THE STATE OF NEW HAMPSHIRE

BEFORE THE

SITE EVALUATION COMMITTEE

DOCKET NO. 2015-04

SUPPLEMENTAL PRE-FILED DIRECT TESTIMONY OF SARAH D. ALLEN, ANN E. PEMBROKE, AND KURT NELSON

APPLICATION OF PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE D/B/A EVERSOURCE ENERGY FOR A CERTIFICATE OF SITE AND FACILITY FOR CONSTRUCTION OF A NEW 115 kV TRANSMISSION LINE

THE SEACOAST RELIABILITY PROJECT

July 27, 2018

Qualifications and Purpose of Testimony

Q. Please state your names and business addresses.

A. My name is Sarah D. Allen. My business address is 25 Nashua Rd, Bedford, NH 03110.

My name is Ann E. Pembroke. My business address is 25 Nashua Rd., Bedford NH 03110.

My name is Kurt Nelson. My business address is 13 Legends Drive, Hooksett, NH 03106.

Q. Who is your current employer and what position do you hold?

A. Ms. Allen is employed by Normandeau Associates Inc. as a Senior Principal Wetland Scientist in the Wetland/Terrestrial Group. Ms. Allen is Normandeau's Project Manager for the Seacoast Reliability Project ("SRP" or the "Project").

Ms. Pembroke is also currently employed by Normandeau Associates and is a Vice President and Technical Director of the Marine Group.

Mr. Nelson is a Senior Land Use Licensing & Permitting Specialist at Eversource Energy.

Q. Please describe your background, experience and qualifications.

A. Our background and qualifications were included in our individual direct pre-filed testimony filed with the NH SEC Application dated April 12, 2016, and July 1, 2018, and have not changed since then.

Q. What is the purpose of this joint supplemental testimony?

A. The purpose of our testimony is to provide additional information to the SEC regarding potential effects to air and water quality and to the natural environment from the construction and operation of the Project as originally filed with the SEC on April 12, 2016. In addition, we have reviewed NHDES's Final Decision that recommends approval, with conditions, of the Project's wetlands permit, shoreland permit, and alternation of terrain permits, and the 401 water quality certification. We also are submitting Revised Environmental Maps, dated July 25, 2018.

Ms. Pembroke continues to offer the opinion that the construction and operation of the Project will not have a significant adverse effect on the resources of Little Bay

along the cable crossing. Ms. Allen also continues to offer the opinion that construction and operation of the Project will not have an unreasonable adverse effect on air and water quality or on the natural environment. Mr. Nelson submits the accompanying soil and groundwater management plan for the Town of Newington and for the Darius Frink Farm.

Ann Pembroke and Sarah Allen

Q. Have you reviewed the supplemental Project material submitted to the SEC after the Application with the SEC was filed?

A. Yes, we have. In addition to the SEC Application (April 12, 2016) and the SEC Application amendment (March 29, 2017), we helped to prepare and/or reviewed all of the following: Documents Submitted to NHDES on March 29, 2017 (Eversource Response to DES Request for More Information, Vernal Pool Supplement, Wetland Mitigation Supplement, 2014 Vibracore Logs, revised NHDES Shoreland Permit); Submission of Additional Information to DES, submitted to SEC on June 30, 2017 (Revised Sediment Dispersion Modeling Report, Supplemental to Sediment Quality Along Little Bay, Existing Cable Removal Plan, Revised Environmental Monitoring Plan, Salt Marsh Protection and Restoration Plan, Response to Comments from Counsel for the Public and The Town of Durham / UNH, Soil and Groundwater Management Plan, BMP's and Construction Plan for Protected Wildlife and Plants); Eversource's responses to NHDES Issues of Concern filed on September 19, 2017 (including specific responses to NHDES concerns, revised environmental maps, revised BMP's and Construction Plan for Protected Wildlife and Plants, NHDES Wetland Permit Application updates, Revised Little Bay Impact Assessment Report, Revised Little Bay Monitoring Plan). We also submitted Pre-Filed Testimony and contributed to a report titled *Horizontal Direction Drilling and Jet Plow: A Comparison of Cable Burial Installation Options for a 115-kV Electric Transmission Line* on July 1, 2018.

Q. Do you adopt and agree with the information and conclusions contained in those additional reports and materials submitted to the SEC?

A. Yes, we do.

Q. Does the supplemental Project material provided to the SEC in this proceeding change anything in your previously filed testimonies dated April 12, 2016 and March 29, 2017?

A. Yes. As described further below, the design modification submitted on September 19, 2017 resulted in changes in wetland impacts, and thus the in-lieu fee wetland mitigation estimates have been updated based on new impact numbers. My testimony also includes supplemental information on revised salt marsh restoration plan, revised construction best management practices, a northern long-eared bat acoustic study, and information regarding a bald eagle nest on an abutting property. The supplemental information is described in more detail below.

Q. Aside from the changes you noted above, does the supplemental information provided to the SEC since the filing of the Application alter your opinions and conclusions?

A. No, they do not.

Sarah Allen

Q. Please describe any changes to natural resource impacts as a result of changes to the Project design.

A. Several changes to wetlands resulted from the Project design changes. Overall, permanent wetland impacts increased by 3,331 square feet from the original design, and temporary impacts decreased by 284 square feet. The net increase in permanent impacts was primarily a result of the potential need for additional concrete mattresses in the nearshore areas of Little Bay. A decrease of 14 square feet of permanent impacts resulted from shifts in several structure locations as the Project responded to municipal and resident requests.

Three locations accounted for most of the areas of change in temporary impacts. In the Flynn Pit, temporary impacts declined by 2,087 square feet after the Town executed an option agreement for a new right-of-way to allow the Project to go underground around a small pond and the associated wetland. At the location of the newly proposed underground segment across the Newington Center Historic District and Hannah Lane residential neighborhood, temporary impacts increased by 18,013 square

feet because of burial of the cable and associated work roads across seven wetlands in the corridor. In the intertidal zones of Little Bay, a proposed increase in concrete mattresses resulted in 3,219 square feet of temporary impacts being converted to permanent impacts.[1] Most other changes resulted in a decline in temporary impacts as engineering and construction requirements were modified in response to design changes.

Cable burial across the Frink Farm also resulted in an additional 84 square feet of temporary impact to a small perennial stream resulting from a stream diversion needed to install the underground duct bank.

All of these changes were submitted to the SEC and NHDES and were considered as part of NHDES's permitting review and are accounted for in the NHDES Final Decision issued on February 28, 2018.

Q. Please describe the effects of the current design on the proposed in-lieu fee for the SRP.

A. The updated values for the Project's proposed Aquatic Resource Mitigation compensation reflect design changes that have occurred since the original filing, as well as changes in equalized values for the Towns (Revised Little Bay Impact Assessment Report, supplement submitted September 19, 2017). Permanent wetland impacts for overhead structures generally declined across the project. For the submarine cable installation, a near-shore survey further defined the areas where concrete mattresses are likely to be needed, therefore permanent impacts increased in intertidal and subtidal areas in Durham and Newington.[2] All combined, the revised cost estimate for in-lieu fee mitigation increased by $39,863.14, as shown by municipality in the following table:

Municipality	Original Compensatory Mitigation Cost	Amended Compensatory Mitigation Cost	Difference between Original and Amended
Madbury	$6,488.92	$6,501.15	$12.23
Durham	$213,547.82	$213,763.28	$215.46

[1] The extent of concrete mattresses was conservatively estimated based on the Project's understanding of the nearshore area. If adequate burial depth can be achieved closer to shore, the amount of concrete mattresses will be reduced, thereby reducing the area of permanent impact. See Revised Little Bay Impact Assessment Report, Supplement dated September 19, 2017.

[2] *See* supra note 1.

Newington	$81,747.24	$120,990.23	$39,242.99
Portsmouth	$8,187.14	$8,579.60	$392.46
Total	**$309,971.11**	**$349,834.26**	**$39,863.14**

Q. Please describe any supplemental natural resource information that has been gathered since the original filing.

A. As part of its ongoing review of natural resources in the vicinity of the Project, additional studies since the Application was filed in March 2016 have been undertaken. The additional work includes:

- ***Salt Marsh Protection and Restoration Plan (Document 5 in the Supplement submitted June 30, 2017)***: Eversource has designed the SRP to avoid environmental impacts where possible. Temporary impacts to fringing salt marsh are unavoidable on both shores of Little Bay. Temporary impacts will result from timber mat placement to allow construction equipment to cross the marsh to reach the work areas, and from burial of the cables underneath the marsh. The burial effort will require salvage of the existing peat where feasible, and replacement of the peat and salt marsh restoration after the cable burial is completed. The restoration plans describe the existing conditions, construction activities, salt marsh protection and restoration methods, and long-term monitoring to document recovery.
- ***Best Management Practices and Construction Plan for Protected Wildlife and Plants (Document 4 in the Supplement submitted September 19, 2017)*:** This document summarizes best management practices (BMP) and time-of-year (TOY) considerations for construction of the Project. Resources to be considered include the wildlife, fish, and plant resources that must be considered to meet permitting requirements. Because the permit application review process is ongoing and authorizations for construction have not been issued yet, the measures described herein may be subject to modification. Additional input from the agencies will be incorporated if presented, and further adjustments may also be required as part of the final permit conditions. As set forth in the SEC Application and other permit applications, the Project has been designed to avoid and minimize impacts to

protected plant and wildlife species to the extent practicable. This document describes the TOY and BMP that apply to each species of concern.[3] Once approved, the locations where the TOY restrictions and BMPs apply will be depicted on the construction plan set. Due to the complexity of the construction sequence of work, the focus of this construction BMP/TOY plan will be to avoid and mitigate impacts.

- ***Northern Long-eared Bat Acoustic Survey (provided in current Supplement).*** Ultrasonic acoustic surveys were conducted to inventory the federally threatened and state endangered northern long-eared bat (NLEB; *Myotis septentrionalis*) within the proposed limits of work for the SRP. The Northern Long-eared Bat Acoustic Survey report is provided in Attachment A. The survey was conducted from July 17 through July 22, 2017 adhering to US Fish and Wildlife Service (USFW) 2017 Guidelines. Bat calls were recorded at all detector locations, and a combination of automated analysis and manual review of the calls indicated that NLEB were likely present at Segments 14, 16, 18 and 19. Multiple bat species are typically found during acoustic surveys; on the SRP, other species included big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), little brown bat (*Myotis lucificugus*), and eastern small-footed bat (*Myotis leibii*). Note that the little brown bat, eastern small-footed bat, and tri-colored bat are listed as endangered by the State of New Hampshire due to recent population declines caused by White-nose Syndrome, although the latter two species have always been less common. USFWS' TOY tree cutting restrictions for NLEB do not apply to the Project because there are no known maternity roosts or hibernacula within 0.25 miles of the SRP right-of-way. Within the segments where NLEB calls were identified, the proposed clearing width ranges from 0 (Segment 14) to 40 feet (Segment 19). Because the tree clearing is minimal, the effects of the clearing on NLEB is expected to be minimal as well. Where possible, Eversource will

[3] The Applicant continues to consult with the permitting agencies regarding the identification and location of any potential protected species. If necessary, the Applicant will update the SEC with any additional TOY restrictions or BMPs that are required to avoid impacts to those protected species.

perform the tree clearing outside of the maternity season (June-July) to minimize risks to non-flying pups.

- ***Bald Eagle Nest near ROW.*** An active Bald Eagle nest has been identified approximately 650-700 feet from the edge of the ROW. The presence of young was confirmed on July 12, 2018. Bald eagles are listed as a species of Special Concern by the State and are federally protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Currently, the nest has been documented by NHFGD, however, is not yet included in the NHNHB database. Eversource is currently assessing potential construction-related impacts, and does not expect that construction of the Project will disturb the eagles during the February-July nesting season. Most work on the overhead transmission line will be shielded by trees and will be outside the 660-foot buffer recommended by the USFWS 2007 National Bald Eagle Management Guidelines. The jet plow-related work will also be outside the buffer, and is proposed to occur during months the eagles will not be dependent on the nest (September – November). Eversource has begun coordination with the appropriate State and Federal regulatory agencies, and is committed to avoiding adverse effects to the nesting bald eagles.

Ann Pembroke

Q. Have your reviewed the Revised Sediment Dispersion Modeling report submitted to the SEC on June 30, 2017?

A. Yes, I have. The Revised Sediment Dispersion Modeling was prepared in response to questions from intervenors concerning sensitivity analyses for the input parameters and a design change for the project (reduction in the cable burial depth in the channel.

Q. Does the Revised Sediment Dispersion Modeling report change anything in your previously filed testimony?

A. No, it does not.

Q. Have you reviewed the supplemental sediment characterization report submitted to the SEC on June 30, 2017?

A. Yes, I have. The revised sediment characterization report provides the results of additional sediment sampling and testing that was conducted in May 2017. The May sampling partitioned the sediment cores into smaller segments to evaluate any vertical differences in distribution of the constituents tested and to test some additional potential contaminants.

Q. Does the revised sediment characterization report change anything in your previously filed testimony?

A. No, it does not. Sediment chemistry data collected during both surveys indicate that contaminant levels are low and of negligible risk for biota.

Q. Have you reviewed the revised environmental monitoring plan submitted to the SEC on June 30 2017?

A. Yes, I have. This plan was superseded by a second revised version submitted to the SEC on September 19, 2017.

Q. Does the revised environmental monitoring plan change anything in your previously filed testimony?

A. No, it does not.

Q. Have you reviewed the response to the NHDES Issues of Concern submitted to the SEC on September 19, 2017?

A. Yes, I have. Eversource addressed comments related to water quality (plume) monitoring, benthic infauna monitoring, plume modeling worst case scenario, desorption of contaminants from suspended sediments, effects of release of nitrogen from disturbed sediments, impacts of removal of existing cables, consideration of operational approaches to reducing the sediment plume, and measures to minimize release of sediments disturbed during hand jetting when silt curtains are removed. With the exception of the removal of silt curtains these issues have been addressed in the revised plume modeling report, sediment characterization report, or monitoring plan submitted to the SEC in either the June 30, 2017 or the September 19, 2017 filing. The removal of silt curtains was discussed in the response to the NHDES issues of concern in the September 19, 2017 filing.

Q. Do Eversource's responses to the NHDES Issues of Concern change anything in your previously filed testimony?

A. No, they do not.

Q. Have you reviewed the Revised Little Bay Impact Assessment Report submitted to the SEC on September 19, 2017?

A. Yes, I have. The report revises the description of impacts to Little Bay resources resulting from the reduction in the burial depth in the channel (from 8 feet of cover to 5 feet of cover). The impact assessment was informed by both the revised plume model and the supplemental sediment testing.

Q. Does the Revised Little Bay Impact Assessment Report change anything in your previously filed testimony?

A. Changes in the Project and additional data obtained through the revised plume model and sediment testing do not alter the characterization of impacts to Little Bay resources that I presented in my previous testimony. The revised Little Bay Impact Assessment Report documents these conclusions.

Q. Have you reviewed the revised Little Bay Monitoring Plan submitted to the SEC on September 19, 2017?

A. Yes, I have. The September 2017 Little Bay Environmental Monitoring Plan provides additional detail concerning the proposed monitoring plan addressing preliminary comments from NHDES. The additions to the water quality monitoring plan include the inclusion of Sentry Stations between the cable route and specific resources of concern, provide greater detail on reporting procedures, describe how results will be evaluated, and describe actions to be taken in response to exceedances. Additions to the benthic infaunal community monitoring plan include clarification on the number of replicate benthic samples that will be collected and analyzed as well as the addition of a second baseline sampling event just prior to the in-water installation.

Q. Does the September 2017 revised Little Bay monitoring plan change anything in your previously filed testimony?

A. No, it does not.

Q. Based on the information you provide above, what is your opinion about the Project's potential to impact resources in Little Bay?

A. It is my opinion that this Project will not have a significant adverse effect on the resources of Little Bay along the cable crossing.

Kurt Nelson

Q. Has Eversource been actively involved in preparing soil and groundwater management plans for this Project?

A. Yes. Eversource has been working cooperatively with NH DES to develop a Soil and Groundwater Management Plan for the Town of Newington. The revised plan that is being submitted to NH DES is provided in Attachment B. This document also includes a Soil and Groundwater Management Plan specific for the Darius Frink Farm as Appendix A.

Sarah Allen, Ann Pembroke, and Kurt Nelson

Q. Have you reviewed the NHDES Final Recommendation issued on February 28, 2018?

A. Yes, we have. The NHDES final recommendation provides a permitting decision from the Agency on the parts of the SEC application that relate to NHDES permitting authority, namely, wetlands, alteration of terrain, 401 water quality certification and shoreland protection. The Applicant is in general agreement with the conditions imposed on the Project by the NHDES Final Recommendation. However, the Applicant does have some concerns about certain conditions in the Final Recommendation that we hope to resolve with Agency. If those concerns cannot be resolved—and as discussed further below—we would ask that the SEC would review the NHDES proposed conditions and only require the Applicant to comply with those conditions that are demonstrated to be necessary based on the factual information in the record and the testimony of the witnesses presented at the final adjudicative hearings.

Q. Has the Applicant addressed the two recommendations that NHDES suggested that the SEC consider imposing on the Applicant pertaining to Horizontal Direction Drilling and conducting a jet plow trial run?

A. Yes. In addition to NHDES's final recommendation to approve the Project as proposed, NHDES also recommended that that the SEC consider having the Applicant conduct a more thorough evaluation of Horizontal Directional Drilling (HDD) for installing the cable under Little Bay, and a trial jet plow run in Little Bay.

On July 1, 2018, Eversource responded to the NHDES's request for the Applicant to provide additional information on HDD. Based on the information provided, it remains the opinion of the Applicant that the jet plow installation method is the preferred installation method for this Project.

Regarding the jet plow trial run, the Applicant is proposing to conduct a 1,000 foot trial jet plow run approximately 21 days prior to commencing the cable installation and providing the results of the trial run to NHDES 14 days prior to commencing cable installation, with the understanding that NHDES would issue a final approval 7 days after receipt of the jet plow trial run sampling data and results. *See* Supplemental Pre-Filed Testimony of Kenneth Bowes and David Plante. In our opinion, such a proposal is more than reasonable to establish baseline conditions for the jet plow installation and monitoring.

Q. Has the Applicant identified any NHDES proposed conditions that are of concern for the Project?

A. Yes. Normandeau and Eversource have reviewed all of the recommended NHDES conditions and permit recommendations and have identified a number of technical and administrative issues relative to coordination and compliance with the permit conditions. The Applicant is concerned with the following numbered conditions: WET-20, WET-25, WET-41, WET-42, WET-43, WET-44, WET-45, WET-46, WET-47, WET-49, WET-58, WET-59, WET-60, WET-61, WET-64 & 65, and WET- 71 through 81.

The specific concerns with conditions are fully described in an April 27, 2018 letter to NHDES. *See* Attachment C. As part of our supplemental pre-filed testimony, we hereby incorporate by reference each of the positions and concerns of the Applicant as stated in the April 27, 2018 letter to NHDES. The Applicant is currently working with NHDES technical staff to review those conditions. To the extent an agreement with the

Agency on permit conditions cannot be met, we request that the SEC consider the positions of the Applicant and make an ultimate decision on what permit conditions are reasonably necessary to ensure the protection of the natural environment and water quality. It is our understanding that the SEC may certificate conditions that are different than those proposed by state agencies having permitting or other regulatory authority. We would request that the SEC use its authority to adjust or modify conditions that place significant and potentially unreasonable burdens on the Applicant during construction of the Project.

Q. Ms. Allen, in your opinion, will this Project as amended have an unreasonable adverse effect on air and water quality and the natural environment?

A. No, the Project will not have an unreasonable adverse effect on air and water quality and the natural environment. I also rely on the assessments and pre-filed testimony of my colleague, Ann Pembroke, at Normandeau Associates on marine resources and water quality. I rely upon the reports and conclusions drawn in the Sediment Dispersion Models and Sediment Characterization Reports that have been provided to the SEC that were developed by Dr. Craig Swanson and Bjorn Bjorkman. In addition, I have reviewed the Soil and Groundwater Management Plans applicable for this Project, which avoid and minimize potential effects to ground and surface waters during construction in the Town of Newington. The Project has carefully considered air quality, water quality and natural resource issues and minimized impacts where feasible and reasonable.

The Project will not result in additional combustion of fuels to produce electricity and, therefore, will not create any air emissions during operation. Generators that may be used during construction of the Project will be operated in compliance with permitting and emission requirements.

As in the original application, permanent wetland and stream impacts have been avoided, and unavoidable impacts have been minimized to the extent practicable. The proposed compensatory mitigation for unavoidable impacts to wetland resources is adequate for the small and scattered permanent impacts from the Project. The vast majority of direct wetland impacts are temporary, and measures to ensure appropriate

habitat protection and restoration will be applied during construction. These will include regular oversight by an environmental monitor to ensure compliance with the Project-specific environmental protection requirements, removal of all equipment, timber mats and erosion controls; surface raking to eliminate ruts; and seeding bare areas.

The final Project design does not have a significant adverse effect on rare plants or wildlife species, or change our assessment of effects to wildlife habitat.

Overall, the potential adverse effects of the Project on water resources and wildlife habitat remain reasonable, and are substantially mitigated.

Q. Does this conclude your joint supplemental pre-filed testimony?

A. Yes.