STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

and

STATE OF MAINE
LAND USE PLANNING COMMISSION

IN THE MATTER OF

CENTRAL MAINE POWER COMPANY Application for Site Location of Development Act permit and Natural Resources Protection Act permit for the New England Clean Energy Connect ("NECEC") L-27625-26- A-N L-27625-TB-B-N L-27625-2C-C-N L-27625-VP-D-N L-27625-IW-E-N SITE LAW CERTIFICATION SLC-9	GROUP 4 (AMC, NRCM, TU) INITIAL BRIEF

INTRODUCTION

Central Maine Power (Applicant or CMP) is proposing to build a 145-mile, high-voltage, direct current (HVDC) transmission line, called the New England Clean Energy Connect (NECEC), from Quebec to an interconnection with the New England grid in Lewiston. About 54 miles of the transmission line route would consist of an entirely new 150-foot wide cleared transmission corridor through a currently undeveloped section of Maine's North Woods. CMP's proposed line includes above-ground transmission lines that would severely fragment this critical forest habitat, crossing the Appalachian Trail, countless wetlands and streams, deer wintering areas, and encroaching upon Beattie Pond, a Class 6 remote pond.

CMP would also expand the clearing along a significant portion of the remaining corridor length that runs within its existing power lines, requiring clearing even more vegetation and undertaking additional development within existing corridors.

This project poses a unique threat to Maine's environment. Unlike other transmission line projects contemplated by the Maine Department of Environmental Protection (Department or DEP) and the Land Use Planning Commission (Commission or LUPC) in the past, this project is not born out of a reliability need for Maine. Instead, it is simply a for-profit venture more akin to other traditional development projects such as subdivisions and shopping centers. However, unlike a more traditional for-profit development project, this project would create an unbroken, 150-foot wide, 54-mile long linear disturbance that would have uniquely harmful and significant environmental, scenic, and recreational impacts within the undeveloped forestland stretching from the Canadian border to The Forks.

The Department and Commission have before them applications for a Natural Resources Protection Act (NRPA) permit pursuant to 38 M.R.S. §§ 480-A – 480-JJ and a Site Location of Development Law (Site Law) permit pursuant to 38 M.R.S. §§ 481 – 490 for CMP's proposed NECEC Project. CMP has failed to demonstrate that this project will fit harmoniously into the existing natural environment and will not adversely affect existing uses, scenic character, and natural resources, including significant vernal pools, brook trout habitat, wildlife habitat and lifecycles, and deer wintering areas. Based on the evidence contained in the record and discussed below, these permit applications must be denied.

ARGUMENT

I. CMP has not met its burden of proof to affirmatively demonstrate to the Department and Commission that each of the licensing criteria in statute or rule has been met. (*Relevant to DEP and LUPC*)

The laws and regulations governing this permitting process require CMP to affirmatively demonstrate that all of the requirements of all applicable laws and regulations have been met. Under the Commission's Rules of Practice, Chapter 4.3(9) places the burden of proof on the applicant, CMP, and requires the applicant to "demonstrate by substantial evidence that the criteria of all applicable statutes and regulations have been met."[1] Similarly, Chapter 2, section 11(F), of the Department's rules direct that

> An applicant for a license has the burden of proof to affirmatively demonstrate to the Department that each of the licensing criteria in statute or rule has been met. . . . For those matters relating to licensing criteria that are disputed by evidence the Department determines is credible, ***the applicant has the burden of proving by a preponderance of the evidence that the licensing criteria are satisfied***.[2]

Here, CMP repeatedly failed to demonstrate that its proposed project satisfies even the minimum permitting requirements set out in the Commission's and Department's rules and failed to adequately respond to the significant and credible evidence put forward by intervening parties and the public that CMP failed to satisfy numerous permitting criteria. Without demonstrating by a preponderance of the evidence that these contested criteria are satisfied, the Commission should not grant a special exception and the Department should not grant a permit.

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1 01-674 Ch. 4.3(9).

2 06-096, Ch. 2(11)(F).

II. CMP failed to demonstrate that it has right, title, or interest in the land proposed for development because CMP proposes a substantial change in use to two parcels of Public Reserved Lands, necessitating approval by two-thirds of the elected members of each body of the Legislature (*Relevant to DEP and LUPC*)

In order to receive certification from the Land Use Planning Commission and a permit from the Department of Environmental Protection, the applicant is required to show that it has valid right, title, or interest in the land proposed for development.

The Department of Environmental Protection Rules, Chapter 2, section 11(D) require an applicant to "demonstrate to the Department's satisfaction sufficient title, right or interest in all of the property that is proposed for development or use."[3]

Likewise, the Land Use Regulation Commission requires "[e]vidence of sufficient right, title or interest in all of the property that is proposed for development or use." 12 M.R.S. § 685-B(2)(D).

While the applicant owns much of the land the proposed project would cross, it does not own two parcels of Maine Public Reserved Lands in Johnson Mountain Township and West Forks Plantation that it proposes to cross. The proposed project would bisect the Johnson Mountain parcel and the West Forks Plantation Northeast parcel.

As evidence of a purported right or interest to cross these publicly owned lands, the Applicant provided a 2014 lease with the Bureau of Parks and Lands.[4] This lease, however, does not demonstrate a valid right or interest to cross these Public Reserved Lands because it has not been approved by a two-thirds vote of the Maine Legislature.

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[3] 06-096 Ch. 372, § 9.

[4] Lease between Department of Agriculture, Conservation and Forestry Bureau of Parks and Lands and CMP, available at: https://www.maine.gov/dep/ftp/projects/necec/applications/SiteLocation/Right,%20Title,%20or%20Interest/Part%20A%20-%20Canada%20To%20Larrabee%20RD%20SS/Other%20Existing%20Deeds/Signed%20Lease%20-%20State%20of%20Maine.pdf.

As discussed in more detail in the memorandum by Attorney Maureen M. Sturtevant, Esq. of Lambert/Coffin,[5] in 1993, Maine voters adopted a constitutional amendment requiring the approval of two-thirds of the elected members of the Maine House and the Maine Senate for any substantial change in use in certain publicly owned lands.

> State park land. State park land, public lots or other real estate held by the State for conservation or recreation purposes and designated by legislation implementing this section may not be reduced or *its uses substantially altered except on the vote of 2/3 of all the members elected to each House.*[6]

As part of Maine's Public Reserved Lands, the two parcels in Johnson Mountain Township and West Forks Plantation were subsequently designated as lands subject to this constitutional requirement.[7]

These two parcels of land have been allocated by the Bureau of Parks and Lands for timber management, wildlife management, and recreational uses. The applicant's proposal to bisect these two parcels with a permanent 150-foot-wide, one-mile-long clearcut corridor is without question a substantial change in use. All timber and wildlife habitat would be removed from the corridor and not available for future management, and all opportunities for remote backcountry recreation would be destroyed in the area where the corridor would be cut. In addition, because the proposed corridor would cut each parcel in half, adjacent areas of the Public Reserved Lands will be adversely impacted as a result of the fragmenting effects of the corridor described by multiple witnesses including Malcolm Hunter, Janet McMahon, David Publicover, and Aram Calhoun in their testimony and discussed in this brief in Section XX.

Given this proposed substantial alteration of uses of the Public Reserved Lands, the lease purporting to grant the applicant right or interest to cross the public lands is not valid for the uses

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5 Group 2 Comment, RTI Attachment B, pp. 193-198 of 491.
6 Me. Const. art. IX, § 23 (Emphasis added.).
7 12 M.R.S. § 598-A(2-A)(D).

proposed unless and until "2/3 of the members elected to each House" of the Legislature have voted to approve the lease. Lacking a lease approved by the Maine Legislature, the applicant has not shown that it has a valid right or interest in the land owned by the public, and the application must be denied.

III. The proposed project does not satisfy the requirements for a special exception to cross the Recreation Protection subdistrict at the Appalachian Trail (*Relevant to LUPC*)

The proposed Project crosses or traverses three separate Recreation Protection (P-RR) subdistricts: West Forks Plantation and Moxie Gore; Beattie Twp., Lowelltown Twp., Skinner Twp., and Merrill Strip Twp.; and Bald Mountain Twp. P-RRs are designated "to provide protection from development and intensive recreational uses to those areas that currently support, or have opportunities for, unusually significant primitive recreation activities. By so doing, the natural environment that is essential to the primitive recreational experience will be conserved."[8] No utility facilities, such as the ones proposed by the Applicant for this project, are allowed within a P-RR subdistrict unless the Commission grants a special exception.[9]

In order to grant this special exception for construction of utility facilities within a P-RR subdistrict, the applicant must show "by substantial evidence that (a) there is no alternative site which is both suitable to the proposed use and reasonably available to the applicant; (b) the use can be buffered from those other uses and resources within the subdistrict with which it is incompatible; and (c) such other conditions are met that the Commission may reasonably impose in accordance with the policies of the Comprehensive Land Use Plan."[10]

A special exception for construction of the proposed project should not be granted for the proposed transmission line crossing of the Appalachian Trail (AT) in Bald Mountain Twp.

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8 Land Use Districts and Standards, 01-672 C.M.R. 10 (Chapter 10), section 10.23,I,1.

9 Land Use Districts and Standards, 01-672 C.M.R. 10 (Chapter 10), section 10.23,I,3.d.

10 *Id.*

because CMP has not shown by substantial evidence that there is no alternative site which is both suitable to the proposed use and reasonably available to the applicant. CMP has also not demonstrated by substantial evidence that the transmission line can be buffered from AT users.

A. <u>The proposed Appalachian Trail crossing in Bald Mountain Twp. should not be allowed by special exception</u>.

Segment 2 of the proposed project would intersect the AT within an existing transmission line corridor. The AT crosses this corridor three times within a distance of about two-thirds of a mile. The proposed project would require widening the existing corridor from 150 feet to 225 feet and add a second line with towers 100 feet tall adjacent to the existing 115 kV line with towers 45 feet tall. The significant difference in visual impact is evident in CMP's photosimulations.[11]

The widening of the corridor and the addition of a second much larger line would significantly increase the visual impact of these transmission line crossings on users of the AT. However, CMP consistently attempted to downplay this increased impact as follows:

- CMP's Visual Impact Assessment rates the impact of the project at the middle of these three crossings (along Troutdale Road) as "minimal to moderate".[12] The Applicant also states that there would be a "negligible" change in visual impact to hikers using the trail.[13] However, these conclusions are contradicted by the revised Scenic Resources Chart that rates the impact as "Moderate/Strong".[14]

- CMP states that AT users expect to see transmission lines, and thus the additional line would not impact users' enjoyment of the trail.[15] However, no user surveys were conducted to actually assess users' expectations and reactions to the project.[16] Users of the AT also expect to see towns, highways and railroads, but encountering those features is still likely to detract from their experience.

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11 Application Chapter 6, Appendix E, p. 27-28.
12 Application Chapter 6, Section 6.2.2.4, p. 6-44.
13 Application Chapter 25, Section 25.3.1.3, p. 25-5.
14 Application Chapter 6, Appendix F (revised 1/30/19).
15 Application Chapter 6, Section 6.2.2.5, p. 6-50; CMP witness Goodwin Direct at p. 10.
16 CMP witness Segal cross-examination, Tr. 4/2/19, p. 163, lines 9-14.

- CMP witness Goodwin states that there are 56 transmission line crossings of at least 230 kV along the length of the AT.[17] However, upon cross-examination he admitted that 70 percent of these crossings were located in the stretch of the AT between Virginia and New York and that none were located in Maine.[18] A transmission line of the size of the proposed project would be a unique impact to the AT in Maine and it is likely that user expectations would differ from those of users in the more heavily developed mid-Atlantic region.

- CMP witness Goodwin also states that there are five crossings of the AT by 115 kV transmission lines in Maine.[19] However, three of those are at the location of the proposed project. The other two are located in proximity to much larger roads (Route 16 in Carrabassett Valley and the Golden Road at the crossing of the Penobscot River).

The proposed project would greatly exceed the size, in both height and clearing width, of any existing transmission line crossing of the AT in Maine, and increase the sense of users that the trail at this location crosses a developed landscape. CMP's contention that the impact on trail users would be "negligible" is without foundation.

1. CMP has not shown by substantial evidence that there is no alternative site which is both suitable to the proposed use and reasonably available to the applicant.

CMP's alternatives analysis for the AT P-RR zone considers only a single alternative, locating the proposed AT crossing at a different location. We agree that creating a new crossing of the AT where none currently exists is not a preferable alternative. However, there are at least three other potential alternatives that have not been adequately explored: routing the project along existing roads to avoid this AT crossing,[20] relocating the AT, or burying the line at the proposed AT crossing.

Relocation of the AT at this location could reduce the number of crossings and minimize the exposure of trail users to the new corridor. We understand that CMP engaged in discussions with the Maine Appalachian Trail Club about potential relocations within the existing National

[17] CMP witness Goodwin Direct at p. 10.
[18] CMP witness Goodwin cross-examination, Tr. 4/2/19, p. 159 line 10 through p. 161, line 2.
[19] CMP witness Goodwin Direct, p. 10.
[20] This alternative is discussed in greater detail in Section VI below and will not be discussed in this section.

Park Service easement area, but that these discussions have not yet reached a final resolution. However, the possibility of relocating the trail outside of the existing easement area has not been explored. This would require acquiring property interests from the adjacent landowner (Weyerhaeuser). CMP witness Kenneth Freye stated "*The decision to relocate the AT rests with the NPS, assuming it can arrange sufficient alternative property rights. It is not within CMP's control*."[21] While CMP cannot force such a relocation, there is nothing to prevent them from undertaking discussions with Weyerhaeuser, the National Park Service, and the Maine Appalachian Trail Club to explore this potential alternative. However there is nothing in the record to indicate that they have done so.

Another unexplored alternative is burying the new line within the existing corridor. This alternative was the subject of questioning by both Commission Director Livesay[22] and Department Commissioner Reid.[23] CMP contended that the easement to the National Park Service did not allow them the right to construct underground lines.[24] However, under questioning CMP witness Freye agreed that the NPS could grant permission for them to do so, but that they have not explored that possibility with the NPS.[25]

There is very little information in the record about the suitability or availability of any of these alternatives because they were not adequately considered by CMP. The fact that these alternatives have not been explored indicates that CMP has not met its burden of proof to demonstrate that there is not a suitable and available alternative.

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21 CMP witness Freye Rebuttal, p. 3.
22 Tr. 5/9/19 beginning at p. 429.
23 *Id.* at p. 439.
24 *Id.*
25 *Id.* at p. 440 lines 8-15.

2. CMP has not shown by substantial evidence that the proposed transmission line can be buffered from hikers along the AT.

Widening the existing 150 foot clearing to 225 feet and adding 100 foot tall poles is incompatible with remote hiking along the AT in this section of Maine. To buffer this incompatible use, CMP proposed vegetation plantings along only one of the three crossings (at Troutdale Road).[26] The inclusion of these plantings is an admission by CMP that the project will cause a substantially increased visual and user impact on the AT. If the impact on AT users was "negligible" as they have claimed, there would be no need for mitigation of this type.

However, these plantings do not, and cannot, come close to buffering the existing use of the AT, remote hiking, from the increased and incompatible impact of the wider corridor and additional much taller transmission line. The photosimulation of the proposed planting speaks for itself in its failure to shield users from views of the wider corridor and additional larger line. CMP witness Segal admits that the plantings will only "partially" screen the widened corridor for AT hikers[27] and that hikers will still see the proposed structures.[28] In addition, these plantings were proposed at only one of the three trail crossings in this area.

CMP clearly failed to meet its burden of proof that the proposed use can be buffered from those other uses and resources within the subdistrict with which it is incompatible. For the above-stated reasons LUPC should deny the special exemption for this project.

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[26] CMP witness Segal Direct, p. 29; CMP Exhibit 5-B, p. 119.
[27] CMP witness Segal Direct, p. 29.
[28] Tr. 4/2/19, p. 166 line 17 through p. 167 line. 1.

IV. CMP's proposed project will adversely affect existing uses and scenic character and therefore fails to satisfy the minimum requirements of the Site Law and NRPA *(Relevant to DEP and LUPC)*

A. CMP failed to demonstrate that the proposed project will not have an unreasonable adverse impact on the scenic character and resources of the region. (*Relevant to DEP and LUPC*)

1. CMP failed to show that its project will have no unreasonable adverse impact on the scenic character, scenic resources, and scenic uses of the region and that the project can be buffered from other uses with which it is incompatible.

Both the Site Law and the NRPA require the applicant to show that its proposed project will have no unreasonable adverse impact on scenic character, scenic resources, and scenic uses.[29] In addition, the Commission's criteria require that the applicant show that that there is no alternative site that is both suitable and reasonably available and that the proposed use can be buffered from other uses with which it is incompatible.[30] The applicant bears the burden of proof to make this showing.

2. Scenic resources are very important to the character and economy of the region through which Segment 1 of the corridor passes.

The area through which Segment 1 of the proposed corridor passes includes the Kennebec River, the Old Canada Road National Scenic Byway, the Appalachian National Scenic Trail, numerous lakes, ponds, and streams, and numerous mountains with recreational trails. These places are important national, statewide, and local scenic resources, crucial elements of the region's scenic character, and the foundation of the region's recreational uses. The scenic resources are the backbone of both the region's quality of life and its tourism economy.[31] As Elizabeth Caruso, First Selectman of the Town of Caratunk, stated,

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[29] 30 M.R.S. §484 (3); 06-096 Ch. 375, § 14; 38 M.R.S. §480-D(1); 06-096 Ch. 315

[30] 12 M.R.S. §685-B(1-A)(B-1); 01-672 C.M.R. 10 (Chapter 10), §10.23.I.3.d.

[31] Group 2 E. Caruso Direct, p. 3 – 2.

> Most year-round residents derive their income in the tourism industry as independent guides or by working for the recreational outfitters, lodges, cabins and restaurants, area gas stations, etc… All residents chose homes and vacation homes or camps in Caratunk for the area's peace and beauty in surroundings and also for the recreational opportunities provided by the local mountains, ponds, lakes, rivers, streams, etc.[32]

As virtually every guide in the region said, the scenic character of the region is a primary reason hikers, snowmobilers, anglers, and hunters come to the region.[33]

Concern about the adverse impact of the project on the scenic resources and character of the region and the resulting adverse impact on the quality of life and economy in the region is a prime reason why six towns (Caratunk, Dennistown, Jackman, Moose River, The Forks, West Forks) of the 15 towns that have opposed the project or withdrawn their support have done so.[34] It is also a prime reason at least 10,466 individuals expressed their opposition to the proposed project through an online petition.[35]

3. An overhead transmission line with poles up to 100, 130, or 165 feet tall would cause significant adverse impacts on the scenic character of a region.

Overhead transmission lines result in significant adverse impacts on the scenic character of a region. Dr. James Palmer, the scenic expert hired by the Department and LUPC, noted in his report that "[t]he conclusion [of CMP's survey of Kennebec rafters] is that views of power lines on hillsides create visual impacts that are among the highest of any human activity or development."[36] In fact, the CMP survey found that power lines have greater visual impact than

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[32] *Id*.at p.3

[33] Group 2 G. Caruso Direct, p. 2 – 3; Group 10 Lyman Direct, p. 2-3.

[34] Group 4 Comments, p. 447-91.

[35] *Id.* at p. 216-446.

[36] James Palmer, Review of the New England Clean Energy Connect October 2018 Supplemental Application Materials (hereinafter Palmer VIA Review), Nov. 23, 2018, sec. 2.2.

large clear cuts, wind power projects, other rafts or kayaks on the river, hydroelectric dams, and bridges and roads.[37]

Dr. Palmer also noted that CMP's "survey provided information to assess the visual impacts at other locations" than just the Kennebec River.[38] In particular, he noted that the survey indicated that "it may not be necessary to see transmission structures or the cleared ROW for the scenic quality to be degraded. In this survey, views of the conductors and warning balls were sufficient to degrade the scenic quality at the Kennebec River crossing."[39]

4. CMP failed to provide sufficient information to allow a complete scenic analysis of Segment 1 of the proposed corridor.

Despite the finding in its survey of Kennebec rafters that power lines create visual impacts that are among the highest of any human activity or development, CMP carried out no further surveys to determine the adverse impact on other scenic resources in the region. Nor did it submit any other credible evidence about potential scenic impacts. The only additional information CMP submitted was from a survey of Baskahegan Lake visitors, "only 4% of whom identified viewing scenery as their primary activity" and was a post-construction survey "not designed to determine how construction of the Stetson MountainWind Farm would affect use of the lake."[40] By contrast, CMP's witness acknowledged that 74% of the people surveyed by CMP said that viewing scenery was one of the activities they planned for during their visit to the region.[41]

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37 CMP 9.4 AIR Attachment A, Upper Kennebec River Survey, p.32.
38 *Id.* at sec. 2.5
39 *Id.*
40 *Id.* at sec. 2.6
41 Tr. 4/1/19, p. 350.

CMP's witness acknowledged that she was aware that this region of the state attracts many visitors because of its undeveloped scenic character.[42] The failure of CMP to survey visitors to the Old Canada Road National Scenic Byway, the Appalachian National Scenic Trail, or other recreationists such as wintertime snowmobilers renders its scenic analysis unreliable. CMP failed to analyze the alternative of putting the transmission line under rather than across the National Scenic Byway. The Old Canada Road National Scenic Byway is one of only two national scenic byways in Maine. As such, it demands greater consideration than CMP gave it in its scenic analysis. Likewise, the proposed corridor would cross the Appalachian National Scenic Trail three times, yet CMP failed to conduct any serious analysis of the alternative of reducing the number of crossings or doing an underground crossing of the Appalachian National Scenic Trail. Finally, this region relies on all four seasons of recreational visitors and yet summertime rafters were the only users surveyed, excluding users such as hiking, fishing, hunting, and snowmobiling users.

In addition to failing to provide sufficient information about the adverse impacts of the proposed power line on visitors to the region, CMP has also failed to provide sufficient information about the actual pole heights and corridor management to allow a thorough and accurate evaluation of the scenic impacts from important locations. As confirmed by Mr. Bergeron, nowhere in the record is information on "how high each pole is and [] how many concrete or direct embedded foundations" would be required.[43] CMP claims to have this information but did not make it available to the Department or parties to evaluate.[44] By not providing this data, continually changing the heights and locations of poles, and introducing vague and changing proposals regarding "tapering" to address adverse impacts on fish and

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42 *Id.* at 348

43 Tr. 5/9/19, p. 470-71.

44 *Id.*

wildlife habitat, CMP has made it impossible to do a thorough analysis of the actual scenic impacts of this project.

Even CMP's visual experts acknowledged that they did not do a formal assessment of the potential visibility of higher poles.[45] Nor could they do so, they stated, without having the exact height of the planned poles.[46] The opinions they provided were based on a lower "level of analysis" incorporating an assumption that the pole heights would be 130 feet tall, even though they acknowledged that the poles could be as tall as the "more typical" height of 165 feet.[47] They did not analyze the scenic impacts of poles that were 140, 150 or 160 feet tall.[48]

CMP has the burden of providing a specific project proposal whose scenic impacts can be evaluated. CMP must also evaluate alternatives and ways to mitigate potential scenic impacts. Without providing a plan that shows specific pole heights and doing a thorough analysis of the scenic impacts of those poles, CMP failed to show that the project will not have an unreasonable adverse impact on scenic resources, scenic character, or scenic uses or that there is no suitable and reasonably available alternative site for the proposed use.

5. The information regarding the scenic impact of the corridor relied on by CMP is outdated and unreliable.

CMP's witness asserted that the transmission line will not impact the use or enjoyment of scenic resources.[49] This opinion was based on a Visual Impact Analysis conducted by CMP's witness.[50] That visibility analysis used data from 1999/2001.[51] Even after being questioned by both the Department and Commission about why they didn't use more recent, available data, CMP failed to update its analysis using the more recent, available data. [52] Dr. James Palmer was

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45 *Id.* at 166.
46 *Id.* at 167.
47 *Id.* at 191, 224 – 226.
48 *Id.* at 226.

concerned about the failure to use the more recent, available data because data that is 20 years old does not include the effects of recent harvesting.[53]

Instead of using the more recent data, CMP's witness simply argued that what they did was good enough because newer data was not available for the entire 145-mile study area.[54] Dr. Palmer, on the other hand, raised multiple concerns about the visibility analysis, noting that the analysis understates the potential visibility by fifty percent.[55] Dr. Palmer further noted that the problems with the analysis all stemmed from the fact that CMP did not use the most up to date data.[56]

CMP's failure to use the most recent data available, a failure that led to understating the potential visibility of the project by fifty percent, renders CMP's Visual Impact Analysis entirely unreliable. With no reliable Visual Impact Analysis, CMP failed to fulfill its burden of proof to show that this project will have no unreasonable adverse impact on scenic resources, scenic character, and scenic uses.

6. CMP's conclusions regarding the level of adverse scenic impact of segment 1 of the proposed corridor are unsupported by the evidence and cannot be relied on.

The problems with CMP's Visual Impact Analysis of this project are legion. In spite of the highly significant scenic resources in the region, CMP failed to conduct adequate surveys of the potential impacts of the proposed transmission lines on visitors who had come to the region to enjoy its scenic character and resources; failed to use the most recent, available data in conducting its analysis; and came to conclusions that are unsupported by the evidence in the

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49 CMP Segal Direct, p. 184.
50 *Id.* at 233.
51 Palmer VIA Review, sec. 3.
52 *Id.* at sec. 3 and 3.5; Tr. 4/1/19, p. 350-51.
53 Palmer VIA Review, sec. 3.1.
54 Tr. 4/1/19, p. 351.
55 Palmer VIA Review, sec. 3.2 and 3.5.
56 *Id.* at sec. 3.5

record. CMP's visual consultants concluded that the project would have no unreasonable adverse impact despite the fact that six towns in the region and more than 10,000 individuals say otherwise.[57]

Even while CMP's visual consultants were opining that the project, including an overhead transmission line across the Kennebec Gorge, would have no adverse scenic impact,[58] CMP was acknowledging the adverse scenic impact by rerouting the proposed line underneath the Kennebec Gorge.[59] The failure of the visual consultants to acknowledge the unquestionably adverse scenic impacts of an overhead line across the Kennebec Gorge renders their opinions about potential scenic impacts along other parts of the corridor entirely unreliable.

Given their spectacularly wrong conclusion about the scenic impacts of the transmission line over the Kennebec Gorge, CMP's consultants' conclusion that the transmission line would have no unreasonable adverse impact on Coburn Mountain, Number 5 Mountain, Parlin Pond, Rock Pond, the Old Canada Road National Scenic Byway, Moxie Stream, the Appalachian National Scenic Trail, and other beloved undeveloped scenic resources along the proposed corridor cannot be relied on.

7. The applicant failed to meet its burden of proving that the project will not cause an unreasonable adverse impact on the scenic resources, scenic character, and scenic uses of the region.

By failing to do a thorough visual impact analysis itself and by failing to provide a specific and unchanging application allowing the public, other intervenors, and the reviewing agencies to do a thorough scenic impact analysis, CMP failed to meet its burden of proof showing that the proposed corridor will not have an unreasonable adverse impact on scenic

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57 Group 4 Comments, p. 216-491.
58 Tr. 4/1/19, p. 538.
59 See generally, CMP Oct. 19, 2019, Application Amendments.

resources, scenic character, and scenic uses. CMP has also failed to show that there is no suitable and reasonably available alternative site for the proposed use.

Furthermore, even if the agencies determine that CMP has done a sufficient scenic analysis and has provided sufficient information to evaluate whether the project has an unreasonable adverse impact on scenic resources, the permit should nevertheless be denied because the evidence in the record, including statements of multiple towns and thousands of individual citizens, demonstrates that the project will have an undue adverse impact on multiple national, state, and local scenic resources, scenic character, and scenic uses.

B. CMP failed to demonstrate that the proposed project will not have an unreasonable adverse impact on the scenic character and existing uses along the Appalachian Trail. *(Relevant to DEP)*

As explained above, both the Site Law and NRPA require the applicant to show that its proposed project will have no unreasonable adverse impact on scenic character, scenic resources, and scenic uses, such as the AT.[60] In addition, the Commission's criteria require that the applicant show that that there is no alternative site that is both suitable and reasonably available and that the proposed use can be buffered from other uses with which it is incompatible.[61] The burden of proof for making these showings is on the applicant.

Segment 2 of the proposed project would intersect the AT within an existing transmission line corridor. The AT crosses this corridor three times within a distance of about two-thirds of a mile. The proposed project would require widening the existing corridor from 150 feet to 225 feet and add a second line with towers 100 feet tall adjacent to the existing 115 kV line with

[60] 30 M.R.S. §484 (3); 06-096 Ch. 375, § 14; 38 M.R.S. §480-D(1); 06-096 Ch. 315

[61] 12 M.R.S. §685-B(1-A)(B-1); 01-672 C.M.R. 10 (Chapter 10), §10.23.I.3.d.

towers 45 feet tall. The significant difference in visual impact is evident in CMP's photosimulations.[62]

The widening of the corridor and the addition of a second much larger line would significantly increase the visual impact of these transmission line crossings on users of the AT. However, CMP consistently attempted to downplay this increased impact as follows:

- CMP's Visual Impact Assessment rates the impact of the project at the middle of these three crossings (along Troutdale Road) as "minimal to moderate".[63] The Applicant also states that there would be a "negligible" change in visual impact to hikers using the trail.[64] However, these conclusions are contradicted by the revised Scenic Resources Chart that rates the impact as "Moderate/Strong".[65]

- CMP states that AT users expect to see transmission lines, and thus the additional line would not impact users' enjoyment of the trail.[66] However, no user surveys were conducted to actually assess users' expectations and reactions to the project.[67] Users of the AT also expect to see towns, highways and railroads, but encountering those features is still likely to detract from their experience.

- CMP witness Goodwin states that there are 56 transmission line crossings of at least 230 kV along the length of the AT.[68] However, upon cross-examination he admitted that 70 percent of these crossings were located in the stretch of the AT between Virginia and New York and that none were located in Maine.[69] A transmission line of the size of the proposed project would be a unique impact to the AT in Maine and it is likely that user expectations would differ from those of users in the more heavily developed mid-Atlantic region.

- CMP witness Goodwin also states that there are five crossings of the AT by 115 kV transmission lines in Maine.[70] However, three of those are at the location of the proposed project. The other two are located in proximity to much larger roads (Route 16 in Carrabassett Valley and the Golden Road at the crossing of the Penobscot River).

The proposed project would greatly exceed the size, in both height and clearing width, of any existing transmission line crossing of the AT in Maine, and increase the sense of users that

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62 Application Chapter 6, Appendix E, p. 27-28.
63 Application Chapter 6, Section 6.2.2.4, p. 6-44.
64 Application Chapter 25, Section 25.3.1.3, p. 25-5.
65 Application Chapter 6, Appendix F (revised 1/30/19).
66 Application Chapter 6, Section 6.2.2.5, p. 6-50; CMP witness Goodwin Direct at p. 10.
67 CMP witness Segal cross-examination, Tr. 4/2/19, p. 163, lines 9-14.
68 CMP witness Goodwin Direct at p. 10.
69 CMP witness Goodwin cross-examination, Tr. 4/2/19, p. 159 line 10 through p. 161, line 2.
70 CMP witness Goodwin Direct, p. 10.

the trail at this location crosses a developed landscape. CMP's contention that the impact on trail users would be "negligible" is without foundation, and they have not met its burden of proof to demonstrate that the project would fit harmoniously into the existing natural environment and would not adversely affect existing uses and scenic character.

V. CMP's proposed project will adversely affect wildlife habitat and other natural resources and therefore fails to satisfy the minimum requirements of the Site Law and NRPA *(Relevant to DEP and LUPC)*

A. CMP failed to demonstrate that the proposed project will not adversely impact significant vernal pool habitat. *(Relevant to DEP)*

Vernal pools are one of the most important types of habitat in New England.[71] As such, they enjoy protection under both NRPA and Site Law. Under NRPA, CMP must demonstrate that its proposed project "will not unreasonably harm any significant wildlife habitat, freshwater plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life."[72] Similarly, Site Law requires that a project proponent demonstrate that the development will not adversely affect natural resources.[73] Chapter 375, Section 15(B)(3)(d), of the Department's rules, clarifies that CMP must make adequate provision for the protection of wildlife and fisheries and provide evidence that "[t]here will be no unreasonable disturbance to . . . [s]ignificant vernal pools."

Dr. Aram Calhoun, Maine's leading authority on vernal pools, testified that CMP's proposed project would adversely impact significant vernal pool habitat.[74] Dr. Calhoun concluded that CMP's proposed project would not only destroy individual pools but would also

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71 "High value vernal pools are one of the most valuable aquatic systems we have in New England, rivaling salt marshes in their productivity, yet the bulk of breeding animals only use them in the spring. These animals typically live in the forest and must travel to and from the vernal pools each year. Tree clearing near vernal pools would cause secondary impacts to the pools…" U.S. Environmental Protection Agency letter to U.S. Army Corps of Engineers, re: Public Notice 2017-01342 CMP NECEC Electric Transmission Line Project, April 25, 2019, p. 4.

72 38 M.R.S. § 480-D(3);

73 38 M.R.S. § 484(3).

74 Group 4 witness Calhoun Direct at p. 13

fragment vernal pool webs and impede the migrations of amphibians to and from pools that maintain the genetic diversity of vernal pool specialists, stating that "the effects of a clear-cut ROW through existing vernal pools, adjacent vernal pools, and travel routes to and from breeding pools will result in impacts ranging from devastation for some individual vernal pools to greatly compromised habitat for others."[75]

Moreover, vernal pool specialists, such as wood frogs, are adapted to shaded pools. Pools exposed to the sun due to clearing under powerlines favor habitat generalists, such as green frogs and bullfrogs.[76] Populations of wood frogs and other pool specialists are therefore likely to decline due to CMP's corridor even in pools CMP does not fill.[77] Moreover, the shrubby vegetation that would take over if CMP builds its proposed corridor would damage pool specialists' ability to move from pool to pool because they are adapted to move through forested landscapes.[78] This will restrict the ability of amphibians to move from pool to pool, limiting genetic diversity, and resulting in reduced populations of vernal pool amphibians.

Professor Calhoun also concluded that CMP's proposed mitigation for the corridor's damage is inadequate:

> This project will cause harm to potentially hundreds of individual pools. Clearing for the powerline will also fragment pool networks causing undue stress to local amphibian populations. The ability of amphibians to move from pool to pool is critical to vernal pool ecological functions. The mitigation only compensates for direct impacts to vernal pools that have regulatory or legal status--- a small subset of the overall impacts to pools. There is no compensation for fragmentation in the form of interruption of migration and dispersal routes, connections among pools, and connections from breeding to post breeding habitats. Therefore, I do not believe that this project meets the no unreasonable adverse impact standard. Its impacts are severe and the applicant's mitigation proposal is inadequate.[79]

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75 *Id. at 13*
76 *Id.* at 11
77 Tr. 5/9/19, p. 39.
78 Group 4 witness Calhoun Direct, p. 12.
79 *Id.* at 17

In response to Professor Calhoun's expert testimony, CMP witness Gary Emond provided rebuttal testimony to justify CMP's minimal mitigation proposal based solely on a TRC Engineers position paper[80] for CMP's Maine Power Reliability Project (MPRP). Mr. Emond made numerous assertions about powerline impact on vernal pools based on the TRC paper that cross examination showed to be misleading and unsubstantiated.

Mr. Emond asserted that: "Constructing and maintaining transmission line corridors does not negatively affect vernal pool hydro-period."[81] Under cross-examination, Mr. Emond admitted that TRC had performed no studies of hydro-period before and after clearing of the MPRP right-of-way. [82] He also stated that: "The ground was not disturbed. Everything was left intact in terms of grade, so the pool basins were not affected."[83] This is irrelevant to whether or not hydro-period was affected by the right-of-way construction. Increased precipitation and sun exposure due to loss of tree cover would both likely affect hydro-period, and therefore, without before-and-after studies of hydro period, which Mr. Emond admitted TRC never did, there is no way to conclude that right-of-way construction does not alter hydro-period.

Mr. Emond also asserted that: "The MPRP data strongly indicate that several generations of spotted salamanders have successfully reproduced in these vernal pools. It is therefore logical to conclude that their offspring continue to breed in these pools."[84] However, Mr. Emond admitted under cross examination that TRC never performed mark and recapture studies to measure whether several generations of salamanders had spawned in the pools. Group 4 attorney Sue Ely asked Mr. Emond: "Without mark and recapture studies that would tie juvenile salamanders leaving the pool and then recapture them when they return you can't say

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80 CMP rebuttal witness Emond testimony, exhibit CMP-12-B.
81 CMP rebuttal witness Emond testimony, p. 5.
82 Tr. 5/9/1, p. 41.
83 *Id.* at 41
84 CMP rebuttal witness Emond testimony, p. 5.

conclusively that multiple generations of salamanders have spawned in these pools; is that correct?" Mr. Emond replied, "That is correct."[85]

Mr. Emond further undermined CMP's claims that the TRC MPRP report shows that transmission corridors do not harm vernal pools when he stated in his testimony that: "maintained transmission line ROWs are compatible with and, in fact, coexist with and support healthy and productive significant vernal pools".[86] Under cross examination, however, Mr. Emond admitted, as with his other statements above, that he had no evidence to support this conclusion.

> MS. ELY: Okay. Did you or TRC do any studies of individual amphibian health in these pools for the MPRP survey?
> MR. EMOND: No, there was nothing done.
> MS. ELY: Did you or TRC do any studies of the number of generalist species such as green frogs that may prey on juvenile forest specialists that were present in these pools?
> MR. EMOND: That was outside the scope of the permitting process, so no.
> MS. ELY: So -- I'm sorry, did you or did you not?
> MR. EMOND: We did not.
> MS. ELY: Okay. Did you do any studies on what percentage of wood frogs and spotted salamander eggs that survived to maturity and leave the pool in the right of way?
> MR. EMOND: No, we did not.
> MS. ELY: Is the TRC study that you cite as the basis for your conclusions about power lines and vernal pool ecosystems a peer-reviewed study published in a scientific journal?
> MR. EMOND: Not in a scientific journal, no.[87]

In sum, CMP's witness, Gary Emond, was unable to provide evidence for any of the major assertions in his testimony, and CMP provided no evidence that its NECEC proposal would not severely damage individual vernal pools through loss of shade, fragment pool habitat and break up pool webs, and hinder amphibian migration due to increased predation and

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85 Tr. 5/9/19, p. 42.
86 CMP rebuttal witness Emond testimony, p. 9.
87 Tr. 5/9/19, p. 44-45.

unsuitable shrub habitat. He provided no evidence to support CMP's claims that its mitigation proposal for pool damage is adequate.

Given this, the Department must conclude that Professor Calhoun, the undisputed leading expert on vernal pools in Maine, is correct that the NECEC would cause severe damage to vernal pools through both individual pool destruction and fragmentation and that CMP's mitigation proposal is inadequate. The Department must also conclude that NECEC would unreasonably adversely impact significant vernal pool habitat, and therefore, would not meet the standards of the Site Law.

B. CMP failed to demonstrate that the proposed project will not unreasonably harm brook trout habitat. *(Relevant to DEP)*

Brook trout and its habitat enjoy robust protections under both NRPA and Site Law. Under NRPA, CMP must demonstrate that its proposed project "will not unreasonably harm any significant wildlife habitat, freshwater plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life."[88] This means that any project that will "unreasonably degrade the significant wildlife habitat, unreasonably disturb subject wildlife, or unreasonably affect the continued use of the cite by the subject wildlife" may not be permitted.[89]

Similarly, the Site Law requires that a project proponent demonstrate that the development will not adversely affect natural resources.[90] Chapter 375 of the Department's rules prohibits any adverse impacts to unusual natural areas[91] or wildlife and fisheries lifecycles.[92]

88 38 M.R.S. § 480-D(3);
89 06-096, Ch. 335, § 3(C).
90 38 M.R.S. § 484(3).
91 06-096, Ch. 375 §(12).
92 06-096, Ch. 375 §(15).

1. The Applicant failed to demonstrate that their proposed buffer strips will protect water quality and fisheries habitat from the impacts of the new clearing proposed for the corridor.

The Applicant failed to meet their burden of proof to demonstrate that their proposed buffer strips will protect water quality fisheries habitat from the impacts of the new clearing proposed for the corridor. Specifically, the Applicant states that:

> CMP will retain riparian natural buffers (or "riparian buffers") and implement restrictions, consistent with those described in Exhibits 10-1 and 10-2, within 100 feet of all rivers, streams or brooks which meet the following criteria:
> - Presence of Special Concern, Threatened, or Endangered Species,
> - Coldwater Fisheries,
> - Outstanding River Segments, as identified in 38 MRS § 480-P and 12 MRS § 403,
> - All perennial streams within the Segment 1 portion of the Project.[93]

This sounds consistent with the Maine Department of Inland Fisheries and Wildlife's (MDIFW) repeated comments requesting undisturbed 100 foot riparian buffers. For example:

> To reiterate, MDIFW recommends that the previously recommended 100-foot buffer be maintained along all streams, including perennial, intermittent, and ephemeral streams, within the Project area. To be effective, these 100-foot buffers should be measured from the upland edge of stream or associated fringe and floodplain wetlands. As proposed, without the protection of 100-foot buffers at all streams, the quality of fisheries and habitat in these watersheds will be impaired. This is also critically important for the other stream-dependent species of concern noted earlier in this document.[94]

However, the details in CMP Exhibit 10-1 indicate that no special consideration will be given to brook trout streams during clearing activities, and, in contrast to the requests from MDIFW for undisturbed buffers, all woody vegetation taller than 10 feet tall will be removed within the wire zone, even within the "retained" "natural" riparian buffer.[95] Outside the wire zone, all "capable" woody vegetation will be removed, essentially limiting the maximum

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[93] Revised Compensation Plan dated Jan. 30, 2019, p. 21.

[94] Maine Department of Inland Fisheries and Wildlife, Comments, Environmental Permit Review, Central Maine Power Company, New England Clean Energy Connect, 3-15-2018.

[95] Site Law Application, Chapter 10, Exhibit 10-1, p. 8

potential height of vegetation within the "retained" buffer to 25 feet.[96] After clearing, the details in Exhibit 10-2 state that areas within the wire zone will have woody vegetation maintained at no taller than 10 feet. Outside the wire zone, within the entire 150-foot-wide corridor all vegetation capable of attaining heights of over 25 feet will be removed every 4 years.[97] With this intensive management, the NECEC's 150-foot-wide corridor will be transformed from forest to scrub-shrub habitat, eliminating many of the existing functions of riparian buffers to protect and maintain high quality coldwater fish habitat.

The Applicant's assessment of these impacts, as presented in Application Section 10, including Exhibits 10-1 and 10-2 and the pre-filed direct testimony of Mark Goodwin (also adopted by Laura Johnston), is significantly flawed. [98] It essentially amounts to repeatedly (and selectively) citing two studies:

(1) Gleason, N.C. 2008. Impacts of Powerline Rights of Way on Forested Stream Habitat Western Washington, Environmental Symposium in Rights of Way Management, 8th International Symposium, pages 665-678;[99] and

(2) Peterson, A.M. 1993. Effects of Electric Transmission Rights-of-Way on Trout in Forested Headwater Streams in New York. North American Journal of Fisheries Management, vol. 13 pp. 581-585.[100]

Based primarily on these studies—and ignoring broad consensus based on decades of research that intact forest buffers are important for protecting coldwater fish habitat[101]—Goodwin concludes that "there will be no unreasonable disturbance to or unreasonable impact on . . . Brook Trout habitat and the project will not result in unreasonable habitat fragmentation . . . CMP has made adequate provision for buffer strips around cold-water fisheries."[102]

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96 *Id.* at p. 8 and Figure 1 on p. 13.
97 Site Law Application, Chapter 10, Exhibit 10-2, pages 5-6.
98 CMP Goodwin Direct, p. 22.
99 The abstract of this study is included in Group 4 Witness Reardon's Rebuttal Testimony at pages 2-3.
100 Attached to Group 4 Witness Reardon's Rebuttal Testimony as Group 4 Exhibit 19-JR-Rebuttal.
101 For example, Group 4 Exhibit 20-JR-Rebuttal; Group 4 Exhibit 6-JR; Group 4 Exhibit 7-JR.
102 CMP Witness Goodwin Direct Testimony at page 22.

But that opinion is not supported by even the plain text of the references Mr. Goodwin cites. For example, a key finding reported by Gleason was that canopy cover (a key habitat element for coldwater fish) was much lower in disturbed transmission corridors than in nearby undisturbed streams, with "a mean of 29% in rights-of-way and 75% upstream."[103] Moreover, Gleason concluded that, "Overall, the elements show a decrease from ideal salmonid habitat conditions."[104]

Similarly, Goodwin cites a 1993 Peterson study[105] as evidence that transmission corridors do not adversely impact natural stream habitat for coldwater fish,[106] but ignores Peterson's primary findings regarding habitat—namely, that of 12 habitat parameters evaluated, 6 were altered at a level that was statistically significant in streams within rights-of-way.[107] Of greatest importance to fish habitat, streams within rights of way had 31.5% mean shade compared to 83.3% in forested streams, and bank vegetation within rights of way was 91.8% shrubs and grass, compared to only 4% shrubs and grass in forested streams.[108] In other words, Peterson documented that in the rights of way studied, a forested buffer with an 83% canopy cover, which would meet the recommendation of MDIFW[109] and the Maine Natural Areas Program,[110] was

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[103] Abstract of Gleason, N.C.2008. Impacts of Powerline Rights of Way on Forested Stream Habitat Western Washington, Environmental Symposium in Rights of Way Management, 8th International Symposium, p. 665-78. Abstract is excerpted in full in Group 4 Witness Reardon Rebuttal Testimony at page 3.

[104] *Id.* (Emphasis added.)

[105] Peterson, A.M. 1993. Effects of Electric Transmission Rights-of-Way on Trout in Forested Headwater Streams in New York. North American Journal of Fisheries Management, vol. 13. Group 4 Exhibit 19-JR-Rebuttal. Hereinafter 1993 Peterson Study.

[106] CMP Goodwin Direct, p. 15.

[107] 1993 Peterson Study, p. 583 Table 2.

[108] *Id.* at 581-85.

[109] Group 4 Exhibit 20-JR-Rebuttal: Maine Department of Inland Fisheries and Wildlife: Forest Management Recommendations for Brook Trout.

[110] Group 4 Exhibit 6-JR: Maine Natural Areas Program: Forest Management Recommendations for Maine's Riparian Ecosystems.

replaced with an open, shrub-and- grass-banked stream. CMP's application would create this condition at every stream crossing.[111]

Goodwin's testimony on buffers emphasizes CMP's "concession" to allow 75-100-foot buffers at stream crossings. But this focus on width, rather than on the nature of the vegetation allowed to remain within the buffer, ignores the importance of canopy closure, presence of mature trees, forested buffers, and inputs of large woody debris to instream habitat. Goodwin emphasizes buffer functions that can be provided by low ground cover or even grasses, like sediment and nutrient removal, but ignores buffer functions like large woody debris and organic matter inputs that are provided by mature trees—trees that will not be allowed within CMP's buffers. He also exaggerates the degree to which the non-capable vegetation allowed to remain within CMPs proposed buffers will provide functions like shade. For example, Goodwin states:

> Allowing non-capable vegetation to remain as described within the appropriate buffer will provide shading and reduce the warming effect of direct sunlight (insolation). Low ground cover will also remain within these buffers to filter any sediment or other pollutants in surface runoff These conditions will allow the stream buffers to provide functions and values similar to those prior to transmission line construction.[112]

This statement is directly contradicted by the only two references Goodwin cites.[113] Mr. Goodwin in his direct testimony also overstates the degree to which CMP's proposed buffers can provide functions like shade and large woody debris.[114]

Because all capable vegetation will be removed from the buffer, CMP's proposed buffers will not provide any recruitment of large woody debris of a size sufficient to maintain instream

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111 CMP's misrepresentation of the implications of these studies is discussed in greater detail in Group 4 Witness Reardon's rebuttal testimony on pages 1-5.

112 CMP Goodwin Direct, p. 21.

113 See generally, Gleason, N.C. 2008. Impacts of Powerline Rights of Way on Forested Stream Habitat Western Washington, Environmental Symposium in Rights of Way Management, 8th International Symposium, pages 665-678; and 1993 Peterson.

114 CMP Goodwin Direct, p.15.

habitat.[115] In rebuttal testimony CMP witnesses maintained that the proposed buffers would continue to supply "moderate sized woody debris" but conceded on cross examination that any recruited wood would likely be shorter and smaller in diameter than sizes specified in standards for large wood addition projects. [116] Nor will CMP's proposed buffer provide anything close to the 60-70% closed canopy vegetation that ME DIFW requested. CMP witness Johnston, on cross-examination, stated that proposed buffers would not provide canopy trees and that under summer conditions when the sun is high, there would be zero shade.[117]

In summary, the Applicant clearly failed to meet the burden of proof to demonstrate that their proposed buffer strips will adequately protect habitat for coldwater fish. The Applicant's argument that proposed buffers are sufficient rests on two studies that contradict long-accepted principles embodied in documents about riparian buffers maintained by the MDIFW and Maine Natural Areas Program. CMP selectively cites their findings, obscuring conclusions in those studies that physical stream habitat was significantly impacted by right of way clearing, particularly by severe reductions in overhead canopy cover, and one study's clear conclusion that right of way clearing resulted in "a decrease from ideal salmonid habitat conditions." The Applicant's witnesses assert, but cannot support, the hypothesis that the non-capable vegetation remaining in the cleared riparian corridor will provide woody debris inputs. But on cross examination, the Applicant's witnesses concede that maximum wood sizes will be no more than 4" in diameter and 15-20' long—far too small to provide important functions of large wood in even moderate sized streams. And the Applicant's witnesses agree that their proposed buffers will not provide canopy closure over even small streams.

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115 Group 4 Reardon Direct, p. 21; Group 4 Exhibit 6-JR; Group 4 Reardon Rebuttal, p. 5-6.

116 CMP Johnston Rebuttal, p. 12, but see Tr. 4/1/19, p. 198-201.

117 Tr. 4/1/19, p. 194, 196-97.

2. CMP failed to demonstrate that NECEC will not harm brook trout habitat.

The Applicant failed to meet its burden of proof to demonstrate that the 53.5 miles of new corridor (Section 1) will not have an adverse impact on the natural environment via impacts on brook trout habitat. The proposed new corridor would be one of the largest permanent fragmenting features impacting watersheds in this region, crossing watersheds that have been recognized as among the least impacted aquatic habitats in the northeastern United States[118] and as the nation's most important stronghold for native brook trout.[119] The Applicant's assessment of these impacts (as set forth in Application Sections 7.5 and 7.6 and the pre-filed direct testimony of Mark Goodwin and Laura Johnston) fails to recognize the importance of this intact habitat to Maine and the nation, inadequately discusses the impacts of the project on brook trout habitat, and does not include measures to protect some of the Maine's and the nation's finest habitat for brook trout.

i. CMP failed to recognize the significance of the brook trout resource impacted by Section 1 of the new corridor.

The streams impacted by the 251 water body crossings in Section 1 are among the most intact watersheds remaining in the continental United States.[120] Western Maine contains the vast majority of un-degraded aquatic habitat in the northeastern states. This intact habitat supports the nation's most significant stronghold of native brook trout populations. Every water body crossing in Section 1, identified in CMP Exhibit 7-7: NECEC Waterbody Crossing

[118] National Fish Habitat Partnership, 2015. Through a Fish's Eye, the Status of Fish Habitat's in the United States, 2015.

[119] Eastern Brook Trout Joint Venture (2006): Eastern Brook Trout: Status and Threats. https://easternbrooktrout.org/reports/eastern-brook-trout-status-and-threats%20%282006%29/view;

[120] Group 4 Reardon Direct, p. 7; Group 4 Exhibit 1-JR; National Fish Habitat Partnership, 2015. Through a Fish's Eye, the Status of Fish Habitat's in the United States, 2015.

Table,[121] is within a subwatershed designated as supporting an "intact" population of brook trout.[122] MDIFW staff biologist Bob Stratton confirmed this assessment, writing:

> I'm quite certain that all the perennial streams in Region E contain wild BKT. All those brooks in Beattie, Appleton, Johnson Mtn, and Bradstreet Twps are full of BKT. I'm not sure about the intermittent streams, but anything connected to the Moose River, Gold Bk, Barrett Bk, Cold Stream, Baker Bk, Tomhegan Stream, Bog Bk, Smart Bk, Number One Bk, Mill Bk, and Piel Bk would have potential. I really think we are safe ground by assuming all the Region E streams (all headwaters) have BKT.[123]

In contrast to these assessments by state fisheries biologists and the Eastern Brook Trout Joint Venture, CMP's description of the brook trout resource is cursory and limited to a few paragraphs in the Site Law Application.[124]

ii. CMP did not incorporate critical information from the MDIFW into their application materials.

As of the May 9, 2019, hearing, CMP had still not incorporated critical information from the MDIFW into their application materials, despite assertions that they had done so. In his direct testimony, Group 4 witness Jeff Reardon raised this issue, writing that "[c]onsultation with MDIFW staff about brook trout presence at crossings appears to have been left until very late in the process, with handwritten comments on the NECEC Water Body Crossing Table (Exhibit 7-7) provided on by MDIFW February 2, 2019."[125] His testimony referred to correspondence between CMP and the Maine Department of Inland Fisheries Wildlife.[126]

In response, CMP witness Lauren Johnston's pre-filed rebuttal testimony stated that:

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121 Site Law Application, Chapter 7, pages 179-198

122 Group 4 Exhibit 1-JR; Eastern Brook Trout Joint Venture (2006): Eastern Brook Trout: Status and Threats. https://easternbrooktrout.org/reports/eastern-brook-trout-status-and-threats%20%282006%29/view

123 1/22/2019 email from Bob Stratton (MDIFW) to Jim Beyer (Department). Included in consultation record under "Review Comments".

124 Application, Chapter 7, Section 7.5.1 at p 7-40.

125 Reardon Direct, p. 9.

126 Two emails from Bob Stratton (ME DIFW) to Jim Beyer (Department) on January 22, 2019; 4 emails from Bob Stratton to Jim Beyer on January 24, 2019; and one email from Bob Stratton to Jim Beyer on February 4, 2019, all accessed at https://www.maine.gov/dep/ftp/projects/necec/review-comments/2019-02-01%20MDIFW%20Comments/.

> It is also inaccurate to describe CMP's consultations regarding brook trout presence "to have been left very late in the process." As described above, CMP's consultation with DIFW began in May 2017 during the application development process and included multiple consultation working sessions through 2018 and into early 2019. DIFW provided CMP with a brook trout GIS data layer on July 12, 2017, prior to the application submission. Designated brook trout streams were incorporated into CMP's geodatabase and Site Law Exhibit 7-7 NECEC Waterbody Crossing Table (9/27/2017). In a January 22, 2019 meeting with DEP and DIFW, DIFW notified CMP that the GIS layer previously provided was incomplete and then provided a list of additional identified resources. ***CMP incorporated the additional resources into the January 30, 2019 Compensation Plan and Exhibit 7-7 NECEC Waterbody Crossing Table***.[127]

If this is change had been made, Table 7-7 would have reflected the input contained in DIFW's emails on January 24, and in their hand marked edits to Table 7-7, discussed during the January 22, 2019, meeting between the Department, DIFW and CMP, and contained in two emails from Bob Stratton to Jim Beyer after that meeting.[128] However, in supplemental testimony in response to question 16 from DEP staff regarding locations where tapering vs. taller overhead pole structures would be preferred, CMP witness Mark Goodwin was either unaware of this consultation or ignored it. He included a table that indicated that out of the nine areas where the Nature Conservancy had suggested tapering or taller pole structures to minimize project impacts, Areas 1, 2, and 3 did not contain brook trout habitat. [129] Additionally, the table did not mention brook trout habitat as a resource of concern in Areas 6, 7, 8, and 9.[130]

- Area 1 includes Number 1 Brook, identified by Maine DIFW as brook trout habitat in the email referenced above.
- Area 2 contains the South Branch Moose River, identified by Maine DIFW as a brook trout stream in the email quoted above.
- Area 3 contains three unnamed perennial streams; ME DIFW email comments indicate that: "*Region E Fisheries indicates, "I'm quite certain that all the perennial streams in*

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127 CMP Johnston Rebuttal, p. 7 (emphasis added).

128 2019-01-24 MDIFW comments on waterbody crossing table1.pdf; 2019-01-24 MDIFW comments on waterbody crossing table 2.pdf. Both accessed at: https://www.maine.gov/dep/ftp/projects/necec/review-comments/2019-02-01%20MDIFW%20Comments/

129 CMP Goodwin Supp. Testimony, table on p. 5.n

130 *Id.*

Region E contain wild BKT. All those brooks in Beattie, Appleton, Johnson Mtn, and Bradstreet Twps are full of BKT.[131]

- Area 6 contains Parlin Brook and two other perennial streams; Parlin Brook (also known as Piel Brook, a tributary to Parlin Pond) is identified as brook trout habitat in ME DIFW's marked up Exhibit 7-7.
- Area 8 contains Tomhegan Stream and three perennial tributaries; Tomhegan Stream and those tributaries are identified as brook trout habitat in ME DIFW's marked up Exhibit 7-7.
- Area 9 contains Moxie Stream; Moxie Stream is identified as brook trout habitat in ME DIFW's marked up Exhibit 7-7.[132]

In short, information provided by Mr. Goodwin was incorrect for 6 of TNC's 9 areas.

On cross examination, CMP witness Johnston was asked whether Number One Brook contained brook trout habitat. She responded:

> Well, I'd have to refer to this table because I don't believe at the time when we updated our table I believe it was January 30 when we filed that we were provided the attached email, we were provided this spread -- hand marked-up spreadsheet and we updated our information based on the -- based on the mark-up of this spreadsheet.[133]

Asked whether CMP had incorporated information provided by MDIFW to update information on brook trout presence at water body crossings identified in Exhibit 7-7, Ms. Johnston stated "I don't believe that the information contained in that email was incorporated into the table that we reviewed at that time."[134] This directly contradicts her rebuttal testimony statement that "CMP incorporated the additional resources into the January 30, 2019 Compensation Plan and Exhibit 7-7 NECEC Waterbody Crossing Table."[135]

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131 1/22/2019 email from Bob Stratton (MIFW) to Jim Beyer (Department). Included in consultation record under "Review Comments."

132 Information regarding streams crossings in TNC's nine areas from CMP Witness Giumarro's Prefiled Supplemental Testimony, table on p.8. Information regarding brook trout presence from 2019-01-22 email from Bob Stratton (MDIFW) to Jim Beyer (Department) and 2019-01-24 MDIFW comments on waterbody crossing table1.pdf. Both accessed at: https://www.maine.gov/dep/ftp/projects/necec/review-comments/2019-02-01%20MDIFW%20Comments/

133 Tr. 5/9/19, p. 276.

134 *Id.*

135 CMP Johnston Rebuttal, p. 8.

In later testimony, both Mr. Goodwin and Ms. Johnston claim that CMP was not party to the correspondence that MDIFW sent to the Department. However, a link to these emails was provided to all parties to the proceeding by the Department's Mr. Jim Beyer in a February 4th email that included CMP's Gerry Mirabile and CMP's attorney Matt Manahan as recipients. In response to questions later in the hearing from Mr. Beyer, CMP witness Goodwin testified that:

> I guess a point of clarification, on the cold fisheries, whether they're currently known as a cold water fishery or known to be in the future, they're -- they -- I guess, let me rephrase that. All of the waterbodies that are currently known to be cold water fisheries will be provided the 100 foot riparian buffer on Segment 1. So if it comes to light that there are other cold water fisheries it would be applied to those as well.[136]

This statement begs the question of how CMP could do that—and how permitting and reviewing agencies could monitor CMP's performance—without clear information in the record about which streams contain brook trout and will receive such buffers. The simple answer is that they can't. It is not clear whether "all of the waterbodies that are currently known to be coldwater fisheries" refers to those that have been identified by MDIFW, or only those where MDIFW's input has been incorporated into CMP's version of Exhibit 7-7.

iii. CMP's proposed riparian buffers are inadequate to protect brook trout habitat.

Chapter 375, Section 9, of the Department's rules "recognizes the importance of natural buffer strips in protecting water quality and wildlife habitat." Because the NECEC corridor will require clearing of a 150 foot right of way, and because CMP's proposed buffers will not provide mature trees or closed canopy, brook trout habitat in every stream crossed—all of which, according to MDIFW contain brook trout—will be impacted. Loss of shade, woody debris inputs, and overhead cover are the primary impacts. The buffers proposed by CMP fall far short

[136] *Id.* at p. 309-310.

of MDIFW's suggested "Forest Management Recommendations for Brook Trout," which states that

> Stream habitat suitability is maintained by the presence of intact, mature wooded riparian corridors that conserve forest soils, provide shade to reduce stream warming, protect stream water quality, provide cover for fish, and provide a source of woody debris and leaf litter from mature trees that maintain in-stream habitat for fish and the aquatic insects they feed upon.

That document recommends:

> The MDIFW also recommends limiting the harvest of trees and alteration of other vegetation within 100 feet of streams and their associated fringe and floodplain wetlands to maintain an intact and stable mature stand of trees, characterized by heavy crown closure (at least 60 – 70%) and resistance to wind-throw. In some situations wider buffers should be considered where severe site conditions (e.g., steep slope, vulnerable soils, poor drainage, etc) increase risk to soil and stand stability. Any harvest within the riparian management zone should be selective with a goal of maintaining relatively uniform crown closure.[137]

Given the number of streams impacted—227 brook trout streams in Section One alone—with a minimum of 150 feet of impact on each stream, it is likely that CMP's corridor would convert more than 6 miles of streams from forested to unforested.[138] Other impacts such as lack of woody debris and organic inputs from mature trees; warming due to increased insolation; and loss of overhead cover from predators, will affect brook trout populations above and below the areas directly impacted.[139] Short of the Department placing additional terms and conditions on CMP's permit to mandate full canopy stream buffers, CMP's current failure to provide adequate buffers will unreasonably impact brook trout habitat.

iv. The NECEC will cross a number of streams identified as priorities for conservation and provides no special provisions to protect brook trout habitat at those sites.

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[137] Group 4 Reardon Rebuttal Exhibit 20-JR-Rebuttal. ME DIFW Publication: "Forest Management Recommendations for Brook Trout."

[138] Stream numbers from Exhibit 7-7: Waterbody Crossing Table, ME DIFW Mark-Up, provided to the Department via email: 2019-01-24 MDIFW comments on waterbody crossing table1.pdf; 2019-01-24

[139] Group 4 Reardon Direct, p. 18-21; Group 4 Reardon Rebuttal, p. 1-6.

The NECEC will cross Cold Stream and its tributaries Mountain Brook and Tomhegan Stream, as well as multiple unnamed and intermittent tributaries. For example, the Cold Stream watershed was been identified by the MDIFW, Maine Bureau of Public Lands, Trout Unlimited, and other partners as a high priority for riparian conservation to maintain intact buffers for brook trout habitat protection, and more than $7 million in state and federal funds were used to purchase the entire length of Cold Stream with the one exception of the NECEC crossing site.[140] This crossing site, as well as the crossing of Tomhegan Stream, a major tributary, are both crossings with extensive impacts not only on the mainstem of Cold Stream and Tomhegan Stream, but also on associated tributaries, multiple channels and wetlands.[141] The Applicant failed to avoid these resources in route planning (see additional discussion below), and also failed to provide any measures to reduce the impact at these crossings. Significantly, such measures, in particular taller poles to maintain intact riparian canopy over aquatic habitat, have been adopted to protect other aquatic resources and are clearly feasible.[142] The Applicant simply failed to properly identify brook trout, and where brook trout presence has been acknowledged, failed to take any measures beyond very minimal buffers to provide additional protection to exemplary brook trout streams.

The Applicant clearly failed to meet the burden of proof to demonstrate that there will not be an adverse impact on the natural environment due to unavoidable impacts to brook trout habitat from the project as proposed. The Applicant's understanding of the location of brook trout habitat in the streams crossed the NECEC is at best incomplete, and contrary to the applicant's repeated assertions that it incorporated information on brook trout presence provided by the MDIFW, has ignored or lost track of or disregarded extensive comments provided in

140 Group 4 Reardon Direct, p. 4.
141 *Id.* at 11-12, Group 4 Exhibit 3-JR.
142 *Id.* at 13-14, Group 4 Exhibit 4-JR.

February. The Applicant's proposed buffers are inadequate, and the Applicant failed to provide any additional protection to even the most impacted and most valuable brook trout streams, including Cold Stream, where state and federal partners have invested millions of dollars to protect the Cold Stream Forest specifically for its value as brook trout habitat. Impacts to brook trout habitat will occur over a wide area acknowledged as some the most intact habitat for brook trout in its native range. The impacts of the corridor will be permanent and irreversible, and cumulatively amount to clearcutting more than 6 miles of brook trout streams on both banks.

C. CMP failed to demonstrate that the 53.5 miles of new corridor (Section 1) will not have an adverse impact on the natural environment through habitat fragmentation.

The Applicant failed to meet its burden of proof to demonstrate that the 53.5 miles of new corridor (Section 1) will not have an adverse impact on the natural environment through habitat fragmentation. The proposed new corridor would be one of the largest permanent fragmenting features bisecting a nationally significant forest region and would have an adverse effect on wildlife habitat, wildlife life cycles and travel corridors. However, the Applicant's assessment of these impacts, set forth in Application Section 7.4.1 and the pre-filed direct testimonies of Gerry Mirabile and Mark Goodwin, is cursory, overly general and lacking in specific analyses of the project's impacts. In particular, the application suffers from the following specific flaws.

1. CMP failed to recognize the significance of the Western Maine Mountains region.

The Western Maine Mountains is the heart of a globally significant forest region that is notable for its relatively natural forest composition, lack of permanent development, and high level of ecological connectivity. The values of this region are set forth in the pre-filed direct testimony of Group 4 witness Dr. David Publicover, Group 1 witness Janet McMahon, and Group 6 witnesses Rob Wood, Andy Cutko and Bryan Emerson. Nowhere in the application

does the Applicant recognize or discuss the value of this region. In contrast, the Applicant consistently minimizes the value of the region as merely heavily harvested commercial forest (e.g. "*this area of the state is already intensively managed (i.e., periodically clearcut) forested land*"[143]; "*…53.5 miles of new ROW which, as discussed previously, is located in an intensively managed timber production area…*[144]). However, the fact that commercial timber harvesting as practiced in this region is consistent with the recognized high value of the region was addressed during the cross-examination of Dr. Malcolm Hunter.[145]

2. CMP inappropriately conflates forestry impacts with corridor impacts.

The Applicant consistently presents the project's impacts as no different than the on-going pattern of timber harvesting in the region, for example:

> In general, given the existing landscape characteristics of the overall NECEC Project area, construction and maintenance of the transmission line corridors will result in habitat conversion that is already common to the area, i.e. forested to scrub-shrub. It is anticipated that local wildlife populations will adapt and respond to any additional alterations much as they already do to uses within the vicinity of the transmission line corridor.[146]

However, the record contains extensive evidence contradicting this mischaracterization of timber harvest impacts being similar to the expected impacts of the corridor and documenting multiple ways in which the project's impacts would differ from those of timber harvesting:

- As opposed to the temporary and shifting pattern of timber harvesting, the corridor would be an essentially permanent feature on the landscape.[147]
- As opposed to the spatially compact configuration of timber harvest areas, the corridor would be an extensive linear feature.[148]

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143 Application Chapter 7, Section 7.4.1.1.1, p. 7-24.
144 Application Chapter 7, Section 7.4.1.2, p. 7-25.
145 Tr. 4/5/19, p. 80 line 19 through p. 82 line 9.
146 Application Chapter 7, Section 7.4.1.1.1, p. 7-24.
147 Group 4 Publicover Direct, p. 15; Tr. 4/5/19, p. 61 line 3.
148 Group 4 Publicover Direct, p. 15; 4/5/19, p. 61 line 7-9.

- The corridor would create permanent scrub-shrub habitat devoid of any trees. In contrast, only 6-7% of harvested acreage in the state consists of clearcuts.[149] In addition, many areas meeting the regulatory definition of a clearcut retain some level of overstory trees.[150] The great majority of harvesting since 2000 consists of various forms of partial harvesting.[151]

In contrast to the Applicant's characterization of the project region as intensively managed forest, Dr. Hunter stated, "[i]t's important to note that the fragmentation effects of the forest management in this region are quite light handed compared to some other forests like the industrial plantations of the southeastern United States or even parts of New Brunswick."[152] When asked during cross-examination whether he agreed with the Applicant's contention that the fragmenting effects of the new corridor were no different than those of timber harvesting, Dr. Hunter clearly answered "No".[153]

3. CMP failed to adequately consider the project's impacts on mature and interior forest habitat.

The Applicant goes to great lengths to emphasize the habitat benefits provided by the creation of early-successional habitat in the new corridor.[154] However, the significance of this habitat benefit is minimized by the Applicant's own admission that this habitat is "already common to the area."[155] When asked whether he believed that the permanent maintenance of early-successional habitat in the corridor would result in an overall improvement to habitat quality in the region, Dr. Hunter answered "No."[156]

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149 Group 4 Publicover Direct, p. 15; Tr. 4/1/19 at p. 173 lines 10-15.

150 Tr. 4/5/19, p. 66 line 1 through p. 67 line 1.

151 CMP Goodwin Sup. Testimony Exhibit CMP-3.2-A; Group 6 Simons-Legard Sup. Testimony (marten habitat maps submitted at request of the Department).

152 Tr. 4/5/19, p. 61 lines 13-18.

153 *Id.* at p. 84 lines 14-20.

154 *See, e.g.*, Application Chapter 7, Section 7.4.1.1.1.

155 Application Chapter 7, Section 7.4.1.1.1 at p. 7-24. We note that the statement in the Application that shrub-shrub habitat is "common" in the project region is directly contradicted by CMP winess Gerry Mirabile's pre-filed testimony which stated on page 13 that there is a "scarcity" of such habitat in the region. Upon cross-examination Mr. Mirabile could not point to any evidence as to the scarcity of this habitat. (Mirabile cross-examination, Transcript 4/1/19, p 162 lines 3-25).

156 Tr. 4/5/19, p. 84 lines 3-7.

While the application contains a specific description of early-successional habitat,[157] there is no corresponding description of mature forest habitat or the species associated with it and the application contains essentially no information on or analysis of the project's impacts on mature or interior forest habitat. This mature or interior forest habitat is considered far more limiting in northern Maine than early-successional habitat.[158] Much of the discussion on this topic during the hearings focused on American (or pine) marten, which is considered an "umbrella" species for mature forest habitat and which has undergone population declines due to the cumulative effects of forest management.[159]

While CMP makes cursory note of some potential impacts to mature forest habitat as a result of this project, the full scope of the impact is ignored and downplayed. For example, the application notes that "[h]abitat conversion is most pronounced in those areas where the proposed transmission line corridor traverses mature forest stands"[160] and that "[s]ome bird species within the NECEC Project area that may be sensitive to forest fragmentation are the long distance, neotropical migrants that rely on forest interior habitats"[161] the full scope and severity of impacts are not acknowledged. These impacts are summarily dismissed with general statements such as "plentiful suitable habitat is available near the NECEC Project areas for these interior forest species"[162] and "[m]ost of the terrestrial mammal species that are likely to be found near the proposed transmission line corridors are likewise not dependent on mature forest."[163] No evidence is presented to support these conclusions. There is no discussion of

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157 Application Chapter 7, Section 7.3.1.2.

158 Group 4 Publicover Direct, p. 11.

159 Group 6 Simons-Legard Sup. Testimony, p. 2.

160 Application Chapter 7, Section 7.4.1.1.1 at p. 7-24.

161 Application Chapter 7, Section 7.4.1.2 at p. 7-25.

162 In another example of the Applicant's contradictory statements, the contention that interior forest habitat is "plentiful" is inconsistent with their contention that this landscape is already so heavily fragmented that the additional impact of the project is inconsequential.

163 Both from Application Chapter 7, Section 7.4.1.2 at p. 7-25.

which species might be adversely affected and no assessment of the extent to which the project would impact mature and interior forest habitats. The word "marten" appears nowhere in the application, and neither of CMP's witnesses on the issue of fragmentation (Mirabile and Goodwin) could define the term "umbrella species," raising questions about their understanding of this issue and their qualifications to testify on these impacts.[164]

Finally, CMP witness Gino Giumarro states that intermediate-age and mature forest pine marten habitat is "at best, marginally and intermittently present along the 150-foot wide Segment 1 right of way."[165] However, his conclusion is contradicted by Dr. Simons-Legard and her marten habitat suitability maps submitted at the request of the Department, which indicate that High and Moderate suitability marten habitat is present throughout the region of Segment 1.[166]

However, the impacts of the project will affect many more species than just marten. Mature and interior forest habitat is utilized by many breeding birds, including those considered Species of Greatest Conservation Need in Maine.[167] The impacts include both the direct loss of this habitat (both as it currently exists and as it may develop through the regrowth of harvested areas), as well as the additional loss through edge effects (see below).

4. CMP Failed to adequately assess the impact of edge effects.

One of the Applicant's own references states that "[f]ragmentation produced by ROWs is likely to have a negative impact on the greatest number of species as a result of edge effects."[168] However, as with other impacts of fragmentation, the application and the Applicant's testimony

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164 Tr. 4/1/19, p. 159 lines 4-16.
165 CMP Giumarro Sup. Testimony, p. 2.
166 Tr. 5/9/19, p. 117 line 25 through p. 122 line 12.
167 Group 6 Hunter Direct, p. 5; Tr. 5/9/19, p. 121 line 16 to p. 122 line 3; Group 1 McMahon Direct, p. 12.
168 Willyard, C.J., S.M. Tikalsky and P.A. Mullins. 2004. Ecological Effects of Fragmentation Related to Transmission Line Rights-of-Way: A Review of the State of the Science. Unpublished report to: State of Wisconsin Department of Administration Division of Energy. Quoted material at p. 14.

is marked by lack of analysis and overly optimistic conclusions unsupported by evidence and contradicted by other expert witness testimony.

Edge effects are discussed in Application Section 7.4.1.3. The discussion of the negative impacts of edge effects consists of a single paragraph of just six and one-half lines. There is no discussion or assessment of what species within this landscape may be adversely impacted, how much area may be affected by edge effects, or how much the new permanent edge habitat created by the corridor compares to the amount of existing edge habitat. This brief section concludes that "this transmission line segment [i.e. Segment 1] is therefore not likely to significantly alter or increase the existing edge effect" since it is "located in an intensively managed area for timber production."[169] However, as noted previously, the new corridor differs in many ways from the existing pattern of timber harvesting, which dominantly consists of partial harvesting that does not create the type of distinct edge created by the corridor.

CMP witness Mirabile states, "[i]n many cases, edge effect results in greater species diversity, and greater population density of certain species, than that observed within individual habitats."[170] This statement implies that edge actually creates a habitat benefit within forested landscape. While true, it is misleading in that ignores the fact that edge habitats favors common generalist species at the expense of less common forest interior species.[171]

In contrast to the Applicant's cursory discussion and unsupported conclusions, the negative impacts of edge effects are discussed extensively by multiple expert witnesses.[172] These witnesses establish that edge effects can extend for many hundreds of meters into the adjacent

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169 Application Section 7.4.1.3.
170 CMP Mirabile Direct, p. 12.
171 Group 4 Publicover Rebuttal, p. 5; Group 6 Hunter Direct, p. 5.
172 Group 4 Publicover Direct, p. 10-12; Group 4 Publicover Rebuttal, p.4-5; Group 1 McMahon Direct, p. 11; Group 6 Hunter Direct, p. 4-6.

forest and will impact an area significantly larger than the actual footprint of the cleared corridor.[173]

5. CMP failed to demonstrate that habitat connectivity will be maintained.

The high level of ecological connectivity is one of the most significant characteristics of the Western Maine Mountains region, and the new corridor would be one of the most significant features impeding this connectivity due to its width and its extent across the entire region. Despite the applicant's contention, it is significantly different than timber harvesting, as clearcuts are required to maintain forested buffers around them that provide travel corridors for species that avoid non-forested areas. While the area contains timber harvesting roads, most are significantly narrower than the proposed corridor and present less of an impediment to species movement.[174]

The issue of habitat connectivity was also a major concern during the public hearing, with a particular focus on mature forest species (most notably marten and amphibians).[175] Marten generally avoid areas lacking forest cover at least 30-40 feet high.[176] Some species of amphibians also avoid non-forested areas.[177] While the corridor may not present an absolute barrier it will significantly impede the ability of these species to move throughout the landscape.[178]

The Applicant recognizes the potential of transmission line corridors to affect species movement, writing "[t]ransmission line corridors present potential direct impacts, as they may affect species movement, dispersal, density, nesting success and/or survival."[179] However, this

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173 *Id.*
174 Group 6 Hunter Direct, p. 3; Tr. 4/5/19, p. 61 lines 5-7; Tr. 4/5/19, p. 81 lines 19 through p. 82 lines 9.
175 See generally, Tr. 4/2/19 and Tr. 4/4/19.
176 Group 4 Publicover Direct, p. 13; Group 6 Simons-Legard Sup. Testimony, p. 1.
177 Group 4 Publicover Direct, p. 13; Tr. 4/5/19, p. 62 lines 7-11.
178 Tr. 4/5/19, p. 62 lines 7-11.
179 Application Chapter 7, Section 7.4, p. 7-23.

section contains no discussion or analysis of these impacts. The Applicant contends that habitat connectivity will be maintained by the maintenance of shrub-scrub habitat throughout the corridor and the proposed riparian buffers.[180] Regardless, CMP's conclusions are not supported by the record:

- As noted above, the shrub-scrub habitat in the corridor is inadequate to allow for travel by mature forest-dependent species such as marten and amphibians.
- Taller vegetation will be maintained in only three areas – the Kennebec DWA, Mountain Brook and Gold Brook. These are inadequate to provide connectivity along a 53-mile-long corridor.
- The riparian buffers will be maintained in an early-successional condition, with the only difference from the corridor being the maintenance of somewhat taller shrub vegetation. All non-capable species (i.e. trees) will still be removed.[181] This type of vegetation will not facilitate movement of mature forest species.[182]
- Even if taller vegetation is maintained, the 200' width of the riparian corridors is insufficient to maintain interior forest habitat.[183]

In summary, the Applicant clearly failed to meet the burden of proof to demonstrate that there will not be an adverse impact on the natural environment due to the habitat fragmentation impacts of the new Segment 1 corridor as required under the Site Law. The Applicant's assessment of the impacts of habitat fragmentation (including impacts to mature and interior forest habitat, the impacts of edge effects, and the impact on habitat connectivity) are rudimentary or in some cases absent, and its conclusions are unsupported by evidence or

180 *See, e.g.*, CMP witness Goodwin Direct at p. 17.
181 Tr. 4/1/19, p. 183 lines 22 through p. 186 lines 14.
182 Tr. 5/9/19, p. 121 lines 8-18.
183 *Id.* at p. 121 lines 4-8.

analysis. The Applicant consistently emphasizes the minimal or non-existent habitat benefits of constructing the new corridor while minimizing or ignoring adverse impacts. The Applicant fails to recognize the value of the Western Maine Mountains region through which the new corridor would pass and mischaracterizes the nature and intensity of timber harvesting in the region. The Applicant inappropriately equates the impacts of the new corridor with those of timber harvesting. The minimization and mitigation measures for these impacts are inadequate and ineffective. In the end the Applicant's argument boils down to, "This region is already heavily impacted by timber harvesting and the effects of the new corridor are the same and will not create any additional impact." The Applicant's assessment and conclusions have been contradicted by the detailed testimony of multiple expert witnesses.

D. The proposed project will unreasonably harm high and moderate value deer wintering areas.

Deer wintering areas are given specific protection under Maine law. CMP is required to demonstrate that its proposed project "will not unreasonably harm any significant wildlife habitat, freshwater plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life."[184] The Site Law requires that a project proponent demonstrate that the development will not adversely affect natural resources.[185] Any "activity that would degrade [a] significant wildlife habitat, disturb the subject wildlife, or affect the continues use of the significant wildlife habitat by the subject wildlife, either during or as a result of the activity, will be considered to have an unreasonable impact if there is a practicable alternative to the project that would be less damaging to the environment.[186] If avoidance is not possible, impacts must be minimized but no

[184] 38 M.R.S. § 480-D(3);
[185] 38 M.R.S. § 484(3).
[186] 06-096, Ch.335, § 3(A).

activity can be permitted that would cause unreasonable disturbance to high and moderate value deer wintering areas.[187]

The proposed project, including the new section and sections that will be widened along the existing corridor, will have significant adverse impacts on deer wintering areas along the proposed corridor route. In his prefiled testimony, Mr. Ron Joseph, a leading deer biologist formerly with MDIFW, testified that deer wintering areas, large areas of intact forest with mature evergreens, are critical to deer survival in Maine:

> [T]he loss of deer wintering areas and the fragmentation and loss of habitat connectivity between deer wintering areas and surrounding forestland are THE major limiting factors for deer populations in northern, western, and eastern Maine. In northern Somerset County, a few miles west of Parlin Pond, the proposed transmission line would cross the Spencer Road in an area so depleted of deer yards, radio-collared deer summering there spend their winters at a deer yard at Harlow Pond in Guilford—a distance of about 50 miles. It is a sad commentary on the state of deer yards when the best remaining ones in the Jackman-Moose River area are in backyards of urban and suburban settings. CMP's proposed project further contributes to deer yard degradation and fragmentation.
>
> Please bear in mind that the continued loss of our remaining deer yards has a significant economic impact on traditional Maine sporting lodges and rural communities that depend on income from deer hunters. Across western and northern Maine, sporting lodges are going out of business, in part because deer numbers are so low, hunters are turning away from Maine and traveling to NY, VT, PA, and elsewhere to hunt deer. For example, Claybrook Mountain Lodge is located in Highland Plantation in western Maine. It opened in the mid-1970s. For 20 years, the owners—Pat and Greg Drummond—earned the bulk of their yearly income from deer hunters. By the mid-1990s, as the deer population plummeted following a series of hard winters combined with the loss of deer yards, deer hunters stopped coming to the lodge. To survive economically, the couple reinvented themselves by transitioning from a hunting lodge to a cross-country skiing, moose watching, and bird watching lodge. Cobb's Camps on Pierce Pond—one of Maine's most renowned sporting lodges—located across the river from The Forks is no longer open in November due to a lack of deer following a significant loss of deer yards.[188]

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187 06-096, Ch.335, § 3(B-C); 06-096, Ch. 375, § 15(B)(3)(a).

188 Group 4 Joseph, Direct, p.2-3.

Unfortunately, this project would bisect one of the last remaining areas of high quality deer wintering habitat in western Maine, the Upper Kennebec Deer Wintering Area:

> CMP's impacts to the deer yard near The Forks (called the Upper Kennebec Deer Wintering Area) would be especially significant because it would occur in a region of Maine already suffering from low deer densities due to difficult winters and dearth of deer yards. In fact, this deer yard is the only remaining substantial deer yard in the entire length of CMP's proposed new stretch of corridor. That makes it incredibly important to the low numbers of deer still hanging on in the region and to the remaining guides and sporting camps that count on these deer as an economic resource. The deer yard is also critically important to support recreational deer hunting for the residents of the region.[189]

Impacts to deer wintering areas would not be limited to only the new sections. Significant negative impacts would also occur where the existing line would be expanded to accommodate the NECEC:

> CMP downplays the deer yard impacts in the sections of its proposed corridor that it plans to widen by claiming that "corridor construction will only widen existing, non-forested transmission line corridors by an average of approximately 75 feet."[190] In its compensation plan, CMP then makes a giant leap by concluding that construction "will not significantly affect the habitat functional attributes of the DWAs intersected by the Project."[191] And that after construction, deer yards "will function similarly to the way they currently do."[192] This claim is preposterous. We know from University of Maine research[193] and my own deer yard work that the loss of deer yards and the loss of connectivity between deer yards and surrounding habitat are detrimental to deer survival. Wide, non-forested strips in deer yards are barriers to deer and the additional width of 75 feet would make them an even greater barrier. Deer can't walk or bound through deep snows without burning precious fat reserves needed to survive until snow depths decrease in April.[194]

In light of these significant impacts, mitigation and compensation are necessary. Unfortunately, CMP's proposed mitigation and compensation measures are inadequate.

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189 *Id.* at p. 4

190 CMP, NECEC Compensation Plan dated Jan. 30, 2019, p. 23.

191 *Id.*

192 *Id*.

193 Erin Simons-Legaard et al. Ineffectiveness of local zoning to reduce regional loss and fragmentation of wintering habitat for white-tailed deer. *Forest Ecology and Manage*ment: 427(78-85). November 2018.

194 Group 4 Joseph Direct at p. 6.

Regarding CMP's proposal for "deer corridors" in the transmission right-of-way through the Upper Kennebec Deer Wintering Area, Mr. Joseph stated that:

> The most significant deer yard along the transmission corridor will essentially be split in half during winter. Deep snows beneath the powerlines will function as a wall, prohibiting deer from crossing between the newly bisected DWA. CMP's proposed "deer corridors," consisting of trees that in eight out 10 "deer corridors" will not be allowed to grow to full maturity, will not adequately remedy this situation. The new transmission corridor through the DWA will largely prevent deer from moving through it in winter. Deer require intact wintering areas to provide shelter, food, and escape routes from predators.[195]

Regarding the impacts to deer yards in other sections of NECEC where CMP proposes to widen existing rights-of-way that pass through deer yards, Mr. Joseph stated:

> In all 11 deer yards where CMP plans to clear trees, they are proposing to revegetate disturbed soils with a wildlife seed mix. CMP fails to recognize that its wildlife seed mix (which will create "food plots") will be buried in open areas beneath 3-4 feet of snow during long Maine winters and thus will provide no benefit to the deer. In summer, when CMP's seed mix would be available to deer, natural food is not a limiting factor.[196]

In conclusion, CMP's proposed corridor would bisect one of the last remaining high-quality deer wintering areas in western Maine. It proposed inadequate, experimental[197] "deer corridors" that would not contain fully mature trees that deer need to survive in deep snow. These experimental corridors would not allow deer to move across the cleared right-of-way between parts of the deer wintering area as they could in the presence of intact mature forest. CMP's conclusion that widening existing rights-of-way through deer wintering areas will have no impact on deer is also false. Impacts to deer yards are cumulative. Furthermore, CMP's proposed use of a "wildlife seed mix" to revegetate the soils in the deer wintering areas where CMP proposes to widen existing rights-of-way would not benefit deer. These food plants would be buried under snow in the winter when deer are most stressed, and they would not provide a

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195 Id. at p. 1.
196 *Id.* at p. 6.
197 Tr. 4/4/2019, p. 48.

substitute for the shelter of mature trees. CMP failed to demonstrate that its proposals would protect deer wintering areas as required in Department rules.[198]

E. CMP failed to demonstrate that the proposed project will not result in unreasonable alteration of climate.

Chapter 375, Section 2, of the Department's rules states that "[t]he Department recognizes the potential of large-scale, heavy industrial facilities, such as power generating plants, to affect the climate in the vicinity of their location by causing changes in climatic characteristics such as rainfall, fog, and relative humidity patterns." Section 2(B) of this same chapter contains broad language stating that "the Department shall consider all relevant evidence" "[i]n determining whether the proposed development will cause an unreasonable alteration of climate."

While CMP's proposed high voltage, direct current transmission line will not have direct emissions, the proposed transmission line will have a dramatic impact on numerous power generating plants throughout the region with the potential for dramatic shifts in where and how much greenhouse gas is emitted. Furthermore, CMP has justified causing significant environmental, scenic, and social harm to Maine's North Woods by claiming that it's proposed project is necessary to achieve greenhouse gas emissions reductions.

> In Section 1.4 of CMP's Site Location of Development Application, CMP writes: The use of the NECEC for delivery of up to 8,500,000 MWh of Clean Energy Generation will provide many significant benefits to Maine and all of New England. In particular, the delivery of Quebec-sourced Clean Energy Generation is expected to reduce greenhouse gas emissions from fossil-fuel fired thermal generation in New England, enhance electric reliability (particularly during winter months when natural gas supply constraints have occurred in recent years), and reduce the wholesale cost of electricity for the benefit of retail customers across the region.

In this same section, CMP notes that "Clean Energy Generation" is defined by Massachusetts as "(i) firm service hydroelectric generation from hydroelectric generation alone; (ii) new Class I Renewable Portfolio Standard ("RPS") eligible resources that are firmed up with

[198] 06-096 Ch. 375, §§ 12 and 15.

firm service hydroelectric generation; or (iii) new Class I RPS eligible resources." CMP's full Site Law Application was incorporated by reference into CMP's NRPA Application.[199]

In its NRPA Application, CMP states that:

> The NECEC project is expected to reduce regional CO_2 (greenhouse gas) emissions by over one million metric tons per year in Massachusetts, which is a direct benefit to neighboring states, including Maine. This amount would help achieve the stated goals of the Regional Greenhouse Gas Initiative (RGGI) by reducing the total amount of CO_2 emissions from the power sector of the six New England states, and Delaware, Maryland, and New York. The NECEC's ability to deliver reliable, renewably-generated electricity from Québec will help alleviate the need to build new non-renewable generation plants, and may allow retirement of older, less efficient fossil fueled power plants.[200]

As CMP is alleging that this project is necessary *because* it will result in specific greenhouse gas emissions reductions, the Department should weigh how likely it is that these greenhouse gas emissions reductions will actually occur, whether there is a risk that this project could actually result in a greenhouse gas emissions increase or flat emissions, and whether the environmental, scenic, and social harms are justified. The evidence indicates that this project will not provide greenhouse gas emissions reductions and that therefore, the environmental, scenic, and social harms are not justified.

Fundamentally, this issue is simple. There are two primary ways to reduce the emissions of greenhouse gasses from the electricity generation sector: 1) use less electricity through energy efficiency and conservation; and 2) construct new renewable energy generation facilities that displace generation from fossil fuel generation facilities.[201]

NECEC would do neither of these things.

As documented in our comments, Hydro-Quebec will build no additional renewable energy generating facilities to supply power for NECEC. Hydro-Quebec's own proposal to

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199 NECEC NRPA Application at p. 1-1.
200 NRPA Application at 2-2.
201 Group 4 Comments, p. 13.

Massachusetts decision-makers identified their lack of intent to build any new additional renewable energy generating facilities as a benefit to the project.

> This Proposal offers a viable, low cost Clean Energy Generation delivery project with limited risk, because (i) there is no construction risk related to the generation resources which are already in service… ***Because no new hydroelectric generation projects will be required, there will be no incremental environmental impacts from hydroelectric generation as a result of this Proposal.***[202]

New Hampshire's Site Evaluation Committee, after years of study of a similar project called "Northern Pass," determined that it would provide no greenhouse gas benefits unless Hydro-Quebec constructed new generating facilities, which Hydro-Quebec claims it would not do as shown above. Specifically, New Hampshire's Site Evaluation Committee stated:

> As to the savings associated with a decrease in carbon emissions, we agree with Counsel for the Public that no actual greenhouse gas emission reductions would be realized if no new source of hydropower is introduced and the power delivered by the Project to New England is simply diverted from Ontario or New York.[203]

The Massachusetts Attorney General's Office (AGO) also questioned the carbon benefits of this specific project, the NECEC, in proceedings before the Department of Public Utilities. The AGO's witness, Mr. Dean M. Murphy of the Brattle Group, testified that Hydro-Quebec could, under the terms on the proposed contracts, meet its contractual obligations to NECEC by simply shifting electricity away from existing customers, such as New York and New Brunswick.[204] As Mr. Murphy explains in his testimony, because Massachusetts would pay more for Hydro-Quebec's electricity under the proposed contracts for CMP's corridor, Hydro-Quebec has a substantial incentive to do this and could meet the requirements of these contracts:

> through resource shuffling—reassignment of a fixed amount of clean energy so as to increase the clean energy delivered to a particular destination without

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[202] *Id*. at p. 3 (citing HRE Section 83D Request for Proposal Application Form. Pp. 4, 56 (emphasis added).).

[203] *Id.* at p. 2 (citing New Hampshire Site Evaluation Committee. 2018. Decision and Order Denying Application for Certificate of Site and Facility. March 30. P. 161.).

[204] Group 4 Comment Attachment A. Direct Testimony of Dean W. Murphy (Brattle Group), Witness for the Massachusetts Attorney General. DPU 18-64 18-65 18-66.

> increasing the total amount of clean energy overall. For instance, with the new NECEC transmission link, if HQ [Hydro-Quebec] increased deliveries into New England by the contracts' 9.55 TWh relative to historical New England deliveries, this would achieve full incrementality as defined in the RFP. ***But if HQ accomplished this by reducing its exports to other neighboring regions rather than by increasing clean energy generation overall, then global GHG emissions would not necessarily be reduced. Diverting clean energy from other regions to New England would enable a reduction in fossil generation and emissions within New England, but the reduced deliveries to other regions may need to be replaced by additional fossil generation in those regions. This would effectively substitute fossil generation in other regions for fossil generation in New England, shifting emissions from one region to another, without causing a material decrease***.[205]

Although the Maine Public Utilities Commission found in its decision granting CMP a Certificate of Public Convenience and Necessity that NECEC would cause a reduction in carbon emissions "regionally," it did so without the benefit of any study of global greenhouse gas emissions impacts from the project and all greenhouse gas studies were limited to emissions impact within the New England energy market.[206] For example, the Commission's own study from London Economics International (LEI) asserted that NECEC would result in 3.6 million tons of greenhouse gas reductions in New England per year, but it admitted that it failed to look at the impacts of NECEC on jurisdictions outside of New England in its analysis stating that "[f]or this analysis, LEI did not monetize the social benefits of the CO2 emissions reduction, nor did it analyze the emissions changes in other jurisdictions as a result of NECEC."[207] Concluding NECEC will have carbon benefits is meaningless without looking at corresponding emissions increases when Hydro-Quebec's existing customers must make up for the electricity they would lose if NECEC shifts power to Massachusetts.

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[205] *Id.* at p. 15 of 27.

[206] Order Granting Certificate of Public Convenience and Necessity and Approving Stipulation, PUC Docket No. 2017-232, p. 71 (May 3, 2019).

[207] London Economics International. 2018. Independent Analysis of Electricity Market and Macroeconomic Benefits of the New England Clean Energy Connect Project, p. 12 (May 21, 2018).

CMP claims that Hydro-Quebec's "spillage" represents an untapped resource that NECEC could use. However, Hydro-Quebec has provided no evidence that spillage is due to lack of transmission capacity[208] and a former Hydro-Quebec employee testified that "there's no way, considering the future hydrological conditions in Quebec, to predict how much water would be spilled each and every year."[209]

Similarly, CMP's claims that future Hydro-Quebec upgrades would provide "additional" power for NECEC are unsubstantiated. The proposed upgrades are exactly that: proposed. Neither CMP nor Hydro-Quebec has provided evidence or guarantees that the upgrades would occur.[210]

CMP's claims of greenhouse gas reductions and concurrent benefits are unsubstantiated, misleading, or false. If the Department receives an application for a project based on unsubstantiated, misleading or false information, it must deny the application. Section 2(B) of Chapter 375 gives the Department broad authority to consider all relevant evidence regarding climate for a Site Law permit. Allowing a large project such as NECEC, justified on the basis of false greenhouse gas reduction claims, but with verified and severe environmental, scenic, and social impacts would be the wrong outcome. NECEC would have an unreasonable undue impact on the climate and the Department should deny CMP's permit application.

VI. CMP failed to adequately consider alternatives to the proposed project. (*Relevant to DEP and LUPC*)

The alternatives analysis is a critical component of any NRPA or Site Law permit. Under NRPA, an applicant must demonstrate that a proposed project "will not unreasonably interfere with existing scenic, aesthetic, recreational or navigational uses" and "will not unreasonably

[208] Group 4 Comment at 10.

[209] Group 4 Comment at 9 (citing PUC Docket No. 2017-232, Dec. 19, 2018, PUC Technical Conference Transcript. p. 72-73.

[210] *Id.* at p. 12.

harm significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine or other aquatic life."[211]

Chapters 310 (Wetlands), 315 (Scenic and Aesthetic), and 335 (Wildlife) all contain explicit requirements that an applicant conduct an alternatives analysis to determine whether a less harmful alternative exists. Under no circumstances can an application be approved where this analysis is not done or where the project would cause unreasonable harm to a protected resource, even where it is determined that no practicable alternative exists. Chapter 310 states that an

> activity will be considered to result in an unreasonable impact if the activity will cause a loss in wetland area, functions, or values, and there is a practicable alternative to the activity that would be less damaging to the environment. The applicant shall provide an analysis of alternatives (see Section 9(A)) in order to demonstrate that a practicable alternative does not exist.[212]

However "[e]ven if a project has no practicable alternative and the applicant has minimized the proposed alteration as much as possible, the application will be denied if the activity will have an unreasonable impact on the wetland."[213] The "Alternatives Analysis" required in Section 9 of this chapter is explained as follows:

> A report that analyzes whether a less environmentally damaging practicable alternative to the proposed alteration, which meets the project purpose, exists. Determining whether a practicable alternative exists includes:
> (1) Utilizing, managing or expanding one or more other sites that would avoid the wetland impact;
> (2) Reducing the size, scope, configuration or density of the project as proposed, thereby avoiding or reducing the wetland impact;
> (3) Developing alternative project designs, such as cluster development, that avoid or lessen the wetland impact; and

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211 38 M.R.S. § 480-D.
212 06-096, Ch. 310, § 5.
213 06-096, Ch. 310, § 5(D).

> (4) Demonstrating the need, whether public or private, for the proposed alteration.[214]

Chapter 315 of the Department's rules addressing scenic and aesthetic uses requires the Department to considers any "practicable alternatives to the proposed activity that will have less visual impact, and cumulative effects of frequent minor alterations on the scenic resource" and states that

> [a]n application may be denied if the activity will have an unreasonable impact on the visual quality of a protected natural resources as viewed from a scenic resource even if the activity has no practicable alternative and the applicant has minimized the proposed alteration and its impacts as much as possible through mitigation. An "unreasonable impact" means that the standards of the Natural Resources Protection Act, 38 M.R.S.A. § 480-D, will not be met.[215]

Chapter 335, the Department's rule addressing significant wildlife habitats, also require an applicant to produce

> [a] narrative describing whether a practicable alternative to the alteration exists that would be less damaging to the environment and what alternatives were considered during project design. The narrative must address why the activity cannot avoid or lessen impacts to the significant wildlife habitat by utilizing, managing or expanding one or more other sites; reducing the size, scope, configuration or density of the proposed activity; developing alternative project designs; or by some other means.[216]

Like Chapters 310 and 315, the rules in Chapter 335 are clear that the existence of a practicable alternative is evidence that the project would have an unreasonable impact but "[e]ven if the activity has no practicable alternative, and the applicant has minimized the proposed alteration as much as possible, the application will be denied if the activity will have an unreasonable impact on protected natural resources or the subject wildlife."[217]

Similarly, the Site Law requires that a project fit "harmoniously into the existing natural environment" and "will not adversely affect existing uses, scenic character, air quality or other

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214 06-096, Ch. 310, § 9(A).
215 06-096, Ch. 315, § 9.
216 06-096, Ch. 335, § 5(A).
217 06-096, Ch. 335, § 3(A) and (C).

natural resources."[218] One measure of whether a project adversely affects certain resources protected under Site Law is whether or not there is a reasonable alternative that would have a lesser impact on these protected resources.

Here CMP did not conduct a reasonable and complete alternatives analysis, did not demonstrated that there is not a practicable alternative, and did not demonstrated that its proposed project would not have an unreasonable impact on protected natural resources.

A. CMP's alternatives analysis is insufficient because did not consider any alternatives that included burying the line.

The alternatives analysis in CMP's applications to the Commission and Department did not include a single alternative that utilized any type of undergrounding or line burial techniques.[219] Burial of even a small section of CMP's proposed route was not contemplated in any application material submitted by CMP until it amended its Site Law and NRPA applications to include an underground crossing at the Kennebec River.[220] CMP's NECEC Project Developer, Thorn Dickinson, testified that CMP, nor any consultants hired by CMP, did any formal analysis of undergrounding options until directed to do so by the Department in this proceeding.[221]

CMP claims that its failure to analyze even a single underground route option was due to the fact that undergrounding the 54 miles of new transmission corridor was "not reasonable or feasible because the costs of doing so would defeat the purpose of the Project."[222] However, these calculations were not done until long after CMP made the decision to select its preferred route.[223] The actual cost data provided by CMP, the itemized calculations of material and labor

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218 38 M.R.S. § 484(3) and

219 See generally, CMP Alternative Analysis.

220 CMP Amended Application, October 19, 2018.

221 Tr. 5/9/19, p. 410.

222 CMP Dickinson Rebuttal, p. 2-3.

223 In bolstering their argument that burying the new portion of the line would dramatically increase the cost of the project, CMP's consultants analyzed the cost of burying the line along the 54 new miles of transmission corridor

costs, were redacted under the label "Proprietary" throughout CMP's May 17, 2019, submission regarding "costs, dollars, or a numerical backup sheet for CMP Exhibits 11-B through 11-G in Mr. Bardwell's pre-filed rebuttal testimony" requested by Mr. Bergeron.[224] This level of redaction renders this information of limited use in evaluating whether or not these figures are reasonable, what they include, and whether the alternatives could have been practicable, had they ever truly been considered by CMP.

CMP also argues that undergrounding a transmission line is not technically or environmentally practicable, requiring significant surface disturbance and clearing.[225] While it goes without saying that trenching through and pouring cement into wetlands and streams is not an ideal outcome, the testimony attempts to imply that because CMP's preferred alternative route has a high number of important scenic areas, significant vernal pools, brook trout habitats, and other important wildlife areas that would be impacted by burial, that burial is always more environmentally harmful. This is simply not the case.

In fact, burial of HVDC lines is exceedingly common, even here in New England.[226] The fully permitted HVDC line from Hydro-Quebec through Vermont, TDI, would be 157 miles long with 97 miles in underwater cables and 57 in buried cables.[227] Similarly 60 miles of the Northern Pass Project through New Hampshire would have been buried.[228] CMP claims that Northern Pass and TDI should not be used as an example of an underground transmission project because they have not "demonstrated that is feasible" and have not secured long-term transmission service

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along CMP's preferred route through the woods but did not disclose the actual cost of only burying the line along existing roads until meeting the existing corridor. CMP Tribbet Rebuttal, p. 5; Tr. 5/9/19, p. 414-15.

224 May 17 submittal by CMP in response to DEP request, p. 4-28.

225 *See generally*, CMP Bardwell Rebuttal, p. 2-9.

226 Group 8 Russo Direct, p. 3-4, Exhibits CR-3 and CR-4.

227 *Id.* at 4.

228 *Id.*

agreements.[229] This is misleading. Northern Pass was initially selected as the winning bid in the Massachusetts 83D RFP process but was rejected after the New Hampshire Site Evaluation Committee denied the project a necessary permit siting concerns over siting concerns.[230]

In short, CMP failed to consider burying all or even short portions of its proposed 145 mile long HVDC transmission line. No alternatives analysis on any burial option was done by CMP.

B. CMP did not consider alternatives that would have minimized scenic, wildlife habitat destruction and wetland impacts by following existing roads and leaving full-height vegetation through taller poles.

CMP also failed to consider any routes that utilized existing disturbances, such as roads, or other techniques such using taller poles to allow for full-height vegetation to reduce scenic, wetland, or wildlife impacts.[231] Whether buried or not, a route that followed existing roads, whether along the Spencer Road or Route 201 to Jackman, could have dramatically reduced wildlife and fisheries impacts.[232] Unfortunately, CMP failed to consider any of these other alternatives and only provided a rough estimate of the cost to bury the line along existing roads for the entire length of the transmission line, rendering that analysis useless as a tool to contemplate whether burial along existing roads until the line could connect to an existing transmission corridor could have been a practicable alternative.[233]

CMP also failed to consider an alternative that utilized a combination of mitigation strategies. For example, CMP could have selectively designed a route that used some combination of HDD, trenching, co-location, and taller poles to mitigate some of the worst

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229 CMP Tribbet Rebuttal, p. 3.

230 Group 4 Comments, p. 2 (citing New Hampshire Site Evaluation Committee. 2018. Decision and Order Denying Application for Certificate of Site and Facility. March 30, 2018.)

231 See generally, CMP Alternative Analysis.

232 Tr. 5/9/19, p. 62, 66-67

233 CMP Tribbet Rebuttal, p. 5; Tr. 5/9/19, p. 414-15.

environmental and scenic impacts of the project. Unfortunately, CMP did not evaluate any alternatives that utilized any of these approaches, even though this would align with common practice. CMP's post hoc rationalization for its initial failure to do an adequate alternatives analysis cannot cure this fatal defect in CMP's application and the application should be denied.

VII. CMP's mitigation and compensation plans are inadequate. *(Relevant to DEP)*

A. CMP did not minimized or mitigated the alteration of habitat and disturbance of wildlife.

1. The Applicant failed to meet their burden of proof to that they have thoroughly minimized impacts to brook trout habitat by considering alternatives to the project as proposed and incorporating these alternatives where feasible.

The Applicant failed to meet its burden of proof to that they have thoroughly minimized impacts to brook trout habitat by considering alternatives to the project as proposed and incorporating these alternatives where feasible. At stream crossings, whether or not the crossings contain brook trout habitat, the only variable the Applicant considered altering to better protect brook trout habitat was buffer width—with 100-foot buffers proposed for brook trout streams, and 75-foot buffers proposed elsewhere.[234] Other alternatives, in particular taller pole structures to maintain intact tree canopy, were implemented to protect aquatic habitat for Roaring Brook Mayfly and Northern Spring Salamander at only two locations, Mountain Brook and Gold Brook.[235] Similar minor modifications to the route or to the size and location of structures could have been considered or implemented to avoid or reduce the impacts of lost riparian buffers on brook trout and salmon habitat but were not. These potential minimization techniques could have included utilizing taller poles to put the wires high enough that full forest canopy closure could be maintained; changing pole locations so that they were higher on slopes, to achieve the same

[234] Revised Compensation Plan dated 1-30-2019, p. 21-22; CMP Goodwin Direct, p. 19-21; CMP Johnston Rebuttal, p. 7.

[235] CMP Goodwin Direct, p. 11-13; Exhibit CMP-3F.

full canopy effect; and minor route changes to cross at locations where impacts would be smaller or to avoid stream crossings altogether.[236] CMP did not pursue any of these minimization techniques in its application.

In rebuttal testimony, Applicant's witnesses argued that these measures were not necessary for brook trout but elsewhere cited the benefits to intact buffers in these areas for brook trout. [237] The Applicant was therefore aware of the benefits of such measures for brook trout and simply chose not to implement them to reduce their impacts on brook trout habitat.

Applicant's witnesses also argued that allowing full canopy vegetation over brook streams would require extensive and expensive changes to pole structures, but under cross-examination acknowledged that vegetation of at least 35 feet could be maintained even with structure locations and pole heights largely as currently proposed.[238] The Department subsequently requested additional information on this topic from CMP at five specific stream crossings and CMP's response indicated that "[a]ll five crossing locations you suggested can accommodate 35' tall vegetation with limited impact to currently proposed structure heights."[239] A table attached to that filing indicates at three of the five sites 35 foot tall trees could be maintained with no changes to the currently proposed structures, and at the other two sites pole height increases of 10.5 and 5.5 feet to a single structure at each site would accommodate 35 foot tall trees.[240] With proposed structure locations and heights, vegetative management practices could be modified to allow for canopy closure at many stream crossings, and with minor changes to pole heights canopy could be maintained over most crossings. It is notable that the feasibility

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236 Group 4 Reardon Direct, p. 12-15; Group 4 Exhibit 4-JR.

237 CMP Johnston, Rebuttal, p. 6-7, *but see id.* at 10.

238 CMP Achorn, pre-filed Sup. Testimony, p. 1-3, *but see* Tr. 5/9/19, p. 449-458.

239 May 17, 2019 Letter from Gerry Mirabile (CMP) to James Beyer (Department) at page 2.

240 May 17, 2019, Letter from Gerry Mirabile (CMP) to James Beyer (Department), Attachment B: Pole and Tree Height Information.

of these minor modifications was only solicited after extensive cross-examination and a request for additional information by the Department. Nothing about the feasibility of these options was presented in the Applicant's proposal. When such measures were suggested by intervenors, Applicant's witnesses asserted that they were not feasible, too expensive, or of limited benefit.[241] These assertions are directly refuted by those witnesses' own testimony on cross-examination, and the feasibility of providing for taller vegetation at many stream crossings is clearly demonstrated in the Applicant's May 17, 2019, letter to the Department.

2. The Application's proposed mitigation for impacts to brook trout habitat is inadequate to offset lost function.

The proposed mitigation for impacts to brook trout habitat is inadequate to offset lost function. Other than streams buffers (the inadequacy of which is discussed extensively above), the Applicant's Final Compensation Plan contains three elements related to cold water fish habitat: (1) Conservation of three tracts of land that contain about 12 miles of streams,[242] (2) a $180,000 contribution to the Maine Endangered and Non-Game Wildlife Fund to protect coldwater fishery habitat,[243] and (3) a $200,000 Culvert Replacement Project.[244] Extensive information in the record indicates significant deficiencies in each of these.

(1) Preservation Tracts to Protect Brook Trout Habitat. The Applicant proposes three tracts to protect brook trout habitat as compensation—the Grand Falls Tract, Basin Tract, and Lower Enchanted Tract. These tracts do contain streams, but the attachments to the Compensation Plan provide no evidence that there are significant wild brook trout resources or habitat on these tracts. These tracts are described in detail and the wetland functions and values (including fish habitat) are assessed in Exhibit I-9, NECEC

241 Applicant's May 1, 2019 Sup. Testimony: Goodwin, p. 2-4, and 5; Achorn, p. 2-3; Giumarro, p. 11-13.
242 Revised Compensation Plan dated 1-30-2019, p. 22.
243 *Id.*
244 *Id.*, Exhibit I-11.

Potential Compensation Tracts, Natural Resource Survey Results, an attachment to the January 20 Final Compensation Plan. The only documentation of fisheries habitat values on these parcels is contained in a table for each property that summarizes functions and values of resources on each tract. For the Grand Falls Tract, the only information provided regarding fisheries is that the Dead River is popular for fishing and that landlocked salmon and brook trout are stocked in it.[245] The same is true for the Basin Tract[246] and the Lower Enchanted Tract,[247] with the exception that the lower Enchanted Tract also includes a short section of Enchanted Stream immediately upstream of its confluence with the Dead River. These waters—the Dead River and the lowermost part of Enchanted Stream—are unlike the streams impacted by the NECEC. The streams impacted by NECEC are mostly cold, high elevation, headwater streams that are highly productive for wild brook trout. The streams on the compensation parcels are mostly large mainstem rivers that warm significantly in the summer, have a recreational fishery at least partially supported by stocking, and have limited potential to produce wild brook trout.[248] A better strategy for coldwater habitat conservation would have been to protect headwater streams like those that are impacted. This would have provided far more brook trout habitat value, particularly if the compensation parcels include long stream reaches where both shorelines and important tributaries are protected.[249] For example, the Cold Stream Forest Project protected 15 miles of stream, commensurate with the Applicant's claim of protecting 12 miles of habitat on these parcels.

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245 *Id.*, Exhibit I-9, Table 5-1 on page 119.
246 *Id.*, Exhibit I-9, Table 7-1 on page 183.
247 *Id.*, Exhibit I-9, Table 6-1 on page 151.
248 Group 4 Reardon Direct, p. 21-22.
249 Id. at p.23.

(2) $180,000 contribution to the Maine Endangered and Non-Game Wildlife Fund to protect coldwater fishery habitat. While the concept of preservation of intact, unaltered, high value brook trout habitat to offset impacts of the NECEC's cleared corridor on brook trout could have merit, no details are provided about the target area for such projects, what their purpose would be, or how they would be selected. As discussed above with respect to the proposed Preservation Tracts, to be "in-kind" mitigation, such measures should be applied on cold headwater streams with robust brook trout populations. There is no indication that these funds would be used to protect this type of habitat. However, regardless of CMP's failure to adequately describe how these funds would be used, the bigger problem is that $180,000 is simply not a large enough fund to accomplish meaningful preservation or restoration. Applicant's witness Kenneth Freye testified that land in the region would likely sell at around $1,000/acre.[250] Given these prices, applying this sum towards the acquisition of fee title or conservation easements to protect additional preservation parcels could preserve at most ~200 acres, which might contain a mile or two of high value brook trout stream. If applied to improving fish passage through improving or removing culverts, it might fund just a handful of culvert projects.[251]

(3) $200,000 Culvert Replacement Project. Unlike preserving intact high value habitat, improving the function of degraded habitat does not directly replace cold water fisheries values impacted by the NECEC. Despite this shortcoming, such projects could have limited merit to improve function in intact streams fragmented by culverts. However, as

[250] Tr. 5/9/19, p. 383-384.

[251] Group 4 Reardon Direct, p. 24-25; Group 6 Direct, p. 8.

noted above, $200,000 is an insufficient amount of money to address more than a few culverts.[252]

Clearly, CMP failed to minimize and mitigate alteration of brook trout habitat as a result of its proposed project. Abundant evidence, including evidence provided by the Applicant's witnesses on cross-examination and in written responses to agency questions, demonstrates that with minimal changes, the project could have provided for intact 35-foot tall vegetation at several critical stream crossings with high value for brook trout. By extension, this same practice could have been applied broadly to many or even most stream crossings across the entire corridor, even without changing structure locations or pole heights. By failing to even consider these minimization and mitigation measure until pressed to do so by intervenors and representatives from the Department and Commission, CMP failed to comply with the requirements of NRPA and the Site Law and its permit should be denied.

The Department should require CMP to revisit its application to do the minimization and mitigation required by law. Only at that point, when we understand the truly unavoidable impacts, should we revisit the appropriate amount of meaningful mitigation to compensate for those unavoidable losses. As it stands currently, the Applicant's proposals in this regard are inadequate and misguided. As discussed elsewhere in detail, its proposed buffers do not maintain critical buffer functions like shading and large woody debris inputs (Section V.B.1.). Its compensation parcels protect streams that contain primarily stocked brook trout (Section VII), and the streams are compromised as brook trout habitat by warm water and competing species like smallmouth bass. The two mitigation funds proposed for coldwater fisheries habitat and a

[252] Group 4 Reardon Direct, p. 24-25; Group 6 Direct, p. 8.

culvert replacement program are insufficient to accomplish meaningful conservation that could offset the unavoidable impacts of the project (see above).

B. CMP's minimization, mitigation, and compensation are inadequate to off-set significant habitat function losses.

Segment 1 of the NECEC project would be one of the largest permanent fragmenting features in the undeveloped forests of Maine.[253] CMP's proposed approach to avoiding and minimizing the project's impacts, mitigating its effects, and compensating for unavoidable impacts is insufficient with regards to its impacts on wildlife habitat through habitat fragmentation. CMP's attempts to minimize project impacts are insufficient; mitigation measures are too limited and ineffective; and proposed compensation is woefully inadequate compared to the magnitude of the impact of the project on a globally significant forest region.

1. CMP's attempts to minimize impacts to wildlife habitats are inadequate.

CMP's efforts at minimization of impacts to wildlife habitat as a result of habitat conversion and fragmentation is described in its application as follows:

> The NECEC has been located (routed) and designed to minimize the creation of new transmission line corridors by constructing approximately 73 percent of the Project within existing corridors. Approximately 27 percent of the Project will require new clearing, however this area of the state is already intensively managed (i.e., periodically clearcut) forested land and the creation of a transmission corridor is not likely to disrupt or significantly alter existing land uses.[254]

This argument is flawed in three ways. First, CMP has not adequately considered alternatives that would avoid the need for a new corridor entirely through co-location and burial along existing roads or other corridors, as described in Section V of this Brief.

Second, the fact that the new corridor is located through managed commercial forest land cannot be considered minimization, as the alternative of locating it through conservation land is

[253] Group 4 Publicover Direct, p. 10; Group 1 McMahon Direct, p. 8.
[254] Application Chapter 7, Section 7.4.1.1.1, p. 7-24.

not a realistic option and the corridor is not equivalent to timber management in its impacts (as described in Section IV.D.2 of this Brief).

Third, the fact that the majority of the project is located within existing corridors is irrelevant to assessing whether the impacts of 53.5 miles of new corridor have been minimized. The impact of the new corridor would be exactly the same even if it terminated at existing lines without any construction of new co-located line. The fact that additional line was constructed beyond the connection point within the existing corridor does not constitute minimization of impacts from the construction of a new corridor. By this standard, construction of even more line within existing corridors would constitute even greater minimization.

2. CMP's attempts to mitigate impacts to wildlife habitats are inadequate.

Three of the primary fragmenting impacts of the new corridor are habitat conversion, edge effects, and loss of habitat connectivity. No mitigation for the loss of forest habitat is proposed, and the maintenance of shrub-scrub vegetation cannot be considered mitigation for this loss. The maintenance of tapered vegetation along the corridor edges would provide some mitigation for edge effects, but it has been proposed only in two limited areas as mitigation for scenic impacts. Finally, the primary mitigation proposed for the loss of habitat connectivity is the maintenance of riparian buffers as travel corridors. However, these have little to no value for species dependent on mature forest as described in Section IV.D.2 above. In total, the mitigation proposed for the impacts of habitat fragmentation falls far short of adequately reducing the impacts of the project. In fact, the summary of mitigation measures in CMP's Compensation Plan makes no mention of mitigation of habitat fragmentation impacts.[255]

During the hearings there was extensive discussion of the potential for expanded use of tapered or taller vegetation to provide additional mitigation of fragmentation impacts. Tapered

[255] CMP NECEC Compensation Plan (revised 1/30/19) Section 1.1, p. 1.

vegetation could have some value in mitigating edge effects but would have little value for improving habitat connectivity.[256] However, in order to mitigate edge effects tapered vegetation would have to be maintained throughout the length of the corridor – its use in limited areas would leave large parts of the corridor open to the full force of edge effects.

Taller vegetation (primarily proposed for riparian corridors) could provide benefit in maintaining habitat connectivity across the corridor, with full-height vegetation having greater benefit than vegetation maintained at 30-40 feet tall.[257] However, in order to provide adequate benefit it would have to be applied extensively along the length of the corridor; its use in just a few additional areas would leave large stretches of the corridor without adequate connectivity. In addition, if taller vegetation were applied only to the 200-foot wide riparian corridors it would consist entirely of edge habitat and would be of limited effectiveness for mature forest-dependent species.[258]

CMP's witnesses have argued that these mitigation techniques would be impractical and ineffective.[259] We disagree. CMP's failure or inability to incorporate these techniques into its original proposal is a clear indication that the project's fragmenting impacts have not been adequately mitigated.

3. CMP's Compensation Plan is inadequate.

CMP's Compensation Plan states that it "achieves no-net-loss of ecological functions and values."[260] The plan provides the absolute minimum level of compensation required for impacts to NRPA-regulated natural resources. However, the project's broader impacts to the Western Maine Mountains landscape through habitat fragmentation will clearly lead to a significant loss

[256] Group 4 Publicover Sup. Testimony, p. 3-4; Tr. 5/9/19. p.129 line 18 to p. 130 line 8.
[257] Group 4 Publicover Sup. Testimony, p. 4-6; Group 6 Simons-Legaard Sup. Testimony, p. 1.
[258] Tr. 5/9/19, p.121 lines 4-18.
[259] CMP Mirabile Sup. Testimony, p. 1-2; CMP Goodwin Sup. Testimony, p. 1-4.
[260] CMP NECEC Compensation Plan (revised 1/30/19) Section 1.1, p. 1.

of ecological function in this high value region. These impacts include 1) the permanent loss of nearly 1,000 acres of forested habitat and its replacement with less valuable shrub-scrub habitat, 2) additional stress on adjacent forest through edge effects, which can affect many thousands or even tens of thousands of acres,[261] and 3) a reduction in habitat connectivity that will impact the ability of species dependent on mature or interior forest to move through the landscape. No compensation is provided for these landscape-level fragmenting impacts.

The Department's evaluation of the Compensation Plan must consider more than NRPA-regulated resources. The Site Law considers impacts at a broader level. For example, 38 M.R.S. § 484(3) addresses impacts to "other natural resources" without limitation. The Department's rules in Chapter 375, Section 15(A), highlight "the need to protect wildlife and fisheries by maintaining suitable and sufficient habitat," indicating that it is appropriate to give consideration of the full range of wildlife and fisheries impacted by a proposed project. Chapter 375, Sections 15(B)(1) and (2), speak generally of "travel lanes" and "fish and wildlife lifecycles" without reference to specific species or habitats (which are considered in Ch. 375 §15(B)(3)). Chapter 375 §15(C) addresses the need for an applicant to provide that they have made "adequate provision for the protection of wildlife and fisheries" (again without limitation). Finally, Ch. 375 § 15(D) allows the Department to "establish any reasonable requirement to ensure that a developer has made adequate provision for the protection of wildlife and fisheries" and Ch. 375 §15(C)(2) includes off-site habitat preservation as a component of mitigation for adverse impacts to wildlife. In total, this section makes clear that compensatory mitigation is not limited just exclusively to NRPA-protected resources but may be applied to all wildlife habitat impacts.

Given the extent and magnitude of habitat fragmentation impacts across a broad and valuable landscape, large-scale compensatory mitigation is required. In essence, compensation

[261] Group 4 Publicover Direct at p. 12; Group 6 Wood, Cutko, Emerson Direct, p. 9; Group 1 McMahon Direct, p. 4.

must allow for "de-fragmentation" of large parts of the landscape commensurate with the level of impact. We agree with The Nature Conservancy's contention that permanent land conservation of up to 100,000 acres would be necessary to compensate for the magnitude of habitat fragmentation impacts.[262] CMP's failure to include compensation for these impacts is a fatal flaw in its application and must result in a denial of its application.

In total, CMP has clearly not met its burden of proof to demonstrate that the project's impacts have been adequately minimized, that effective mitigation measures have been considered and applied, and that sufficient compensation has been provided for unavoidable impacts.

VIII. Before any approvals are granted, the Department should require a reclamation bond sufficient to ensure that the development is constructed, operated, maintained, and restored in compliance with state environmental standards. (*Relevant to DEP*)

For the reasons outline in this brief, Group 4 affirms that the Department should deny CMP's application. However, in the event that the Department decides to approve a permit for the NECEC, the Department should require a reclamation bond as a term and condition of approval. The performance bond should be sufficient to ensure that the development is constructed, operated, maintained, and restored in compliance with state environmental standards.

Under Chapter 373, section 2(C)(1), of the Department's rules, "[t]he Department may, as a term or condition of approval, establish any reasonable requirement to ensure that the developer has and will maintain the financial capacity to meet permit requirements and state environmental standards, such as [a performance bond]." [263] Due to the unique nature of this proposed project (a for-profit transmission line as opposed to a traditional reliability project)

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262 Group 6 Wood, Cutko and Emerson Direct at p. 10.

263 06-096 Ch. 373, § 2(C)(1).

with a limited contracted lifetime (back to back 20 year contracts) and significant and unique environmental risks and impacts, the applicant should be required to post a bond for construction, operation, maintenance, and restoration.

Two additional risks not identified above must be addressed. First, as was identified during the hearings, high voltage transmission lines present a small but significant risk of devastating fire damage.[264] While the likelihood of severe fire damage may be low, the potential harm is vast and unpredictable, exactly the type of unforeseen and debilitating danger that performance and reclamation bonds can help protect the public against.

Second, despite assertions from witnesses from CMP, this project may become obsolete after one or both 20 year contracts expire. Unlike a transmission line that is built to satisfy reliability concerns in Maine, this project is proposed to supply power to electric distribution companies in Massachusetts. These consumers are outside the regulatory control of Maine and should choose to purchase power from other sources after the initial 20 year contract expires, increasing the risk that this line could become underutilized. Therefore, CMP should be required to post a bond that is sufficient to remove all unused poles, wires, and other infrastructure and facilitate full restoration of the corridor in the event that the line is not used. Furthermore, CMP has not included any decommissioning costs into its contracts in Massachusetts and therefore, these costs would have to be absorbed by the Applicant at a time when the transmission line would already be unprofitable enough to warrant decommissioning. By this time, it may be too late to obtain the necessary funding to adequately reclaim this region.

CONCLUSION

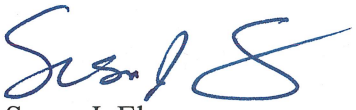
CMP has not met its burden to show that this project complies with the requirements of NRPA or Site Law. CMP failed to demonstrate that this project will fit harmoniously into the

[264] Tr.4/2/19 at p. 96; Public Hearing Tr. 4/2/19 at p. 37, 106-07.

existing natural environment and will not adversely affect existing uses, scenic character, and natural resources, including significant vernal pools, brook trout habitat, wildlife habitat and lifecycles, and deer wintering areas. CMP's minimization, mitigation, and compensation measures are inadequate. CMP also failed to satisfy the requirement to conduct an alternatives analysis. Therefore, the Commission should not grant a P-RR special exception, and the Department should deny CMP's permit application. Based on the evidence contained in the record and discussed herein, these permit applications must be denied.

Submitted on June 14, 2019

Respectfully,



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Appendix A: Group 4 Proposed Findings of Fact

Intervenor Group 4, consisting of the Appalachian Mountain Club, Natural Resources Council of Maine and Trout Unlimited, submit the following proposed Findings of Fact in the above-captioned matter.

1. Title, Right or Interest (relevant to DEP and LUPC)

- Finding: The proposed project would bisect two parcels of Maine Public Reserved Lands in Johnson Mountain Township and West Forks Plantation that are not owned by the Applicant.
- Finding: Article IX Section 23 of the Maine State Constitution requires a vote of "2/3 of all the members elected to each House" of the Legislature before the use of public lots is "substantially altered".
- Finding: The Johnson Mountain and West Forks Plantation Northeast Public Reserved Lands are subject to this constitutional provision.[1]
- Finding: The Johnson Mountain parcel and the West Forks Plantation Northeast parcel have been allocated by the Bureau of Parks and Lands for timber management, wildlife management, and recreational uses.[2]
- Finding: CMP's basis for claiming the right to construct the new corridor is a 2014 lease with the Maine Bureau of Parks and Lands.
- Finding: The proposed project would permanently clear a 150-foot-wide, one-mile-long corridor through the middle of each lot, which would remove and preclude the future management of timber, destroy and degrade wildlife habitat, and foreclose opportunities for public recreation. This action changes the corridor from an area devoted to the sustainable management of multiple uses for public benefit to one devoted to a single use for private benefit.
- Finding: The proposed project would "substantially alter" the use of these Public Reserved Lands, and as such the lease requires legislative approval as required by the Maine State Constitution.[3]
- Finding: The substantial alteration of use allowed by the 2014 lease has not received legislative approval.
- Finding: CMP does not have title, right or interest to construct the NECEC line across the Johnson Mountain and West Forks Plantation Northeast Public Reserved Lands as required under 12 M.R.S. § 685-B(2)(D) and 06-096 C.M.R. ch. 2 § 11(D).

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1 12 M.R.S. § 598-A(2-A)(D).

2 MBPL Upper Kennebec River Management Plan, pg. 95 (Attachment C to Group 4's 5/9/19 comments on title, right or interest).

3 See legal analyis by Maureen M. Sturtevant, Esq. (Attachment B to Group 4's 5/9/19 comments on title, right or interest).

2. Appalachian Trail P-RR zone special exception (relevant to LUPC)

- Finding: The proposed project would be the first crossing of the Appalachian National Scenic Trail by a transmission line of this size in the state. It would require widening the existing corridor (crossed three times by the AT) from 150 to 225 feet and install a new line with towers 100 feet tall (considerably taller than the surrounding forest) adjacent to the existing 115 kV line with towers 45 feet tall.
- Finding: The widening of the corridor and the addition of a second much larger line would significantly increase the visual impact of these transmission line crossings on users of the AT. CMP's visual experts state that there would be a "negligible" change in visual impact to hikers using the trail.[4] However, this conclusion is contradicted by the revised Scenic Resources Chart that rates the impact as "Moderate/Strong".[5]
- Finding: CMP's visual experts state that trail users expect to see transmission lines, and thus the additional line would not impact users' enjoyment of the trail.[6] However, no user surveys were conducted to actually assess users' expectations and reactions to the project.[7]
- Finding: CMP's alternatives analysis for the AT P-RR zone considered only a single alternative – location of the proposed line in a new corridor at a different location.[8]
- Finding: CMP engaged in discussions with AT managers about relocating the trail within the existing National Park Service easement to reduce exposure of the trail to the new line. However, they did not consider the alternative of relocating the trail outside of the existing easement or NPS-owned corridor.
- Finding: CMP did not consider the alternative of burying the line under the trail. CMP contended that the easement to the National Park Service did not allow them the right to construct underground lines. However, under questioning they agreed that the NPS could grant permission for them to do so, but that they have not explored that possibility with the NPS.[9]
- Finding: CMP has not shown by substantial evidence that there is no alternative site which is both suitable to the proposed use and reasonably available to the applicant as required by 01-672 C.M.R. ch. 10, section 10(23)(I)(3)(d).
- Finding: CMP has proposed to buffer the new line from users of the trail through vegetation plantings along one of the three crossings of the transmission line corridor in

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4 Application Chapter 25, Section 25.3.1.3, p. 25-5.
5 Application Chapter 6, Appendix F (revised 1/30/19).
6 Application Chapter 6, Section 6.2.2.5, p. 6-50; CMP Goodwin Direct, p. 10.
7 Tr. 4/2/19, p. 163 lines 9-14.
8 Site Law Application Chapter 25, Section 25.3.1.3, p. 25-5.
9 Tr. 5/9/19, p. 440 lines 8-15.

this vicinity (at Troutdale Road).[10] The need for these plantings is an admission by CMP that the project will have a substantially increased visual impact on the AT.

- Finding: The photosimulation of the proposed planting does not provide strong evidence that it will be effective at shielding users from view of the wider corridor and additional larger line.
- Finding: CMP visual expert admitted that the plantings will only "partially" screen the widened corridor for AT hikers[11] and that hikers will still see the proposed structures.[12]
- Finding: These plantings were proposed at only one of the three crossings of the transmission line corridor by the trail in this area.
- Finding: CMP has not shown by substantial evidence that the use can be buffered from those other uses and resources within the subdistrict with which it is incompatible as required by 01-672 C.M.R. ch. 10, section 10(23)(I)(3)(d).
- Finding: CMP has not met the requirements for the granting of a special exception for the construction of NECEC within the Appalachian Trail P-RR zone, and NECEC should not be certified as an allowed use as required by 12 M.R.S. § 685-B(1-A)(B-1).

3. Scenic Character (relevant to DEP)

- Finding: The area through which NECEC Segment 1 would pass includes the Kennebec River, the Old Canada Road National Scenic Byway, the Appalachian National Scenic Trail, numerous lakes, ponds, and streams, and numerous mountains with recreational trails. These places are important national, statewide, and local scenic resources, crucial elements of the region's scenic character, and the foundation of the region's recreational uses. The scenic resources are the backbone of both the region's quality of life and its tourism economy.[13]
- Finding: Concern about the adverse impact of the project on the scenic resources and character of the region and the resulting adverse impact on the quality of life and economy in the region is a prime reason why six towns (Caratunk, Dennistown, Jackman, Moose River, The Forks, West Forks) of the 15 towns that have opposed the project or withdrawn their support have done so.[14]
- Finding: CMP's visual expert acknowledged that she was aware that this region of the state attracts many visitors because of its undeveloped scenic character.[15]
- Finding: CMP's survey of Kennebec River rafters found that power lines have greater visual impact than large clearcuts, wind power projects, hydroelectric dams, and bridges and roads.[16]

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10 CMP Segal Direct, p. 29; CMP Exhibit 5-B, p. 119.
11 CMP Segal Direct, p. 29.
12 Tr. 4/2/19, p. 166 line 17 to p. 167 line 1.
13 Group 2 E. Caruso Direct, p. 3.
14 Group 4 5/9/19 comments, p. 447-91.
15 Tr. 4/1/19, p.348.

- Finding: Despite the finding in its survey of Kennebec rafters that power lines create visual impacts that are among the highest of any human activity or development, CMP carried out no further surveys to determine the adverse impact on other scenic resources in the region or the reactions of other user groups including hikers, snowmobilers, hunters or fishermen/women.
- Finding: CMP did not analyze the alternative of putting the transmission line under rather than across the Old Canada Road National Scenic Byway, one of only two national scenic byways in Maine.
- Finding: The proposed project would be the first crossing of the Appalachian National Scenic Trail by a transmission line of this size in the state. It would require widening the existing corridor (crossed three times by the AT) from 150 to 225 feet and install a new line with towers 100 feet tall (considerably taller than the surrounding forest) adjacent to the existing 115 kV line with towers 45 feet tall.
- Finding: CMP's visual experts state that there would be a "negligible" change in visual impact to hikers using the Appalachian Trail.[17] However, this conclusion is contradicted by the revised Scenic Resources Chart that rates the impact as "Moderate/Strong".[18]
- Finding: CMP did not analyze the alternative of putting the transmission line under rather than across the Appalachian Trail.
- Finding: CMP did not provide information on actual pole heights.[19] CMP's visual experts acknowledged that their assessment and opinions were based on an assumption that the pole heights would be 130 feet tall, even though they acknowledged that the poles could be as tall as the "more typical" height of 165 feet.[20]
- Finding: Dr. James Palmer raised multiple concerns about the visibility analysis, noting that the analysis utilizes outdated data and understates the potential visibility of the project by fifty percent.[21]
- Finding: CMP's visual consultants concluded that the project, including an overhead transmission line across the Kennebec Gorge, would have no adverse scenic impact.[22] However, CMP acknowledged the adverse scenic impact by amending the proposal to bury the proposed line underneath the Kennebec Gorge.[23] The failure of the visual consultants to acknowledge the unquestionably adverse scenic impacts of an overhead line across the Kennebec Gorge renders their conclusions about potential scenic impacts along other parts of the corridor unreliable.

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16 James Palmer, Review of the New England Clean Energy Connect October 2018 Supplemental Application Materials, Nov. 23, 2018, sec. 2.2.

17 Application Chapter 25, Section 25.3.1.3, p. 25-5.

18 Application Chapter 6, Appendix F (revised 1/30/19).

19 Tr. 5/9/19, p. 470-71.

20 Tr. 5/9/19, p. 191, 224–226.

21 Palmer *op. cit*., sec. 3.2 and 3.5.

22 Tr. 4/1/19, p. 538.

23 See generally, CMP Oct. 19, 2019, Application Amendments.

- Finding: CMP has failed to meet their burden of proof to demonstrate that the proposed NECEC project would fit harmoniously into the existing natural environment and would not adversely affect existing uses and scenic character (per 38 M.R.S. § 484(3)). CMP's Visual Impact Assessment is unreliable due to the following flaws: 1) the failure to conduct user surveys beyond rafters on the Kennebec Gorge, ignoring the reaction of other user groups and their evaluation of the project's impact on other scenic resources of national, state and local significance; 2) the failure to properly assess the extent of visibility of the project and underestimating the actual visibility by up to fifty percent; 3) the failure to base the assessment on actual (and potentially higher) rather than assumed structure heights; 4) the failure to properly assess the evidently adverse visual impact of an overhead crossing of the Kennebec Gorge, which renders their other judgments suspect.

4. Natural Resources – Vernal Pools (relevant to DEP)

- Finding: Vernal pools are one of the most important habitat types in New England.[24]
- Finding: NECEC would harm hundreds of individual pools and the amphibian migrations that tie pool webs together. [25]
- Finding: Shrub/scrub vegetation that would dominate if NECEC were built would impede vernal pool specialist migration. [26]
- CMP's proposed compensation plan does not mitigate for these fragmenting effects and is therefore inadequate. [27]
- Finding: CMP has not met its burden of proof to demonstrate that the proposed NECEC project would not adversely affect other natural resources (per 38 M.R.S. § 484(3)); specifically that the project would not adversely affect significant vernal pool habitat (per 06-096 C.M.R. ch. 375 § 15) through the impacts of clearing and habitat fragmentation.
- Finding: The proposed NECEC project would create an adverse effect on the natural environment under 38 M.R.S. § 484(3); specifically that the project would create an adverse effect on significant vernal pools due to the impacts of clearing and habitat fragmentation.

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[24] U.S. Environmental Protection Agency letter to U.S. Army Corps of Engineers, re: Public Notice 2017-01342 CMP NECEC Electric Transmission Line Project, April 25, 2019, p. 4.

> High value vernal pools are one of the most valuable aquatic systems we have in New England, rivaling salt marshes in their productivity, yet the bulk of breeding animals only use them in the spring. These animals typically live in the forest and must travel to and from the vernal pools each year. Tree clearing near vernal pools would cause secondary impacts to the pools…

[25] Group 4 Calhoun Direct, p. 13.

[26] *Id.*, p. 12.

[27] *Id.*, p. 17.

5. Natural Resources – Brook Trout (relevant to DEP)

- Finding: The streams impacted by the 251 water body crossings in Section 1 have aquatic habitat that is among the least degraded in the northeast.[28]
- Finding: All of the streams crossed by Section 1 are within subwatersheds designated as supporting an intact population of brook trout by the Eastern Brook Trout Joint Venture.[29]
- ME DIFW staff indicate that all perennial stream crossings in Segment 1 support brook trout.[30]
- Finding: The applicant has not incorporated key information from ME DIFW on brook trout presence at stream crossings into its application materials.[31]
- Finding: According to the ME DIFW, intact, mature, wooded riparian corridors are important to conserve forest soils, provide shade to reduce stream warming, protect stream water quality, provide cover for fish, and provide a source of woody debris and leaf litter from mature trees that maintain in-stream habitat for fish and the aquatic insects they feed upon.[32]
- Finding: To provide these functions, ME DIFW recommends maintaining an intact and stable stand of mature trees, characterized by heavy crown closure (60-70%) and resistance to windthrow.[33]
- Finding: The Applicant's vegetation maintenance activities post-construction will not allow for re-development of mature trees or closed canopy cover within the NECEC right of way.[34]
- Finding: References cited by the Applicant document that habitat in rights of way had canopy closure of around 30%, while nearby forested streams had canopy closure of 70-80% or higher.[35]

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28 National Fish Habitat Partnership, 2015. Through a Fish's Eye, the Status of Fish Habitat's in the United States, 2015; Group 4 Exhibit 1-JR.

29 Group 4 Exhibit 1-JR; Eastern Brook Trout Joint Venture (2006): Eastern Brook Trout: Status and Threats. https://easternbrooktrout.org/reports/eastern-brook-trout-status-and-threats%20%282006%29/view

30 1/22/2019 email from Bob Stratton (ME DIFW) to Jim Beyer (ME DEP). Included in consultation record under "Review Comments"; Two emails from Bob Stratton (ME DIFW) to Jim Beyer (ME DEP) on January 22, 2019; 4 emails from Bob Stratton to Jim Beyer on January 24, 2019; and one email from Bob Stratton to Jim Beyer on February 4, 2019, all accessed at https://www.maine.gov/dep/ftp/projects/necec/review-comments/2019-02-01%20MDIFW%20Comments/.

31 Tr. 5/9/19, p. 276.

32 Group 4 Reardon Rebuttal, Exhibit 20-JR-Rebuttal.

33 *Id*.

34 Site Law Application, Chapter 10, Exhibit 10-2, p. 5-6.

35 Abstract of Gleason, N.C.2008. Impacts of Powerline Rights of Way on Forested Stream Habitat Western Washington, Environmental Symposium in Rights of Way Management, 8th International Symposium, pages 665-678; Peterson, A.M. 1993. Effects of Electric Transmission Rights-of-Way on Trout in Forested Headwater Streams in New York. North American Journal of Fisheries Management, vol. 13 pp. 581-585. Group 4 Reardon Rebuttal, Exhibit 19-JR-Rebuttal.

- Finding: A reference cited by the Applicant documents that bank vegetation within rights of way was 91.8% shrubs and grass, while bank vegetation in nearby forested streams was only 4.6% shrubs and grass.
- Finding: The Applicant's clearing activities for construction will result in a conversion of riparian habitat from intact stands of mature trees characterized by crown closure to herbaceous vegetation and scrub-shrub habitat.[36]
- Finding: Because of this conversion from mature trees to grasses and shrubs, the applicant's proposed buffers will not provide large woody debris to adjacent streams.[37]
- Finding: With the sole exception of expanding buffers on brook trout streams to 100 feet rather than 75 feet on other streams, the Applicant has neither evaluated nor adopted other measures to minimize its impacts on brook trout habitat.[38]
- Finding: Such measures were evaluated and proposed to protect other aquatic resources, particularly Northern Spring Salamander and Roaring Brook Mayfly, by raising pole heights to allow mature canopy trees underneath the transmission lines.[39]
- Finding: Critical brook trout resources at multiple streams could have benefited from similar measures.[40]
- Finding: Although Applicant's witnesses testified that such measures were not necessary for brook trout,[41] they also cited the benefits of these measures (where applied for other species) to brook trout and brook trout habitat.[42]
- Finding: The Applicant argued that such modifications to provide full canopy closure over brook trout habitat would require extensive and expensive changes to pole structures,[43] but acknowledged on cross examination that trees of up to 35' in height could be maintained even with structure locations and pole heights as proposed.[44]
- Finding: In response to questions from DEP about 5 specific crossings, the Applicant indicated that at 3 of 5 sites 35' tall trees could be accommodated with proposed structures, and at the other two could be accommodated with minor increases in pole height.[45]
- Finding: The applicant proposes three preservation tracts to compensate (among other things) for impacts to brook trout habitat: the Grand Falls Tract, the Basin Tract, and the Lower Enchanted Tract.[46]

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36 Site Law Application, Chapter 10, Exhibit 10-1, p. 8 and Figure 1, p. 13.
37 Group 4 Reardon Direct, p. 21 and Exhibit 6-JR; Group 4 Reardon Rebuttal, p. 5-6; Tr. 4/1/19, p. 196-201.
38 Final Compensation Plan (revised 1/30/19), p. 21-22; CMP Goodwin Direct, p. 19-21; CMP Johnston Rebuttal, p. 7.
39 CMP Goodwin Direct, p. 11-13 and Exhibit CMP-3F.
40 Group 4 Reardon Direct, p. 12-15 and Exhibit 4-JR.
41 CMP Johnston Rebuttal, p. 6-7.
42 *Id*., p. 10.
43 CMP Achorn Supplemental, p. 1-3.
44 Tr. 5/9/19, p. 449-458.
45 5/17/19 letter from Gerry Mirabile (CMP) to James Beyer (ME DEP), p. 2 and Attachment B.
46 Final Compensation Plan (revised 1/30/19), p. 22.

- Finding: The only information provided about brook trout presence, population status, or habitat quality is contained in tables for each tract that summarize functions and values of wetland resources on each tract. These tables indicated that these tracts provide recreational fishing, and that both brook trout and landlocked salmon are stocked the portion of the Dead River that flows through each tract. No information regarding wild brook trout presence or habitat quality is presented.[47]
- Finding: Unlike the streams impacts by the NECEC, which tend to be cold, high elevation, headwater streams with documented wild brook trout habitat and no non-native species, the Dead River is warm, has a recreational fishery supported by stocking of hatchery fish, supports a population of smallmouth bass, a severe competitor with brook trout, and has limited potential to produce wild brook trout.[48]
- Finding: The Applicant proposes a $180,000 contribution to the Maine Endangered and Non-Game Wildlife Fund to protect coldwater fishery habitat.[49]
- Finding: This amount will not provide for habitat protection of a scale sufficient to compensate for NECEC impacts on brook trout habitat.[50]
- Finding: $180,000 would, based on the Applicant's witness's testimony, be sufficient to protect about 180 acres of land.[51]
- Finding: The Applicant proposes a $200,000 Culvert Replacement Program and proposes to replace 20-35 culverts with these funds.[52]
- Finding: Witnesses familiar with the costs of culvert projects in Maine testified that this is not possible, and that perhaps 2-4 culvert replacements might be completed with these funds.[53]

6. Natural Resources – Habitat Fragmentation (relevant to DEP)

- Finding: The Western Maine Mountains is the heart of a globally significant forest region that is notable for its relatively natural forest composition, lack of permanent development, and high level of ecological connectivity.[54]
- Finding: NECEC Segment 1 would permanently clear a 150-foot-wide 53.5-mile-long corridor across the Western Maine Mountains region from the Canadian border at Beattie Township to an existing transmission line corridor in The Forks.[55]

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47 Final Compensation Plan (revised 1/30/19), Exhibit I-9, Table 5-1, Table 6-1 and Table 7-1.
48 Group 4 Reardon Direct, p. 21-22.
49 Compensation Plan (revised 1/30/19), p. 22.
50 Group 4 Reardon Direct, p. 24-25; Group 6 Wood/Cutko/Emerson Direct, p. 8.
51 Tr. 5/9/19, p. 383-384.
52 Final Compensation Plan (revised 1/30/19), Exhibit I-11.
53 Group 4 Reardon Direct, p. 23; Group 6 Wood/Cutko/Emerson Direct, p. 8.
54 Group 4 Publicover Direct, p. 4-7; Group 1 McMahon Direct, p. 6-7; Group 6 Wood/Cutko/Emerson Direct, p. 3-4.
55 Site Law Application Chapter 1, Section 1.2.1, p. 1-3.

- Finding: The Segment 1 corridor would be one of the largest permanent fragmenting features in the Western Maine Mountains region, and one of the few permanent features other than logging roads to completely bisect the region.[56]
- Finding: Fragmentation of forest habitat is one of the leading causes of biodiversity decline across the world.[57]
- Finding: The impacts of the Segment 1 corridor include direct loss of forest habitat, a reduction in existing and future interior forest habitat due to edge effects, and a reduction in habitat connectivity across the corridor.[58]
- Finding: The fragmenting impacts of the Segment 1 corridor would be significantly different than those of timber harvesting due to the greater intensity and permanence of forest clearing and the extended linear extent of the corridor.[59] Also, the corridor would have a greater impact than most logging roads due to its much greater width.[60]
- Finding: The Segment 1 corridor would permanently convert nearly 1,000 acres of forest to shrub-scrub habitat.[61]
- Finding: The Segment 1 corridor would create up to 107 miles of new permanent high-contrast edge throughout this forest region.[62]
- Finding: Forest edges create dramatic changes in the adjacent forest, including altered climate due to increased penetration of light and wind and altered forest structure and composition. Depending on the specific effect, edge effects can extend from tens to hundreds of meters into the adjacent forest and affect an area many times that affected by the direct clearing of the corridor.[63]
- Finding: Edge habitat favors more common generalist species at the expense of species that avoid edges and require interior forest habitat. Species adversely affected by the creation of edge habitat include mammals, birds and amphibians, include many species identified as Species of Greatest Conservation Need in Maine.[64]
- Finding: The creation of a broad continuous swath of early-successional habitat would create an impediment to species movement and reduce habitat connectivity for species that avoid this habitat and forest edges and depend on mature or interior forest habitat.[65]
- Finding: American marten is an "umbrella species" that serves as a proxy for a broad range of other mature and interior forest species. Marten habitat requirements in Maine

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56 Group 4 Publicover Direct, p. 10; Group 1 McMahon Direct, p. 8.
57 Group 4 Publicover Direct, p. 10; Group 6 Hunter Direct, p. 3.
58 Group 4 Publicover Direct, p. 10-13.
59 Group 4 Publicover Direct, p. 15; Tr. 4/5/19, p. 61.
60 Group 6 Hunter Direct, p. 3; Tr. 4/5/19, p. 61 lines 5-7; Tr. 4/5/19, p. 81 line 19 to p. 82 line 9.
61 Site Law Application Chapter 7, Section 7.4.4.2, p. 7-35; Group 1 McMahon Direct, p. 4.
62 Group 1 McMahon Direct, p. 8.
63 Group 4 Publicover Direct, p. 10-12 and Rebuttal, p. 4-5; Group 1 McMahon Direct, p. 11; Group 6 Hunter Direct, p. 4-6.
64 Group 4 Publicover Rebuttal, p. 5; Group 6 Hunter Direct, p. 5.
65 Tr. 4/5/19, p. 62 lines 7-11.

have been extensively studied. They generally avoid areas without forest vegetation at least 35 feet tall.[66]

- Finding: Taller vegetation that would enhance the ability of marten and associated species to cross the corridor will be maintained at only three locations along the 53.5-mile corridor.[67]
- Finding: The shrub-scrub vegetation maintained in riparian buffers would not maintain adequate connectivity for marten and other mature and interior forest-dependent species.[68]
- Finding: The Site Law Application does not include an assessment of the amount of mature and interior forest habitat that would be lost through clearing of the corridor.
- Finding: The Site Law Application includes minimal discussion of the adverse effects of forest edges and includes no assessment of the amount of edge habitat that would be created or which species would be adversely affected.
- Finding: The Site Law Application recognizes but does not assess the impact of the new corridor on habitat connectivity.
- Finding: CMP's contention that the new corridor will not have an adverse effect on wildlife habitat due to forest fragmentation is based solely on drawing a false equivalence between the corridor and the on-going pattern of timber harvesting in the region.[69]
- Finding: The Applicant's assessment and conclusions regarding the impacts of the project due to habitat fragmentation have been contradicted by the detailed testimony of multiple expert witnesses.
- Finding: The alternatives analyses contained in the Site Law and NRPA applications do not consider the alternative of co-location and burial along existing corridors as has been proposed for other transmission line projects in New England and New York as a means to minimize the impacts of the project.[70]
- Finding: CMP has proposed no mitigation for the impacts of permanent conversion of forested habitat or the degradation of extensive forest habitat through edge effects.
- Finding: Maintenance of taller vegetation at just three locations is inadequate mitigation for the impact on habitat connectivity along a 53.5-mile corridor.
- Finding: Maintaining taller shrub-scrub vegetation within riparian buffers is inadequate mitigation for the impact on habitat connectivity as this vegetation will not facilitate the movement of mature forest dependent species across the corridor.[71]
- Finding: CMP has not proposed any land conservation as compensation for the permanent loss of nearly 1,000 acres of forest habitat, the degradation of thousands of

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66 Group 4 Publicover Direct, p. 13; Group 6 Simons-Legaard Supplemental, p. 1.
67 CMP Mirabile Direct, p. 30.
68 Tr. 5/9/19, p. 121 lines 8-18.
69 Site Law Application Section 7.4.1.1.1, p. 7-24, Section 7.4.1.2, p. 7-25 and Section 7.4.1.3, p. 7-26.
70 Group 4 Publicover Direct, p. 18-21.
71 Tr. 5/9/19, p. 121 lines 8-18.

additional acres through edge effects, and the reduction in habitat connectivity across the Western Maine Mountains region.

- Finding: CMP has not met its burden of proof (as required under 38 M.R.S. § 486-A(2)) to demonstrate that the proposed NECEC project would not adversely affect other natural resources (per 38 M.R.S. § 484(3)); specifically that the project would not adversely affect wildlife, wildlife habitat and wildlife lifecycles (per 06-096 C.M.R. ch. 375 § 15) through the impacts of habitat fragmentation.
- Finding: CMP has not met its burden of proof to demonstrate that the impacts of the proposed NECEC project have been adequately avoided, minimized and mitigated.
- Finding: The proposed NECEC project would create an adverse effect on the natural environment under 38 M.R.S. § 484(3); specifically that the project would create an adverse effect on wildlife, wildlife habitat and wildlife lifecycles due to the impacts of habitat fragmentation.

7. Natural Resources – Deer Wintering Areas (relevant to DEP)

- Finding: Loss of deer wintering areas and the fragmentation and loss of habitat connectivity between deer wintering areas and surrounding forestland are THE major limiting factors for deer populations in northern, western, and eastern Maine.[72]
- Finding: NECEC would bisect the Upper Kennebec Deer Wintering Area, one of the last high-quality deer wintering areas in western Maine.[73]
- Finding: CMP's proposed deer travels corridor's across the right-of-way though the Upper Kennebec Deer Wintering Area are entirely experimental.[74]
- Finding: These corridors are unlikely to work effectively because they will not contain fully mature trees in eight of 10 cases.[75]
- Finding: CMP's widening of existing rights-of-way in 11 deer wintering areas will cause further fragmentation, damaging the deer herd.[76]

8. Climate (relevant to DEP)

- Finding: Hydro-Quebec will build no additional renewable energy generating facilities to supply power for NECEC.[77]
- Finding: The New Hampshire Site Evaluation Committee, after years of study, determined that there would be no greenhouse gas benefits from Northern Pass, a virtually identical project to NECEC, without construction of new generating facilities.[78]

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72 Group 4 Joseph Direct, p. 2-3.
73 *Id.*
74 Tr. 4/4/2019, p. 48.
75 Group 4 Joseph Rebuttal, p. 1.
76 Group 4 Joseph Direct, p. 6.
77 Group 4 5/9/19 comments, p. 3.

- Finding: A witness for the Massachusetts Attorney General's Office testified in hearings there that Hydro-Quebec and CMP could meet their NECEC contract through resource shuffling, shifting electricity sales from New York, New Brunswick, and other existing customers to more lucrative markets in Massachusetts. This would result in no overall reduction in greenhouse gas emissions.[79]
- Finding: The PUC relied on flawed and incomplete information in the LEI study to conclude that NECEC would have greenhouse gas benefits. The LEI study failed to look at emissions increases in other jurisdictions when Hydro-Quebec shifts electricity sales to Massachusetts. [80]
- Finding: CMP has repeatedly made false and misleading claims about the greenhouse gas reduction benefits of NECEC while simultaneously stating in its Site Law and Natural Resource Protection Act applications that the purpose of NECEC is to reduce greenhouse gas emissions.[81]

9. Alternatives Analysis (relevant to DEP and LUPC)

1. Finding: The alternatives analysis in CMP's applications to the Commission and Department did not include a single alternative that utilized any type of undergrounding or line burial techniques.[82]
2. Finding: CMP failed to evaluate an alternative route using an underground route.[83]
3. Finding: CMP failed to evaluate an alternative route utilizing existing roads and disturbances.[84]
4. Finding: CMP failed to evaluate an alternative utilizing a combination of burial, co-location with existing roads, and taller poles.[85]
5. Finding: Burial of even a small section of CMP's proposed route was not contemplated in any application material submitted by CMP until it amended its Site Law and NRPA applications to include an underground crossing at the Kennebec River Gorge.[86]
6. Finding: Neither CMP nor any consultants hired by CMP did any formal analysis of undergrounding options until directed to do so by the Department in this proceeding.[87]
7. Finding: CMP's cost estimates for burying the transmission line were not done until long after CMP made the decision to select its preferred route.[88]

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78 *Id.*, p. 2.
79 *Id.*, p. 4.
80 *Id.*, p. 7.
81 *Id*., p. 9-10, 12.
82 See generally, CMP Alternative Analysis.
83 *Id*.
84 *Id*.
85 *Id*.
86 CMP Amended Application, October 19, 2018.
87 Tr. 5/9/19, p. 410.
88 In bolstering their argument that burying the new portion of the line would dramatically increase the cost of the project, CMP's consultants analyzed the cost of burying the line along the 54 new miles of transmission

8. Finding: The "costs, dollars, or a numerical backup sheet for CMP Exhibits 11-B through 11-G in Mr. Bardwell's pre-filed rebuttal testimony" were not available to intervenors, the Department, or the Commission for inspection or analysis because large portions of the document were redacted under the label "Proprietary."[89]
9. Finding: Burial of HVDC lines is exceedingly common, even here in New England.[90]
10. Finding: Other HVDC projects of a similar length contain all or significant portions of the project buried underground.[91]
11. Finding: TDI in Vermont would be 157 miles long with 97 miles in underwater cables and 57 in buried cables.[92]
12. Finding: 60 miles of the Northern Pass Project through New Hampshire would have been buried.[93]
13. Finding: Northern Pass was initially selected as the winning bid in the Massachusetts 83D RFP process but was rejected after the New Hampshire Site Evaluation Committee denied the project a necessary permit siting concerns over siting concerns.[94]
14. Finding: Northern Pass was not rejected in the Massachusetts 83D RFP process due to the cost of undergrounding portions of the transmission line.[95]
15. Finding: Whether buried or not, a route that followed existing roads, whether the Spencer Road or Route 201 to Jackman, could have dramatically reduced wildlife and fisheries impacts.[96]
16. Finding: CMP failed to do a cost estimate of burying the line along existing roads until the line could tie into an existing transmission corridor.[97]
17. Finding: CMP has failed to meet its burden of proof to demonstrate that there is not a practicable alternative that is less damaging to the environment.

10. Mitigation and Compensation (relevant to DEP).

- Finding: At stream crossings, the only variable the Applicant considered altering to better protect brook trout habitat was buffer width—with 100-foot buffers proposed for brook

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corridor along CMP's preferred Segment 1 route but did not disclose the actual cost of only burying the line along existing roads until meeting the existing corridor. CMP Tribbet Rebuttal, p. 5; Tr. 5/9/19, p. 414-15.

89 May 17, 2019 submittal by CMP in response to DEP request, p. 4-28.

90 Group 8 Russo Direct, p. 3-4, Exhibits CR-3 and CR-4.

91 Group 8 Russo Direct, p. 3-4, Exhibits CR-3 and CR-4.

92 *Id.* at 4.

93 *Id.*

94 Group 4 5/9/19 comments, p. 2 (citing New Hampshire Site Evaluation Committee. 2018. Decision and Order Denying Application for Certificate of Site and Facility. March 30, 2018).

95 *Id*.

96 Tr. 5/9/19, p. 62, 66-67

97 CMP Tribbet Rebuttal, p. 5; Tr. 5/9/19, p. 414-15.

trout streams, and 75-foot buffers elsewhere.[98] Within these buffers all capable vegetation (i.e. trees) would be removed.

- Finding: Taller pole structures to allow the maintenance of an intact riparian tree canopy were implemented to protect aquatic habitat for Roaring Brook Mayfly and Northern Spring Salamander at two locations (Mountain Brook and Gold Brook)[99] but were not considered to better protect brook trout habitat.
- Finding: CMP's witnesses argued that allowing full canopy vegetation over brook streams would require extensive and expensive changes to pole structures, but under cross-examination acknowledged that vegetation of at least 35 feet could be maintained even with structure locations and pole heights largely as currently proposed.[100]
- Finding: CMP's witnesses asserted that maintaining taller vegetation at brook trout stream crossings was not feasible, too expensive, or of limited benefit.[101] However, the feasibility of providing for taller vegetation at many stream crossings is clearly demonstrated in CMP's May 17, 2019, letter to the Department.
- Finding: CMP's Final Compensation Plan contains three elements related to cold water fish habitat: (1) conservation of three tracts of land that contain about 12 miles of streams,[102] (2) a $180,000 contribution to the Maine Endangered and Non-Game Wildlife Fund to protect coldwater fishery habitat,[103] and (3) a $200,000 Culvert Replacement Project.[104]
- Finding: The streams impacted by NECEC are mostly cold, high elevation, headwater streams that are highly productive for wild brook trout. The streams on the compensation parcels are mostly large mainstem rivers that warm significantly in the summer, have a recreational fishery at least partially supported by stocking, and have limited potential to produce wild brook trout.[105]
- Finding: The $180,000 contribution to the Maine Endangered and Non-Game Wildlife Fund is not large enough to accomplish meaningful preservation or restoration. If applied to improving fish passage through improving or removing culverts, it might fund a handful of culvert projects.[106] Applying this sum towards the acquisition of additional preservation parcels could preserve at most about 200 acres, which might contain a mile or two of high value brook trout stream.[107]

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98 Final Compensation Plan (revised 1/30/19), p. 21-22; CMP Goodwin Direct, p. 19-21; CMP Johnston Rebuttal, p. 7.

99 CMP Goodwin Direct, p. 11-13 and Exhibit CMP-3F.

100 CMP Achorn Supplemental, p. 1-3, *but see* Tr. 5/9/19, p. 449-458.

101 Applicant's May 1, 2019 Supplemental Testimony: Goodwin, p. 2-4 and 5; Achorn, p. 2-3; Giumarro, p. 11-13.

102 Final Compensation Plan (revised 1/30/19), p. 22.

103 *Id.*

104 *Id.*, Exhibit I-11.

105 Group 4 Reardon Direct, p. 21-22.

106 Group 4 Reardon Direct, p. 24-25; Group 6 Wood/Cutko/Emerson Direct, p. 8.

107 Tr. 5/9/19, p. 383-384.

- Finding: The $200,000 Culvert Replacement project is insufficient to address more than a few culverts.[108]
- Finding: CMP has failed to demonstrate that the impacts to brook trout habitat created by the NECEC project have been adequately minimized and mitigated.
- Finding: CMP has not adequately considered alternatives that would avoid the need for a new corridor entirely through co-location and burial along existing roads or other corridors.[109]
- Finding: CMP has not proposed any mitigation for the loss of nearly 1,000 acres of forest habitat and the creation of over 100 miles of new permanent edge and many thousands of acres of edge habitat from the clearing of Segment 1.
- Finding: The primary mitigation proposed for the loss of habitat connectivity is the maintenance of riparian buffers as travel corridors. However, the shrub-scrub habitat that would be maintained in these buffers has little to no value for maintaining habitat connectivity for species such as marten dependent on mature forest.[110]
- Finding: CMP's failure or inability to incorporate techniques along extensive sections of Segment 1 such as tapered vegetation to reduce edge effects or taller vegetation to improve habitat connectivity along extensive sections of Segment 1 into its original proposal is evidence that the project's fragmenting impacts have not been adequately mitigated.
- Finding: CMP's Compensation Plan states that it "achieves no-net-loss of ecological functions and values."[111] However, the project's broader impacts to the Western Maine Mountains landscape through habitat fragmentation will lead to a significant loss of ecological function.
- Finding: 06-096 C.M.R Ch. 375, § 15 makes clear that compensatory mitigation is not limited just exclusively to NRPA-protected resources but may be applied to all wildlife habitat impacts.
- Finding: CMP has not proposed any compensation for the loss of ecological functions and values of wildlife habitat in the Western Maine Mountains landscape that NECEC would create due to habitat fragmentation.
- Finding: CMP has failed to demonstrate that the impacts to wildlife habitat and wildlife lifecycles created by the NECEC project due to habitat fragmentation have been adequately minimized and mitigated.

[108] Group 4 Reardon Direct, p. 24-25; Group 6 Wood/Cutko/Emerson Direct, p. 8.
[109] Group 4 Post-hearing brief, Section V.
[110] Group 4 Post-hearing brief, Section IV.D.2.
[111] Final Compensation Plan (revised 1/30/19), Section 1.1.