NORMANDEAU ASSOCIATES
Environmental Consultants

July 12, 2016

Mr. Rene Pelletier, PG
Assistant Director, Water Division
NH Department of Environmental Services
PO Box 95
29 Hazen Drive
Concord, NH 03302-2964

Re: Joint Application of Northern Pass Transmission, LLC and Public Service Company of New Hampshire d/b/a Eversource Energy: Response to NHDES Progress Report of May 16, 2016

Dear Mr. Pelletier:

On behalf of Northern Pass Transmission, LLC, we respectfully submit the enclosed initial response to the Wetlands Bureau and Watershed Protection Bureau requests for more information included in your May 16, 2016 Progress Report to the NH Site Evaluation Committee. Please note that some of the responses reference documents -- they are on the flash drive enclosed with this letter. We continue to assemble information to respond to certain data requests, including those from the Alteration of Terrain Bureau, and we expect to provide you with those responses by July 15, 2016.

We have met or spoken by phone with several program officials, and we greatly appreciate their time and efforts reviewing and discussing our application materials. If you or your colleagues have questions or comments, please do not hesitate to contact me directly at 637-1150 or at lcarbonneau@normandeau.com. Thank you.

Sincerely,

Lee E. Carbonneau

Lee E. Carbonneau
As agent for Northern Pass Transmission, LLC.
Senior Principal Scientist
Normandeau Associates, Inc.

Enclosures
Cc: Thomas Burack, Commissioner, NHDES (w/o enclosures)
David Keddell, US ACOE
Mark Kern, US EPA
Robert P. Clarke, Eversource (w/o enclosures)
Kevin F. McCune, Eversource (w/o enclosures)
Dana Bisbee, Devine Millimet (w/o enclosures)

RESPONSE TO NH DEPARTMENT OF ENVIRONMENTAL SERVICES
ADDITIONAL DATA REQUESTS

A. WETLANDS BUREAU

1. It appears that the transmission line could buried along the NH Route 3 right-of-way (ROW) from Pittsburg to Northumberland to avoid creating a new 32 mile ROW that runs cross-country in a southeasterly direction, almost to the Androscoggin River, only to eventually return due west to the Connecticut River valley. The Route 3 alternative would avoid most of the significant wetland and wildlife impacts in Coös County; therefore, DES review found that this portion of the project does not avoid and minimize wetland impacts to the greatest extent practicable per RSA 482-A and NH Administrative Rule Env-Wt 302.03 and Env-Wt 302.04. Please provide revised plans that consider and utilize the NH Route 3 alternative from Pittsburg to Northumberland.

   Response: *From the exchange of e-mails on May 17 & 19, 2016 on this question between Dana Bisbee on behalf of NPT and Collis Adams (enclosed), we understand that, in essence, DES is requesting more information from Northern Pass to explain how NPT has avoided and minimized wetlands impact to the maximum extent practicable in the northern section of the route. The application provides a robust discussion of NPT's efforts to avoid and minimize impacts on pp. 66-72, 86-89, and 95-96 of the application narrative, as well as in Appendix G. The wetland rules at Env-Wt 302.03(a) require a description of the impact of the proposed project design and a demonstration that potential impacts have been avoided to the maximum extent practicable and that unavoidable impacts have been minimized. The applicant is not required to include an impact assessment of an alternative project on a site it cannot access, or in another state with different laws, or for a different design that is not practicable. Avoidance and minimization review for DES wetlands application purposes focuses on the applicant's design within the site, for which NPT has provided DES complete information. This is different from the alternatives analysis that NEPA requires. As explained in detail in the application and further in answer to Question 2 below, NPT has minimized impact to the "maximum extent practicable" for the selected route. It is important to note that the 40 miles of the northern section of the route includes previously disturbed areas including approximately 8 miles along public highway ROWs and approximately 24 miles within the Wagner Forest, an area that experiences regular industrial-level logging operations. And, along the route corridor itself, NPT has designed the line to avoid wetlands impacts where practicable.*

   On its face, DES's question on the Route 3 alternative would require an entire new design and plans for some 40 miles of new corridor, but as the e-mail exchange mentioned above clarified, that is not the actual intent of the request. Rather, it calls upon the Applicant to provide more information on its efforts to avoid wetlands impact to the maximum extent practicable. The Route 3 alternative suggestion is not practicable, as explained in greater detail below. Northern Pass provided the explanation set forth below in response to a data request in the SEC proceeding. While it specifically addresses the question of why it is

impracticable to construct all of the line underground, the analysis of that question also applies to the alternative route of a buried line from Pittsburg to Northumberland, a distance of some 40 miles. Having accepted an additional $500 million in project costs to place a total of more than 60 miles underground, Northern Pass has avoided wetlands impacts to the "maximum extent practicable", as required by Env-Wt 302.03(a)(1). When placed in service, this will be the longest stretch of underground cable on land in the United States. NPT's 60 miles of underground construction in previously disturbed transportation corridors has virtually no wetlands impacts, and, as a whole, the NPT line minimizes wetland impacts to the greatest extent practicable. It is not reasonable to isolate one overhead segment of the line for analysis as if it were an entire project, while giving no credit for the extensive and expensive wetlands avoidance of the project as a whole. Adding the hundreds of millions of dollars of additional cost to require burial of 40 more miles of the line is not practicable.

Data Request Response to Question from the Environmental Organization Group

In order to be economically feasible or viable, a project such as NPT must be able to attract investment from a market participant – in this case Hydro Québec (HQ). For its part, HQ's investment decision will be based on the prospect of being able to recoup its investment, plus an acceptable return.

Since the project was conceived in 2008, NPT has made changes to the line's proposed route and construction approach in order to respond to concerns expressed by New Hampshire stakeholders. In doing so, NPT believes it has struck the right balance between addressing these concerns and ensuring that the project remains both technically and economically feasible.

NPT's cost has increased by over $500 million, from $1.1 billion to $1.6 billion. The primary driver of this increase is the addition of underground transmission cable. Almost one third of the project, or a little more than 60 miles of its overall length of 192 miles, will be placed underground, including approximately 52 miles in and around the White Mountain National Forest and Franconia Notch and another 8 miles in the North Country. Construction of the remaining two-thirds of the project underground would add a further $1 billion to the project cost, for a total of $2.6 billion.

In addition to increasing the project cost, the underground initiative has also reduced the NPT line's capacity. A change in technology was required to enable this new long length of underground construction, which resulted in a reduction of the line's capacity from 1200 MW to 1090 MW. That reduced capacity means that there is a corresponding reduction in revenue that can be derived from potential electricity sales.

The dramatic increase in required project investment has been accompanied by an equally dramatic decrease in its expected revenues – at least in its early years. Roughly 50% of New England's electricity demands are being met by natural gas fueled generators, and natural gas prices have been in sharp decline as a result of increased gas supply. As a result, the price of electricity in the New England wholesale energy market has dropped by 48% since the project's inception. Low gas prices are expected to persist at least into the early years of NPT's operation.

The expected energy price in New England in 2019, the first year of operations for the project, is just over $40 per megawatt hour. Thus, the wholesale energy price expected when NPT enters service will be about 50% of that which prevailed when HQ made its initial investment decision; HQ will be able to deliver 10% less energy than it expected; and the U.S. transmission cost of those deliveries will have increased by about 50%. At $40 MWh, energy revenues HQ receives from deliveries over the line will not cover its cost of NPT's revenue requirement, which HQ would be required to pay regardless of the revenues it earns from sales over the line. While HQ would seek to cover the shortfall with other sources of revenue, such as participation in the forward capacity market, it would face a more significant risk of loss.

Given these project and market developments, even with no further project cost increases, NPT and HQ need to explore new market opportunities, which necessarily requires a cost competitive profile. For example, NPT has submitted a proposal in response to the New England Clean Energy Request For Proposal (RFP).[1] The RFP requires NPT to compete with other clean energy projects on an equal footing. That competitive approach to new transmission and generation projects reflects a fundamental shift in the industry, and NPT and HQ will be measured against competitors in order to successfully compete for market opportunities (including the RFP).

The addition of $1 billion of project cost would handicap the NPT proposal in response to the RFP, even if the proposal could be increased to cover the additional cost, which it cannot. On January 28, 2016, NPT submitted a fixed price proposal in response to the RFP, based upon a project with 60 miles of underground construction. The RFP cautions that "Bidders will not be offered the opportunity to refresh their pricing." (RFP § 2.3.2.1) But, assuming that NPT were able to "refresh" its proposal to reflect an additional billion dollars in construction costs, it is reasonable to expect that the RFP decision makers would view the required investment relative to the economics of competitive proposals, certainly increasing the likelihood that NPT will be evaluated as uneconomic.

The investment decisions in the RFP process will be made on behalf of electric distribution companies (EDCs) in Connecticut, Massachusetts and Rhode Island by the EDCs and by representatives of state regulatory agencies serving on Evaluation and Selection Teams. Although the RFP seeks to advance the participating States' clean energy goals, only projects deemed to be "economically competitive" will be selected. Bids that are not eliminated as uneconomic in a preliminary review will be evaluated in separate quantitative and qualitative evaluations. The quantitative evaluation will be given a 75% weight in this process, and will be based on "the benefit to cost ratios of projects, based on the combination of direct and indirect benefits divided by the payments required by the project." (RFP § 2.3.1.3) While the economic objectives of the participating States differ from those of a for-profit investor, both must determine whether the likely benefits of the investment are worth the price and the uncertain risks. This determination is a matter of judgment by the entity who will pay (or, in the case of

[1] The New England Clean Energy RFP and related documents referenced here are available at https://cleanenergyrfp.com

the RFP, the entities that represent those who will pay), but any substantial increase in the cost of the project significantly reduces the likelihood that a market participant would undertake such an investment.

For its part, NPT must judge where the tolerance of potential investors for increased cost and risk will be exhausted. Its senior management believes that the project is at or near that point by virtue of acceptance of an additional $500 million in project costs for the construction of 60 miles of underground line to avoid visual effects in most areas of special scenic and recreational value. In incorporating these changes, NPT believes it has struck the appropriate balance – addressing the key concerns of New Hampshire stakeholders and ensuring the project remains commercially viable.

Detailed cost estimates have been prepared regarding this route and are confidential in nature. The Applicants are providing a redacted copy of "An Evaluation of All UG Alternatives for the Northern Pass Transmission Project" dated 5-31-16, which has been uploaded to the ShareFile Site in response to this request. To the extent the request calls for the confidential information, the Applicants will make this confidential information available as requested as soon as the requesting party complies with the requirements of an SEC order governing confidential documents in this proceeding.

2. Per Rule Env-Wt 302.04(a)(2) the applicant is required to demonstrate by plan and example that the proposed alternative is the one with the least impact to wetlands or surface waters. It is not clear how the proposed 32 mile new ROW in Coös County avoids surrounding wetlands on a landscape scale when the wetland impact plans only represent wetlands located within the ROW. DES finds that the proposed 32 mile ROW in Coös County is not an alternative with the least impact to wetlands or surface waters.

Response: *The re-routing of the original Project route in northern Coos County that took place in 2011 in response to public comment included a concerted effort to locate the line in less populated areas where visual impacts would be of less concern. Complete underground construction was not considered a practicable option, as described in the response to question 1, above. A landscape-level analysis of sensitive natural resources along approximately 38 alternative route segments proposed by the NP team (A through MM) was conducted. The routes were evaluated based on their intersection with conservation lands, rivers and streams, lakes and ponds, NWI wetlands, hydric soils, and Tier 1 and 2 Ranked Wildlife Habitat from WAP maps. These alternatives are documented in the table and figures below (4 maps, attached).*

NAI Segment	Segment Length (FT)	Conservation Lands Traversed (FT)	Rivers and Streams Crossed	Lakes and Ponds Traversed (FT)	NWI Traversed (FT)	Hydric Soils Traversed (FT)	Intersection of NWI & Hydric SoilsTraversed (FT)	WAP Tiers 1 and 2* Traversed (FT)	Notes
A	11030	165	3	0	516	122	75	151	Crosses Washburn Family Forest at narrowest point; wet floodplain at western end

AA	18858	18858	0	0	0	135		21955	Al in NSSF, Parallels Nash Stream and NS Bog, mostly in WAP1
B	55292	0	7	0	0	1311		11207	avoids most sensitive resources; crosses WAPState1 along 3 un-named streams and 1 farm field, and wetlands adjacent to CT Lakes Headwaters
BB	31720	0	2	0	238	245		26211	
C	42590	3383	7	7526	2644	3269	1232	4382	crosses 4 named streams, two county conservation lands, and 2 WAPState 1 fields, floodplain wetlands and3 ponds
CC	45777	35760	9	0	232	1195		24651	Mostly in NSSF, Crosses Nash Stream, Jimmy Cole Brook, Rowells Brook and 2 tribs, Robert, another trib, and Phillips Brook with large wetland, small WAP1 and2 mostly along streams
D	4684	0	1	0	0			0	1 stream crossing
DD	27079	0	0	0	0			7478	
E	22416	5716	3	1464	392			16087	Coleman State Park, E.Branch Mohawk River and Sugar Hill brook with wetlands; and WAPState1 in park and out of park,
EE	11029	0	0	0	0			3139	
F	25762	0	3	0	0			9167	crosses E. Branch Mohawk and crosses/parallels Sugar Hill Brook, and a trib with wetlands, also WAPstate1
FF	7480	0	0	0	0			3426	

G	26519	0	3	0	0			49130	all within WAPstate1 - crosses Dixie Brook and another stream
GG	6479	0	0	0	0			0	No obvious resource impacts
H	12323	0	3	0	9	468		23465	All within WAPstate1 - crosses Cascade Brook and another stream, and some wetlands in valley
HH	9090	0	0	0	0	517		1842	Small overlap with wetlands and WAP1
I	24494	0	3	0	0			48469	crosses Cascade Brook and another stream and parallels Cascade just below Dixville Notch
II**	66895	24617	10	0	2367	1171	515	14748	Mostly in NSSF, crosses Phillips Brook and large wetland,
J	44832	0	6	0	0			24785	crosses North Inlet and 4 other streams, avoids interior WAPState1 and wetlands, parallels Phillips Brook
JJ	79092	24265	17	4762	1177	2429	272	38379	<half in NSSF, crosses n end of NS Bog, and Johnson, Silver, Sugarloaf, Bog (twice), Colombia, Pike, and 9 other brooks, Upper Ammonoosuc, some wetlands and WAP1.
K	8532	0	0	0	0			16725	
KK	14356	5531	3	0	0	597		9391	Half in NSSF, crosses Potter and another brook, parallels potter and inpacts some wetlands and mostly in WAP1
L	9412	0	2	0	0			7276	half in WAPState1, crosses Wells Brook
LL	2637	2637	1	0	0			2151	All in NSSF, crosses trib with WAP1

M	16110	0	4	1289	416			13395	Mostly in WAP State1, crosses Phillips Brook and 3 others with wetlands
MM	5075	5075	1	0	0			1372	All in NSSF, croses trib to Nash with WAP1 and parallels Nash Stream
N	14743	5170	3	0	192			10676	half in NSSF - Crosses Nelson and Phillips Brook, with All in NSSF; wetlands, and WAPState1, and one other stream
O	5258	5258	0	0	0			26	
P	4526	4526	0	2915	969	1165	969	7409	All in NSSF, Parallels Nash Stream trib through WAP1 and wetland/pond complex
Q	24208	24208	4	0	0			21362	Parallels and crosses Nash Stream and Trib, and crosses 3 other streams, including Waterhole Brook, mostly through WAP1
R	11821	11821	0	0	0			11734	All in NSSF - Parallels Nash Stream trib through WAP1
S	21210	21210	5	0	1448	1452	1146	33054	All in NSSF, Parallels Nash stream mostly in WAP1 along All in NSSF, wetlands, and crosses 3 other tribs
T	21498	21498	6	0	398			12155	All in NSSF , crosses 5 tribs with WAP1
V	13298	13298	3	0	144			13391	Al in NSSF, Parallels Nash stream a little further away than S, crosses Slide and Long Mt brooks and Nash Stream, all in state forest and most in WAP1
W	34716	22134	3	1706	248	1517	248	26188	
X	8840	0	0	0	0			836	

Y	5776	0	2	0	0			3640	
Z	29061	0	2	0	553	2795	353	23974	

*** WAP Tier 1 - Highest Ranked Habitat in NH, WAP Tier 2 - Highest Ranked Habitat in Biological Region**
**** Segment II Traverses the White Mountain National Forest for Approximately 6205 Feet**
There is currently no Digital Floodzone Data available for this area
RTE Data beyond the level of WAP Tier information is available upon request to NH Division of Forests and Lands
No field delineation data is available for this area

Property acquisition efforts commenced for the best alternatives, and the route was revised based on the successful acquisition of property rights. robertNormandeau provided "hot-spot" mapping and GIS modeling within 3 miles of the entire proposed Project route in 2012 to identify locations with the greatest sensitivity and permitting concerns. The model included the natural features mentioned above, along with: ridgetops/mountaintops, where headwater streams, fragile soils, wildlife corridors and unique habitats are present and ROW maintenance issues may be greater; calcareous soils and excessively drained soils where rare plants may be more abundant; known threatened and endangered species/habitat locations (plants, lynx, marten, snakes, turtles, etc.); known deer yards; archeologically sensitive areas; streams and rivers with added regulations (SWQPAs, ORWs, Class A, Designated).

A similar desktop and field reconnaissance evaluation was completed in 2013 for the northern underground route options, which became necessary when completion of an overhead route became difficult. Two alternative routes in Clarksville and Stewartstown, the B and C routes, were then evaluated (see table below, and one attached map). The decision was made to proceed with the B route based on the lower impacts to wetlands and conservation lands.

B&C Route Analysis

Segment	Segment Length (FT)	Conservation Lands Traversed (FT)	Rivers and Streams Crossed	Lakes and Ponds Traversed (FT)	NWI Traversed (FT)	Hydric Soils Traversed (FT)	Intersection of NWI & Hydric SoilsTraversed (FT)	WAP Tiers 1 and 2* Traversed (FT)	Notes
106-104-102	106 = 39,318; 104 = 13,419; 102 = 11,588; Total = 64,325 feet	-	7	-	-	1,938		11,207	AKA Segment B (Blue Route). Avoids many sensitive resources, and impacts no conservation land. This segment crosses WAPState1 along 3 un-named streams, which are all tributaries of Dead Water Stream to the east, so there may be a stream-dependent protected species in those areas (which may be affected by

									shoreline cover removal). It also crosses 1 farm field and hydric soils in forested areas (likely wetlands) adjacent to CT Lakes Headwaters.
103	42,893	3,862	7	2,654	2,479	3,465	1,053	4,382	AKA Segment C. (Green Route) This segment has greater wetland, stream, and conservation land impacts. It crosses 4 named streams including Haines Brook, Bishop Brook, Pond Brook, and Favreau Brook, where shoreline cover would be removed. It also crosses through two Coos County farm conservation lands, and 2 WAPState 1 fields (possible habitat for northern harrier, a state-endangered hawk that prefers open country), floodplain wetlands and a pond.

The route through Wagner Forest (Bayroot properties), and selection of off-ROW construction access roads were also evaluated. Shifts were made to the route, structures, and access roads as possible to minimize resource impacts. The resulting route in the northern section of the project, located on parcels where construction rights were acquired, is generally situated along the mid-slope landscape position, avoiding to the extent possible the sensitive high elevation areas (which are also potentially more visible) as well as the valleys where streams, wetlands, riparian corridors, archeological resources and highest ranked habitats are most abundant. These mid-slope landscape positions are generally comparable with respect to wetlands attributes throughout this region. Given the desktop analysis of natural resources which informed the route selection, the field work conducted, and the iterative design process within the selected ROW, the work complies with Env-Wt 302.04(a)(2).

3. It appears that the new section of ROW in Coös County comes within close proximity to several areas of the Granite Reliable Wind Farm. Cumulative impacts to wetland complexes and stream systems need to be further addressed and evaluated as required under Rule Env-Wt 302.04(a)(16) and (17).

Response: *As explained on p. 6 of 8 of the Wetlands Application in addressing these two specific rules, there should be little or no cumulative impact to wetlands or wetlands*

complexes as understood under Env-Wt 302.04(a) (16) and (17). The impacts from the Northern Pass Project are small, and with specific regard to the Granite Reliable Project the permanent impact from the Project is a tiny percentage of the overall wetlands complex in the watershed. Normandeau reviewed plans and wetland impact summary tables associated with that now operational wind farm project. These materials were obtained through a data request to NHDES File Review (plans), from the GRP SEC Application materials available through the NHSEC website (summary tables)[1], and from the appendices associated with the GRP Final EA (plans)[2]. The construction of GRP required direct filling of wetlands and streams for access roads and turbine pads, with approximately 60-70% of the permanent wetland impacts (those located in Newell Brook and Millsfield Pond Watersheds) associated with ridgeline and other higher elevation areas, while the permanent impacts associated with NPT structure foundations are located on middle to lower slopes (Figure enclosed). Analysis of permanent impacts to streams and wetlands was conducted within the four watersheds that contain components of both the operational GRP and the proposed NPT Project. The watersheds were delineated using USGS StreamStats Beta Version 4 and exported to a GIS file containing the proposed NPT impact data. Precise quantification of impacts to individual wetlands and streams was not possible given the lack of detailed delineation data in areas between the two project sites; and the detail at which resource delineations were conducted for each project exceeded that of statewide stream (NHD) and NWI wetland inventory data thereby necessitating the more general watershed-scale review. Permanent impacts were the focus of the analysis because temporary impacts are not assumed to accumulate, and secondary impacts were not provided in the GRP project materials provided through the data request.

Table 1. Cumulative Impact Analysis: GRP and NPT

Watershed Name (≥HUC12)	**Watershed Area (Acres)**	**GRP Perm. Stream Impacts (SF)[Acres]**	**GRP Perm. Wetland Impacts (SF)[Acres]**	**NPT Perm. Stream Impacts (SF)[Acres]**	**NPT Perm. Wetland Impacts (SF)[Acres]**
Unnamed Trib. Andro-scoggin River	87	0	542 [0.01]	0	64 [<0.01]
Pond Brook	6,226	2,300 [0.05]	25,511 [0.59]	0	658 [0.02]
Newell Brook	7,584	0	12,256 [0.28]	0	88 [<0.01]
Millsfield Pond Brook	10,695	0	45,128 [1.04]	7 [<0.01]	407 [<0.01]
Total:	24,592	2,300 [0.05]	83,437 [1.92]	7 [<0.01]	1,217 [0.03]

The identified watersheds include those associated with an unnamed tributary to the Androscoggin River in Dummer, Pond Brook in Dummer and Millsfield, Newell Brook in Dummer, Errol and Millsfield, and Millsfield Pond Brook in Millsfield and Errol. Table 1 provides the area of each watershed along with the total permanent stream and wetland impact for both projects. Total permanent stream and wetland impacts associated with the GRP project within the common watersheds total approximately 1.97 acres while the proposed permanent impacts associated with the NPT Project total just 0.03 acres. Impacts to "ditches" that were included in the GRP impacts summary tables were excluded due to uncertainty associated with jurisdiction. This suggests a minimal cumulative increase in impacts as a result of the NPT project within the common watershed areas. In addition, several other factors should be considered: 1) the majority of all four watersheds have been, and continue to be, heavily logged including clearcutting and selective harvesting resulting in ongoing disturbance to the cover, soils and water resources within these watersheds, including areas located between the two projects; 2) NPT will utilize Dummer Pond Road, which was upgraded as a part of the GRP project, as a primary access route thereby minimizing additional impacts in this area from new road construction; and 3) Northern Pass will permanently impact only 0.5% or less of the 877 acres of wetlands, 6 acres of vernal pools, and 139,905 lf of streams within its entire project area. Based on this analysis, we expect that the cumulative impacts of GRP and NPT will be relatively minimal especially given the existing land use context and mitigation measures and BMPS to protect wetland and water resources that will be implemented during construction of the NPT project.

[1] *http://www.nhsec.nh.gov/projects/2008-04/index.htm*
[2] *http://energy.gov/nepa/downloads/ea-1801-final-environmental-impact*

4. Question 2 of the wetland application states 24 miles of the 32 mile new section of ROW will occur within working forests. What are the other land uses in the remaining 8 mile section?

Response: *In Pittsburg, the land use within the Project corridor is primarily managed forest, with a small quantity of unmanaged floodplain and wetland, and a very small area of active hayfield. Recreational trails are also present. In Clarksville, the primary land use along the corridor is forested land and agricultural land, some active and some abandoned. In addition, Transition Station 2 is located on land that is also mined for gravel. There is some low density residential land along Route 145 where the Project is underground. In Stewartstown, the primary land uses along the project route are managed forest and low density residential land mixed with active agricultural land.*

5. Question 10 of the wetland application states that the project will enhance public access for all-terrain vehicle (ATV) trails. Describe the areas where this project will enhance public ATV access, and address whether these new trails impact additional wetlands and surface waters.

Response: *NPT supports snowmobile and other ATV use where appropriate. No final decisions have been made on whether and where ATV use is appropriate. For the conservation land that is part of the Mitigation Package, these decisions will be made on an conservation area by conservation area basis. See also NPT's response below to Question 35.*

6. Will the ROW's be gated with signage to prevent unauthorized access by ATVs or other off-road vehicles? How will enforcement be achieved to prevent rogue ATV use along ROW's or in environmentally sensitive areas?

   Response: *To discourage use of ATVs and other off-road vehicles that is not authorized by the underlying landowner, NPT and, where applicable, Eversource NH will work with landowners to install gate and barrier systems across access points adjacent to public roadways, where appropriate. Appropriate signage will also be posted on properties with landowner permission.*

7. There appears to be a change in use on some forestry access roads, as well as some ATV and snow machine trails, that will require additional permitting. See Rule Env-Wt 303.04(g)(1), which states "access shall not be used for subdivision, development, or other land conversion to non-forestry uses…". Please include in the wetland application any additional wetland impact areas where this change in use occurs. In addition, existing stream crossings may need to be upgraded to meet the stream crossing standards of Chapter Env-Wt 900.

   Response: *As recommended by NHDES, Northern Pass will assess potential culvert improvements along roads that were previously permitted by others under a Forestry Permit by Notification, and which will now need to meet current stream rules for the conversion to non-forestry purposes. The assessment will take place in phases. Phase one includes the identification of proposed off-ROW access roads that were not already permitted for all uses, a culvert survey by an engineer and a scientist with stream geomorphology experience, and an evaluation of each culvert based on field and GIS data and is expected to be completed by the end of July 2016. Phase two includes collection of additional field measurements for culverts to be replaced, culvert design, and drafting and submission of a permit amendment.*

8. Question 19 of the wetland application states that the existing transmission ROW crosses several conservation lands, and that there will be no expansion of clearing within these areas. How is this being accomplished? Can this be done in other sensitive areas to further avoid and minimize the project related wetland impacts?

   Response: *Vegetative clearing for the project is accurately depicted on the wetlands maps located in Appendix 47 of the SEC Application, which includes clearing on conservation lands within the existing ROW. The statement in answer to Question 19 that no additional clearing was necessary is incorrect. It should have stated that no additional clearing was necessary beyond the existing ROW and that there would be no expansion of the ROW. As we have explained in prior communications with DES, the existing transmission ROW predates the conservation areas that this question references, so there will be no clearing on land subject to the conservation restrictions.*

   ROW clearing is not defined by the location of the right-of-way vis-à-vis conservation land or other land types, rather it is governed by clearances from the conductor to the edge of the ROW as defined by The National Electric Safety Code which describes the distances that are required to maintain the operational security and safety of the lines. Within the ROW, vegetation will be cleared only to the extent required to construct the Project safely and in compliance with the electric safety code and further expansion of clearing will not occur. Moreover, significant reductions in clearing limits were attained by redesigning all HVDC

structures with V-string insulators, and by relocating the DC line closer to the center of the existing corridor.

9. DES review of the wetland impact plans found that portions of the project did not appear to fully avoid and minimize wetland impacts within the ROW. Please address each of the following plan specific questions:

   a) On plan sheet 006, temporary impact within wetland PB27 could be avoided by relocating the access road to the southeast, and wetland PB26 avoided by moving the road northwest.

   b) Plan sheet 007, wetland PB23 could be avoided by moving the road east.

   c) Plan sheet 008, it appears that Transfer Station 1 could be relocated further east to minimize impacts.

   d) Sheet 011, the access road could cross wetland CK30 further south, and wetlands CK29 and CK28 could be completely avoided.

   e) Sheet 012, tower DC-29 could be relocated outside of wetland CK20 (either east or west).

   f) Sheet 047, shift access road southwest to avoid wetland S37.

   g) Sheet 055 and 056, towers DC-138 and DC-139 could be relocated east or west to avoid impacts to wetland S2 and S1.

   h) Sheet 057, towers DC-142 and DC-143 could be shifted west to avoid wetlands DX261 and DX254, respectively.

   i) Sheet 058, towers DC-144 and DC-145 could be moved east outside of wetlands DX251 and DX250.

   j) Sheet 059, tower DC-147 could be shifted east to avoid DX241.

   k) Sheet 074, tower DC-184 could be moved northwest to avoid wetland DX124, and the access road could be moved southwest to avoid wetland DX123.

   l) Sheet 078, access road could be moved southwest to avoid wetland DX97.

   m) Sheet 083, move access road east to avoid wetland DX33 and DX32.

   n) Sheet 091, move road east to avoid wetland M195.

   o) Sheet 101, tower DC-258 could be moved northwest to further avoid wetland M147.

   p) Sheet 121, tower DC-306, could be shifted southwest to further avoid wetland DU167

q) Sheet 139, the north portion of the access road may not be needed between towers DC-351 and DC-352, as other access points exist. This will reduce impacts to wetland DU36.

r) For long stretches of wetland crossings that occur over several thousand linear feet, (e.g. sheets 169 and 170 for wetland SK37, and sheets 231, 232, 233 and 234 for wetland WF59) could different pole technology be employed to allow for longer spans between towers that would further avoid the overall wetland impact?

s) Plan sheet 191, tower DC-485 could be moved north to avoid wetland NU30.

t) Sheet 262, it appears that there is an existing access road through wetland WF24 that could be used. Why wasn't this considered over the proposed road location?

u) Sheet 537, there is an existing road east of the proposed access road that could be used to avoid new impacts to wetland F37.

v) Sheet 689, why wouldn't the existing road be used on the west edge of vernal pool DF94 to minimize impacts?

Response: *We are still analyzing these specific locations and will provide a response shortly.*

10. Review of the Deerfield Substation plans finds that most of the proposed wetland impacts are for two stormwater ponds; 9,037 square feet and 19,196 square feet respectively. Impacts to naturally-occurring wetlands for stormwater treatment and attenuation are typically not allowed. It appears that the substation could be shifted further southwest to avoid these wetland areas. Also, the stormwater ponds could be reconfigured to further reduce impacts.

Response: *The Deerfield Substation is an existing facility on a parcel of land presently owned by Eversource. In the DT-1 area, 4,996 square feet of the 19,196 square feet of wetland impacts is due to the access road which connects the existing station to the proposed expansion and is not stormwater facility related. It is not practicable to relocate the access road in a more efficient manner while providing direct and simple access. The remaining 13,200 square feet of wetland impacts in this area are stormwater basin related.*
In the DT-2 area, only 1,077 square feet of the 9,037 square feet of wetland impacts is directly caused by stormwater features (sediment forebay and sand filter SF-1). The stormwater features were designed and located as to minimize the wetland impacts to the extent practicable. The remaining 7,960 square feet is from earth fill and grading associated with the station. The station location and positioning on the site was carefully considered to minimize wetland and other sensitive natural resources to the extent practicable; which the current proposal depicts. The station was not able to be shifted south/southwest to decrease wetland impacts due to several limiting existing conditions located in that area which consist of a steep earth slope, other delineated wetlands, and a FEMA Flood Zone 'A'. Shifting the station south/southwest impacts these other features which creates more impacts than the currently proposed configuration.

Both DT-1 and DT-2 are designed to detain and attenuate stormwater flows in accordance with the NH DES Stormwater Manual, their size has been minimized to the extent practicable. The station and stormwater facilities configuration has been designed to

minimize wetland impacts to the extent practicable per Env-Wt 302.03(a). As requested by DES, NPT is undertaking additional geotechnical subsurface survey work and the data from this survey will be analyzed to confirm the design assumptions with the design as presently proposed.

11. The plans for Transition Station #5 propose filling 16,378 square feet of wetland for the yard and a stormwater pond. Similar to the above comment, impacts to naturally-occurring wetlands for stormwater treatment and attenuation are typically not allowed. Given the amount of wetland impacts and the steep slopes in the area, alternative sites should be considered that further avoid wetland impacts.

    Response: *The site chosen for Transition Station #5 was based on the limited availability of a land owner willing to sell a parcel of land located at the junction of the underground route and the overhead ROW. Placing this transition station at this location instead of land farther south that is otherwise available has allowed NPT to add 3 miles of additional underground construction in order to avoid and minimize visual and environmental effects to Baker Pond, the Rocks Estate, and Profile School.*

    12,735 square feet of the 16,378 square feet of wetland impacts is due to the station footprint and associated grading. The station footprint is almost as large as the parcel itself. While this maximizes the use of the parcel, it does not allow space to reduce wetland impacts. The remaining 3,643 square feet of wetland impact is due to the associated stormwater facilities. A stormwater management basin was required to meet the NH DES stormwater manual requirements and the only location available onsite is along the northern portion of the site where there are delineated wetlands. These wetland impacts are unavoidable however the stormwater facilities were designed to limit the wetland impacts to the extent practicable per Env-Wt 302.03(a).

12. The plans for Transition Station #1 propose 46,132 square feet of wetland and stream impacts for large cuts and fills, as well as a stormwater pond. These impacts are significant and could be avoided by shifting the station further east to reduce or eliminate many of these impacts. Relocating the station should be considered in the overall design to meet Rule Env-Wt 302.03.

    Response: *The site chosen for Transition Station #1 was based on the limited availability of a land owner willing to sell a parcel of land located at the junction of the underground route and the overhead ROW. 9,240 square feet of the 46,132 square feet of wetland impacts is due to the proposed stormwater management facilities (basin and swale) onsite. The location of these stormwater facilities is already optimized to minimize wetland impacts. The remaining 36,892 square feet of wetland impacts are due to the station, access road, and associated grading which have also been designed and configured to minimize wetland impacts. Shifting the stormwater facilities and/or the station will only increase the amount of wetland and stream impacts beyond the current design. The station and stormwater facilities configuration has been designed to minimize wetland impacts to the extent practicable per Env-Wt 302.03(a).*

13. Provide detailed restoration/planting plans for temporary wetland, stream and vernal pool impact areas that will be adhered to by the selected contractors. Stream banks and wetland

restoration areas shall include live stakes and container plantings as well as seed mixes, where applicable.

Response: *To expand upon the restoration narrative included in the wetlands application and address the NHDES request to add woody vegetation plantings to the ROW, NPT has completed draft planting tables with preliminary construction specification notes (both set forth below). As engineering and construction design is further developed, these planting tables will also be refined. Before becoming a final document, NPT will work with NHDES and the NH Natural Heritage Bureau to incorporate appropriate plant and seed mix selections for the various locations. This plan may be modified in the future due to changing conditions or specific landowner or agency requests. All proposed modifications will be submitted to NHDES for approval prior to implementation Most wetlands that are temporarily disturbed will retain the soil, roots and seed bank of the current vegetation, and it is expected that most of these areas will revegetate without the addition of planted nursery stock. However, live stakes will be installed on stream banks or in wetlands where grading occurred or invasive species were mechanically removed, to hasten soil stability and vegetation recovery in these locations.*

Common Name	Genus	Species	Status	Spacing	Installation Method	Location*
Speckled alder	*Alnus*	*incana*	FACW	3-6 feet	Live stake or cutting	N/S
Red chokeberry	*Aronia*	*arbutifolia*	FACW	3-6 feet	Cutting	N/S
Common buttonbush	*Cephalanthus*	*occidentalis*	OBL	3-6 feet	Live stake or Live Pole	N/S
Heart-leaved willow	*Salix*	*eriocephala*	FACW	3-6 feet	Live stake or Live Pole	N/S
Long-beaked willow	*Salix*	*bebbiana*	FACW	3-6 feet	Live stake or Live Pole	N/S
Black willow	*Salix*	*nigra*	OBL	3-6 feet	Live stake or Live Pole	N/S
Silky willow	*Salix*	*sericea*	OBL	3-6 feet	Live stake or Live Pole	N/S
Black elderberry	*Sambucus*	*nigra*	FACW	2-8 feet	Live stake or cutting	N/S
White meadowsweet	*Spiraea*	*alba*	FACW	2-8 feet	Live stake or cutting	N/S
Steeplebush	*Spiraea*	*tomentosa*	FACW	2-8 feet	Live stake or cutting	N/S
Red-osier dogwood	*Swida*	*sericea*	FACW	3-6 feet	Live stake or Live Pole	N
Silky dogwood	*Swida*	*amomum*	FACW	3-6 feet	Live stake or Live Pole	S
Gray dogwood	*Swida*	*racemosa*	FAC	3-6 feet	Live stake or Live Pole	S
Smooth arrowwood	*Viburnum*	*dentatum*	FAC	2-8 feet	Live stake or cutting	N/S
Nannyberry	*Viburnum*	*lentago*	FAC	2-8 feet	Live stake or cutting	N/S

Highbush-cranberry	*Viburnum*	*opulus*	FACW	2-8 feet	Live stake or cutting	N/S
NE erosion control/restoration mix for moist sites				35lbs/acre	hydro-seeding, mech. spreader, broadcast	N/S
NE conservation/wildlife mix				25lbs/acre	hydro-seeding, mech. spreader, broadcast	N/S
NE Roadside Matrix Wet Meadow mix				35lbs/acre	hydro-seeding, mech. spreader, broadcast	N/S
NE Erosion control/restoration mix for dry sites				35lbs/acre	hydro-seeding, mech. spreader, broadcast	N/S

* N - WMNF and points north; S - south of the WMNF

Restoration Notes

A. ***Typical Stream Crossing Restoration without Existing Trail/Road***

1. Following the removal of equipment bridges, timber mats, and construction debris, waterbody banks will be restored to preconstruction contours.

2. In all areas of ground disturbance a permanent cover crop of native annual and perennial seed mixes will be used to establish immediate soil stabilization. Acceptable seed mixtures for riparian restoration include New England Erosion Control/Restoration Mix for Moist Sites, New England Conservation/Wildlife Mix, and New England Roadside Matrix Wet Meadow Mix or similar mixes. Descriptions of these seed mixes are included on the detail sheets (to be developed). All proposed seed mixes will be provided to the NH Natural Heritage Bureau for review and approval.

3. Following seeding, a layer of straw mulch will be applied to all seeded areas. Mulch will be anchored to prevent displacement by surface water flow or wind erosion. No hay will be permitted.

4. Temporary erosion control blankets and silt fence will be used on and at the base of slopes greater than 8 percent. Permanent slope breakers and water diversions will also be installed and maintained.

5. Live stakes will be installed in late fall or early spring during the dormant season (following September 15 or before June 1) at a rate of 500 shrubs per acre along restored stream banks as shown on the detail sheets (to be developed).

6. Vegetation growth and establishment will be monitored until 85 percent permanent ground cover has been met.

7. Temporary erosion control materials will be removed following vegetation establishment.

B. Typical Stream Crossing Restoration with Existing Trail/Road

1. For stream crossings in areas with existing improved and unimproved roads that the landowner intends to retain, all road surfaces will be re-contoured to pre-construction grades, with all ruts and potholes filled and smoothed. Where necessary, road fill will be compacted in 6-inch lifts to established pre-construction contours. If requested by the landowner, existing access roads may be removed, and original stream bed and bank contours restored.

2. In all areas where ground disturbance has occurred, final grading, seeding, mulching, and planting will occur as outlined in Section A. above.

C. Typical Depressional Wetland Crossing Restoration

1. Following the removal of timber mats and construction debris, wetland contours, including microtopographic relief, will be restored to preconstruction conditions.

2. Establishment of preconstruction contours may require soil de-compaction in areas where the use of timber mats and machinery result in soil compaction during the construction phase. In areas of severe soil compaction, or in areas where topsoil and subsoil separation was not achieved, the use of a wetland soil mix may be required to establish pre-construction contours and soil organic content.

3. Additionally, coarse wood debris will be preserved in the wetland or replaced during the restoration process as long as it will not interfere with ROW maintenance.

4. In all areas of ground disturbance, a permanent cover crop of native annual and perennial seed mixes will be used to establish immediate soil stabilization. Acceptable seed mixtures for wetland restoration efforts include New England Erosion Control/Restoration Mix for Moist Sites, New England Conservation/Wildlife Mix, and New England Roadside Matrix Wet Meadow Mix or similar mix (see detail sheet [to be developed]). All seed mixes will be provided to the NH Natural Heritage Bureau for review and approval.

5. Following seeding a layer of straw mulch will be applied to all seeded areas. Use of hay will not be permitted. Mulch will be anchored to prevent displacement by surface water flow or wind erosion. Temporary erosion control blankets and silt fence will be used on and at the base of slopes greater than 8 percent, and where determined to be necessary. Permanent slope breakers and water diversions will also be installed and maintained. Live stakes of native shrubs will be installed in late fall or early spring during the dormant season (following September 15 or prior to June 1) at a rate of 100 shrubs per acre along restored wetland edges and within wetlands, when feasible.

6. Vegetation growth and establishment will be monitored until 85 percent permanent ground cover has been met.

D. ***Seepage Slope Wetland Crossing Restoration***

1. Where seepage slope wetlands are crossed, the path will be restored by adding (or replacing stockpiled) wetland soil mix to the disturbed area so it matches the surrounding topography and pre-construction contours.

2. Newly placed wetland soil will be seeded with one of the following seed mixes; New England Erosion Control/Restoration Mix for Moist Sites, New England Conservation/Wildlife Mix, and New England Roadside Matrix Wet Meadow Mix, or similar mix (see detail sheet [to be developed]). All seed mixes will be provided to the NH Natural Heritage Bureau for review and approval.

3. Erosion control blankets will be placed over the disturbed and seeded area to hold soil in place until vegetation has become established.

E. ***Wetland Swale Crossing Restoration***

1. Following the removal of equipment bridges, timber mats, and construction debris, wetland swale bed and banks will be restored to preconstruction contours.

2. In all areas of ground disturbance a permanent cover crop of native annual and perennial seed mixes will be used to establish immediate soil stabilization. Acceptable seed mixtures for wetland swale restoration include New England Erosion Control/Restoration Mix for Moist Sites, New England Conservation/Wildlife Mix, and New England Roadside Matrix Wet Meadow Mix or similar mix (see detail sheet [to be developed]). All seed mixes will be provided to the NH Natural Heritage Bureau for review and approval.

3. Following seeding a layer of straw mulch will be applied to all seeded areas. Use of hay will not be permitted. Mulch will be anchored to prevent displacement by surface water flow or wind erosion. Temporary erosion control blankets and silt fence will be used on and at the base of slopes greater than 8 percent.

4. Vegetation growth and establishment will be monitored until 85 percent permanent ground cover has been met.

5. Temporary erosion control materials will be removed following vegetation establishment.

F. ***Wetland Crossing Restoration with Existing Trail/Road***

1. For wetland crossings in areas with existing improved and unimproved roads all road surfaces will be re-contoured to pre-construction grades, with all ruts and potholes filled and smoothed.

2. If requested by the landowner, existing access roads may be removed, and wetland contours restored to grades and microtopograpy similar to portions of the wetland not previously impacted by anthropogenic disturbances.

In all areas where ground disturbance has occurred, final grading, seeding, mulching, and planting will occur as outlined in Section C. above.

14. Describe how future maintenance of the structures will be accomplished once the temporary access roads are removed and wetland areas restored.

Response: *Future maintenance and repair activities along the overhead portions of the proposed Project route will be conducted in the same manner as maintenance and repair work is accomplished today on existing transmission lines within New Hampshire. Maintenance on structures and vegetation maintenance along the new and existing ROW areas will be conducted under the purview of the Utility Maintenance Notification (UMN)(RSA 482-A:3, XV) permitting mechanism for wetlands and streams and under the Permit By Notification (PBN)(RSA 483-B) permitting mechanism for maintenance work within Shoreland areas. Future maintenance would be expected to be temporary in nature and as required the work would be conducted consistent with the Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Water bodies in New Hampshire (Utility BMP manual) published by the NH Department of Resources and Economic Development (NHDRED) (January 2010), or applicable revision of this document. Wetland and stream impacts would be avoided and minimized where possible, along with instances of RTE species or natural communities. Any disturbed areas would be promptly restored and stabilized and erosion and sediment control measures would be applied where necessary. Avoidance and minimization, where practicable, of temporary impacts to sensitive resources would be prioritized through alternate access routes, seasonal considerations, or equipment types; however if utilizing the previously impacted and restored access route across a given wetland is the alternative that minimizes impacts associated with the maintenance/repair work the most, it will be used and any temporary impacts will be restored.*

15. Provide further detail how equipment will access structures that are located in open water and deep water habitats. The plans show access roads through open water areas in several locations where timber matting would be ineffective. Please address alternative access methods for these locations where applicable.

Response: *There are several options available for crossing and accessing proposed structure locations in shallow ponded areas. The proposed NPT route crosses several ponded, palustrine unconsolidated bottom (PUB) wetlands many of which are also associated with beaver activity. In addition the number of structures proposed for these areas was limited where possible. All of these ponded wetlands are relatively shallow and are at least partially, with many completely, vegetated with aquatic emergent and floating-leaf plants. Water depths fluctuate seasonally and with changes in hydrology associated with beaver activity and other climatic influences; however none of the ponded areas crossed within the NPT ROW are considered deep-water, or Lacustrine systems and water depths do not exceed 2 meters (6.6 feet). The majority of the areas within the ROW range from 1-4 feet in depth.*

Several access and work area alternatives exist for the means and methods of construction at the ponded wetland areas, including but not limited to:

- *Avoidance: several of the proposed temporary construction access crossings of ponded wetland areas may be able to be avoided by utilizing access opportunities from public roads on opposite sides of the proposed pond crossing (e.g. DF31, Sheet 670, Deerfield). Avoidance will ultimately be decided in the field by the contractor based on current conditions along the proposed access roads leading to and from the proposed crossing site and other variables including safety, weather, seasonal conditions, schedule and structure type.*

- *Minimization: multiple ponded or partially ponded wetlands utilize existing access road and/or ORV trail crossing sites that have been previously disturbed and are continually utilized by private landowners. Many of these sites have hardened bottoms for better performance (e.g. CH46, Sheet 695, Chester; RA5, Sheet 691, Raymond). Additional techniques include bridging, stacking timber matting in shallow water to achieve the stability needed, and shallow water work barges where needed.*

- *Winter/Frozen Conditions: After avoidance and minimization, working in these ponded areas is most easily accomplished under winter/frozen conditions typically experienced in late December through late February in New Hampshire. Additional opportunities for winter/frozen condition work will be available in northern New Hampshire. This is the preferred method after avoidance for minimizing impacts to the wetland system assuming that seasonal conditions are appropriate. Frozen conditions can be enhanced through simple practices including:*

    - *The removal (plowing) of snow from underlying ice to reduce the natural insulating action of snowpack thereby increasing the depth and strength of the ice;*

    - *Application of water to plowed icy areas to strengthen ice; and*

    - *Utilizing timber matting over ice or deep snow.*

16. The plans do not appear to show all possible staging, storage and laydown areas, some of which the application described as 5 to 50 acres in size. These areas should be represented on the plans in all areas of the project where they occur.

Response: *The location of and proposed impacts associated with known temporary storage and staging areas located within lands owned or controlled by the Project have been included in the applicable state and federal permit applications, including the NHDES wetlands permit (Sections 6.1.15 and 6.1.16); however sites that may be identified in the future or where a formal agreement for use has not been completed or does not exist have not been included. We expect that additional sites will be identified once the Contractors for the Project are more fully engaged. Any storage and staging areas identified in the future will be subject to the same site selection, avoidance and minimization standards and protocols that have been applied to the remainder of the Project; and no impacts will be allowed unless explicitly permitted by DES. The Project expects to use only already disturbed sites requiring no additional resource impacts.*

17. Describe how the compaction of soils in laydown areas will be restored to allow for natural infiltration of precipitation. The plans should include notes that describe these restoration activities.

Response: *Northern Pass intends to use laydown sites that are previously disturbed areas, such as gravel pits, parking lots, fallow fields, etc. These sites will be returned to pre-construction conditions, unless the landowner has specific requests for final treatment that do not require natural resource impacts. If the laydown area is, for example, a fallow field that was not compacted prior to use on the Project, then surface tilling and seeding would be done as needed to restore the site. For gravel pits, minor regrading may or may not be required, and no loss of infiltration is expected.*

18. Site photographs were not provided for every wetland resource where permanent impacts are proposed - only marked up aerial photographs were provided in several locations. Provide additional on-site wetland photographs were necessary.

Response: *Photos for wetlands PB25, M2, M23, M86, M88, and P30 are attached.*

19. Three high-quality vernal pools are proposed to be temporarily impacted by the project. Can these temporary impact areas be avoided by making minor plan changes?

Response:

WVP79 – This vernal pool is located in Whitefield adjacent to the Lancaster town line. The access road in the vicinity "clips" the edge of this vernal pool. It has an impact of approximately 2.5 square feet. The Project will relocate the access road approximately 2 feet to the east to avoid the vernal pool impact.

BHVP2 – This vernal pool is located in Bethlehem in the vicinity of Route 116. The impacts to this pool are caused by an access road that is sandwiched between two wetland areas. The vernal pool impacts are approximately 235 square feet. Shifting the access road would not be minimizing or avoiding and would lead to substantially more wetland and/or vernal pool impacts. The Project suggests that we leave the impact as is.

DFVP1 – This vernal pool in located in Deerfield in the vicinity of Haynes Road (public) and just east of Thurston Pond Road. The impacts to this pool are caused by a crane pad associated with a 345 kV lattice structure. Some minimization of impact is possible but it would not substantially change the impacts based on the size of the pool and the location of the structure and the crane pad. The only way to avoid this vernal pool would be to move the structure approximately 30 feet to the south. This would cause the structure height to increase.

20. All wetland areas along the 192 mile corridor are required to be field delineated and classified in accordance with Env-Wt 301.01 and Env-Wt 301.02. Have these requirements been met or did some of the wetland areas get interpreted and identified from aerial photographs?

Response: *All wetlands included in the state and federal wetlands applications were field delineated, with one exception. The one wetland not delineated in the field (F-85 in Franklin) was initially overlooked, and was mapped by aerial photo interpretation when the omission was discovered. This wetland has since been delineated and GIS files have been updated accordingly. Field delineations revealed a smaller wetland than what was interpreted aerially resulting in minor reductions in temporary impact from a proposed access road. The revised Wetlands and AoT plan sheets are enclosed.*

21. Given the large scale of the project, construction monitoring plans should be developed and included with the application to clarify these requirements to the selected contractors.

Response: *We agree. As is typical for large scale transmission line projects of this nature, Project Compliance Work Plans (PCWPs) will be developed by the general contractor and approved by the Applicants prior to construction. These will include details regarding construction progress, safety performance and environmental monitoring. More specifically, the PCWPs will include permit conditions, detailed maps, tables and other information for the Contractor and Environmental Monitors to use for different construction tasks. The plans will describe timing restrictions, access limitations, fencing/signage requirements, environmental monitor tasks, restoration details, etc. for every ecologically sensitive location along the Project route. Details will be added as agency consultations continue and permit conditions are issued. The PCWPs will be provided to NHDES when they are available.*

22. DES received written comments from the Pemigewasset River Local Advisory Committee (LAC). Please address their concerns and provide a copy of your response to DES.

Response:

23. DES has received numerous written comments and concerns from several local Conservation Commissions, including Bethlehem, Easton, Campton, Ashland, Franklin, Bristol, Canterbury, Pembroke, Deerfield, and Raymond. Address each of their concerns and provide a copy of your response to DES.

Response:

24. DES received written comments from the Society for Protection of New Hampshire Forests (SPNHF) on April 25, 2016 and the applicant responded directly to SPNHF on April 27, 2016. Several of the concerns raised by SPNHF are similar to questions that DES is requesting clarification on, so be sure to adequately address each question in this request.

Response:

25. The application describes Karner blue butterfly egg surveys in July 2015. How will these survey results be utilized to minimize construction impacts?

Response: *The Kbb egg survey was conducted primarily to assist in quantification of the unavoidable direct impacts to Kbb (associated with the unavoidable direct impacts to wild lupine) to insure that compensatory mitigation would be adequate. The egg survey was not used for construction impact avoidance. Rather, it was assumed that all areas of wild lupine*

(state-threatened) were also likely to support Karner blue butterflies (Kbb) at some life stage, and therefore efforts to avoid and minimize lupine impacts would also minimize Kbb impacts.

26. Please include the following construction timing restrictions on the plans to minimize potential impacts to wildlife species, or as recommended by New Hampshire Fish & Game Department (NHFG):
    a) Avoid summer clearing from May through August in high elevation areas above 2,700 feet in elevation,
    b) When working near identified Deer Wintering Areas (DWA) or Moose Concentration Areas (MCA), avoid work when deep or crusted snow exists – typically January and February.
    c) No work shall be done within ¼ mile any active raptor nests from March 1st to July 31st.
    d) Avoid significant mast habitat whenever possible.
    e) If an area is found to be inhabited by denning Canada lynx, then avoid all work from May through mid-July.
    f) In areas where Northern long-eared bats or small-footed bats are detected, no cutting shall occur from May 1st to September 30th.
    g) The applicant's consultant shall search for Northern black racer habitat and turtle nesting habitat prior to construction in each area to help avoid accidental crushing.

    Response: *Northern Pass will incorporate the requested construction timing restrictions, or similar restrictions and other avoidance and minimization commitments as recommended by NH Fish and Game Department, NH Natural Heritage Bureau, and US Fish and Wildlife Service into the plans for the Northern Pass Project.*

27. American beech stands were identified as important wildlife mast along both sides of a 3,700 linear foot section of the ROW within the town of New Hampton. Are additional clearing impacts necessary in these areas, or can clearing be avoided as similarly proposed where the ROW crosses conservation lands?

    Response: *Vegetative clearing for the project is shown on the wetlands maps located in Appendix 47 of the SEC Application. ROW clearing is not defined by the location of the right-of-way vis-à-vis conservation land or other land types, rather it is governed by clearances from the conductor to the edge of the ROW as defined by the National Electric Safety Code which defines the distances that are required to maintain the operational security and safety of the lines. In the New Hampton ROW, including the section identified in the question, vegetation will need to be removed between the existing clearing limits to the ROW limits (approximately 20 feet wide in some areas) in order to comply with the safety code.*

28. Provide additional detail how the project will impact unique wetland areas that were identified in the survey, like the potential exemplary natural community identified as a circumneutral hardwood forest seep (enriched calcareous seepage swamp) in Dixville that has 6 state watch plant species, or uncommon wetland areas like peatlands, floodplain wetlands, and northern white cedar swamps. Do the mitigation parcels conserve similar unique wetland systems?

    Response:

Floodplain Wetlands

A floodplain wetland will be impacted on the south east side of Halls Stream in Pittsburg, NH. The floodplain is characterized as a wet meadow and shrub wetland adjacent to upland agricultural land and is located in the Upper Connecticut watershed. The wetlands located in the Halls Stream floodplain will be permanently impacted by 2 lattice structures and temporarily impacted by two work pads and an access road. Additionally, a peatland will be impacted by a permanent structure to the east of the stream. However, the area surrounding Halls stream is a proposed mitigation parcel and, if approved, would protect the surrounding riparian and shoreland habitat.

Floodplain wetlands adjacent to John's Stream in Dalton, NH will be impacted by work during the construction of the Northern Pass Project. The floodplain wetlands are fed by seeps along the toe of slope to the west. The wetland is also used in part as a horse pasture. Common plant species observed included bluejoint, joe-pye weed, mannagrasses, woolgrass, jewelweed, and sedges. Woody species included speckled alder, red elderberry (Sambucus racemosa) and willows. Due to the wetland association with the Johns River this wetland was determined to having several principal functions including groundwater recharge/discharge, floodflow alteration, sediment/toxicant retention, nutrient removal, shoreline stabilization, and wildlife habitat. In the wetland, impacts will include 3 feet of a lattice structure and temporary access roads and a work pad.

Some small floodplain wetlands occur in Lancaster, NH at the Israel River and along Otter Brook. These small wetlands are concentrated in agricultural fields surrounding the rivers. No direct impacts will occur in floodplain wetlands along Otter Brook and temporary impacts from a work pad will occur in a small section of the floodplain wetland adjacent to the Israel River.

None of the project area floodplains will lose measureable flood storage capacity or other functions and values as a result of the Project. Mitigation Site A will provide protection to approximately 25 acres of the Halls Stream floodplain wetlands, including forested, shrub and emergent wetlands with stream frontage, oxbow ponds and vernal pools. Mitigation Site B also includes small portions of the Connecticut River floodplain, with oxbow wetlands. Site N includes the cedar and fir wetland floodplain forest associated with Cedar Brook.

Peatlands

A peatland in Northumberland (NU8) will be impacted by the Northern Pass Project. The wetland is characterized by a mix of scrub shrub and emergent wetland plants with trees along the project area edge. Species within the overstory include balsam fir with wild raisin, Labrador tea (Rhododendron groenlandicum), leatherleaf (Chamadaphne calyculata), alder (Alnus spp.), mountain holly, meadowsweet and willow in the shrub/sapling layer. Herbaceous species include cattail, sallow sedge (Carex lurida), rattlesnake mannagrass, cottongrass, nodding sedge, bluejoint and American water-horehound (Lycopus americanus). Principal functions of wetland NU8 include groundwater recharge/discharge, floodflow alteration, sediment/toxicant retention, nutrient removal, production export, and wildlife habitat. The site will be impacted by 2 lattice structures, associated temporary work

pads, and a temporary access road. Work in this wetland will be conducted in the winter under frozen conditions to the extent practicable. There are no known peatlands on the mitigation parcels.

Northern Hardwood Seepage Forest (in Proposed ROW)

Two of these communities, when observed in 2015, were heavily disturbed by logging. The other two communities had intact forest canopies. One community is considered exemplary and two are listed as possibly exemplary. Tree clearing for the proposed ROW will result in the permanent loss of between 21% and 80% of the areas of these communities, which will be converted to non-forested habitat. The community that will be impacted the most (NHSF5 in Stewartstown) has been highly disturbed by logging. Mitigation Site B includes a Northern Hardwood Seepage Forest surrounding the proposed Transition Station 1 and adjacent ROW, which contains several watch list species. This community has been logged but will be preserved without logging in the future.

One of these communities is currently considered exemplary by the NH Natural Heritage Bureau. The community is approximately 502,046 sq. ft. and is largely an intact forest with generally semi-rich conditions. The state watch millet grass and the state indeterminate swamp buttercup were observed in this area and no invasive species were observed. At this site temporary impacts will result from the construction of a temporary access road, 14 work pads, and potentially grading associated with their placement. Permanent direct impacts to 0.5% of this community will result from the installation of one monopole structure and 13 lattice structures. Permanent vegetation clearing (indirect impact) will occur in 25% this community. Attempts to avoid this community were investigated through field reconnaissance. Shifting the route to the north (downslope) results in greater wetland and riparian corridor impacts, and shifting the route to the south (upslope) increases direct impacts to this Exemplary Natural Community, and increases visual impacts.

Northern Hardwood–Black Ash–Conifer Swamp (in Proposed ROW)

Two communities of this type, located in Stewartstown and Clarksville, will be affected by the Project. These communities have been deemed not exemplary by the NHNHB. The community in Clarksville has a generally intact tree canopy, while the community in Stewartstown has been highly disturbed by logging. Approximately 53 to 56% of the known areas of these communities will permanently affected by tree clearing. Direct construction impacts associated with a temporary access route, temporary work pads, and permanent structure foundations will occur within the area of the tree clearing. The precise boundaries of these communities were not determined, as they were only surveyed within the area of the proposed ROW. The western side of Mitigation Site N includes a Northern Hardwood - Black Ash-Conifer Swamp along Cedar Brook.

Boulder–cobble River Channel (in Proposed ROW)

One Boulder–cobble river channel associated with South Valley Brook in Dixville will be affected by the Project. A portion of this community is located within proposed ROW where tree clearing will occur (the full extent of the community is unknown; only the portion of the community within the Project area was observed). However, this community type contains

few or no trees, and tall shrubs are usually present in low abundance (NHNHB 2015). Therefore, this impact is expected to have little or no effect on the community. Proposed access routes will cross this Boulder–cobble river channel and two others in Dixville. However, the access routes at these locations consist of existing approximately 20-foot wide dirt logging roads, and bridges or culverts are currently present at the river crossings. There are no Boulder-Cobble River Channel communities in the mitigation parcels, however there are several other stream channel communities represented on these sites associated with Hall's Stream, the Connecticut River, and the Pemigewasset River.

Northern White Cedar-Balsam Fir Swamp (Potentially Exemplary)
Three Northern white cedar–balsam fir swamps were observed in the Project area, in Stewartstown and Dummer. The three communities were deemed by NH NHB to be possibly exemplary, possibly to probably not exemplary, and probably not exemplary. The size and condition of these swamps varied; however, they are all considered potentially exemplary because of their S2 ranking. One of the Northern white cedar–balsam fir swamps in Stewartstown (NHCBFS1) will be temporarily impacted by underground drilling. The impact area is 43 square feet (approximately 0.01% of the area of the community) and occurs by the edge of the road. This is expected to have little or no effect on the community. The other cedar swamp in Stewartstown (NWCBFS2), located on the transition station number 4, will be partly affected by tree clearing. The northernmost tip of this community (approximately 1,922 square feet or 6% of the area of the community) extends into the proposed ROW and will be permanently cleared of trees. Because only the northernmost portion of the community will be affected, the community will not be fragmented. The affected area does not include the main stand of cedars in the swamp, but rather a more marginal portion of the community located along the outskirts. Temporary impacts associated with work pads will occur within the area of permanent tree clearing. The cedar swamp in Dummer (NWCBFS3) will be bisected by the proposed ROW. Tree clearing for the ROW will result in the permanent loss of approximately 26% of the estimated area of this community. A temporary access route is also proposed in this community, but it occurs within the area of permanent tree clearing. This cedar swamp is currently in poor condition, as it has been heavily affected by logging. However, if left undisturbed, the remaining community would likely regenerate. Mitigation Site A includes an excellent Northern White Cedar-Balsam Fir swamp on the eastern side of Hall Stream Road. In addition, Mitigation Site N contains an excellent Northern White Cedar Seepage Forest along Cedar Brook.

29. Additional construction timing restrictions may be needed for rare, threatened or endangered (RTE) plant species; therefore, please coordinate with the NH Natural Heritage Bureau (NHB) to identify timing restrictions and please include these notes on the plans.

Response: *Northern Pass continues to coordinate with the NH Natural Heritage Bureau to identify all possible means to avoid and minimize impacts to each species of rare, threatened or endangered (RTE) plant within the Project Area, including timing restrictions where appropriate, and will provide additional information to NHDES when available.*

30. The application states that calcium rich bedrock occurs within the towns of Dummer, Milldfield, Dixville, Stewartstown, Clarksville, and Pittsburg. With the higher possibility of

rare plants occurring in these areas, botanists should be retained to re-survey these areas prior to construction to ensure that additional rare plants are avoided.

Response: *The Project surveys for rare, threatened and endangered plants were conducted in accordance with project-specific work plans that were reviewed by and approved by the NH Natural Heritage Bureau. The plans included surveys wherever the following conditions were identified:*

- *State-Threatened or Endangered plant populations or watch species occurrences mapped within the corridor.*
- *Areas of the corridor within 0.5 mile of a State-Threatened or Endangered rare plant population or watch species occurrence, if the species has habitat requirements that may occur within the corridor.*
- *Exemplary natural communities mapped within the corridor.*
- *Areas of the corridor within 0.5 mile of an exemplary natural community, if the community has the potential to extend into the corridor.*
- *Areas within the corridor with bedrock mapped as calc-silicates, carbonate-bearing, intermediate, or mafic, and areas within a mile in a southerly direction of these rock types. High search priority will be given to wetlands, riverbanks, and steep slopes that occur on these bedrock types in the corridor. Moderate search priority will be assigned to wetlands within a mile in a southerly direction (the prevailing direction of glacial movement) of these bedrock types.*
- *Areas mapped as Cliff, Peatland, Pine barren, and Rocky ridge or Talus slope that occur within the corridor.*
- *Any additional areas that may have relatively high potential to support rare species, as communicated by NHNHB to Normandeau.*
- *The corridor does not include elevations high enough to provide alpine habitat.*
- *Survey of grasslands is not proposed (given the anthropogenic nature of this habitat type and generally low potential to support rare species) unless mapped areas correspond to rare plant or community habitats or other locations of medium or high search priority.*

We believe that this full survey does not need to be repeated. However, for all locations where RTE plants were observed, botanists will resurvey and reflag their locations in the field prior to construction and assist contractors in avoiding impacts during construction.

Wetland Mitigation Comments

31. Per Env-Wt 806.05(a) and (b), the DES shall not issue a permit until the applicant has paid the full amount of the mitigation payment. With the New Hampshire Site Evaluation Committee (SEC) application process, the DES recommends that the mitigation payment shall be provided within 120 days of the date of a favorable decision by the SEC and issuance of a decision by the Army Corps of Engineers.

Response: *As discussed with DES, the timing of the ARM payment will be determined as the SEC and Section 404 permit process concludes, with payment being made in total within 120*

days as suggested here, on a rolling basis as construction impacts occur, or on a quarterly basis.

32. In the application materials, Eversource Land Trust (ELT) is proposed to be the easement holder for the preservation parcels. The DES recommends the applicant continue to pursue efforts to identify other potential grantees such as a state agency or a local land trust. With this in mind, Northern Pass Transmission, LLC (NPT or Northern Pass) and Eversource shall draft a letter of intent between NPT and ELT that sets out the terms of the proposed conservation easements that includes the date of recordation. It is preferred that the recordation of the final conservation easements should occur prior to commencement of work or another agreed upon time frame. The DES acknowledges that if another easement holder is identified, it would be more efficient to draft the deed language with that entity so more time may be needed to finalize the deeds. However, DES needs a date for completion of recordation, so if it is not achieved, a mitigation payment would be required for the impacts in-lieu of the preservation considered.

Response: *Section 6.E of the proposed conservation easement deeds includes a commitment by Northern Pass as Grantor to "attempt to identify a Replacement Grantee with more experience holding conservation easements in the State of New Hampshire." NPT is working now with ELT to finalize separate deeds for each conservation area proposed in the mitigation package, and expects to submit those proposed deeds to DES by July 15, 2016. Recordation of the final approved deeds will take place after approvals for the Project have been issued by a date to be determined with DES.*

33. The draft conservation easement deeds will require further review as well as acceptance of the final language by the DES and Army Corps of Engineers. The language as currently written notes ELT as the grantee. If another easement holder is interested in becoming the grantee, DES will need to confirm that the language allows for transfer to another entity or whether an amendment of the conservation deed will need to occur.

Response *Sections 5 and 6.E of the draft conservation easement deeds address the authority to identify a "replacement grantee."*

34. The reference to RSA 227-M in the conveyancing paragraphs is confusing, please explain or delete.

Response: *The reference has been removed from the conservation easement deeds.*

35. A summary of what is contemplated as reserved rights on each of the preservation parcels needs to be provided. DES understands the deed language may be revised if a subsequent grantee is determined. In addition, clarification on agricultural activities to be conducted or maintained on any of the preservation parcels should be noted as an optional provision or whether this will be handled in the management plan.

Response: *Section 3 of the deed template provided to DES on April 15, 2016 specifies the reserved rights and includes riders that specify reserved rights for forestry, transmission lines, and ATV use. The final deeds will specify what uses will be allowed for each individual conservation area and will include consideration of agricultural activities.*

36. The information in the baseline reports submitted with the application materials may need to be supplemented with additional information depending on the parcel and final easement holder. The DES can provide an example final baseline documentation report (BDR) to be the template used for the final documents. The BDR is signed upon recordation of the conservation easement and a final signed copy submitted to DES.

Response: *The baseline reports have been modified to match the Baseline Documentation Report (BDR) template provided by NHDES. Some additional survey data, soil maps, rare plant surveys and specific wildlife habitat assessments are being added, and a Phase I Environmental Site Assessment will take place on the one mitigation site that has not been assessed in this way. Once these items are complete, the BDRs will be submitted for further review. Once the easements are recorded, the finalized BDRs will be submitted.*

37. A status of the Pine Barrens mitigation parcel needs to be provided. A summary of parcels reviewed and a letter of intent to purchase a parcel that is satisfactory to the NHFG and NHB must be provided.

Response: The acquisition efforts for a mitigation parcel suitable for the management of Karner blue butterflies continues. The Table below summarizes the parcel search information to date. The names of the owners and map and lot information has been omitted for confidentiality purposes as negotiations are underway. Northern Pass has been informing the NH Fish and Game Department and the US Fish and Wildlife Service of progress, and Northern Pass will seek approval from the resource agencies of the Pine Barrens mitigation parcel.

DRAFT KBB PARCEL ANALYSIS

KBB Rank*	Town	Acreage	For Sale?	ROW Present?	Zoning 2	Notes
1	Pembroke	36.37			C-1	Contains existing pine barren, very good location; but with existing mobile homes, landowner would sell only small piece
2	Concord	6.91 Vacant (15 total)	X		OFP	Adjacent to Concord/USFWS Karner Blue property. Vacant lot could be separated from sale, Old foundation present. Mentioned by USFWS. Offer has been made for undeveloped parcel.
3	Pembroke	132.6	X	X	SRD	Existing pine barrens; location fair; other conservation values; within Pembroke's Aquifer conservation district; partially under contract already; site visit and offer to be made only if Parcel ranked 2 is unsuccessful
4	Concord	111		X	RM	Potentially acceptable to F&G; >5 acres pine barrens; other values; Inconsistent with City's long range plans
4	Concord	18.5			RO, Shoreland Project	Soucook River Frontage, minimal KBB habitat; bonus landlocked parcel; would go with Parcel 15
5	Concord	11	X		R-3D	Good location, contains existing pine barrens; potential offer if higher ranked sites unavailable
6	Concord	0.31			RS	High value location, but very small, not for sale
6	Concord	0.37			RS	High value location, but very small, not for sale
6	Concord	0.3			RS	High value location, but very small, not for sale
7	Concord	33.4		X	RF, OFP	May be acceptable to F&G, 15 acres of pine barrens
8	Concord	23		X	OFP	May be acceptable to F&G; 3 acres of pine barrens
9	Concord	54.5		X	OFP, RM	Acceptable to F&G; est 5 acres pine barrens
10	Concord	13		X	RM	Potentially acceptable to F&G; minimal pine

						barrens for mgmt., sloping
11	Pembroke	19.4		X (NP)	C-1	Location fair, cover type unknown, no mapped pine barrens; partially within Pembroke's aquifer conservation district
12	Concord	2.86	X	X(NP)	IN	Good location, but small and surrounded by pavement
13	Pembroke	7.69	X		R-3D/R-3	Limited potential to be managed by Kbb
N/A	Pembroke	11.36	X		LO-A	Unsuitable cover type
N/A	Pembroke	4, 13, 15.5	X		R-3D	Unsuitable cover type; location not preferred
N/A	Pembroke		X		R-3D	Unsuitable
N/A	Concord	27.8			RO, Shoreland Project	Filed review with F&G; rejected due to cover type
N/A	Concord	17.8		X (NP)	RO, Shoreland Project	Field review with F&G; rejected due to slope and floodplain
N/A	Pembroke	15.3			C-1	USFWS recommended. Owner contacted twice; confirms no current interest in selling property

*N/A is not acceptable or not available

2 Zoning Codes:
Concord:
IN: Industrial District
GWP: Gateway Performance District
RS: Single-Family Residential District
RO: Open Space Residential District
OFP: Office Park Performance District
RM: Medium Density Residential District

Pembroke:

- R-3: Rural/Agricultural-Residential
- SRD: Soucook River Development District
- C-1: Commercial/Light Industrial

38. Table 3. *ARM Fund Calculation Results for the Northern Pass Project by Town* notes stream and vernal pool buffer impacts together. For calculating the amount of mitigation for these impacts, please provide an additional table that separates these resources. For stream impacts, note linear feet of impact according to perennial, intermittent and ephemeral stream type, and whether it is located in existing ROW or new ROW. Provide a column for vernal pools buffer impacts separately.

Response:

Town	ROW Type (E=existing/N=new)	Direct Impacts			Secondary Impacts			
		Permanent Stream Impacts (Linear Feet)						
		Peren.	Inter.	Ephem.	Total Stream Buffer Impacts	Stream Buffer Impact - (15% (existing ROW) or 20% (new ROW) of total area)	VP Buffer clearing (sq ft)	VP Buffer Impact - (15% (existing ROW) or 20% (new ROW) of total area)
Allenstown	E				26,069	3910		0
Ashland	E				18,360	2754		0
Bethlehem	E				399	60		0
Bridgewater	E		4		86,074	12911		0
Bristol	E				91,144	13672		0
Campton	E					0		0

Canterbury	E				41,011	6152		0
Chester	E					0		0
Clarksville	N				36,488	7298	41,118	8224
Concord	E				18,931	2840		0
Dalton	E				386	58		0
Deerfield	E		212		117,838	17676	13,946	2092
Dixville	N				1,135,433	227087	123,725	24745
Dummer	E				6,781	1017	2,310	347
	N				303,115	60623	63,627	12725
Easton	E					0		0
Franconia	E					0		0
Franklin	E			4	76,299	11445	2,089	313
Hill	E				18,355	2753		0
Lancaster	E				6,309	946	10,596	1589
Londonderry	E					0	26,373	3956
Millsfield	N			4	665,308	133062	72,932	14586
New Hampton	E				108,030	16205		0
Northfield	E				25,213	3782		0
Northumberland	E				35,357	5304	12,076	1811
Pembroke	E				30,738	4611	10,622	1593
Pittsburg	N		49		54,892	10978	12,199	2440
Plymouth	E					0		0
Raymond	E					0		0
Stark	E				59,270	8890	14,284	2143
Stewartstown	N				82,270	16454	23,968	4794
Sugar Hill	E					0		0
Thornton	E					0		0
Whitefield	E				2,985	448	349	52
Woodstock	E							
Total (SF)						**570933**		**81411**
Total (Acres)						**13.11**	**0.00**	**1.87**

39. For the final preservation parcels, final recordable surveys for the parcels will need to be provided for recordation. A Phase 1 site assessment may need to be completed and the parcels may need to be reviewed in the field by DES once the following information is provided:

Preservation Site	Information that needs to be addressed
A	Need to show parking area, existing logging road, and relocate ORV trails out of the floodplain or explain how the trail will be extinguished. These parcel features may need to be noted in the final BDR. Identify who is maintaining fields and whether/how this will be addressed in a management plan.
B	Review the location and condition of the existing roadways, skidder trails and logging roads for inclusion in the BDR and management plan and propose any measures to limit impacts to aquatic resources. Consider excluding the transition station from the easement on parcels 158 and 200. Determine location of dug wells and note them on parcel

	plans. The continued use of the wells may need to be mentioned in the reserved rights section in the easement deed.
C	Determine whether it is possible to remove or exclude existing buildings from the easement parcel. Locate Corridor 20 and determine extent of unregulated use that may need to be addressed with gates, boulders, etc.
E	Consider excluding transition station from easement and note underground cable corridor in reserved rights relative to future maintenance. Future use of gravel roadways need to be noted in BDR and management plan. Note location of logging/skidder roads in property plan for BDR. and the orchard/tree plantation in photo 3.
K	Marking/Blazing parcel boundaries is a priority if this parcel continues to be a component of the mitigation package. Minimal future harvesting should be noted as well as no future wind tower construction allowed on the parcel.
N	Consider including snowmobile trail use in reserved rights and include provision that no additional trails shall be constructed.
Z1 – Pine Barrens	Provide complete documentation for proposed Pine Barrens parcel to offset impacts to Karner blue butterfly. If site manipulation for habitat restoration is needed, provide details and time frame when this will occur and note the coordination efforts with NHFG and NHB.
Z2 New Hampton	Discuss future access and uses with Pemigewasset River Local Advisory Committee. Consider excluding the round-a-bout area.
Z3 Pembroke	Provide information relative to location of existing conservation lands in vicinity of the parcel and within the town.

Response: *All of the requested information will be considered and provided in the updated BDRs as appropriate. Trails and existing logging roads will be noted on the plans, and currently known locations where barriers to unauthorized access are needed will be identified. Where reserved rights are requested, language regarding the protection of natural resources and available details will be incorporated into the deeds and further details will be provided in management plans to be developed with the easement holders for DES approval. Transmission facilities (ROW and transition stations) will be included as reserved rights, and are omitted from the total conservation area calculations; existing dug wells will be included in the reserved rights on Site B; the existing buildings on Site C will be removed and wind turbines and high elevation forestry will be prohibited on Site K. The location of existing conservation lands near Site Z3 in Pembroke and a table naming them are attached. We have requested input from the Pemigewasset River Local Advisory Committee for Site Z2. They are reviewing material we provided and are conducting their own site walk, and we expect to attend a site visit with them in the near future. Work on securing a parcel suitable for Karner blue butterfly management in the pine barrens continues. Twenty one parcels have been identified, several negotiations with landowners have occurred, and an offer is pending on the best available parcel. We are in contact with NHF&G and USFWS regarding progress.*

Site Z3 -A map identifying the locations of the conservation lands listed below is attached.

Table of Nearby Conservation Lands within a 2-mile radius of Proposed Mitigation Parcel Z3 (LL#8981)

Conservation Parcel Name	Total Acreage
Humphrey Chichester	75.6
Spaulding Lot	112.4
Spaulding Lot access	10.4
Ames-Brook Easement	30.4
Whitehouse acres open space	12.2
Whittemore Town Forest	138
Scripture	1.1
Doherty	5.1
Beck	33
Clark	5
Pembroke Town Forest, Butterfield Tract	29
Anderson	26.8
Pembroke Water Works	48.4
Airport Bluff and Floodplain	147.7
Karner Blue National Wildlife Refuge Area A	29.4
Well Buffer Area	24.7
Concord Wellfield	55.5
Total Acreage	784.7

B. WATERSHED MANAGEMENT BUREAU

1. On page 7-8 of the § 401 WQC application it is stated that emergency inspections will occur during storm events if turbidity plumes are visible; please describe what action will be taken to mitigate high turbidity if plumes are observed?

   Response: *NHDES indicates in the Draft § 401 Water Quality Certification Conditions that a number of plans (due 90 days prior to construction or roughly mid-2017) will be required of the Applicant pertaining to construction activities and practices, BMP inspection and monitoring, and water quality monitoring, that collectively, would provide guidance for contractors to engage in preventative and remedial measures during construction of the Project to comply with state surface water quality standards. While NPT has not yet embarked on preparing the various plans requested by NHDES, we provide the following contextual information to describe our current thinking by which high turbidity plumes would be first avoided and minimized and second, mitigated should they be observed.*

   Similar to other large energy and linear projects in New Hampshire, it is expected that ample construction and erosion and sediment control monitoring of the Northern Pass Transmission project will be required as previously outlined in the draft SWPPP (to be further developed in consultation with the contractors) provided in Appendix 4 to the SEC Application. Specifically, the US EPA Construction General Permit requires inspections at least once every seven calendar days, or at least once every 14 calendar days and within 24 hours at the end of a storm event of 0.25 inch or greater. It is anticipated that the contractor's environmental staff and the owner's acting environmental monitor(s) EMs will be on-site frequently, with inspection of all high risk sites to be done on a weekly basis, and within 24 hours after each major storm event of 0.5 inch or greater, as stated in the New Hampshire Stormwater Manual, Volume 3. Inspections will verify that all required BMPs are installed correctly, maintained, and effectively minimizing pollutants in stormwater runoff from the project site(s). Further, the contractor's environmental staff will routinely evaluate general site conditions, to assess whether additional measures are needed to prevent erosion and sedimentation.

   The Project will establish water quality and turbidity monitoring stations (to be described further in the forthcoming Water Quality Monitoring Plan to Assess Operations) which will provide water quality data (some of it, real-time) to establish baseline existing conditions. Further, the Turbidity Sampling and Sediment Deposition Inspection Plan (to be developed) will present a turbidity sampling and inspection plan to confirm that measures to control erosion during construction are not causing or contributing to surface water quality violations. To this end, it is anticipated that water quality and turbidity monitoring stations will be established above and below construction activities in sensitive areas along the project route, i.e. where outstanding resource waters and/or Class A waters are located in close proximity to construction activities at the various facilities, i.e. substations, transition stations and the converter terminal.

In compliance with the protocol referenced in the Draft § 401 Water Quality Certification Conditions, i.e., "Guidance for SWPPPs, BMP Inspection and Maintenance, Turbidity, and Sediment Monitoring for NHDOT Projects with 401 Water Quality Certification", should it be observed that turbidity levels at the point of discharge and the downstream location are 10 NTUs above background levels (upstream or at reference location), the person conducting the sampling shall notify the EM and project manager immediately and assist in identifying and correcting the potential source of the turbidity. The EM will coordinate with the construction crew to identify measures or controls to correct and eliminate the turbidity source as soon as possible. All corrective actions shall follow the approved SWPPP and Construction BMP Inspection and Maintenance Plan (to be submitted at a later date to NHDES). Similarly, if compliance issues are identified by either the Contractor or the NPT environmental field inspector during the course of an inspection in areas other than project facilities, the issue will be immediately reported to the Contractor's environmental team for corrective action. NPT's environmental field inspector will photograph and document the issues and the associated corrective action in a weekly report. If the environmental concern is determined to be a major issue, either by negligence or a repeatable offence, than the Contractor will be held in non-conformance; subject to an inquiry, and a follow up corrective action plan that outlines how the issue will not be repeated.

2. Please provide a plan that shows the proposed route of the Activity with the potentially impacted surface waters that are Class A surface waters or Outstanding Resource Waters [per Env-Wq 1708.05(a)] clearly identified.

Response: *Please see enclosed the requested plan (USGS based maps) showing Class A surface waters and Outstanding Resource Waters at 1:24,000 scale requested by Gregg Comstock.*

3. With regards to the Pollutant Loading Analyses (PLAs):

    a. Please provide working copies of the Excel spreadsheets used for each of the Pollutant Loading Analyses.

Response: *The current PLA Excel spreadsheets (matching the PLA versions in the previously submitted Stormwater Management Studies) are enclosed.*

    b. The PLAs for Transition Stations 2, 3 and 6, the Franklin Converter Station and the Scobie Pond Substation Expansion, appear acceptable provided the design of the proposed permanent stormwater best management practices (BMPs) comply with NHDES Alteration of Terrain Bureau regulations (Env-Wq 1500).

Response: Noted; the design complies with Env-Wq 1500.

    c. Please confirm that all permanent BMPs used in the PLAs are designed in accordance with NHDES Alteration of Terrain regulations.

Response: *The BMPs used in the PLAs are currently designed in accordance with AOT regulations.*

d. Disconnection credits are assumed for many of the post development subareas used in the PLAs for Transfer Stations 1, 4, and 5 and the Deerfield Substation Expansion. Please explain how each of the criteria for disconnection of non-rooftop runoff, in Chapter 6 of the NH Stormwater Manual (Vol. 1) are satisfied. Unless a subarea drains to an infiltration basin (without underdrains) that is designed in accordance with the NHDES Alteration of Terrain regulations (Env-Wq 1500), all of the disconnection criteria in Chapter 6 must be met before the disconnection credit can be used in the PLAs.

Response: *There are no underdrains proposed within Transition Stations #1, 4, 5, and Deerfield Substation Expansion sites and the stormwater basins have been designed per Env-Wq 1500. Because there are no underdrains, we are justified in applying the non-rooftop runoff disconnection credit.*

e. For Transition Stations 1, 4 and 5, please clarify if the detention basin(s) are dry basins, wet ponds, or wet extended detention ponds.

Response: *Transition Stations 1, 4, and 5 are wet extended detention ponds.*

f. The sand filters proposed for Transition Stations 4 and 5 and the Deerfield Substation Expansion have underdrains. Therefore, in accordance with the NH Stormwater Manual (Vol 1), the BMP removal efficiencies in the PLAs should be 51% for TSS, 33% for TP and 10% for TN . Please revise and resubmit.

Response: *NPT will revise and resubmit the PLAs as requested.*

g. Please revise the PLAs in response to the comments above and resubmit for approval.

Response: *NPT will revise and resubmit the PLAs as requested.*

4. Please provide a copy of the Stream Segment Temperature Model (SSTEMP), as well as the input and output files, that were used to predict the likelihood of impacts to cold-water fisheries from proposed vegetation clearing.

Response: *Please see enclosed a folder container this model and input and output files.*

5. Please provide the maximum height that vegetation is allowed to grow in the transmission R.O.W.

Response: *The maximum height that vegetation is allowed to grow in transmission rights-of-way (ROWs) is determined by the Eversource Transmission Vegetation Management (TVM) Program in compliance with North American Electric Reliability Corporation (NERC) Transmission Vegetation Standard FAC-003. NERC is a regulatory body that develops and enforces Reliability Standards and is subject to oversight by the Federal Energy Regulatory Commission (FERC). To meet NERC Standards, Eversource has developed and follows the TVM. Attachment A of the current TVM Program establishes the targeted and minimum clearances for various transmission voltages. (Refer to the Attachment A, excerpted from Eversource Document M8-MT-1003 Transmission Vegetation Management Procedure.)*

In New Hampshire, Eversource maintains all of its ROWs in a cyclical program utilizing mechanical means (e.g. mowing) to ensure compliance with the TVM and NERC Standard FAC-003. In general, the height of vegetation allowed to remain in the right-of-way is dictated by the area within the maintained corridor where the vegetation exists. Within the conductor or wire zone – the maximum height of vegetation allowed in maintained areas is 15 feet. In the areas outside of the conductor or wire zone (side zones) the maximum height of vegetation allowed is 30 feet. The height of vegetation allowed to remain may be modified due to topographical features or construction type that would affect the height of the conductors above ground under all potential operating conditions.