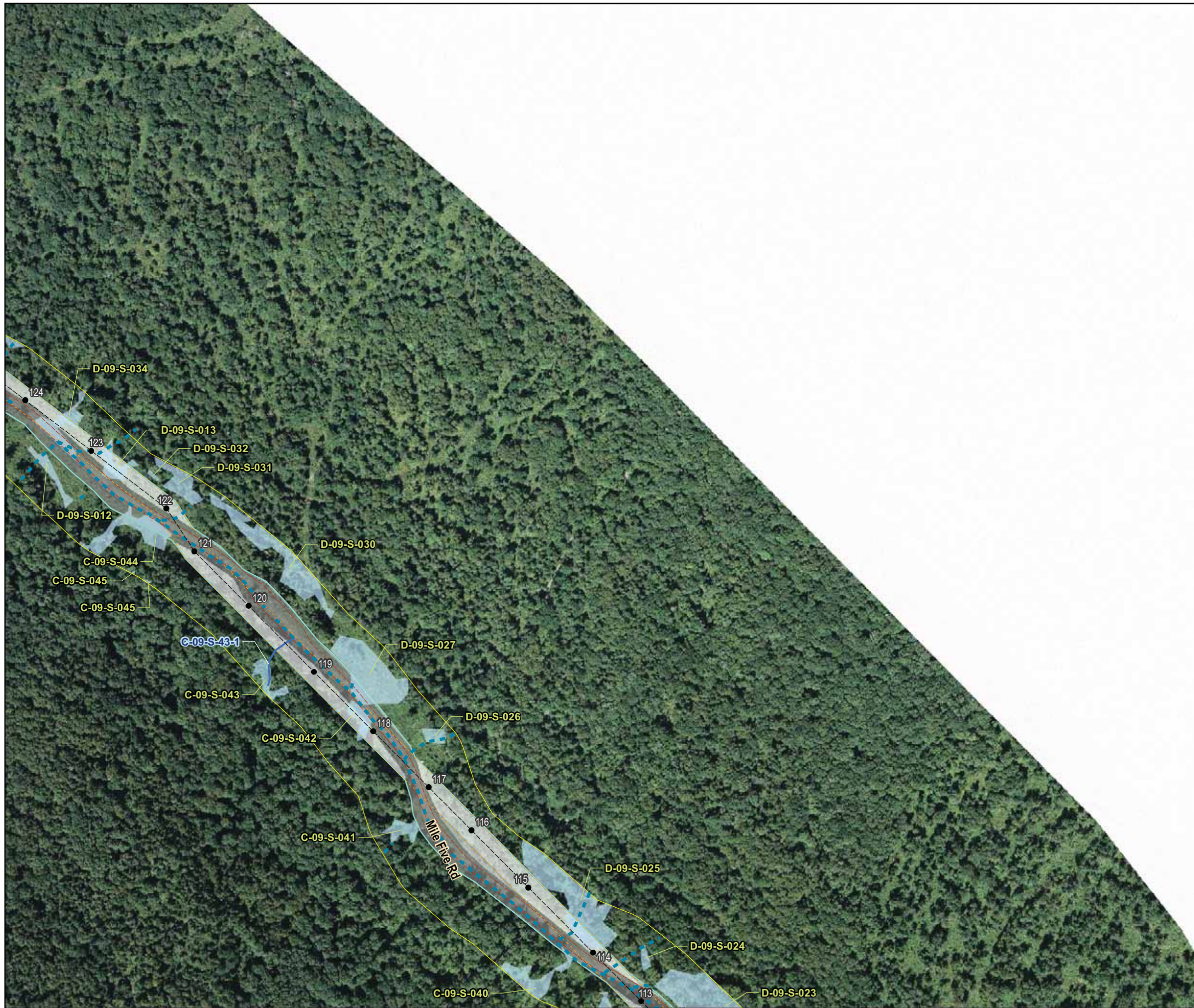
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 - Proposed 34.5kV Collector Transmission Line
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- Collector
 - Grading
 - Temp

Sources: Maine OGIS, TRC, Color Orthophotography, Aerial Survey 2009



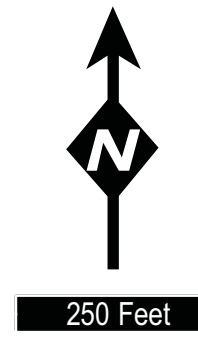
Kibby Expansion Wind Power Project

Figure B.15-5
Wetland and Stream Maps



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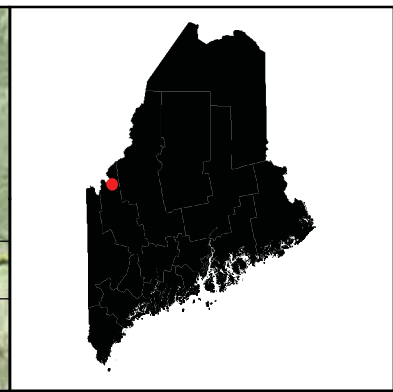
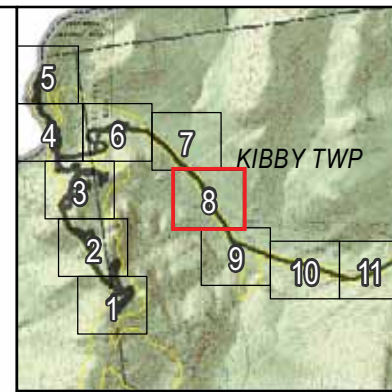


Kibby Expansion
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Figure B.15-5
Wetland and Stream Maps

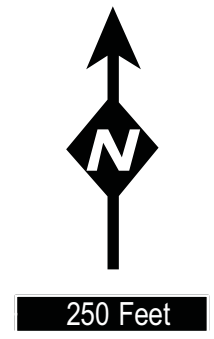
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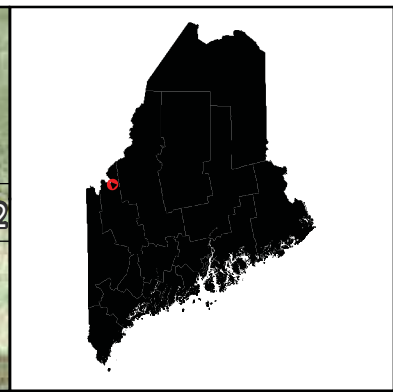
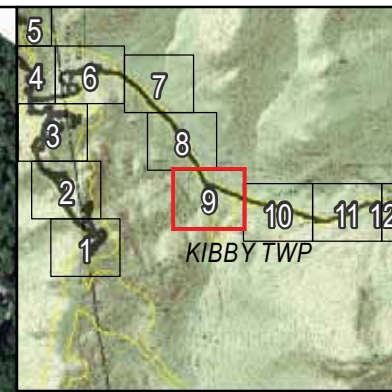


Kibby Expansion
Wind Power Project

Figure B.15-5
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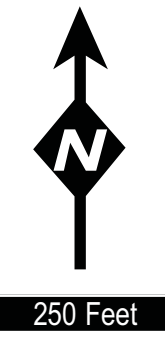
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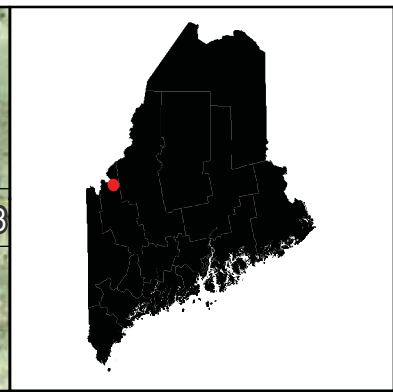
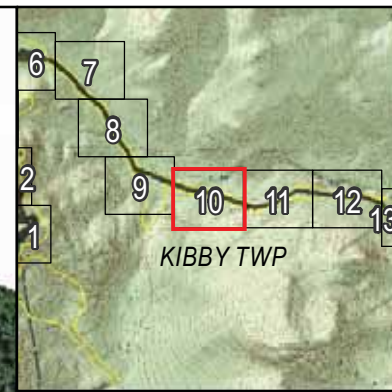


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Figure B.15-5
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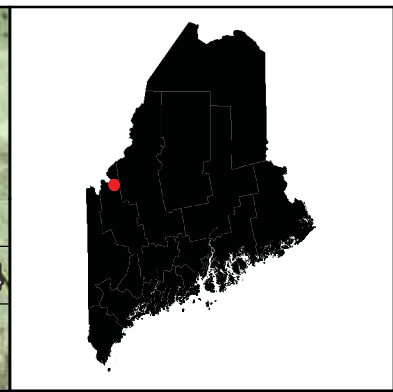
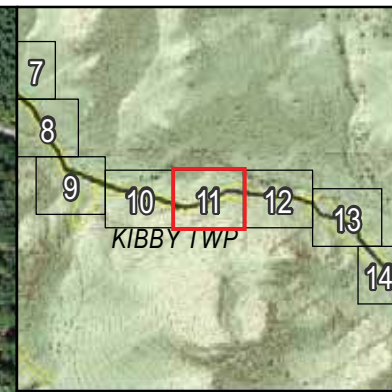
Kibby Expansion
Wind Power Project

Figure B.15-5
Wetland and Stream Maps

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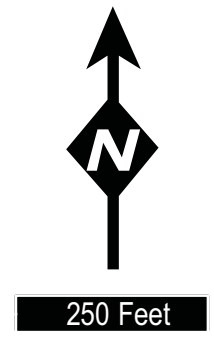
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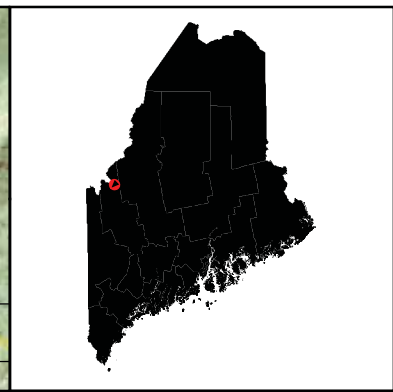
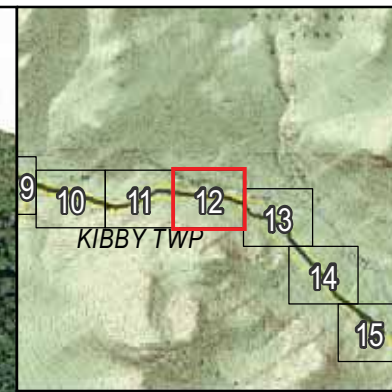
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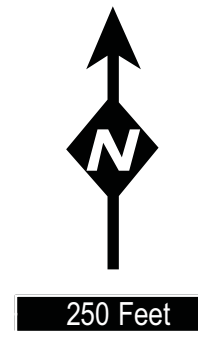
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Figure B.15-5
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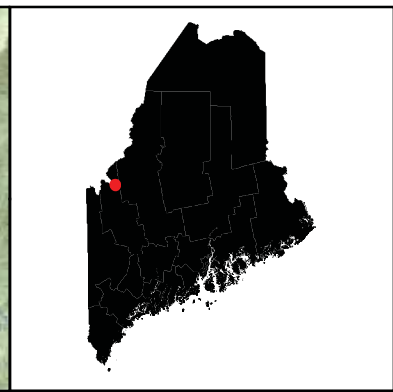
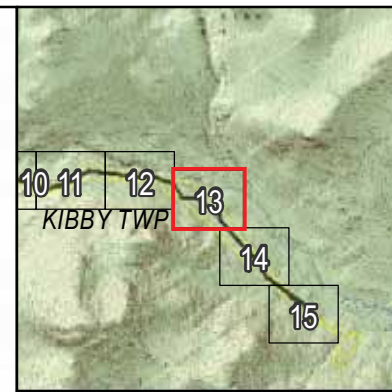
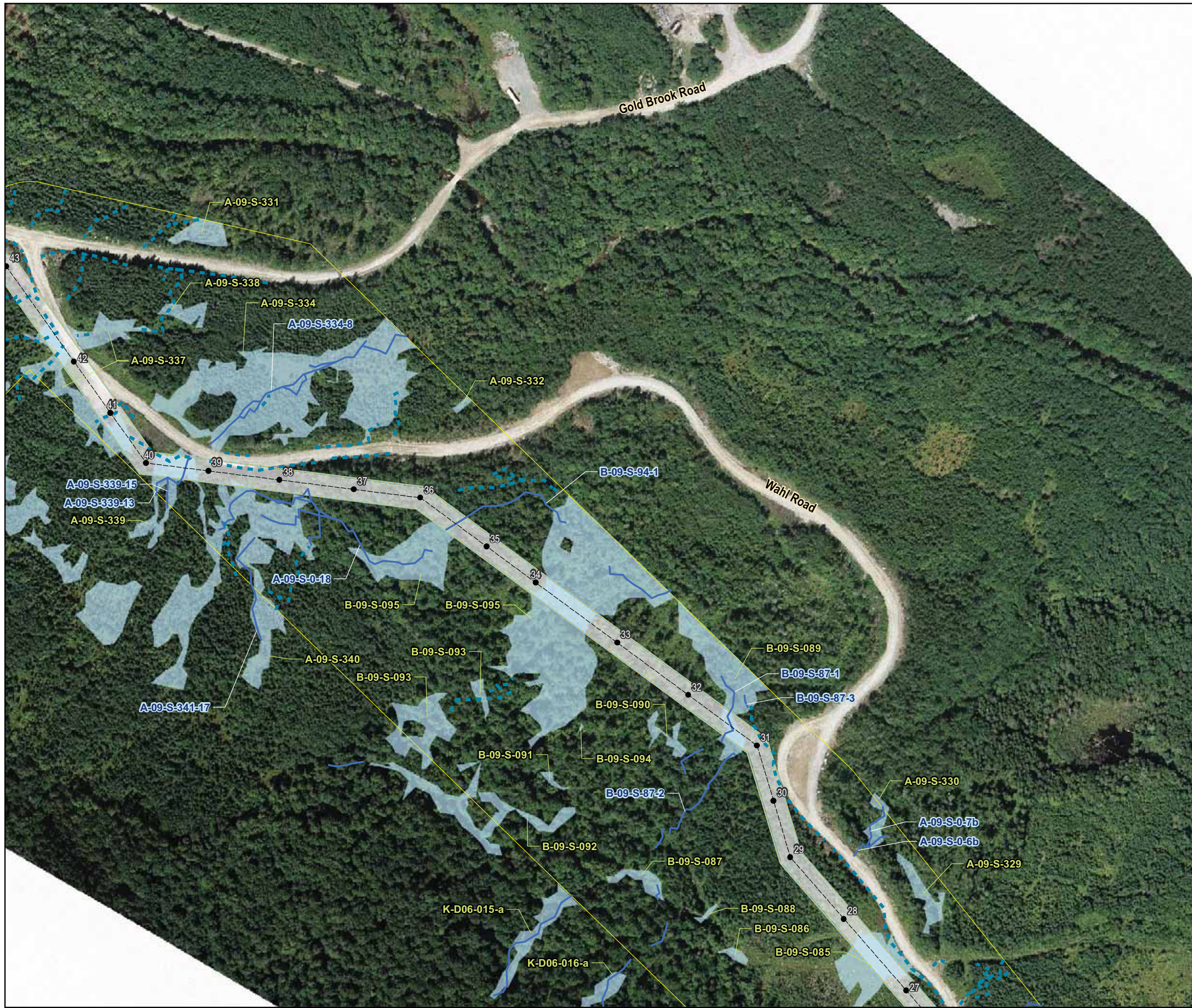
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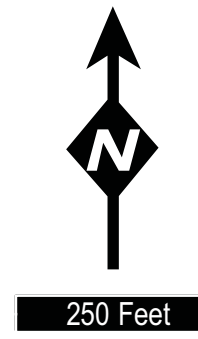
Kibby Expansion
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Figure B.15-5
Wetland and Stream Maps



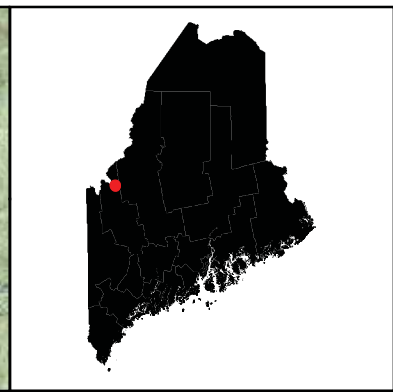
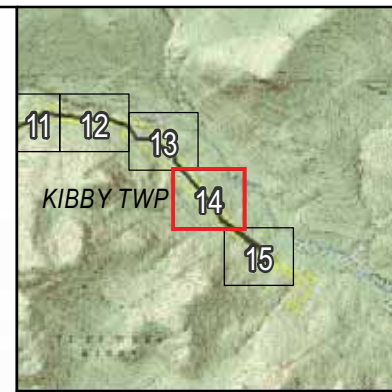
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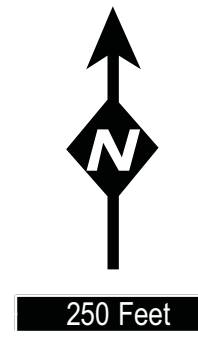
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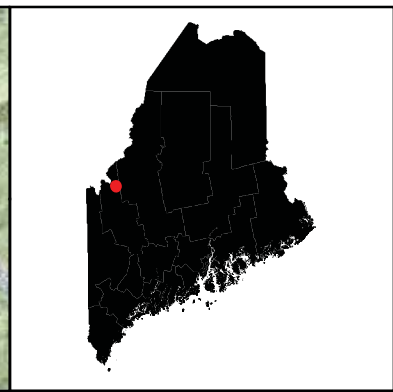
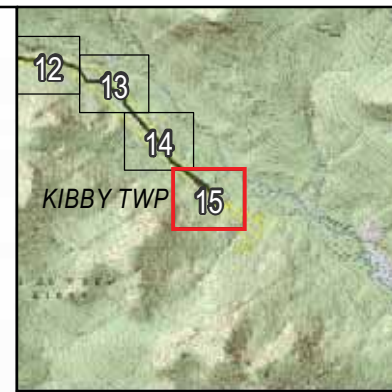


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Figure B.15-5
Wetland and Stream Maps

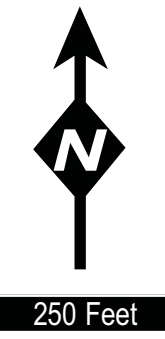
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Figure B.15-5
Wetland and Stream Maps

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

At end of section - Maps showing extent of Subalpine Fir Forest natural community and Bicknell's thrush habitat (also on CD #2)

CD #1

- MNAP review comments
- TransCanada response to MNAP review comments
- MDIFW review comments
- TransCanada response to MDIFW review comments

CD #2 –

- Maps showing extent of Subalpine Fir Forest natural community and Bicknell's thrush habitat
- BRI 2009 Bicknell's thrush/Breeding Bird survey report

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. *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

From Chapter 5 of Maine’s Wildlife Conservation Strategy identifies species-specific problems and needs. In particular, it includes in Table 30, on pp 86-87, the State’s objectives for Bicknell’s thrush:

Status, Distribution & Threats	Population & Habitat Actions	Research & Outreach Actions
<ul style="list-style-type: none"> • Documented at 60 mountaintops in Maine (157 discrete habitat units) • >90% of population breeds in BCR 14 • Species of Special Concern in Maine • Threats: global climate change, environmental contaminants (mercury), breeding habitat loss (communication towers, ski areas, wind power turbines), winter habitat loss, and industrial forest practices 	<ul style="list-style-type: none"> • Increase population within BCR (35,000 individuals) by 10% to 38,500 individuals • 26,130 ha of potential habitat exists in Maine, with 40% in conservation ownership (Dan Lambert pers. Com) <ul style="list-style-type: none"> • Maintain existing range of breeding habitat (BCR 14 Workshop) • Identify and secure habitat protection for core breeding areas in Maine, secure stewardship and management agreements with industrial forest managers (PIF Plan for Physiographic Area 28 and BCR 14 Workshop) • Develop mitigation policies and measures that would protect and enhance wintering habitat, to offset development projects in the US (BCR 14 Workshop) 	<ul style="list-style-type: none"> • Expand existing monitoring practices for high elevation species, including monitoring natal dispersal of BITH (BCR 14 Workshop) • Analyze existing data to evaluate population changes (BCR 14 Workshop) • Evaluate significance of contaminant exposure (mercury) on BITH (BCR 14 Workshop) • Initiate a Population Viability Analysis for BITH (BCR 14 Workshop) • Model potential consequences of climate change (BCR 14 Workshop) • Determine demographics and reproductive success rates within industrial forest landscape (BCR 14 Workshop) • Use BITH as an umbrella species to educate public about conservation needs of migratory species and international conservation issues (BCR 14 Workshop) • Educate recreational users of montane forests about BITH conservation (BCR 14 Workshop) • Determine effects of high elevation timber harvesting on BITH populations • Evaluate BITH use of regenerating hardwood stands as breeding habitat • Continue support for Project Mountain Birdwatch

2. **Applicant's site survey of Fir-Heart-leaved Birch Subalpine Forest.** (CD #1) 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. To identify this community, the applicant applied 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. Downslope from Fir-Heart-leaved Birch Forest, the forest grades into the S-4 rated Spruce-Fir-Wood Sorrel-Feathermoss Forest.

3. **Applicant's site survey for Bicknell's thrush.** (Results report on CD #2) As a part of the breeding bird survey in 2009 (also *see* Section VIII, Other Wildlife Issues, avian and bat surveys), 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). The results of these studies revealed 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. The 2009 Breeding Bird Survey results were submitted on May 6, 2010. BRI noted that Bicknell's thrush were the most abundant where the Subalpine Fir Forest was most abundant, although it was also observed elsewhere, with two nests found in this area. BRI further noted that "the density of Bicknell's thrush appears to be greatest between survey points two through five, and a conservative estimate of density equaled 0.33 individuals/hectare (ha)." The report also stated: "the Vermont Center for Ecostudies (VCE) developed a model of potential Bicknell's thrush breeding habitat within the KEP study area. Within a one mile or 1.6 kilometer (km) buffer around Sisk Mountain there was 357.3 ha of potentially suitable habitat. As the buffer widens we see increased hectares of habitat." "While 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 assessment of the proposed impacts to on Bicknell's thrush habitat and potential direct effects of the proposed KEP were also discussed in the applicant's pre-filed testimony, submitted on April 21, 2010 (*see* pre-filed testimony of Christine Cinnamon and Dana Valleau, p 22; and Peter Vickery, p 7). 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 also noted that the total area of this Subalpine Fir Forest is 358 acres, so any displaced birds may be able to use the adjacent forest. A total of 39 acres of Fir Subalpine Forest would be affected permanently, leaving 317 acres of this plant community at this site. The applicant also included in its pre-filed testimony an analysis of the potential for Bicknell's thrush to be directly impacted by the proposed turbines, in particular collisions of displaying males during the breeding season. The applicant concluded that the males' display flight would largely be below the height of the blades, and as such the potential for impact is low. The risk is also reduced because the flight displays are not as likely when the wind is blowing (the females cannot hear the males' songs), and the blades don't start rotating until the winds are 9 mph or greater.

4. **Maine Department of Inland Fisheries and Wildlife (MDIFW).** (CD #1) MDIFW reviewed the application, and on March 3, 2010 commented on Bicknell's thrush as follows:

“As currently proposed, this project has 5 turbines that will occur within Bicknell's Thrush habitat. Of those 5 turbines, Turbine 11 and its access road are of greatest concern to MDIFW, because this development will essentially bi-sect the habitat block. Therefore, we recommend the following options (in order of preference) (1) the applicant relocated Turbine 11 and its access road, or (2) the applicant implement a set of operational restrictions for Turbine 11, during nesting and brood rearing periods for this species. The specific details of these restrictions should be developed between LURC, MDIFW and the applicant. Also under option (2), a post-construction monitoring protocol needs to be implemented for this species with at least the same rigor and scope as the pre-construction studies.”

5. **Applicant response to MDIFW comments.** (CD #1) On April 9, 2010, the applicant responded to MDIFW's review comments regarding Bicknell's Thrush and post-construction monitoring by (1) “relocating Turbine 11 and the associated access road down-slope and to the west, moving it to the edge of suitable Bicknell's thrush habitat, consistent with the MDIFW first preference;” and (2) stating that it “will continue to work with MDIFW to scope the post-construction work to be performed at wind power projects with the benefit of results of on-going work at other projects. At a minimum, the post-construction plan, which is yet to be finalized, will include mortality searches for two years, and agency consultation and adaptive management will be incorporated into the plan.” The relocation of Turbine 11 would reduce the impact to Bicknell's thrush habitat from 12.4 acres to 8 acres.
6. **Maine Natural Areas Program (MNAP).** (CD #1) MNAP reviewed the application, and on February 26th and March 10th commented regarding the Subalpine Fir Forest, as summarized below:
 - A. MNAP's records show a Subalpine Fir Forest in the project area rated S-3. This plant community is not common in Maine, with 18 known sites currently documented for a total of approximately 40,000 acres. The Subalpine Fir Forest on Sisk Mountain covers

358 acres, and is a good example with an element occurrence rank of B (based on condition, landscape context, and size).

MNAP describes the Subalpine Fir Forest community type as commonly found above 2,700 ft in elevation, and dominated by balsam fir (or sometimes birch), with a dense canopy and somewhat stunted trees. Heart-leaved birch and mountain ash are found occasionally, with a dense shrub layer of ash, fir, or hobblebush where wind, fire, or landslides create openings. The herbaceous layer is sparse. Fir waves are a variant of the community. The mineral soil is thin and rocky. Recurring natural disturbances exert lasting influences on community dynamics. The Maritime Spruce-Fir Forest along Maine's downeast coast is compositionally similar, but occurs at sea level.

- B. The proposal to clear 42 acres² of this Subalpine Fir Forest will fragment portions of the northern part of this community, isolating some of areas and eliminating their value. The clearing will create unnatural edges, and alter the habitat adjacent to the edge by increasing light and wind, removing moisture, and damaging trees.
- C. MNAP added a 50 ft buffer to the proposed impact area because of the edges that will be created, estimating that the total impact to the Subalpine Fir Forest from clearing, impacts caused by creating edges, and from fragmentation would be approximately 80 acres.
- D. MNAP recommended impacts to the Subalpine Fir Forest be minimized, and requested the removal of Turbine 11 because it would fragment the core of the northern portion of the Subalpine Fir Forest into two smaller areas. MNAP stated: "removal of Turbine 11 would considerably decrease impacts to the Subalpine Fir Forest and result in a northern core of approximately 62 contiguous acres", reducing the overall impact from 80 to 75 acres, and reducing "fragmentation of the remaining northern portion of the natural community."
- E. MNAP recommended the project plan demonstrate how the facility has been designed to cause the least impact to sensitive plant and animal habitat, and address design, construction, and management considerations. Inadvertent impacts to soil and vegetation should be avoided because high elevation habitats are extremely slow to recover after disturbance. Strict no disturbance zones should be clearly marked adjacent to the construction zones.
- F. The criteria used by MNAP to map the Subalpine Fir Forest are based on "Natural Landscapes of Maine: A Classification of Vegetated Natural Communities and Ecosystems" (Gawler and Cutko 2010). The applicant mapped the community in August 2009, and MNAP verified the community during a site visit. In November 2009, MNAP again visited the site at the request of LURC staff for an unrelated permit application to clear-cut the P-MA Subdistrict on the south side of Sisk Mtn. outside the development area (reference Forest Operations Permit FOP 878, pending but on-hold). MNAP found the Subalpine Fir Forest to be 358 acres in size, with an element rank of B (good viability). Element occurrence ranks are based on the size of the community relative to other known examples in Maine, condition (presence of representative species, maturity,

² Reduced to 39 acres when Turbine 1 was moved.

and human disturbance), and landscape context (land uses and/or condition of surrounding area and ability of the community to be protected from effects of adjacent uses).

7. **Applicant's response to MNAP comments.** (CD #1) On April 9, 2010, the applicant responded to MNAP's comments, as summarized below:
- A. "The Subalpine Fir Forest found on Sisk Mountain was not mapped until [the applicant] began field studies on the ridge and identified the presence of the forest in the summer of 2009. Mapping of the community was done in consultation with MNAP."
 - B. Turbine 11 has been moved to the west and downslope from the original site, reducing both impacts to the Subalpine Fir Forest (*see* Finding of Fact #5, above).
 - C. The project design reduces overall footprint to the minimum needed for the proposed project. Components of the proposed project plan that minimize impacts include:
 - (1) Road width would be the minimal amount necessary for construction equipment. After construction, the ridge road widths will be reduced from 34 ft to 20 ft wide by applying erosion control mulch to the road edges. Most of each turbine pad area would be similarly treated.
 - (2) Road and crane pad construction materials would come from the project site, requiring no additional clearing or removal of other materials from other areas.
 - (3) Cut/fill for the project has been balanced, with only minimal materials required from outside of the project footprint.
 - (4) Clearing limits would be established prior to construction and well marked with surveyors tape or flagging. Clearing would be performed to leave the flagging in place, with the marked limit then used as a limit for any future disturbance.
 - (5) All wetlands, streams, rare plant locations, rare animal habitats and rare natural community areas would be clearly marked where they intersect with the clearing limits and are within 50 feet of the clearing limits.
 - D. Tree stumps, organic soils not suitable for construction activities, and other woody debris will be used on-site to manufacture erosion control mix for erosion control berms and to spread on areas being restored along roads and turbine pads. This technique was developed in consultation with the SSS for the Kibby Project and has been used successfully. Woody debris not used for erosion control mix will be distributed on rock fill slopes to provide visual screening and encourage establishment of vegetation.
 - E. To control the introduction of invasive plants, the E&S Plan restricts the use of hay mulch to below 2,700 ft in elevation, and above 2,700 ft only erosion control mix made from on-site native materials or erosion control blankets may be used. The Plan does not address preventing the spread of plant materials from construction vehicles, and does not include a monitoring plan. The applicant will consult with MNAP to address its concerns for rehabilitation and restoration of the Subalpine Fir Forest. MNAP will be included as an interested party to the third party inspection reporting, and MNAP site inspections should be integrated into these same inspections.

8. **Applicant's pre-filed testimony and post-hearing submittals; copied from Appendix A to its closing brief.** (CD #2) The following are copied directly from Appendix A to the applicant's closing brief, and summarize the applicant's testimony:

A. *Bicknell's Thrush*

- (1) Bicknell's thrush is not listed as threatened or endangered under state or federal law. (Pre-filed testimony of Susan Gallo [hereinafter Gallo Testimony] at p 7; MDIFW Endangered Species Program/State List, at: www.maine.gov/ifw/wildlife/species/endangered_species/state_list.htm .
- (2) The Bicknell's thrush population is approximately 40,000 individuals and the population is not declining in Maine (Pre-filed Testimony of Peter Vickery [hereinafter Vickery testimony] at p 4; hearing transcript at p 196; TransCanada post-hearing submission, Dana Valleau testimony [hereinafter Valleau Post-Hearing testimony], Tab C, Exhibit C [Tom Hodgman comment #3]).
- (3) At least 83,000 acres of Bicknell's thrush habitat exist in Maine, spread over 60 mountain peaks (Vickery Testimony at 4; Pre-filed Testimony of Dr. Jeffrey Wells in ZP 702 [hereinafter Wells ZP 702 testimony] at p 3 [contained in TransCanada hearing Exhibit 13]).
- (4) In 2007, when Maine IF&W evaluated whether to add Bicknell's thrush to this state list of threatened or endangered species, it did not add the species to the list "largely because of its population size and the large number of sites where it occurs in Maine." (Valleau Post-Hearing Testimony at Tab C, Exhibit C [Tom Hodgman comment #3]).
- (5) Within a one mile radius of Sisk Mountain, there are approximately 882 acres of potential Bicknell's thrush habitat, and within a five mile radius there are approximately 14,811 acres of potential habitat (BRI Breeding Bird Survey Report for the Sisk Mountain Wind Power Project, Appendix F at 104-05, attached to e-mail from Juliet Browne to Marcia-Spencer Famous (May 6, 2010)).
- (6) Regenerating timber harvest clear cuts, ski trails, and other areas impacted by human activity provide potential breeding habitat for Bicknell's thrush. (National Audubon Society Bicknell's thrush Watchlist, cited in Pre-filed Testimony of Susan Gallo and contained in TransCanada Hearing Exhibit 12 at 1; Valleau Post-Hearing Testimony at Tab C, Exhibit C [Tom Hodgman Comment #3]; Wells ZP 702 Testimony at 7-8; Partners in Flight NA Landbird Conservation Plan at 43 [contained in TransCanada post-hearing submission at Tab E, Exhibit 9]).
- (7) If regenerating clear-cut areas are added as potential breeding habitat, this increases Bicknell's thrush habitat in Maine by approximately 98,000 additional acres (Wells in ZP 702 testimony at p 8).
- (8) TransCanada has identified actual breeding Bicknell's thrush in regenerating clear cuts, below 2,700 feet, on Kibby (Valleau post-hearing testimony at pp 1-2 and Exhibit B).
- (9) Bicknell's thrush survey protocols were approved in advance by Maine IF&W, and are consistent with the protocols approved by Maine Audubon in the Kibby Project (Pre-filed direct testimony of Christine Cinnamon and Dana Valleau [hereinafter Cinnamon/Valleau testimony] at p 22).

- (10) In response to comments from Maine IF&W, TransCanada moved turbine #11 out of the Bicknell's thrush habitat, reducing the clearing impacts from 12.4 to 8 acres (Vickery testimony at p 9).
- (11) In this proceeding, Dr. Vickery has concluded that the loss of 8 acres due to direct clearing of habitat is "of no significance biologically" to Bicknell's thrush (Vickery testimony at p 8).
- (12) In the Black Nubble proceeding, NRCM concluded that the loss of 64 acres due to direct clearing of habitat was "inconsequential" to Bicknell's thrush (Wells ZP 702 testimony at p 3).
- (13) In the Redington proceeding, Maine IF&W concluded that the loss of 300 acres due to direct clearing of habitat was "very slight" when compared to available habitat in the region (Valleau post-hearing testimony at Exhibit C [Tom Hodgman comment #3]).
- (14) Most of the available northern breeding habitat, in Maine and in the region, is "reasonably extensive and well-protected overall" (Letter from Chris Rimmer to Christine Cinnamon (April 21, 2010) [hereinafter Rimmer letter], contained in TransCanada post-hearing submission at Tab G, Exhibit 1; see also Wells ZP 702 testimony at p 9 ["much of the [Bicknell's] breeding range in North America is within existing protected areas. . . ."]).
- (15) Loss of Bicknell's thrush wintering habitat is the "greatest threat to the species' long-term viability," according to Audubon New York, the Nature Conservancy, Cornell Lab of Ornithology, Chris Rimmer's organization (VCE), and the Wildlife Conservation Society (Wells ZP 702 testimony at p 3).
- (16) TransCanada intends to make a contribution of \$100,000 to the BITH Fund for preservation of the wintering habitat in the Caribbean (Rimmer letter).
- (17) Mr. Rimmer has concluded that the TransCanada donation will "provide a very important boost, enabling a first-ever disbursement of monies to local conservation partners on Hispaniola by the end of 2010." (Rimmer letter).
- (18) The Consolidated Intervenors agree "absolutely" that Chris Rimmer is "widely considered" an expert on Bicknell's thrush (transcript at p. 212).

B. *Subalpine Forest.*

- (1) The subalpine forest community on the Sisk ridgeline is ranked "S3" by the Maine Natural Areas Program (MNAP) (MNAP comments p 1).
<http://www.maine.gov/doc/nrimc/mnap/features/rank.htm>
- (2) An S3 ranking is in contrast to an MNAP S2 ranking (impaired because of rarity) or an S1 ranking (critically impaired because of extreme rarity).
<http://www.maine.gov/doc/nrimc/mnap/features/rank.htm>
- (3) According to MNAP, approximately 40,000 acres of mapped subalpine forest exists in Maine (Hudson pre-filed direct testimony p. 2).
- (4) There are approximately 358 acres of mapped subalpine forest on the Sisk ridgeline (Hudson testimony, Ex. B; MNAP comments p. 1).
- (5) The Project will result in the clearing of 39 acres of this mapped area, or approximately 10% (Hudson testimony, Ex. B).
- (6) Including direct and indirect impacts ("edge effects" and fragmentation), the total impact from the Project is 102 acres (Hudson testimony, Ex. B).

- (7) The calculation of edge effects and fragmentation was done in consultation with MNAP (Feb. 24, 2010 MNAP comments pp. 1-2).
- (8) The total impacts of the Project constitute 0.25% of the mapped subalpine forest in Maine (transcript p. 223 [testimony of David Publicover]).
- (9) There is approximately 3,000 acres of additional unmapped subalpine forest in the “immediate area” of Sisk Mountain (transcript p. 92 [testimony of Don Hudson]).
- (10) As there exists unmapped subalpine forest in Maine, the actual percentage of impact due to the Project is less than one quarter of one percent (transcript p. 223 [testimony of David Publicover]).
- (11) Moving turbine #11 out of the mapped subalpine forest “considerably reduces fragmentation.” (MNAP comments p 2).
- (12) This subalpine forest community in Maine is “relatively stable in overall extent and are extensive on Maine’s higher mountains,” “major occurrences are well protected within public lands or private conservation lands,” and “recreation and windpower generation could locally degrade other minor sites, but these uses are unlikely to present a significant threat to the integrity of these forests.” (Maine’s Comprehensive Wildlife Conservation Strategy, p 7 [TransCanada, hearing Exhibit 5]).
- (13) Some amount of clearing impacts to subalpine forest community is acceptable. (transcript at p 224-225 [testimony of David Publicover]).
- (14) The Appalachian Mountain Club has supported a wind energy project (the “Granite Reliable” project in New Hampshire) with impacts to mapped subalpine forest that AMC characterized by AMC as a “higher value forest community” than the community on Sisk (transcript p. 225 [testimony of David Publicover]). AMC concluded that the impacts in the Granite Reliable project (direct impacts of 37 acres out of a 226 acre community) “would not constitute an unreasonable adverse effect on the natural environment.” (transcript p 227 [testimony of David Publicover]).
- (15) The Commission has issued permits for timber harvesting above 2,700 feet in areas with subalpine forest, including a recent permit for BPL that included mapped S3 subalpine forest (Dana Valleau post-hearing submission, Ex. C, D, E; Didisheim ZP 702, testimony at p 2).

9. **Parties’ pre-filed testimony and post-hearing submittals, from their closing briefs.** (CD #2)

A. *Consolidated Parties.* The following key findings were submitted by the CP with their closing brief:

(1) *Subalpine Forest Natural Community*

- (a) “The Fir-Heartleaved Birch Subalpine Forest natural community is ranked S3 (Rare) by the Maine Natural Areas Program, with only 19 documented occurrences in the state encompassing 40,000 acres in total, or just 0.2% of the state’s land area. Eighty-six percent of this total is found in just five areas (Mount Katahdin, the Mahoosuc Range, Bigelow Mountain, Redington/Crocker and Baker/Lily Bay). The Maine Natural Area Program (NAP) states that this community “should not be considered common anywhere in Maine.” (Letter from Sarah Demers, Maine Natural Areas Program, to Marcia Spencer Famous

- dated February 24, 2010, p. 1; Testimony of David Publicover, April 21, 2010, Attachment A)”
- (b) “The southern portion of the proposed project, encompassing Turbines 8 through 15 and the associated access roads, lies predominantly within an occurrence of this rare natural community documented by the Maine Natural Areas Program. (Testimony of Christine Cinnamon/Dana Valteau, April 21, 2010, Exhibit D)”
 - (c) “The occurrence of the Fir-Heartleaved Subalpine natural community on Sisk Mountain encompasses 358 acres, making it the eleventh largest of the nineteen documented occurrences in the state. It falls within the middle of the size range of documented occurrences outside of the state’s largest mountain ranges. The Sisk occurrence is larger than eight of the nineteen documented occurrences and more than twice as large as seven of them. (Letter from Sarah Demers, Maine Natural Areas Program, to Marcia Spencer Famous dated February 24, 2010, p. 1; Testimony, Publicover, Attachment A)”
 - (d) “Dr. Hudson for the Applicant opined that there are fifteen additional potential but undocumented areas where this community may occur and estimated that they encompass an additional 8,000 acres. (Testimony of W. Donald Hudson, April 21, 2010, p. 4; Transcript of May 12, 2010, pp. 119-120)”
 - (e) “Inclusion of these additional potential but undocumented areas would bring the total extent of this community to 0.24% of the state – a minor increase that does not diminish the rarity of this community. (Transcript of May 12, 2010, p. 120; Rebuttal Testimony of David Publicover, June 1, 2010, Attachment A)”
 - (f) “Inclusion of these potential areas would increase the number of occurrences to 34, which is at the low end of the range of 20-100 occurrences that are part of the standard for an S3 classification. (Rebuttal Testimony, Publicover, Attachment A)”
 - (g) “Eight of the fifteen potential but undocumented occurrences are smaller than the one on Sisk, which does not change the position of Sisk relative to other occurrences. (Transcript of May 12, 2010, p. 120; Rebuttal Testimony, Publicover, Attachment A)”
 - (h) “The occurrence on Sisk Mountain was assigned an Element Occurrence Rank of “B”, or “Good”, by MNAP. Of the three elements that go into this ranking (condition, size and landscape context), the occurrence on Sisk was given the highest ranking for condition, with MNAP noting its undisturbed and natural condition. (Kibby Expansion Wind Power Project Application Vol. II, p. B.15-21; Letter from Sarah Demers, Maine Natural Areas Program, to Marcia Spencer Famous dated February 24, 2010, p. 1)”
 - (i) “Other examples of this community in Maine have been impacted by timber harvesting, which reinforces the value of the occurrence on Sisk Mountain as an undisturbed and natural example. (Testimony of Peter Vickery, April 21, 2010, Figure 4; Testimony of Dana Valteau, May 24, 2010, p. 5; Rebuttal Testimony, Publicover, p. 4)
 - (j) “The size and natural condition of the occurrence of this rare natural community on Sisk Mountain are such that it should be considered an ecologically significant occurrence. (Testimony, Publicover, p. 4)”

- (k) “The fact that this community may occur outside of Maine is irrelevant in this proceeding. Many rare species and communities are more common outside the borders of Maine (including Canada lynx and alpine habitat). LURC’s responsibility is to the resources within its jurisdiction. No legal basis exists for LURC to minimize its responsibility to protect rare or significant natural resource values because of the presence of these resources outside of the state. (Rebuttal Testimony, Publicover, p. 2)”
- (l) “As documented by the Applicant, the project would eliminate, fragment or indirectly impact 102 of the 358 acres of this rare community occurrence, or nearly 30% of its extent. (Testimony, Cinnamon/Valleau, Exhibit D)”
- (m) “The Applicant’s estimate of project impacts assumes an indirect impact (“edge effect”) zone of only 50 feet around the actual project footprint. This estimate is conservative. (Testimony, Cinnamon/Valleau, Exhibit D; Transcript of May 12, 2010, p. 321; Testimony, Publicover, p. 9; Rebuttal Testimony, Publicover, p. 3)”
- (n) “Maine’s Beginning with Habitat Program uses a buffer of 250’ around developed areas and roads of similar scale to those in the project. Using this state-published and approved methodology would result in an estimate of total direct and indirect impact of 144 acres, or about 40% of the mapped extent of the community. (Transcript of May 12, 2010, pp. 321-322; Rebuttal Testimony, Publicover, pp. 3-4)”
- (o) “The fragmenting impact of the southernmost four turbines (Turbines 12 – 15) and their access road would be the same as Turbine 11 as originally proposed, which was relocated by TransCanada at the request of MNAP and the Maine Department of Inland Fisheries and Wildlife. (Transcript of May 12, 2010, p. 322)”
- (p) “The National Academy of Sciences, in a study of the ecological effects of wind-energy projects, concluded (page 91): “it is likely that wind energy facilities will adversely alter ecosystems indirectly, especially through the following cumulative impacts:
 - (i) Forest clearing resulting from road construction, transmission lines leading to the grid, and turbine placements represents perhaps the most significant potential change through habitat loss and fragmentation for forest-dependent species. This impact is particularly important in the Mid-Atlantic Highlands, because wind-energy projects there all have been constructed or proposed in forested areas.
 - (ii) Changes in forest structure and the creation of openings may alter microclimate and increase the amount of forest edge.
 - (iii) Plants and animals throughout the ecosystem respond differently to these changes, and particular attention should be paid to species listed under the ESA and species of concern that are known to have narrow habitat requirements and whose niches are disproportionately altered.”(Testimony, Publicover, p. 10)
- (q) “Significant adverse impacts to this rare natural community are limited to the southernmost seven turbines and the associated access road. The northern seven turbines would lie outside the mapped extent of the community, and Turbine 8

- and its associated access road impact only a small area at the northern tip of the mapped occurrence. (Testimony, Cinnamon/Valleau, Exhibit D)”
- (r) “The original Kibby project was purposefully and successfully designed to avoid impact to the documented occurrence of this community on Kibby Mountain (614 acres), which also had an Element Occurrence Rank of “B” (Good). TransCanada has applied a less stringent standard to protection of this community in this project as compared to the original Kibby project. (Kibby Wind Power Project Application, April 2007, p. 7-1; Kibby Expansion Wind Power Project Application Vol. I, p. B.6-6 and Vol. II, p. B 15-1; Transcript of May 12, 2010, pp. 100-101; Testimony, Publicover, pp. 11-12)”
 - (s) “Peer-reviewed paleoecological research has documented that the elevational distribution of subalpine forest in the White Mountains (NH) has remained relatively stable for 9,000 years despite significant changes in regional climate and lower-elevation vegetation. Spruce-fir forest was eliminated from low elevations during a previous major warming period between 9,000 and 4,000 years before present following the retreat of the last glacier. Dr. Hudson confirmed that the subalpine forest of Maine has persisted for thousands of years in the areas in which it is found. (Testimony, Publicover, pp. 7-8; Transcript of May 12, 2010, p. 120) “
 - (t) “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. (Testimony, Publicover, p. 7 and Attachment B)
 - (u) “Protecting important ecosystems of sufficient size and geographic distribution is an important and well-documented adaptation strategy for climate change. In a presentation made by Alec Giffen to LURC on the “Great Maine Forest Initiative/Keeping Maine’s Forests” on April 7, 2010 he included as one aspect of the vision of this effort “Facilitat[ing] the adaptation of forest ecosystems to a changing climate.” (Testimony, Publicover, p. 7)”
 - (v) “Subalpine forests in northwestern Maine will have an important adaptive role in a future warmer climate. 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. (Testimony, Publicover, p. 8)”
 - (w) “The Commission did not approve the proposed Black Nubble wind project, which would have impacted an occurrence of this rare community of 316 acres with an Element Occurrence Rank of “B” (Good), finding that “the project as proposed would alter and cause an undue adverse impact on a particularly sensitive area.” (LURC Decision, ZP 702, p. 67)
 - (x) “The AMC did not “support” the Granite Reliable Power project in New Hampshire, as falsely claimed by TransCanada. In cooperation with NH Fish and Game Department, AMC withdrew its opposition after the Applicant agreed to a \$2.3 million mitigation package that directly compensated for the Project’s

serious habitat impacts. In contrast, this project only proposes \$100,000 to be used in the Caribbean. (Transcript of May 12, 2010, pp. 225-227)”

- (y) “Maine Natural Areas Program Director Molly Docherty stated, “I think there's no question there's an adverse impact” on this occurrence of this rare natural community. (Transcript of May 12, 2010, p. 291)”

(2) *Bicknell's Thrush.*

- (a) “Bicknell’s thrush is one of the highest conservation priorities in our region and is listed by multiple conservation organizations and government agencies as a species of highest conservation concern. (Transcript of May 12, 2010, p. 183; Susan M. Gallo Testimony, April 21, 2010, pp. 6-7)”
- (b) “TransCanada’s breeding bird survey report states that Bicknell’s thrush is among North America’s most rare, range-restricted breeding passerines, at greatest risk of extinction and therefore of highest continental conservation concern (BRI Breeding Bird Survey Report for the Sisk Mountain Wind Power Project, Appendix F at 99)”
- (c) “Our region (including northeastern United States and southeastern Canada) is the only place in the world where Bicknell’s thrush breeds. (Testimony, Gallo, p. 6)”
- (d) “Bicknell’s thrush is a species of global conservation concern and is at substantial risk of being listed under the Endangered Species Act, if appropriate measures are not taken. (Testimony, Gallo p.6)”
- (e) “Within our region, Bicknell’s thrush is limited to high elevation, stunted spruce-fir forest. (Testimony, Gallo p. 4)”
- (f) “Despite a few isolated observations of Bicknell’s thrush in regenerating clearcuts at lower elevations, there is no peer-reviewed scientific evidence that Bicknell’s thrush breed successfully in Maine in this habitat type. (Transcript of May 12, 2010, p. 111)”
- (g) “Experts have urged caution to avoid development in high quality Bicknell’s thrush breeding habitat. Chris Rimmer of the Vermont Center for Ecostudies, acknowledged by the Applicant as “highly respected” and “very knowledgeable” about this species, has recommended that “Habitat alterations should be avoided in areas where natural disturbance, either chronic or random, could maintain suitable habitat for Bicknell’s Thrushes. Such areas include west-facing slopes, ridgelines, fir waves, and areas adjacent to fir waves.” (Transcript of May 12, 2010, pp. 113-114)”
- (h) “TransCanada’s own expert witness agreed that it would be preferable to avoid under all possible circumstances habitat alterations in areas where natural disturbances, either chronic or random, could maintain suitable breeding habitat for Bicknell’s thrush. (Transcript of May 12, 2010, p.114.)”
- (i) “TransCanada has underestimated the amount of direct breeding habitat loss to Bicknell’s thrush at eight acres. (Transcript of May 12, 2010, p.184)”
- (j) “The Applicant has made questionable assumptions about Bicknell’s thrush observations on the edges of the search areas. Search areas for spot-mapping efforts were limited to 10 ha plots around each of six point count locations, providing no information about Bicknell’s thrush use of habitat beyond these

- plots. (Transcript of May 12, 2010, pp. 182-188; Consolidated Parties Exhibit 1 (Gallo Powerpoint))”
- (k) “Where the Bicknell’s thrush’s territory falls relative to the point it was observed changes the amount of habitat impacted by the project. If the Applicant’s assumptions are wrong and any observed Bicknell’s thrush actually uses habitat beyond the search area, then the impact to the Bicknell’s territory would be significantly greater than the Applicant asserts. (Transcript of May 12, 2010, p. 186)”
 - (l) “TransCanada has significantly underestimated the number of Bicknell’s thrush to be affected by the proposed project. (Transcript of May 12, 2010, p. 205)”
 - (m) “Bicknell’s thrush defends one patch of ground for their territory, not disjunct patches in multiple locations on the landscape. The loss of direct habitat would impact multiple Bicknell’s thrush territories. (Transcript of May 12, 2010, p. 205)”
 - (n) “Eight acres of habitat loss is a gross underestimate of the amount of lost and degraded habitat as a result of the proposed project. The Applicant has failed to acknowledge the well-studied and well-documented impacts from edge effects. (Testimony, Gallo pp. 9-11)”
 - (o) “Disturbance caused by edge effects would be much different and much more dramatic than that caused by a typical small-scale logging road or by a natural disturbance. (Testimony, Gallo p. 11)”
 - (p) “Applicant’s expert admitted that the habitat directly adjacent to the clearings would change and that the Applicant’s estimate of habitat degradation failed to include habitat degradation due to edge effects. (Transcript of May 12, 2010, p.187, pp.107-108)
 - (q) “Applicant grossly overestimated the amount of potential Bicknell’s thrush habitat available on the landscape. (Rebuttal Testimony, Gallo pp. 1-4)”
 - (r) “Dr. Vickery’s assertion that there are 98,000 acres of additional available habitat in Maine is based on a study that advises using caution when applying the habitat model in areas north of 45 degrees latitude. (Lambert et. al, 2005, p. 9; Transcript of May 12, 2010, p. 112)”
 - (s) “Sisk Mountain is north of 45 degrees latitude. (Official notice, Delorme Atlas of Maine)”
 - (t) “Dr. Vickery admitted that only a portion of the 98,000 acres would be available as potential habitat. (Transcript of May 12, 2010, pp. 111-114)”
 - (u) “Studies Dr. Vickery references to support claims that Bicknell’s thrush use regenerating clearcuts were conducted in Canada where Bicknell’s thrush is known to breed at lower elevations than in Maine. (Transcript of May 12, 2010, p. 112)”
 - (v) “Dr. Vickery admitted that there is no documentation of Bicknell’s thrush breeding successfully in Maine in regenerating clearcuts. (Transcript of May 12, 2010, 111)”
 - (w) “Dr. Vickery admitted that the Vermont Center for EcoStudies, that houses the leading experts in the field, has not initiated research into regenerating clearcuts in Maine. (Transcript of May 12, 2010, p. 114)”

- (x) “Even if some of the “available” habitat is truly available potential habitat, it’s very likely that it would provide lower quality habitat compared to naturally disturbed forests. (Rebuttal Testimony of Susan M. Gallo, June 1, 2010, p. 1)
- (y) “Lower quality bird habitat often attracts singing males with little or no chance of successful breeding. (Rebuttal Testimony, Gallo, p. 1)”
- (z) “Protection of species of special concern is important. The designation is a red flag that the species is at risk and, if appropriate measures are not taken, we may soon find the species facing extinction. (Rebuttal Testimony, Gallo p. 4)”
- (aa) “The Department of Inland Fisheries and Wildlife’s Comprehensive Wildlife Conservation Strategy identified Bicknell’s thrush as one of the only 12 bird species of very high priority on the list of Species of Greatest Conservation Needs, which indicates high potential for state extirpation without management intervention and/or protection. (Testimony, Gallo, p. 6)”
- (bb) “There would be considerable opportunity for male Bicknell’s thrush to collide with the turbine blades causing direct mortality. (Transcript of May 12, 2010, p. 187; Testimony, Gallo, p.13)”
- (cc) “Flight songs for male Bicknell’s thrush typically consist of 10 to 15 second flights, 25 to 75 meters (82 to 246 feet) above the ground often in large circles as large as 100 meters. The turbine blades are 119 feet and higher off the ground. Even if the Bicknell’s thrushes don’t fly higher than 150 feet off the ground, as was suggested by Dr. Vickery, there is still considerable opportunity for collision with the turbine blades causing direct mortality. (Testimony, Gallo, p. 13)”
- (dd) “With five of the seven southern turbines in or within 100 meters of potential Bicknell’s Thrush habitat, there is a significant risk of collision and mortality. (Testimony, Gallo p.13)”
- (ee) “The northern part of the project area, consisting of turbines 1 through 8, does not contain high-quality Bicknell’s thrush habitat, is not now in use by Bicknell’s thrush, and it not likely potential future habitat. Concern over habitat loss and risk of collisions with turbines during the breeding season is minimal. (Testimony, Gallo, p. 3)”
- (ff) “Even though the migration passage rate for birds and bats over the project area is only moderate, 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. (Testimony, Gallo, Exhibit D)”
- (gg) “A northern eight turbine only project would need to incorporate conditions to mitigate for adverse impacts to migratory birds and bats as a relatively high number of bird and bat targets would be expected to pass through the rotor swept area during fall migration. (Testimony, Gallo, pp. 14-15)”
- (hh) “Though the migration passage rates do not rise to the level of creating an undue adverse impact, the low altitude of flights over the project area is a concern in terms of the potential for direct mortality. As a result, rigorous post-construction studies should be required and should be developed by the Department of Inland Fisheries and Wildlife in consultation with the U.S. Fish and Wildlife Service. (Testimony, Gallo, pp. 14-15)”

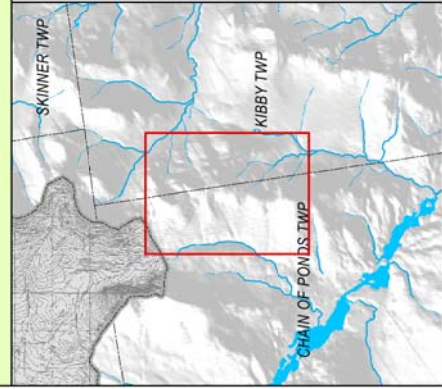
- (ii) “Strong adaptive management language addressing turbine operations is needed in the event that the post-construction studies find high mortality for either breeding birds or migrating birds and bats. (Testimony, Gallo p. 15)”(3) *Summary*
- (jj) “LURC’s 1997 Comprehensive Land Use Plan contains numerous references to the values and sensitivity of high mountain areas:
- “Mountain areas” are specifically listed among the “unique, high-value natural resources” included in the principal values of the jurisdiction. Throughout the document mountains are consistently listed as one of the specific resources that give the jurisdiction is special character.
 - The goal and both policies pertaining to mountain resources emphasize the protection of their significant values:
 - Goal: “Conserve and protect the values of high-mountain areas from undue adverse impacts.”
 - Policy 13: “Regulate high-mountain areas to preserve the natural equilibrium of vegetation, geology, slope, soil and climate, to reduce danger to public health and safety posed by unstable mountain areas, to protect water quality, and to preserve *scenic value, vegetative communities, unique wildlife communities* and low-impact recreational opportunities.” [italics added]
 - Policy 14: “Protect high-mountain resources with particularly high natural resource values or sensitivity which are not appropriate for most development.”
- (Testimony, Publicover, p. 5)”
- (kk) “The third criteria for approval of permit applications set forth in 12 MRSA §685-B.4.C and LURC Land Use Districts and Standards Chapter 10.24, states that LURC cannot approve a Project 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 on existing uses, scenic character, and natural and historic resources in the area likely to be affected by the proposal.*” (12 MRSA §685-B.4.C; LURC Land Use Districts and Standards Chapter 10.24)”
- (ll) “The record shows the project area encompassing Turbines 9 through 15 has significant value in the areas of scenic quality, rare vegetation communities and unique wildlife communities, and meets the terms of “high-mountain resources with particularly high natural resource values or sensitivity.”
- (mm) “The construction of Turbines 9 through 15 would have an undue adverse impact on an ecologically significant occurrence of the rare Fir-Heartleaved Birch Subalpine Forest natural community, on significant breeding habitat for Bicknell’s thrush, and on outstanding scenic resource values. (Testimony, Publicover, p. 12; Testimony, Gallo, p. 16; Testimony, Johnson, p. 11)”

B. *Friends of the Boundary Mountains (FBM)*. The following were prepared by staff based on the FBM’s closing brief, and summarize the FBM’s assertions with regard to Bicknell’s thrush and the Subalpine Fir Forest community:

- (1) FBM asserted that the proposed KEP will create undue adverse effects on natural resources such as the Subalpine Fir Forest which provides breeding habitat for Bicknell’s thrush.

- (2) “The adverse effects of the proposed [KEP] on the 358 acres of Subalpine Fir Forest on Sisk Mountain, combined with the existing impacts on 614 acres of Subalpine Forest on Kibby Mountain” from the Kibby Project, “demonstrates that the tipping point in being able to fit such industrial development harmoniously into the natural environment has been reached.”
- (3) FBM concurs with the conclusions reached by the CP, who argued that this “level of impact on a significant rare natural resource clearly rises to the level of an ‘undue adverse impact’, calculating the direct and indirect impact of the proposed KEP to be on 40% of the Subalpine Fir Forest on Sisk Mtn. alone. FBM also concurs with the CP’s assertion that timber harvesting in this community does not justify its further destruction, but makes protection of remaining undisturbed occurrences more imperative. Past impacts in other areas do not justify additional cumulative impact, and would be contrary to the intent of LURC’s third principle goal to “Maintain the natural character of certain areas within the jurisdiction having significant natural values...”
- (4) FBM agrees with the CP that “this important habitat faces risks from timber harvests and wind power development” which “strengthens the reason why larger intact, undisturbed examples like Sisk should be protected as an important and well-recognized part of the state’s climate change strategy. Protecting habitats that will have an important role in allowing the region’s species to adapt to future climate change is as much needed as is wind power.”
- (5) FBM asserted that “allowing Sisk to be developed for wind power will be the straw that breaks the camel’s back in terms of the degradation of natural and cultural values resulting from cumulative impacts of incremental development.”





- * Alternate_Number_One_Point_041610
- Alternate Layout Number One
- Expedited Wind Energy Project Permitting Area
- Fir - Heart-leaved Birch Subalpine Forest (total: 358 acres)**
- Natural Community Remainder (total: 256 acres)
- Habitat Area Adjacent to Project Footprint (total: 25 acres)
- Habitat Area Coincidental with Project Footprint (total: 39 acres)
- Habitat Area Fragmented by Project Footprint (total: 38 acres)

**Kibby Expansion
Wind Power Project**

Alternate Layout Number One
Fir - Heart-leaved Birch
Subalpine Forest
Natural Community Remainder

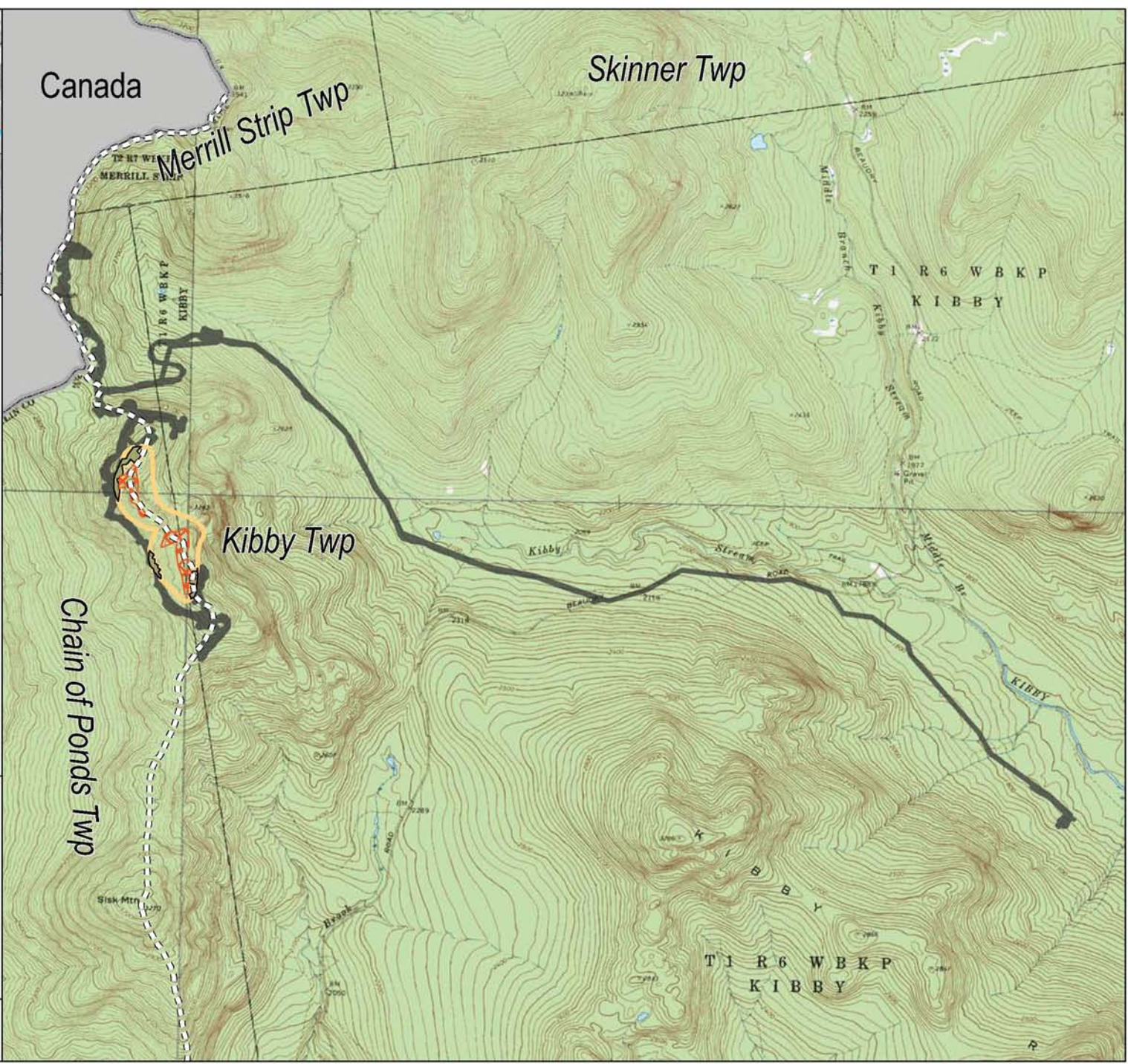
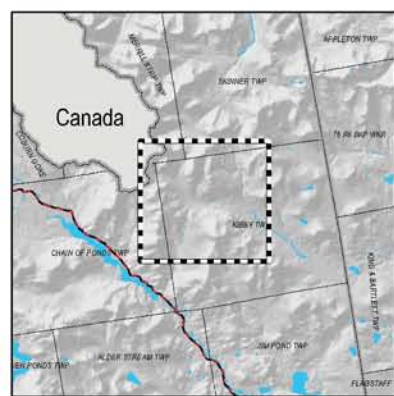
Feet
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TRC

14 Gabriel Drive
Augusta, ME 04330

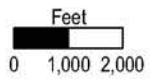
Created: 4/16/2010

SOURCES: MAINE OGIS, USGS, MMAP, TRC
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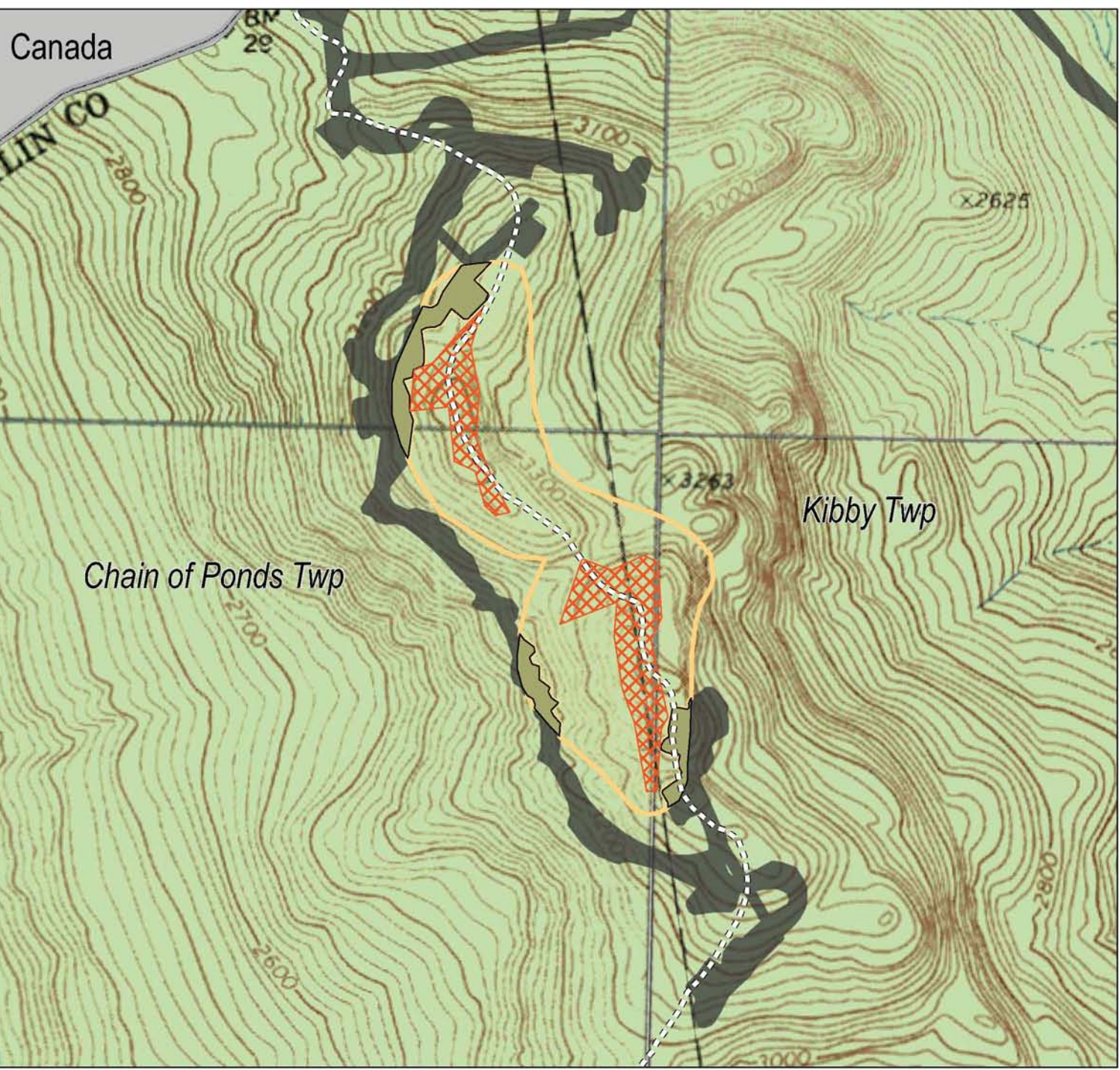
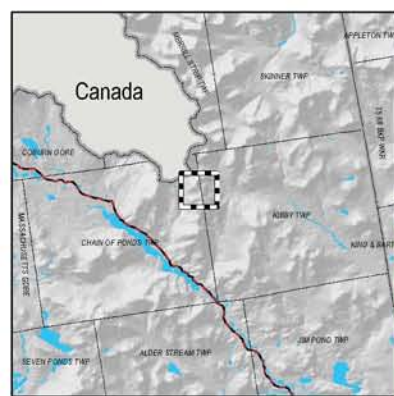
Legend

- ==== Sisk Ridge Centerline
- Project Footprint
- Bicknell's Thrush Habitat (total: 88 acres)**
 - Unimpacted Habitat Area (total: 80 acres)
 - Habitat Area Impacted by Project Footprint (total: 8 acres)
 - ▨ Core Bicknell's Thrush Habitat

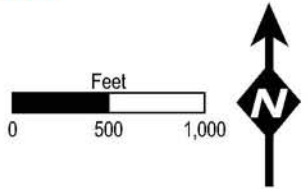


Sources: Maine OGIS, USGS, LURC, TRC
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Kibby Expansion
 Wind Power Project
 -
 Bicknell's Thrush
 Habitat



- Legend**
- ==== Sisk Ridge Centerline
 - Project Footprint
 - Bicknell's Thrush Habitat (total: 88 acres)**
 - Unimpacted Habitat Area (total: 80 acres)
 - Habitat Area Impacted by Project Footprint (total: 8 acres)
 - ▣ Core Bicknell's Thrush Habitat



Sources: Maine OGIS, USGS, LURC, TRC
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Kibby Expansion
 Wind Power Project
 -
 Bicknell's Thrush
 Habitat

VIII. OTHER WILDLIFE ISSUES

- A. Avian and bat surveys [*Wind Energy Act exhibit*]
- B. State and federally listed species – Golden and bald eagle, Canada lynx, Northern bog lemming, Roaring Brook mayfly and spring salamander
- C. Effects of noise on wildlife

CD #2

- BRI 2009 Bicknell's thrush/Breeding Bird survey report (*see* Section VII)
- MDEP/MDIFW guidance memo on avian and bat monitoring (*see* Section I, application checklist, pp 20-23)
- MDIFW response to Sixth Procedural Order (May 24th), and rebuttal to FBM comments (June 1) (in Section VI)
- FBM response to Sixth Procedural Order, and May 30th rebuttal to MDIFW May 24th comments (in Section VI)

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.”

(Note: *see* Section IV, Finding of Fact #1,A, exception with regard to scenic resources)

- B. *PL 2007 Ch. 661, Sec. B-13. Submission requirements.* No later than September 1, 2008, the Department of Environmental Protection and the Maine Land Use Regulation Commission shall, jointly and to the extent not already addressed in existing agency guidance, specify the submission requirements for the following matters for applications for wind energy development, including, but not limited to, expedited wind energy development as defined in the Maine Revised Statutes, Title 35-A, section 3451, subsection 4, in accordance with the recommendations of the February 2008 final report of the Governor's Task Force on Wind Power Development in Maine created by Executive Order issued on May 8, 2007, and the provisions of this Act, as applicable:
 - (1) Effects on scenic character and existing uses related to scenic character;
 - (2) Tangible benefits, including post-construction reporting of tangible benefits realized;
 - (3) Noise and shadow flicker effects;
 - (4) Effects on avian and bat species (emphasis added);
 - (5) Public safety-related setbacks; and
 - (6) Decommissioning plans, including demonstration of current and future financial capacity that would be unaffected by the applicant's future financial condition to fully fund any necessary decommissioning costs commensurate with the project's scale,

location and other relevant considerations, including, but not limited to, those associated with site restoration and turbine removal.

C. *MDEP/MDIFW guidance memo on avian and bat monitoring*. (CD #2, Section I, application checklist, pp 20-23)

2. Applicant's avian and bat surveys [*Wind Energy Act exhibit*]; and assessment of State and federally listed species (CD #1)

A. In consultation with MDIFW and USFWS, the applicant conducted the following avian and bat surveys:

- (1) *Rare raptor nesting surveys: bald eagle, golden eagle, and peregrine falcon (2005 through 2009)*. No rare raptor nesting activity was detected in the vicinity of the proposed development area, although occasional individuals were seen flying over the area.
- (2) *Spring and fall daytime migrant surveys*. For hawks, 83 individuals (11 species) were documented. The average daily passage rate (total birds/total hours of effort for the entire season) was 0.38 and 0.39 birds per unit effort in spring 2009 and fall 2009, respectively. The survey found hawk use to be lower than other documented northeastern count sites. Overall, passage rates were low, and consistent with the 2005/2006 surveys done for the Kibby Project.
- (3) *Spring and fall nighttime migrant surveys (radar - bat monitoring, ceilometer and night vision survey)*.
 - (a) *Nighttime avian radar survey*: Results of the spring 2009 nighttime radar surveys showed the mean passage rates for migrants for the project area to be 207, as compared to previous surveys showing 456 for Kibby Mountain, 197 for the Kibby Project Series A, and 512 for the Kibby Project Series B in 2005. Results of the fall 2009 radar surveys showed the mean passage rates for migrants for the project area to be 458, as compared to 565 for Kibby Mountain and 201 for Kibby Range in 2005. Flight height for the nighttime migrants was estimated to be between 200 and 300 meters.
 - (b) *Bat survey*: The bat surveys detected low use of the project area, similar to the bat activity detected for the Kibby Project area. Of the eight species of bat on Maine's Species of Special Concern list that have the potential to occur in the project area, based on the monitoring which did not identify calls to species, there is potential for these species to occur. However, the overall use of the area by bats was low, greatly reducing the risk.
- (4) *Breeding bird surveys*. The BRI Report (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).

- B. The applicant assessed the development area for the presence of State and federally listed wildlife species, and included in the application a summary of the results, for the following species:
- (1) *Canada lynx*. Canada lynx is federally endangered, and listed by Maine as a Species of Special Concern (see Section C, below).
 - (2) *Golden and bald eagle*. Both species are federally threatened; the golden eagle is state endangered, and the bald eagle is not state listed (see Finding of Fact #1,A, above; and Section C, below).
 - (3) *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 (see Findings of Fact #3,C and #4,B, below).
 - (4) *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 (see Findings of Fact #3,C and #4,B, below).
 - (5) *Northern bog lemming*. This small mammal is listed in Maine as threatened. The applicant identified and assessed three wetlands in the project footprint with the potential to support this species. Although no evidence of this species' presence was found, the applicant has designed the project to avoid these wetlands, as well as their surrounding upland watersheds.
- C. As a part of the federal Section 404 wetlands permitting process, the applicant has had on-going dialogue with USFWS and the Corps, and has conducted a risk assessment regarding the potential impacts to the federally listed (threatened) golden eagle and bald eagle (in accordance with the federal Golden and Bald Eagle Protection Act), and the federally listed (endangered) Canada lynx (in accordance with the federal Endangered Species Act). Prior to construction of the Kibby Project, Canada lynx track surveys were conducted. After construction, Canada lynx tracks were found in the Kibby Project area, potentially due to habitat modifications increasing the habitat for the lynx's food sources. On June 4th, the applicant submitted to USFWS its most recent habitat modeling/project information/assessment results for Canada lynx, and assessment for golden and bald eagle. This exercise was requested by USFWS as the most effective method of assessment of impacts to suitable habitat in the project area.
3. **MDIFW review comments.** (CD #1) On March 3, 2010, MDIFW submitted the following review comments:
- A. "The findings presented in the application for development of the Sisk Mountain-Kibby Wind Expansion are consistent with other pre-construction studies conducted for wind power projects MDIFW has reviewed in Maine. As the project is currently proposed, MDIFW believes that additional pre-construction studies at this site are not necessary. 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. No negative impacts to northern bog lemming are expected because the applicant identified the wetlands that provide suitable habitat and designed the proposed KEP to avoid these areas, and to also maintain a 500 ft wide buffer around them.
- C. The applicant conducted surveys for Roaring Brook mayfly and spring salamander in the Kibby Stream watershed because both are known to occur within the adjacent Gold Brook watershed. While neither species was found within the survey area, suitable habitat for both occurs within the Kibby Stream Watershed, and the applicant has agreed to follow MDIFW management guidelines for these species. Four of the Mile 5 Road stream crossings have the greatest potential for the Roaring Brook mayfly to occur. MDIFW made recommendations that the crossings be improved with larger culverts. MDIFW also recommended all collector line stream crossings follow standards similar to DEP’s draft “Minimum Performance Standards for Electric Utility Corridors”, found in Appendix A of Chapter 375 Rules.”
- D. “A detailed post-construction monitoring plan should be developed and approved as part of the Development Permit. MDIFW re-states our willingness to work with the applicant in developing this monitoring plan. The post-construction monitoring efforts should be at least as rigorous as the pre-construction efforts. This monitoring plan should be conducted for a minimum of two years (preferably three) and can be distributed over a period of several years post-construction (*i.e.*, years 1, 3, 5). We request that the post-construction monitoring plan is reviewed and approved by MDIFW and LURC prior to operation of any wind turbines. Post-construction monitoring protocols for wind projects are rapidly evolving. Many of the same techniques used at the Mars Hill and Stetson Mountain Wind Power Facilities should be used for the Sisk Mountain-Kibby Wind Expansion project and refined through consultation with MDIFW. This post-construction monitoring protocol should be adaptive as continued wind power projects shed new information on possible ways to minimize impacts on birds and bats. This may result in the modification of proposed studies through discussions among the applicant, MDIFW, and DEP.”
- E. On March 8th, MDIFW submitted to the file its “Guidelines for Roaring Brook Mayfly and Spring Salamander”.

4. Applicant response to MDIFW. (CD #1)

- A. *Northern bog lemming*. The applicant concurred with MDIFW that the project design avoids negative impacts to this resource.
- B. *Roaring Brook mayfly/spring salamander*. The applicant responded to MDIFW’s comments on three of the four stream crossings, where a larger culvert is requested. Because the requested culvert size would result in a significant increase in the width of

the road, resulting in more impact to the stream and adjacent wetlands, the applicant proposed these three streams would be bridged. The fourth stream has a recently installed new bridge that will remain in place. All other stream culverts will either meet MDIFW's guidelines or a bridge would be installed.

5. **Applicant's closing brief.** (CD #2) The applicant submitted the following with its closing brief:
 - A. "*Roaring Brook mayfly and spring salamander.* TransCanada, in consultation with IF&W, conducted surveys for the Roaring Brook Mayfly and the Spring Salamander within the Kibby Stream watershed where both species are known to occur. Although the surveys did not document either species, TransCanada has committed to implement IF&W management guidelines to protect the habitat of both species. (Cinnamon et al. Pre-Filed Direct Testimony at 24 and e-mail from Mr. Cordes, IF&W, to Ms. Spencer-Famous dated March 3, 2010)."
 - B. "*Northern bog lemming.* TransCanada identified three wetlands that are suitable for and potentially occupied by northern bog lemmings on Sisk Mountain and has located all project elements to completely avoid the watersheds that contain these wetlands. As a result, IF&W concluded that no adverse impacts to the bog lemming are anticipated from the Project (Pre-Filed Direct Testimony of Cinnamon et al. at 24 and e-mail from Mr. Cordes, IF&W, dated March 3, 2010)."
6. **CP closing brief.** (CD #2) CP did not include in its closing brief any mention of bald or golden eagle, northern bog lemming, Roaring Brook mayfly, spring salamander, or the effects of noise on wildlife. Regarding avian and bat monitoring in general, CP asserted that impacts to migratory birds and bats would be adverse as a result of the proposed KEP. CP contended that even a permit for a smaller project consisting of the northern eight turbines would need to incorporate conditions to mitigate for adverse impacts to migratory birds and bats. CP asserted that "a relatively high number of birds and bats would be expected to pass through the rotor swept area during fall migration. Even though the passage rate is only moderate, 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 each hour." CP further asserted that although "the passage rates may not rise to the level of creating an undue adverse impact, the low altitude of flights over the project area is a concern in terms of the potential for direct mortality. As a result, rigorous post-construction studies should be required, and should be developed by [MDIFW] in consultation with [USFWS]. Strong adaptive management language addressing turbine operations would also be needed in the event that the post-construction studies find high mortality for either breeding birds or migrating birds and bats."
7. **FBM closing brief.** (CD #2) FBM did not comment specifically on the avian and bat surveys, bald or golden eagle, northern bog lemming, Roaring Brook mayfly, or spring salamander, but in its closing brief asserted that the proposed KEP will create undue adverse effects on natural resources such as wildlife and wildlife habitat. Adverse impacts on wildlife and habitat would be due to permanent industrial road building, turbine noise, and

loss of breeding habitat. Impacts include “direct habitat loss; facilitated invasion of weeds, pests, and pathogens; fragmentation and isolation of wildlife populations; animal behavioral modifications and a variety of edge effects”. The proposed KEP will increase adverse impacts above 2,700 ft in elevation by creating edges along the roads, transmission line connectors, and turbine footprints. Edge effects are one of the most harmful consequences of habitat fragmentation. Although the applicant did not do mammal surveys other than for Canada lynx, it concluded that the increase in edge, habitat loss, and fragmentation would not result in adverse impacts to mammal species. FBM questioned how that statement could be made without conducting surveys.

8. Effects of noise on wildlife

- A. The issue of the effect of noise generated by wind energy development on wildlife was raised by FBM in its pre-filed testimony and discussed at the May 12th public hearing. The Commission instructed staff to request that MDIFW submit titles and summaries of any literature it is aware of on the subject of noise impacts to wildlife. After the hearing, the Presiding Officer issued the Sixth Procedural Order, which among other things, requested that MDIFW comment on the subject, and submit the titles of any literature it may be aware of regarding the effects of human produced noise on wildlife.
- B. *FBM pre-filed testimony.* (CD #1) In its pre-filed testimony, FBM asserted that sound produced by wind turbines has an adverse effect on wildlife, noting several references on the subject. FBM referred to a study published in the journal *Trends in Ecology and Evolution* (Barber, Crooks, Fristrup 2010) that shows that human background noise, including wind turbines, can have major impacts to animals by impacting their “effective listening area.” This study found that an increase as low as 10dB (decibels) in background noise could reduce the listening area for animals by 90%.
- C. *MDIFW response to Sixth Procedural Order.* (CD #2) On May 24, 2010, MDIFW commented they are aware of several studies written since 1970 on the effects of road, aircraft, and snowmobile/ATV noise on wildlife, and that recently several studies have focused on noise produced by wind power developments. MDIFW stated: “These studies indicate that wildlife will either respond behaviorally (avoiding adjacent habitats, increase vigilance, etc.) or will habituate and adapt to the noisier environment and that responses are taxa-specific.”
- (1) “Noise produced by operating wind facilities may have negative effects on certain species, but the full impact of these effects is unknown. The effect of anthropogenic noise on wildlife populations is difficult to measure and often confounded by other variables that cannot be teased out”. “Most studies can only speculate about the impact of noise and the resulting survival and reproduction of specific study species. The challenge is to determine what level of impact is expected, but more importantly, what level of effect is acceptable. When reviewing large-scale wind projects, MDIFW has concentrated on protecting habitats for species with special conservation needs.”
 - (2) MDIFW supplied the titles and summaries of several recent peer-reviewed papers on noise and wildlife:

- (a) Barber, J. R. et al. 2009. The costs of chronic noise exposure for terrestrial organisms. *Trends in Ecology and Evolution* 25: 180-189. “This paper provides an excellent review of multiple studies and suggests potential impacts to wildlife including communication, predator-prey relationships, and reproductive success.”
 - (b) Rabin, L. A. et al. 2006. The effects of wind turbines on antipredator behavior in California ground squirrels (*Spermophilus beecheyi*). *Biological Conservation* 131:410-420. “This study measured noise levels at control sites and turbine sites and found an increase in background noise while turbines were operating.” “They found that at both sites”....“the squirrels showed an increased alertness and readily returned to the area around their burrows.”
 - (c) Flydal, Kjetil, et al. 2003. Effects of wind turbines on area use and behaviour of semi-domestic reindeer in enclosures. *Rangifer* 24:55-66. “This study observed reindeer activities in a control enclosure away from a wind facility and an enclosure at a wind facility” and “while turbine blades were rotating and off”. There was no significant difference in activity of the reindeer while the turbine blades were rotating.
 - (d) Bee, M.A. and E.M. Swanson. 2007. Auditory masking of anuran advertisement calls by road traffic noise. *Animal Behaviour* 74(6): 1765-1776. “This study suggests that realistic levels of background traffic noise can place constraints on the active space of the acoustic signals of some amphibians, including grey tree frogs (a species native to Maine).”
- D. On May 30, FBM submitted a rebuttal to MDIFW’s response to the Sixth Procedural Order (CD #2), stating that the literature MDIFW cites supports FBM’s concern about noise impacts to wildlife, but they did not include the study noted by FBM in its pre-filed testimony, which was published in the journal *Trends in Ecology and Evolution*, Vol. 25, No.3, by Barber, Crooks, and Fristrup, 2010, and available on line.”
- E. On June 1, 2010, MDIFW responded to the rebuttal comments submitted by FBM (CD #2), stating: “MDIFW did cite the Barber et al. paper in *Trends in Ecology and Evolution* Vol. 25 (3) that Ms. Boretos' referenced. I believe there are two versions of the journal, paper (which was available March 2010) and online (available Sept. 2009), but they are identical articles Vol. 25 (3) pages 180-189.”



IX. SOIL SUITABILITY

Soils mapping, erosion and storm water control, phosphorus export, acidic rock testing and management plan

CD #1

- State Soil Scientist (SSS) review comments: January 13, January 29, and April 16
- Applicant response to SSS review comments

CD #2

- Revised engineered plans with soils overlay, dated May 24th – *see* Section I
- Chapter 10, Sections 10.25,K, L and M
- Revised acidic rock testing and mitigation plan, May 24th
- SSS response to Sixth Procedural Order, and rebuttal to FBM
- FBM response to SSS' May 12th oral testimony
- FBM rebuttal to SSS' response to Sixth Procedural Order
- SSS' guidance on soils mapping for wind energy development (*see* Section I, application checklist, pp 27-28)

1. Review criteria

A. Commission's Land Use Districts and Standards, Section 10.25,G: Soil Suitability

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

- (1) Soil types shall be determined by a site-specific soil survey, according to the “Guidelines for Maine Certified Soil Scientists for Soil Identification and Mapping” (Maine Association of Professional Soil Scientists, 2004). The soil survey class shall be determined as follows, *unless the Commission finds that a lower or higher intensity soil survey class is needed: (emphasis added)*
- (c) For new commercial, industrial and other non-residential development, a Class A high intensity soil survey shall be used to identify soils within any proposed disturbed area. A Class C soil survey may be used to identify soils elsewhere within the project area.

The Commission may waive one or more of the provisions of a Class A or B high intensity soil survey, including but not limited to the contour mapping requirement, where such provision is considered by the Commission unnecessary for its review.

- (2) Determination of soil suitability shall be based on the Natural Resources Conservation Service's soils potential ratings for low density development. Soils with a low or very low development potential rating shall not be developed unless the Commission determines that adequate corrective measures will be used to overcome those limitations that resulted in a low or very low rating.”

- B. *Commission's Land Use Districts and Standards, Sections 10.25, K, L and M; Surface Water Quality, Phosphorus Control and Erosion and Sedimentation Control.* (CD #2)
- C. *State Soil Scientist's guidance on soils mapping for wind energy development.* (CD #2, Section I, application checklist, pp 27-28)

2. Applicant's proposal and assessment (CD #1)

- A. *Soils mapping.* During the summer of 2009, the applicant conducted a Class L Soil Survey (requested by the State Soil Scientist (SSS)) for the proposed KEP. The results were included with the application. At the request of the SSS, the soils mapping was overlaid on the engineered plans, and the revised plans were submitted on January 13, 2010.
- B. *Erosion/sedimentation and storm water control.* Based on the site conditions, experienced gained during the construction of the Kibby Project, and the results of the soils assessment, the applicant developed a temporary and permanent erosion and stormwater control plan (E&S Plan). The 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. The applicant included the details of the erosion and storm water control measures on the engineered plans so the contractor will have the benefit of the specifications on-site during construction.
- C. *MDEP Storm Water General Permit standards.* Because the proposed KEP will disturb more than one acre of land, the MDEP Maine Construction General Permit standards will be met. These standards are contained in the Maine Erosion Control BMPs.
- D. *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.
- E. *Geotechnical assessment and "Acidic Rock Testing and Management Plan".* Because of the clearing and soil disturbance to provide access to the ridgeline portions of the project area, the applicant has not yet completed the geotechnical investigations for the KEP. Among other things, the results of the geotechnical investigation provide data that area used to refine the 'Acidic Rock Testing and Management Plan'. However, because the KEP is expected to be very similar to the adjacent Kibby Project area, the applicant proposed to use the same Plan for the KEP as the one reviewed and approved for the Kibby Project, with modifications to accommodate that the geotechnical work had not yet

been completed. On May 24, 2010, the applicant submitted a revised Plan, with changes based on the January 29, 2010 review comments by the SSS (CD #2) (*see* Finding of Fact #3,B(2) and #C, below).

3. **State Soil Scientist (SSS) review comments.** The SSS reviewed the application, and submitted the following:
 - A. On January 13, 2010, the SSS requested that the applicant provide revised engineered plans with the soil survey maps overlaid, showing the soil types where significant road cuts are proposed to help determine where rock sandwiches should be used.
 - B. On January 29, 2010, the SSS submitted the following review comments: (CD #1)
 - (1) *Temporary skidder trail.* The soils where temporary skidder trail will be are cryic and have thixotropic properties, so care must be taken to minimize rutting. The road should be constructed in late summer, as proposed, and should be done under the supervision of the applicant.
 - (2) *Acidic rock testing and mitigation plan.*
 - (a) The proposed neutralization process for any acidic blasted rock encountered will be less effective than removal or isolation, either of which is preferred.
 - (b) The three proposed options for permanent mitigation are applicable when the acidic rock is 10 feet or more above groundwater, but the groundwater table is generally very near the surface in the mountains. The SSS suggested how best to carry out the “encapsulation” and “cut slope” options. Off-site disposal and permanent isolation of exposed rock faces were suggested for blasted acidic rock.
 - (3) *Soils, erosion and stormwater control.* A pre-construction meeting with the contractor, the third party inspector, and the SSS should be required.
 - (a) Recommendations were offered on how to ensure that diversion channels do not alter the natural hydrology; how best to install cross culverts associated with rock sandwiches; and alternatives to silt fencing, suggesting instead the use of erosion control mix berms in the high elevation areas. The SSS emphasized that on-site flexibility is needed during construction.
 - (b) The applicant should defined its term, “isolated seeps”.
 - (c) Corduroy should only be used in areas of somewhat poorly drained soils, but it is not needed in mineral soil wetlands if the soil is not soft. In wetlands with organic soils, a timber mat should be used instead.
 - (d) The applicant should explain how transmission lines would be installed across occasionally wet areas (not jurisdictional wetlands) to not permanently impact the natural hydrology.
 - (e) Rock or log check dams are more effective than staked hay bales, especially in high elevation areas which have more storm water runoff than lowland areas.
 - (f) Standard loam and seeding is useful for lowland areas, but not in high elevation areas where it can lead to introduction of invasive and low elevation species. For the high elevation areas, E&S blankets, hay mulch, or erosion control mix and allowing natural vegetation to re-colonize is preferred.
 - (g) Disturbed wetland areas should not be stabilized by permanent seeding. The top layers, which contain seeds, roots, etc from native plants, should be replaced. If

not possible or insufficient, erosion control mix could be incorporated into the surface layers.

- (h) In addition to the proposed erosion and stormwater control measures, in high elevation areas a flexible approach should be employed during construction, including supervision and inspection, to best implement the most appropriate measures should actual site conditions warrant a different measure than the plans indicate.
- (i) The SSS made recommendations for specific areas, in particular where or how to best construct the rock sandwich design.

C. After reviewing the applicant's revisions and response to his initial comments (*see* Finding of Fact #4, below), on April 16, 2010, the SSS submitted a second set of comments with remaining recommendations, commenting that in general the applicant satisfactorily responded to his concerns, except as follows:

- (1) *Acidic rock testing and mitigation plan.* Although it is correct generally that to deal with acidic rock, a "tool box" approach is appropriate. However, although not an acidic rock expert, the SSS asserted that the proposed plan does not explain how to employ the options when acidic rock is encountered. Simple and quick techniques should be developed explaining how to select and implement the appropriate option.
- (2) *Isolated seeps.* "All groundwater seeps have a hydrologic connection downslope", and "some have a defined channel or obvious concentrated flow path while others appear to have a subsurface connection". When a road cut intersects with a seep, the hydrology should be reconnected with a rock sandwich or culvert. If a seep spreads out over the ground surface and does not continue in a concentrated flow path, no reconnection would be needed.

4. **Applicant response to SSS review comments.** (CD #1) On April 9, 2010, the applicant responded to the SSS' January 29th comments, as follows. The applicant also revised the engineered plans to include the soils mapping as an overlay.

A. All construction activities, including construction of the temporary skidder trail, that have potential for soil disturbance or other adverse effect on natural resources will be supervised by the applicant or contractor's environmental inspector.

B. *Acidic Rock Testing and Mitigation Plan.*

- (1) The proposed "Acidic Rock Testing and Mitigation Plan" in the application is the same Plan approved for, and used successfully during construction of the Kibby Project. The Plan sets forth the basic approach: rock coring; rock, surface and groundwater sampling; and analysis parameters used during the geotechnical investigations to identify the potential for acidic rock or acidic drainage to be encountered during construction. As needed, additional field sampling and analysis would be conducted by a geologist or geotechnical engineer.
- (2) The Plan would be implemented in the same way it was for the Kibby Project. As data become available indicating the potential for encountering acidic rock, it would be provided to LURC and to MDEP geologists for review, to determine which mitigation option, if any, is appropriate.

- (3) Determinations for disposal of acidic rock, if any, will be made based on site-specific data and consultation with State agencies.
- (4) On May 24th, the applicant submitted a revised “Acidic Rock Testing and Mitigation Plan”, addressing the SSS’ review comments. (CD #2)

C. *Soils, E&S and Stormwater*

- (1) Prior to construction, a revised E&S Plan incorporating clarifications and corrections prompted by the SSS comments will be prepared.
- (2) Diversion channels, which would be constructed before grading activities begin, divert clean upslope water and release it down-slope to undisturbed areas. Diversion channels would be either a temporary berm or a swale, and may remain in place permanently.
- (3) The E&S Plan does not intend that silt fence and erosion control mix berms are interchangeable in all situations. The specifications for the installation and implementation of soil erosion and sedimentation control measures provide detail, but also allow flexibility for applying the most appropriate measures at a particular location. The plan incorporates the “toolbox” approach, allowing for field judgment to choose the best practice to suit the circumstances. The E&S Plan will be revised to clarify that silt fencing and erosion control mix berms are not always interchangeable.
 - (a) The applicant recognizes the importance and benefits of a pre-construction meeting, and the E&S Plan includes a pre-construction site inspection. Prior to construction, the E&S Plan will be revised to specifically include the recommended pre-construction meeting.
- (4) An isolated seep does not have a continuous hydrologic connection down-slope. By contrast, a continuous seep area does display this connection. Areas around isolated seeps will be stabilized so that seepage water can percolate into the ground.
- (5) The description of cross culverts in the E&S Plan applies to a typical road culvert, but not to a rock sandwich with a culvert. The applicant will revise the E&S Plan accordingly.
- (6) The use of corduroy would be very limited and only after consultation with the appropriate agency personnel. The E&S Plan will be revised to assure clarity and consistency with the SSS’ comments.
- (7) The E&S Plan the engineered plans will be revised to address the SSS’ recommendations on transmission line construction, treatment of concentrated flow, permanent stabilization measures, and timing of restoration.
- (8) The applicant agreed with the SSS’ review comments that flexibility in combination with a carefully designed engineered plan is the goal for implementation of erosion and sedimentation control measures. However, flexibility must include supervision and inspection, as well as contractor training.
- (9) Regarding the SSS’ comments on seeding Best Management Practices, the applicant will add a discussion on seeding to the E&S Plan to further explain the Plan’s intent.

5. **SSS response to Sixth Procedural Order; and response to FBM rebuttal.** (CD #2)

- A. *Response to Sixth Procedural Order.* The SSS stated the following in response to the Sixth Procedural Order:

- (1) His primary concerns for the construction of wind power facilities are the instability and fragility of high mountain soils, and the potential alteration of the natural hydrology in the mountains. The SSS has developed a method of collecting soils data and designing appropriate erosion control Best Management Practices (BMPs) for such projects, in particular for constructing roads in high mountain areas. These techniques have been applied and have performed as proposed on the Kibby Project and on Stetson I and II.
- (2) He developed the Class L Soil Survey specifically to collect the type of soil information critical to the successful development of linear projects in sensitive areas (Class A High Intensity soil survey information is still required for the non-linear parts of these projects). Those soil surveys, combined with training of contractors and third party inspectors on both the “tool box” approach to using BMPs, and on the use of blasted rock for the roads and turbine pads, have proven quite effective. Site inspections have confirmed minimal soil erosion and minimal alteration of the natural hydrology on the completed wind energy projects.
- (3) Blasted rock provides a porous road base material that is very stable even when wet. Rock sandwiches are installed when needed to re-connect the natural hydrology where sheet flow is appropriate, and culverts are used where concentrated flow areas occur.
- (4) The Sisk Mountain soils are typical of high mountain areas and are not any more unstable than the Kibby Range or Redington Range soils. All high mountain soils are “unstable due to the high organic matter content of the B horizon and the significant hydrology from the contributing upslope watershed.” For the KEP, the SSS recommended measures that will assure stable road construction. The proposed construction techniques will result in minimal erosion/sedimentation or alteration of the natural hydrology. The SSS stated “he and the 3pi will work with the applicant to assure those goals are achieved.”
- (5) The tool box approach is critical for successful construction in high mountain areas because it is not possible to predict exactly where each erosion control measure should be used (*see* Section B, below). Trained personnel must be involved with the construction to identify when and where a BMP is needed; and the third party inspector process is helpful. The SSS stated he “intends to walk the KEP access road path, tower road and tower pad sites prior to construction to point out any sensitive areas in advance of work starting,” and to visit “the site during construction to make sure proper erosion/sediment control and stormwater measures are being installed”. The SSS does not “anticipate any more issues with construction on the expansion project than there were for the Kibby Project, and “in fact, expects fewer issues because of what was learned during the first phase of this project”.

B. On May 25th, the SSS responded to FBM’s May 23rd comments (*see* Finding of Fact #7,A, below):

- (1) Responding to FBM’s comments about the ‘tool box’ approach, the SSS does not agree that a final set of civil engineered plans can be produced for a project such as this so that all the possible hydrologic conditions will be accounted for in the exact location they occur. This can be done at lower elevations, but at higher elevations it is not possible to examine all soils in the project area to the extent needed to detect

subtle indicators of hydrology. The mountains commonly have subsurface features that transmit considerable quantities of groundwater not typically found at lower elevations. The 'tool box' approach is the only logical way to assure stable roads are built while also minimizing alteration to the natural hydrology.

- (2) The SSS has developed the Class L soil survey specifically for wind energy development, although it can also be used for other linear projects.
- (3) There is a considerable amount of variability in the mountain soils, making the use of standard models difficult. The 'tool box' approach works well for the mountains. The developer should use the correct Best Management Practice where and when it is needed, not just follow the specifications on a set of plans. This approach has been used successfully on three wind farm projects so far, including the Kibby Project.

6. **Applicant testimony and post-hearing submittals, summarized in its closing brief.** (CD #2) With regard to erosion and storm water control, the applicant submitted the following:

- A. "TransCanada will implement the construction techniques and use the Best Management Practices developed in connection with and successfully implemented during construction of the Kibby Project. (Goulet et al. Pre-Filed Direct Testimony at 15 and memorandum from Mr. Rocque, State Soil Scientist, dated May 24, 2010)."
- B. "TransCanada's implementation of the "toolbox approach" developed and endorsed by the State Soil Scientist, will be used during construction of the Kibby Expansion Project to minimize soil erosion and maximize the ability of the mountainous soil to absorb and hold water. (Goulet et al. Pre-Filed Direct Testimony at 15 and memorandum from Mr. Rocque, State Soil Scientist, dated May 24, 2010)."

7. **FBM testimony and post-hearing submittals, as summarized from its closing brief.** (CD #2)

- A. *FBM response to SSS May 12th oral testimony.* On May 23rd, FBM responded to the SSS' position that the proposed "toolbox approach" is appropriate to implement erosion and storm water control measures for a project in a high elevation area, asserting that civil engineered plans can and should be prepared for such a project, and that expense was the only reason the applicant did not do so.
- B. *Closing brief.* In its closing brief, FBM responded to the SSS' January 29th review comments and the applicant's April 9th response, as follows:
 - (1) FBM asserted that the proposed KEP's roads will have an undue adverse impact on natural resources. The 2010 CLUP states that one of the greatest threats to the fragile environment above elev. 2,700 ft is the impact of erosion from road construction (*see* also 1997 CLUP Chapter 3, esp. p 56). Clearing and grubbing, blasting, excavation, the placement of road and pad material, and construction of erosion controls produce soil particles. Runoff patterns are changed, altering local hydrology, and leading to secondary impacts to wetlands, streams, and vernal pools.
 - (2) The most radical development of the KEP will be above 2,700 ft in elevation. The cut and fill estimates for road construction and pad placement indicate that 93,000 cubic

yards per turbine, or 1.4 million cubic yards of material will be moved, with cuts or fills up to 45 feet deep. Erosion/storm water controls will include 43 plunge pools, 24 ditch turnouts and 12 rock sandwiches to reconnect wetlands and hydrology. The upgrade of the Wahl Road for the substation will impact the drainage into Kibby Stream, located parallel to Wahl Road.

- (3) The ridgeline access road will cause huge impacts, with 20 to 50 ft deep cuts or fills, and 100 ft or more of crushed rock on the side slopes. At one point, there will be a short distance of 14% grade, exceeding MDEP Best Management Practices for road construction.
- (4) The proposed upgrades to the Mile 5 Road will result in serious impacts to wetlands, requiring significant erosion controls.
- (5) The rock sandwich is a new technology and has only been used at higher elevations at the Kibby Project. FBM questioned its design, contending that silt and fines may accumulate, preventing water from passing through. FBM also asserted the rock sandwiches will likely not meet the demands of the 100-ton carrying capacity, and will require constant maintenance.
- (6) Regarding the SSS' comments on the "Acidic Rock Testing and Mitigation Plan", the tools for dealing with acidic rock, if encountered, appear to be inadequate. Permanent mitigation measures are decided on a case-by-case basis after consultation process with state agencies. The revised Plan, submitted by the applicant on May 24, 2010 (CD #2), does not incorporate the SSS' recommendations. FBM asserted "there is no clear plan for mitigation of acidic seepage if such an area is breached", and "no tested solution and no absolute information that serious acidic rock will not be encountered."

X. OTHER EXHIBITS REQUIRED BY THE WIND ENERGY ACT (PL 2007, CH 661)

Assessment of sound impacts in accordance with MDEP's rules, assessment of shadow flicker, public safety-related setbacks, decommissioning

At end of applicable subsection

- Noise assessment maps from application (also on CD #2)
- Shadow flicker assessment map from application (also on CD #2)

CD #1 - Warren Brown's (third party review) report on sound assessment

CD #2

- MDEP's noise rules
- Noise assessment map from application
- Shadow flicker assessment map from application
- MDEP guidance on noise and shadow flicker (pp 18-20), public safety related setbacks (p 23), decommissioning (pp 26-27) (*see* Section I, application checklist)

1. Review criteria applicable to noise, shadow flicker, public safety related setbacks, and decommissioning

A. *12 M.R.S.A., Section 685-B,4.* **“Criteria for approval.** In approving applications submitted to it pursuant to this section, the commission may impose such reasonable terms and conditions as the commission may consider appropriate.

“The commission may not approve an application, unless:

A. Adequate technical and financial provision has been made for complying with the requirements of the State's air and water pollution control and other environmental laws, and those standards and regulations adopted with respect thereto, including without limitation the minimum lot size laws, sections 4807 to 4807-G, the site location of development laws, Title 38, sections 481 to 490, and the natural resource protection laws, Title 38, sections 480-A to 480-Z, and adequate provision has been made for solid waste and sewage disposal, for controlling of offensive odors and for the securing and maintenance of sufficient healthful water supplies;”

“B. Adequate provision has been made for loading, parking and circulation of land, air and water traffic, in, on and from the site, and for assurance that the proposal will not cause congestion or unsafe conditions with respect to existing or proposed transportation arteries or methods;”

“C. Adequate provision has been made for fitting the proposal harmoniously into the existing natural environment in order to 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;”

“D. The proposal will not cause unreasonable soil erosion or reduction in the capacity of the land to absorb and hold water and suitable soils are available for a sewage disposal system if sewage is to be disposed on-site;”

“E. The proposal is otherwise in conformance with this chapter and the regulations, standards and plans adopted pursuant thereto; and”

“F. In the case of an application for a structure upon any lot in a subdivision, that the subdivision has received the approval of the commission.”

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

- B. *PL 2007 Ch. 661, Sec. B-13. Submission requirements.* (emphasis added) “No later than September 1, 2008, the Department of Environmental Protection and the Maine Land Use Regulation Commission shall, jointly and to the extent not already addressed in existing agency guidance, specify the submission requirements for the following matters for applications for wind energy development, including, but not limited to, expedited wind energy development as defined in the Maine Revised Statutes, Title 35-A, section 3451, subsection 4, in accordance with the recommendations of the February 2008 final report of the Governor's Task Force on Wind Power Development in Maine created by Executive Order issued on May 8, 2007, and the provisions of this Act, as applicable:
- (1) Effects on scenic character and existing uses related to scenic character;
 - (2) Tangible benefits, including post- construction reporting of tangible benefits realized;
 - (3) Noise and shadow flicker effects;
 - (4) Effects on avian and bat species;
 - (5) Public safety-related setbacks; and
 - (6) Decommissioning plans, including demonstration of current and future financial capacity that would be unaffected by the applicant’s future financial condition to fully fund any necessary decommissioning costs commensurate with the project’s scale,

location and other relevant considerations, including, but not limited to, those associated with site restoration and turbine removal.”

C. *35-A M.R.S.A. §3402, sub-§1 and sub-§2.*

- (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.”
- (2) “Need for modification of regulatory process for siting wind energy developments. The Legislature finds that it is in the public interest to reduce the potential for controversy regarding siting of grid-scale wind energy development by expediting development in places where it is most compatible with existing patterns of development and resource values when considered broadly at the landscape level. Accordingly, the Legislature finds that certain aspects of the State's regulatory process for determining the environmental acceptability of wind energy developments should be modified to encourage the siting of wind energy developments in these areas. Such changes include, but are not limited to:
 - (a) Making wind energy development a permitted use within certain parts of the State's unorganized and deorganized areas;
 - (b) Refining certain procedures of the Department of Environmental Protection and the Maine Land Use Regulation Commission; and
 - (c) Because the Legislature recognizes that wind turbines are potentially a highly visible feature of the landscape that will have an impact on views, judging the effects of wind energy development on scenic character and existing uses related to scenic character based on 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 the scenic character of that resource.”

“The Legislature further finds that, while wind energy may be developed at many sites with minimal site-specific environmental impacts, wind energy developments

may have, in addition to their beneficial environmental effects and potential scenic impacts, specific adverse environmental effects that must be addressed in state permitting decisions pursuant to approval criteria tailored to address issues presented by wind energy development. Nothing in this section is meant to diminish the importance of addressing as appropriate site-specific impacts on natural values, including, but not limited to, wildlife, wildlife habitats and other ecological values.”

“The Legislature further finds that development of the State's wind energy resources should be undertaken in a manner that ensures significant tangible benefits to the people of the State, including, but not limited to, residents of communities that host wind energy facilities; and that the State should seek to host a substantial amount of wind energy as part of a strategy to reduce greenhouse gas emissions and meet the goals established in the state climate action plan developed pursuant to Title 38, section 577.”

2. Noise assessment

A. Review criteria.

- (1) MDEP Comprehensive Noise Standards, Chapter 375.10, Control of Noise. (CD #2)
- (2) MDEP guidance document (CD #2, *see* Section I, application checklist, pp 18-20)

- B. *Applicant's assessment.* As required by 12 M.R.S.A., Section 685-B(4-B), the applicant assessed the sound to be produced by the proposed KEP's wind turbines in accordance with MDEP's "Comprehensive Noise Standards, Chapter 375.10, Control of Noise". MDEP's rules limit noise at protected locations (defined as any area accessible on foot containing a residence, house of worship, school, library, hospital, nursing home, etc.) based on existing ambient noise levels and existing zoning, and set higher limits for daytime than for nighttime. At a "quiet location", the limits are typically 55 dBA during the day, and 45 dBA at night. However, the nighttime limits only apply within 500 ft of the protected location, after which the daytime limits apply. Also, the MDEP standards limit noise at property boundaries to no more than 75 dBA. Finally, no limits are set for construction noise produced from 7 am to 7 pm.

The applicant modeled the noise that would be likely to be produced by the proposed KEP during operation at the nearest protected locations, which are more than two miles from the nearest turbine. The study included identification of protected locations, monitoring of ambient noise to determine baseline conditions, computer modeling, and a demonstration of compliance with MDEP's rules. The predicted noise levels produced by the turbines during operation at the nearest protected locations would range from 20.2 dBA to 25.4 dBA. The applicant does not propose nighttime construction, but if needed the noise produced would meet the MDEP standards for nighttime construction.

- C. *LURC third party review (CD #2).* LURC established a contract with sound expert Warren Brown to conduct a third party peer review of the sound assessment section of the application. Mr. Brown submitted his report to the file on April 7, 2010.

- (1) Mr. Brown concluded that "the Kibby Expansion Project noise will be well below MDEP standards". "The Kibby Expansion Project noise assessment is reasonable and technically correct according to standard engineering practices required by LURC under 12 MRSA §685-B(4-B)(A) Regulations on Control of Noise (06-096 CMR 375.10). The wind project prediction model is based on the following prediction assumptions:

- ground absorption factor – reflective ($G = 0$),
- 8 km turbine inclusion radius (to include Kibby and Kibby expansion wind projects
- 5 dB manufacturer and model uncertainty factor inclusion,
- individual wind turbine spherical wave fronts,
- atmospheric attenuation based on 50°F, 70% RH,
- no attenuation due to foliage,
- all wind turbines operating at maximum sound power output (107 dB - corrected April 6, 2010), and
- all wind turbines operating under moderate downwind conditions simultaneously."

(2) Mr. Brown recommended the following:

“It is the reviewer’s opinion compliance measurements should not be required. Very conservatively predicted operating sound levels are well below the standard limits even with an inclusion of tonal and SDRS penalties, which are not expected. Operating sound measurements attempted for sound levels near or below predominate ambient levels (nearby traffic, water flow, and foliage rustling) would be indistinguishable. All future sound measurements for LURC/MDEP submission associated with any project should be accompanied by local meteorological measurements [Chapter 375.10 H(2)(2.4)(f)].”

D. *Applicant and Parties’ testimony.* Based on their closing briefs (CD #2), with the exception of the possible effects of noise on wildlife (*see* Section VIII, Finding of Fact #8), noise expected to be produced by the proposed KEP’s turbines was not raised as an issue.

3. Shadow flicker

- A. *MDEP guidance document.* Attachment I from the “*Report of the Governor’s Task Force on Wind Power Development (2-14-2008)*”. MDEP Standards on Noise and Shadow Flicker at Wind Power Projects (January 10, 2008) [also see CD #2, Section I, application checklist, pp 18-20]

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

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

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

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

4. Public safety-related setbacks; and LURC Chapter 10 setbacks

A. Review criteria and MDEP guidance.

- (1) *Public safety related setbacks - Excerpted from MDEP guidance included with LURC wind power permitting checklist.* Attachment H to the “Report of the Governor’s Task Force on Wind Power Development (2-14-2008)”. Guidelines for Wind Power Project Ecological Study by the Maine Department of Environmental Protection and Maine Department of Inland Fisheries and Wildlife; February 1, 2008. (also see CD #2, Section I, application checklist, p 23)

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

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

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

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

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

(2) *Commission's Land Use Districts and Standards, Section 10.26,D,2.*

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

- (a) 100 feet from the nearest shoreline of a flowing water draining less than 50 square miles, a body of standing water less than 10 acres in size, or a tidal water, and from the upland edge of wetlands designated as P-WL1 subdistricts;
- (b) 150 feet from the nearest shoreline of a flowing water draining 50 square miles or more and a body of standing water 10 acres or greater in size;
- (c) 75 feet from the traveled portion of the nearest roadway except as provided for in Section 10.26,D,2,d below;
- (d) 20 feet from the traveled portion of all roadways on coastal islands; and
- (e) 25 feet from the side and rear property lines.

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

B. *Applicant's proposal.*

(1) *Public safety related setbacks.*

- (a) All of the proposed turbine would be located more than 1.5 times the turbine height from public roads or other structures. Eight of the 15 proposed turbines would be located more than 615 ft from property boundary lines, logging roads, or other structures. The remaining seven turbines (8, 9, 11, 12, 13, 14, and 15) would be closer than 615 ft from township boundary lines.
- (b) All parcels abutting the areas where the turbines would be less than 615 ft from a turbine consist of non-residential land in active forest management. The applicant has obtained waivers from adjacent landowners KWF and Plum Creek. The waiver was expressly included in the underlying landowner Plum Creek easement agreement, and a separate waiver was obtained from underlying landowner Kennebec West Forest.
- (c) The applicant provided the IEC Design Evaluation Statement and turbine protection systems information for the Vestas V90 turbine showing that the turbine design meets accepted safety standards, and that over-speed controls (*e.g.*, variable pitch, mechanical brakes) are incorporated in the design.

(2) *Chapter 10 setbacks.*

- (a) The bases of all turbines would range from 106 ft up to 1,501 ft from all property boundaries, including the cleared corridor (closest turbine is 170 ft) along the Maine/Quebec boundary that is maintained by the International Boundary Commission (IBC). The applicant consulted with the IBC regarding the location of the turbines relative to the international boundary between the U.S. and Canada, who informed them that as long as no part of the project would be within, or extend into, the clearing IBC maintains along the Maine/Quebec border, no permit would be needed. The IBC maintains a cleared corridor that averages 35 ft wide.

- (b) One pole structure and portion of the 34.5 kV collector line would be located less than 25 ft from a property boundary line. The applicant obtained consent from the abutting landowner to do so.
 - (c) *Setbacks to streams and wetlands.* All turbines would be set back at least 150 ft from all minor flowing waters and P-WL1 wetlands. Except for at stream crossings, the new roads and collector lines would be set back at least 100 ft.
- C. No agency comment or testimony from the Parties (as summarized in their closing briefs) was received regarding public safety-related setbacks associated with the proposed KEP.

5. Decommissioning plan

A. Review criteria and MDEP guidance.

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

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

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

(2) MDEP guidance on decommissioning (CD #2, see Section I, application checklist, pp 26-27)

B. Applicant's decommissioning plan proposal. The applicant stated that it expects to re-power the KEP at the end of its 25-year life span, and would operate the facility up to 50 years or more. However, in accordance with requirements of the Wind Energy Act, the applicant submitted the following regarding its decommissioning plan:

- (1) The decommissioning plan would entail dismantlement of the turbines, including removal and resale or reuse of the nacelles, blades and towers; all above ground collector system; the substation; and the met tower(s). The project components have high market value. Disturbed areas would be re-graded and natural vegetation would be allowed to re-colonize these areas unless the landowner requests otherwise in writing.
- (2) To fund the decommissioning, the applicant would put in place a Letter of Credit (LOC) or Parental Guarantee from TransCanada Corporation to fund the necessary activities. The estimated cost would be \$2,458,281 (based on 2009 US dollars) for removal of the collector system and substation; the turbines and foundations, minus the salvage credits per turbine; and the cost of transportation and disposal.
 - (a) If TransCanada Corporation's credit rating falls below investment grade, the applicant would provide a LOC from a financial institution of investment grade standing.
 - (b) The amount of the Parental Guarantee or LOC would be 50% of the estimated decommissioning costs, submitted by December 31st of the first year of commercial operation. No later than year 15 of operation, the applicant will reassess the decommissioning costs and put in place a financial assurance for 100% of the then estimated decommissioning costs, less salvage value.
- (3) A detailed decommissioning plan including a description of the work to be performed to remove the turbines and foundations down to a depth of 24 inches below final grade; to remove all buildings, cables, electrical components, and associated facilities

(unless they are to be otherwise placed into productive use); and how the site will be restored, including any landowner requests, will be submitted:

- (a) No later than 60 days after the date the KEP ceases to generate electricity as set forth in a written notice from the applicant to LURC stating an intention to cease generating electricity; or
- (b) If no notice is given, 60 days after the KEP ceases to generate electricity for 12 consecutive months, unless the operator demonstrates to LURC that the project has not been abandoned and should not be decommissioned.

C. *Applicant and Parties' testimony.* Based on their closing briefs, no issues regarding the proposed decommissioning plan were raised by the Parties. MNAP in its agency review comments (CD #1) recommended provisions that should be incorporated in the applicant's decommissioning plan for restoration of the Subalpine Fir Forest areas (*see* Section VII, Finding of Fact #6).



Figure 2 – Kibby Expansion Project Operational Noise Contour Map

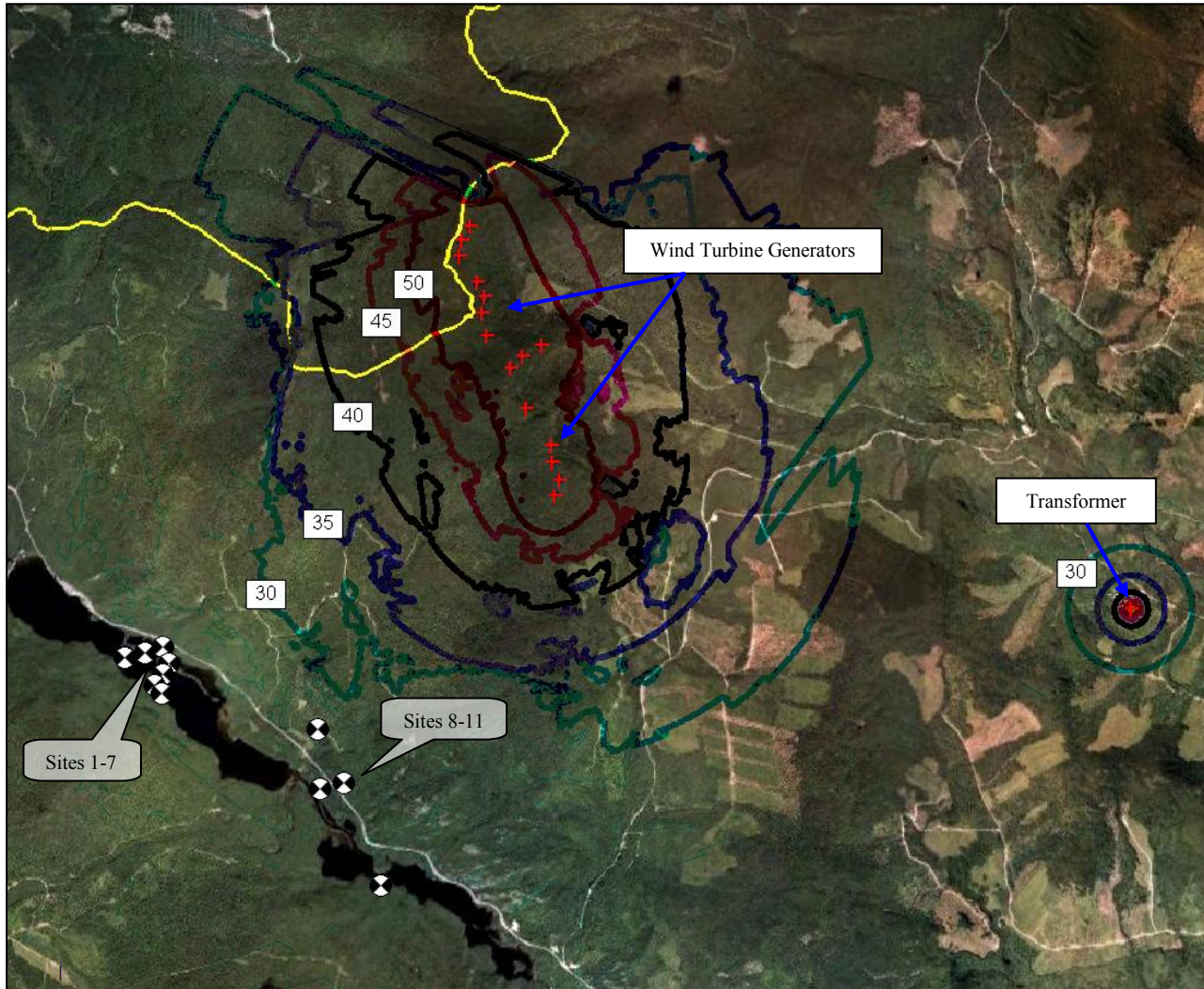


Figure 1 – Kibby Cumulative Project Noise Contour Map Utilizing “o” Ground Cover

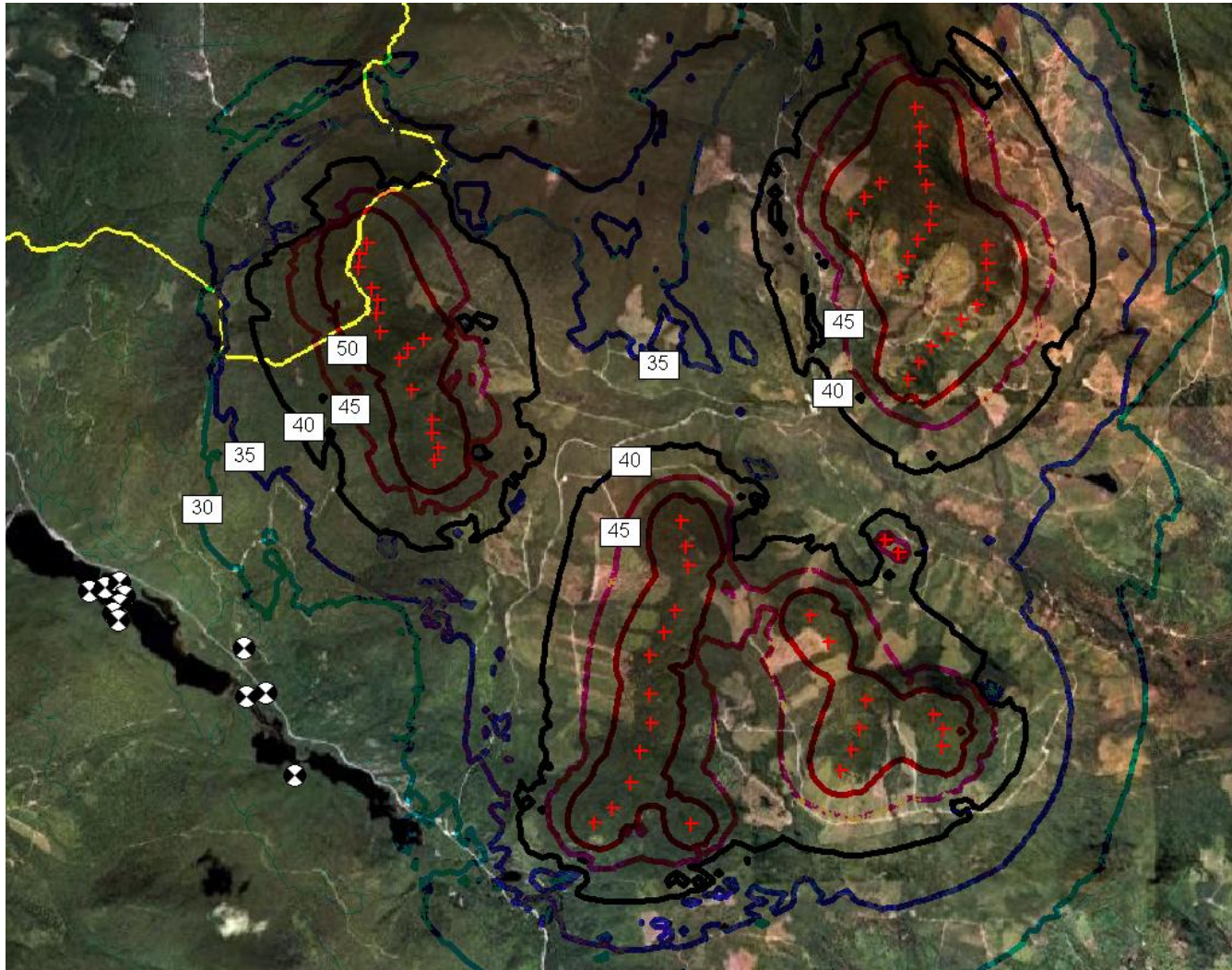
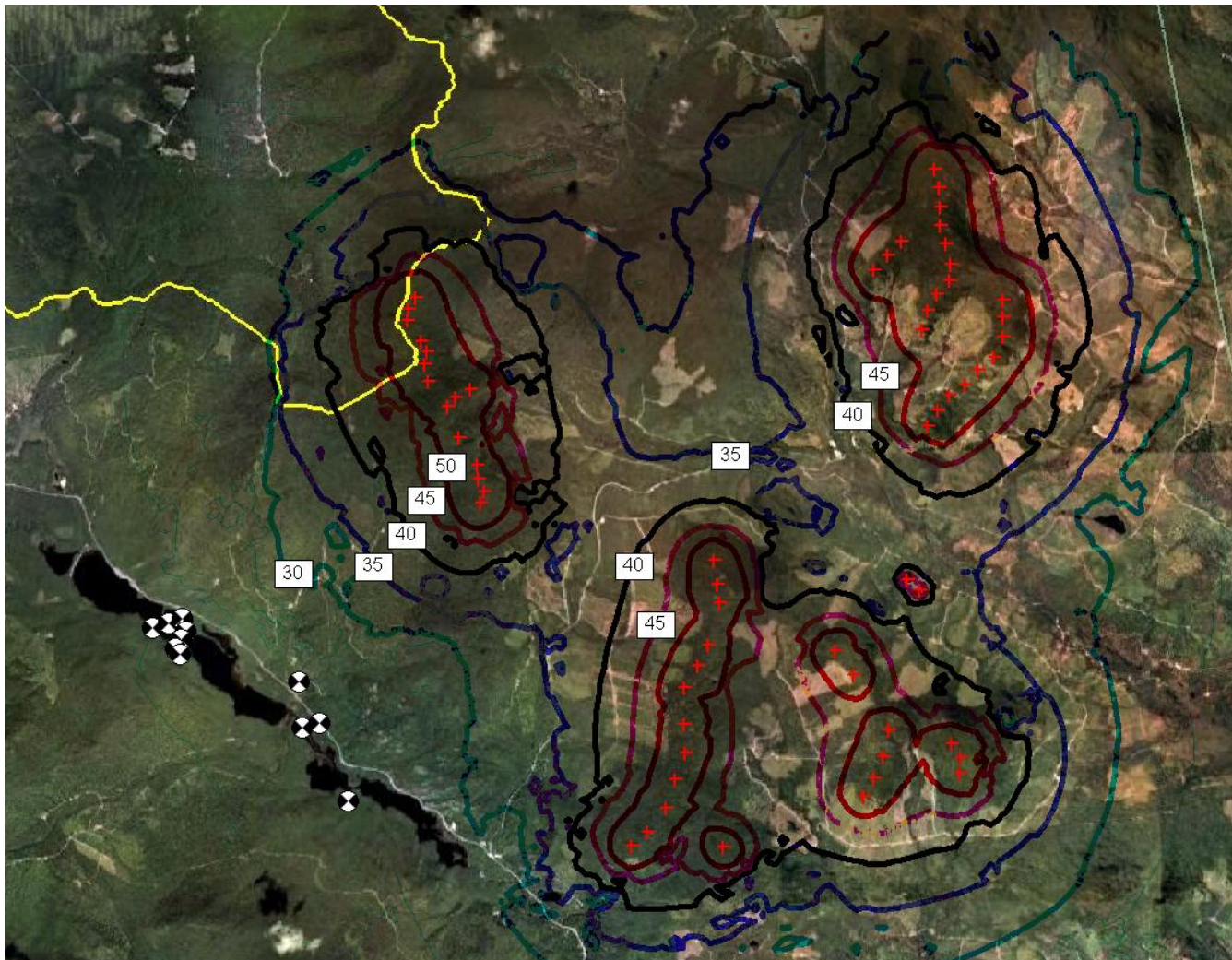
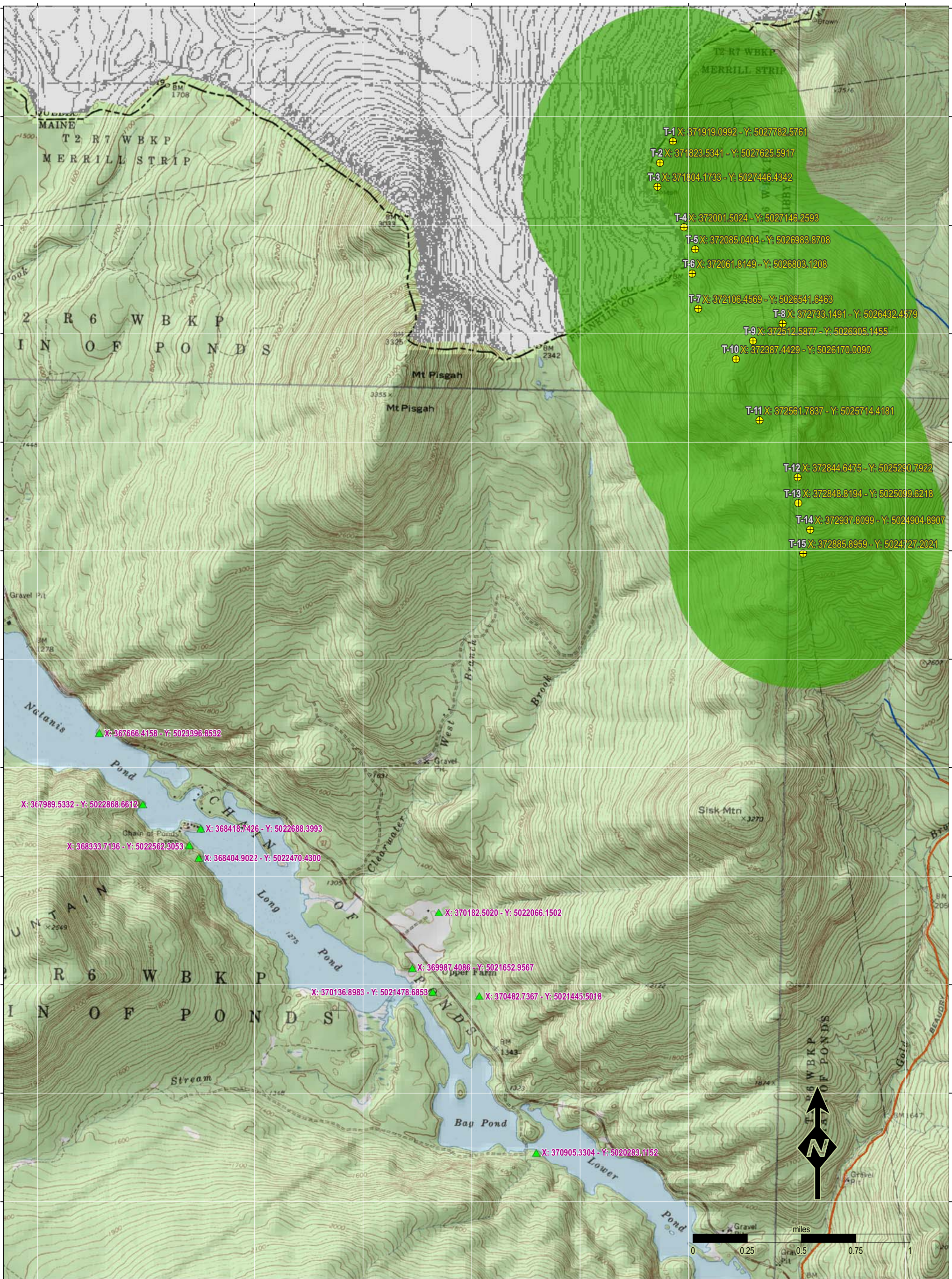


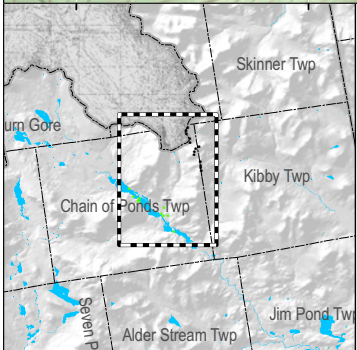
Figure 2 – Kibby Cumulative Project Noise Contour Map Utilizing “0.5” Ground Cover





- T-1 X: 371919.0992 - Y: 5027782.5761
- T-2 X: 371823.5341 - Y: 5027625.5917
- T-3 X: 371804.1733 - Y: 5027446.4342
- T-4 X: 372001.5024 - Y: 5027146.2593
- T-5 X: 372085.0404 - Y: 5026983.8708
- T-6 X: 372061.8149 - Y: 5026803.1208
- T-7 X: 372106.4569 - Y: 5026541.6463
- T-8 X: 372733.1491 - Y: 5026432.4579
- T-9 X: 372512.5877 - Y: 5026305.1455
- T-10 X: 372387.4429 - Y: 5026170.0090
- T-11 X: 372561.7837 - Y: 5025714.4181
- T-12 X: 372844.6475 - Y: 5025290.7922
- T-13 X: 372848.8194 - Y: 5025099.6218
- T-14 X: 372937.8099 - Y: 5024904.8907
- T-15 X: 372885.8959 - Y: 5024727.2021

- X: 367666.4158 - Y: 5023396.8592
- X: 367989.5332 - Y: 5022868.6612
- X: 368418.7426 - Y: 5022688.3993
- X: 368333.7136 - Y: 5022562.3053
- X: 368404.9022 - Y: 5022470.4300
- X: 370182.5020 - Y: 5022066.1502
- X: 369987.4086 - Y: 5021652.9567
- X: 370136.8983 - Y: 5021478.6853
- X: 370482.7367 - Y: 5021445.5018
- X: 370905.3304 - Y: 5020283.1152



- Expedited Area 15 Turbine Layout Locations
- Known Dwellings
- 1km Buffer Around Proposed Turbine Locations

Kibby Expansion Wind Power Project

Figure 2

Shadow Flicker Screening Assessment

Note: Turbine layout and camp location coordinates are NAD 1983 UTM Zone 19 North meters. Camp locations are approximate. Map grid: 0.5 mile.

XI. PUBLIC COMMENT

All public comments have been compiled and organized chronologically, and are included on CD #2 in five scanned files:

- Written comments received from Legislators
- Written comments received January 13, 2010 through April 22nd
- Written comments received May 7th through May 24th
- Written copies of oral testimony received from the general public at the May 11th and 12th public hearing (two separate files) [Note – The transcript from the hearing is also included on CD #2 in the General Section.]

Opportunity for public comment on Development Permit DP 4860 for the proposed Kibby Expansion Project (KEP) started December 23, 2009 as the notice of accepting the application for processing was published, those requesting to be on the “Interested Persons” list were notified, and the application was posted on LURC’s website. Instructions for how the general public could review the application and submit comments were included in the notice and the on-line posting. The general public was also invited to offer testimony at the May 11th and May 12th evening session for the public hearing.

A total of 132 public comments were submitted to the record: 84 as written comments submitted to the file, and 48 as oral testimony at the May 11th and 12th public hearing (some of which were later submitted to the file as written testimony).

Of the 48 oral testimonies heard at the public hearing, 29 testified in support of the project and 18 testified in opposition. One individual expressed neither support nor opposition.

Generally, opinions expressed and issues raised in opposition³ 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. Many concerns doubting the viability of wind power as an energy source and its development in Maine were also raised.

Generally, opinions expressed and issues raised in support 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. Of the five letters received from Legislators, four expressed support for the project (Sen. Phil Bartlett, Rep. Stacey Fitts, Rep. Ken Fletcher, and Sen. John Nutting). Rep. Benjamin Pratt requested a public hearing, but expressed neither support nor opposition. In addition, the various groups expressing support included the Franklin County Commissioners, the Arnold Expedition Historical Society (although they initially expressed opposition, the Greater Franklin Development Corporation, the American Lung Association in Maine, the Arnold Trail Snowmobile Club, and the Conservation Law Foundation.

³ Letters requesting a hearing, but expressing neither opposition nor support were grouped with those in opposition.

