NORMANDEAU ASSOCIATES
Environmental Consultants

July 15, 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 additional response to the Department of Environmental Services May 16, 2016 Progress Report to the NH Site Evaluation Committee. This further response addresses the requests for more information from the Alteration of Terrain program, and provides additional information on four of the wetlands program's requests. An electronic copy of this cover letter, the response and referenced attachments are on the flash drive enclosed with this letter.

Thank you and your colleagues again. If you have questions or comments, please do not hesitate to contact me directly at 637-1150 or at lcarbonneau@normandeau.com.

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)
Ridge Mauck, NHDES
Craig Rennie, NHDES
David Keddell, US ACOE
Mark Kern, USEPA
Pamela G. Monroe, SEC Administrator
Robert P. Clarke, Eversource (w/o enclosures)
Kevin F. McCune, Eversource (w/o enclosures)

RESPONSE TO NH DEPARTMENT OF ENVIRONMENTAL SERVICES
ADDITIONAL DATA REQUESTS

A. ALTERATION OF TERRAIN BUREAU

1. For each of the Stormwater Management Study areas (Franklin Converter Station, Substations, Transmission Stations) provide the following:

    a) Post-development watershed maps at a scale of 1-inch = 50-ft for the areas of proposed disturbance/development.

    Response: *A new 1-inch = 50-ft scale Post-development Watershed Map for each site is enclosed.*

    b) Existing conditions plans that delineate the location and type of vegetative cover. Such plans should also be used as the basis for the applicable pre- and post-development plans.

    Response: *Enclosed are the Existing Conditions Plans for reference.*

    c) Sufficient labeling of topographic contours on the pre- and post-development watershed plans.

    Response: *The pre- and post-development watershed plans have been updated to depict additional and legible topographic contour labeling.*

    d) Delineation of pre- and post-development subcatchments on color-coded hydrologic soil group (HSG) plans.

    Response: *Separate color figures are being prepared for each pre- and post-development watershed maps that depict the color coded hydrologic soil group delineations and total area of each group in table format.*

    e) Computations of the total area of each hydrologic soil group used in the pre- and post-development hydrologic models.

    Response: *These computations will be placed on the hydrologic soil group plans.*

    f) Infiltration Feasibility Reports for each site where infiltration is a component of the stormwater management.

    Response: *Infiltration Feasibility Reports will be provided for the sites that have proposed infiltration basins. These reports will be provided to NHDES upon completion of the ongoing subsurface investigation.*

g) Where blasting of bedrock is anticipated, the estimated quantity of blasting in cubic yards. If greater than 5,000 cubic yards are anticipated at any location, a groundwater monitoring plan may be required.

Response: *The groundwater monitoring plans will be coordinated prior to construction as needed, which will be determined on a site by site basis.*

h) The estimated seasonal high water table in areas where significant earth cuts or stormwater ponds are proposed.

Response: *The seasonal high water table will be verified through the onsite subsurface investigations which are in progress.*

i) Sediment forebays used to satisfy requirements for pretreatment of stormwater runoff must have a minimum depth of 2 feet. In addition, on sites where multiple forebays are proposed it must be demonstrated that each forebay meets the sizing requirement based upon the specific contributing area.

Response: *This will be verified after completion of the ongoing geotechnical surface investigation.*

j) Trash racks for outlet control structures with openings of 6- inch or less in diameter or width.

Response: *The following station drawings were revised to incorporate trash racks: Deerfield (C505, Details 1 & 2), Franklin (C508, Detail 1), Scobie Pond (C507, Detail 3), Transition Station #1 (C508, Detail 2), Transition Station #3 (C508, Detail 2), Transition Station #4 (C507, Detail 2), Transition Station #5 (C508, Detail 2), and Transition Station #6 (C508, Detail 2 and C509, Detail 2). The following note was added: "Provide three dimensional trash rack (not flat against the OCS face). Trash rack flow through rate shall match or exceed the ocs orifice flow rate." The revised drawings are enclosed.*

k) For the BMP worksheets, provide documentation as to how the impervious area draining to each specific practice was determined.

Response: *A separate impervious area summary table will be provided and attached to the back of the BMP worksheets in the Stormwater Management Study. This data will correspond with the impervious areas used in the hydrologic analysis (Pondpack model). We are working to complete this work product by August 10, 2016.*

l) Where sand filters are proposed for stormwater treatment, the filter media must meet the criteria of Env-Wq 1508.06(l)(4).

Response: *Deerfield and Transition Stations 4 & 5 have sand filters. Deerfield was confirmed that there are no changes required. Transition Station 4 (C507, Detail 1) & Transition Station 5 (C509, Detail 1) were revised to include the full Mixture 'A' specification/test method and size. The revised drawings are enclosed.*

m) The results of coordination with New Hampshire Natural Heritage Bureau.

Response: *The following is an excerpt from an email from Ridge Mauck on 6/23/16: "Progress Report Item 1.m: Upon further review of the information provided within the October 2015 AoT application (see attachment 1) and review of supplemental information provided at our meeting (attachment 2, information provided with the Wetlands application), no additional action is required relative to this item."*

2. For the Scobie Pond Substation Expansion provide the *Level Pool Pond Routing Summary* report from the hydrologic model.

Response: *The Interconnected Pond Routing Summary sheets are enclosed. The Scobie Pond design utilizes interconnected ponds with forward and reverse flows. Level Pool Pond Routing Summary is for interconnected ponds with forward only flow, therefore, is not applicable.*

3. For the Franklin Converter Station:

a) The gravel pad (Station Yard) portion of post-development subcatchment 2A should be modeled as a separate subcatchment.

Response: *We will review breaking out the gravel pad area from Area-2A and if it generates a higher peak runoff rate then we will incorporate it into the design.*

b) It appears the basin surface areas of basins 1 and 2, as modeled in the hydrologic analysis, may be overestimated. Please review and comment.

Response: *We have reviewed for potential overestimation in Basin 1 & 2 sizing and can confirm that the surface areas indicated in Tables 2-10 and 2-12 of the Stormwater Study are consistent with the grading of drawing sheet C-101 and the areas in the Pondpack model. To clarify, the surface areas include area of the basin along with their respective sediment forebays. Basins 1 and 2 are not overestimated with regards to surface area.*

4. For the Deerfield Substation:

    a) The outlet pipe to outlet control structure (OSC) OSC-2 the analysis assumes an 18-inch diameter pipe, while the drainage schedule specifies a 24-inch diameter pipe.

    Response: *The analysis is correct with the 18-inch diameter pipe. The Pipe Schedule Table on drawing C104 has been updated to indicate the 18-inch diameter pipe for P-10. The revised sheet C104 is enclosed.*

    b) The analysis includes an outlet structure labeled OCS-3. It is not clear which outlet structure this represents. If this is to represent the outlet to the proposed sand filter, the analysis assumes a crest elevation of 378.0, while the plan specifies a crest elevation of 379.0

    Response: *Correct, OCS-3 represents the sand filter (SF-1) spillway crest elevation. The pondpack analysis is correct at 378.00. Point number 146 in the sheet C101 "Layout points table" has been updated to indicate the correct elevation of 378.00. Sheet C104 has been revised to identify the location of OCS-3. The revised sheet C101 and C104 sheets are enclosed.*

    c) Design drawing C505 references drawing C504 for OCS pipe size. The correct reference is C104.

    Response: *The drawing references on C505 have been revised accordingly. The revised C505 is enclosed.*

    d) The proposed timber check dam is specified at elevation 377.67 on sheet C104, while it appears to be specified at elevation 378.67 (WQV WSE) on sheet C507. Please clarify.

    Response: *The 378.67 elevation is the correct elevation. The Timber Check Dam callout on Sheet C104 has been revised to reflect this elevation. The revised sheet C104 is enclosed.*

    e) The stone fill specified around the perimeter of the sand filter (see detail 3, sheet C509) will cause “short-circuiting” of the filter system. Modify the design as appropriate.

    Response: *The stone fill has been revised to be sand, similar to the rest of the forebay/sand filter detail, which will eliminate the “short-circuiting” that the porous stone would have created. The revised sheet C509 is enclosed.*

5. For Transition Station #1:

    a) Provide justification for the differing initial flow paths between pre- and post-development subcatchments Area-A for the estimation of the subcatchment time of concentration.

    Response: *The pre- and post-development time of concentrations for Area A will be corrected and updated to be consistent. We are working to complete this work product by August 10, 2016.*

    b) For the proposed detention pond, the input for the analysis' *Elevation-Area Volume Curve* does not appear in agreement with the Stage/Storage Table provided. Please clarify.

    Response: *The Elevation-Area Volume Curve and Stage Storage Tables will be reviewed, and corrected and updated as needed. We are working to complete this work product by August 10, 2016.*

    c) Provide subsurface information and/or a hydrologic budget to demonstrate that a permanent pool elevation of 1158.61 will be maintained in the proposed wet pond.

    Response: *Upon receipt of the additional subsurface investigation results and report, we will provide the information necessary to verify this design or otherwise provide a modification to the design.*

    d) The proposed treatment swale needs to be designed with a maximum channel width of 8 feet, and be bermed or otherwise separated from the adjacent roadside.

    Response: *The design was intended to reduce impact to the existing side slope seep wetlands and ephemeral flow channels. The proposed treatment swale will be redesigned to have a maximum bottom width of 8 feet and also be separated from the roadside ditch. Separation between the roadside ditch and the proposed treatment swale will also require separate culverts under the station access road which will be incorporated.*

6. For Transition Station #2:

    a) It appears the composite Curve Number may be slightly lower in the post-development analysis than that of the pre-development analysis. Please review and adjust as appropriate

    Response: *The Curve Numbers have been verified. The Post Curve Number is lower than Pre because there is higher CN existing gravel areas that are replaced by lower CN meadow in Post.*

7. For Transition Station #4:

    a) It is not clear why the estimated time of concentration differs between pre-development Area 4 and post-development Area-4.

    Response: *The plan and hydrologic model will be corrected to reflect that the time of concentration for Area 4 does not change in post development conditions. We are working to complete this work product by August 10, 2016.*

    b) It is not evident that post-development Area-A will discharge to the detention basin, as assumed in the analysis, nor follow the flow path assumed in estimation of the time of concentration of the subcatchment.

    Response: *The plan will be corrected to show that the post-development Area-1A flow path flows to the detention basin. Appropriate slope stabilization and outlet protection will be designed and provided for runoff directed across the proposed 2H:1V slopes. Layout points and other drawing updates will be updated accordingly. We are working to complete this work product by August 10, 2016.*

    c) The *Stormwater System Detail Reference List* shown on sheet C104 does not identify the locations of the referenced structures.

    Response: *This has been addressed.*

8. For Transition Station #5:

    a) The descriptions of the subcatchments in the hydrologic analysis subsection *Runoff CN-Area* is inconsistent in the classification of the hydrologic soil groups (Soil/Surface Description).

    Response: *The cover type descriptions of the subcatchments in the hydrologic analysis (Pondpack model) have been updated to be consistent with the hydrologic soil groups soil/surface descriptions. The revised Pondpack output tables are enclosed.*

B. WETLANDS BUREAU

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: *A copy of NPT's response to the Pemigewasset River Local Advisory Committee will be provided to DES on July 18, 2016.*

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: *A copy of NPT's response to the Conservation Commissions will be provided to DES on July 18, 2016.*

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: *Northern Pass provided a response to the April 21 2016 SPNHF letter "Request for More Information", and to their April 21, 2016 "Request to Deny Wetlands Permit Application" letter. We provide additional comments below.*

Restoration Plan

As detailed in the response to NHDES wetlands data request A-13, Northern Pass is developing additional restoration details. The draft species planting list and restoration notes, which will be finalized and added to the construction plan set, are included in the response to NHDES data request A. 13 for preliminary review and comment by NHDES.

Change of Use – Forestry PBNs

As discussed in our May 26, 2016 meeting with NHDES, and as provided in our response to NHDES Question A-7, Northern Pass is reviewing the off-ROW access roads for stream crossing locations that may have been permitted only with a forestry PBN, and which do not meet current stream rule standards. We will follow through with any culvert replacement design and permitting that is necessary based on the culvert assessment.

Project Need and Avoidance and Minimization

In addition to our original response, see our response to the NHDES Wetlands data requests A-1 and A-2 regarding Project alternative assessments and avoidance and minimization rule compliance.