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November 28, 2018

***VIA ELECTRONIC MAIL
ORIGINAL BY FIRST CLASS MAIL***

M. Kathryn Sedor, Presiding Officer
Energy Facilities Siting Board
One South Station, 5th Floor
Boston, MA 02110

Re: Vineyard Wind LLC, EFSB 17-05/D.P.U. 18-18/18-19

Dear Presiding Officer Sedor:

Enclosed for filing in the above-referenced matter please find an original Initial Brief of the Town of Yarmouth, together with three copies and a Certificate of Service.

Thank you for your attention to this filing.

Sincerely,

A handwritten signature in black ink that reads "Audrey A. Eidelman". The signature is fluid and cursive, with a long horizontal stroke at the end.

Audrey A. Eidelman

AAE/drb
Enclosures

cc: Service List EFSB 17-05/DPU 18-18/18-19 (w/enc.)(via email only)
Daniel Knapik, Yarmouth Town Administrator (w/enc.)(via email and first class mail)

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COMMONWEALTH OF MASSACHUSETTS
ENERGY FACILITIES SITING BOARD

Petition of Vineyard Wind LLC Pursuant to G.L.
c. 164, §69J for Approval to Construct, Operate
and Maintain Transmission Facilities in
Massachusetts for the Delivery of Energy from an
Offshore Wind Energy Facility Located in Federal
Waters to an NSTAR Electric (d/b/a Eversource
Energy) Substation Located in the Town of
Barnstable, Massachusetts.

EFSB 17-05/D.P.U. 18-18/18-19

CERTIFICATE OF SERVICE

I hereby certify that I have this day filed the foregoing document(s) upon the Siting Board via first class mail and electronic mail and upon the Service List via electronic mail in the above-docketed proceeding, in accordance with the requirements of 980 C.M.R. §1.03 (4).



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Dated: November 28, 2018

**COMMONWEALTH OF MASSACHUSETTS
ENERGY FACILITIES SITING BOARD**

Petition of Vineyard Wind LLC Pursuant to G.L. c. 164, §69J for Approval to Construct, Operate and Maintain Transmission Facilities in Massachusetts for the Delivery of Energy from an Offshore Wind Energy Facility Located in Federal Waters to an NSTAR Electric (d/b/a Eversource Energy) Substation Located in the Town of Barnstable, Massachusetts.

EFSB 17-05/D.P.U. 18-18/18-19

INITIAL BRIEF OF THE TOWN OF YARMOUTH

In accordance with the briefing schedule established by the Energy Facilities Siting Board (“Siting Board”) on September 10, 2018 and confirmed on October 26, 2018, the Town of Yarmouth (“Town” or “Yarmouth”) hereby submits this Initial Brief in the above-captioned proceedings (collectively referred to herein as the “Proceeding”), pursuant to which Vineyard Wind LLC (“Vineyard Wind” or the “Company”) is seeking approval to construct, operate and maintain transmission facilities for the delivery of energy from an offshore wind facility located in non-jurisdictional federal waters to an NSTAR Electric Company d/b/a Eversource Energy (“NSTAR”) substation located in the Town of Barnstable (the “Vineyard Wind Connector” or the “Project”).

I. EXECUTIVE SUMMARY

The Town has significant interests at stake in this Proceeding. Vineyard Wind originally proposed a preferred route for the Project’s two undersea transmission cables to be installed through Lewis Bay and make landfall in a residential neighborhood at the end of New

Hampshire Avenue in Yarmouth. The original noticed alternative landfall site proposed by Vineyard Wind was Covell's Beach in the Town of Barnstable ("Barnstable"). Vineyard Wind has since changed its route preference and identified Barnstable as its preferred route, while Yarmouth remains its noticed alternative. If the Project were to make landfall in Yarmouth, the Project's underground transmission lines would travel along one of several routes through the Town to the NSTAR substation in Barnstable. A vast amount of public comment from Yarmouth residents is in opposition to this Project. Much of such public comment is well-grounded in concerns over potential impacts to Lewis Bay as well as the longstanding commercial and recreational activities therein. It is paramount for a municipality to both protect the health, safety, convenience and welfare of its inhabitants and to promote the care and proper environmental stewardship of its property. Towards that end, the Town is intervening in this Proceeding to ensure that its interests and the interests of those most directly impacted by the Project's potential landfall at New Hampshire Avenue are adequately represented.

The New Hampshire Avenue landfall will clearly involve impacts to a more environmentally sensitive site than the proposed Barnstable landfall. Lewis Bay at the end of New Hampshire Avenue is a shallow estuary, with a nitrogen-impaired ecosystem. It is host to a diverse marine environment that would be impacted by the construction and operation of the Project. Significant commercial and recreational activities take place in Lewis Bay that would be disrupted as a result of the Project. In contrast, there are no such issues associated with landfall at Covell's Beach in Barnstable.

The Town maintains that the record in the Proceeding fails to adequately evaluate the potential environmental impacts associated with a landfall at New Hampshire Avenue and does not contain satisfactory mitigation measures for this noticed alternative. Moreover, as noted

supra, the impacts from a landfall in Yarmouth are significantly greater than from a landfall in Barnstable. For these reasons, based upon the limited record advanced by Vineyard Wind, and as set forth in more detail below, the Siting Board cannot, at this juncture, approve the New Hampshire Avenue alternative.

II. PROCEDURAL BACKGROUND

On December 8, 2017, Vineyard Wind filed a petition with the Siting Board pursuant to G.L. c. 164, §69J (“Section 69J”) for approval to construct, operate and maintain the Project. Exh. VW-1. The Project components include two 220 kV export transmission cables to bring the power to shore, onshore 220 kV underground transmission cables and associated components and a new onshore substation to step down transmission voltage for interconnection of the offshore wind farm in federal waters (“Wind Farm”) with the electrical grid at 115 kV. Exh. VW-9 at 16.¹ Each export cable will have a capacity of approximately 400 MW. EFSB-G-1. Vineyard Wind provided a two-volume analysis in support of its petition. Exh. VW-2 and VW-3.

On February 15, 2018, Vineyard Wind filed a zoning exemption petition with the Department of Public Utilities (“DPU”), seeking individual and comprehensive zoning exemptions from Barnstable and Yarmouth zoning bylaws. Exh. VW-4. The same day, Vineyard Wind filed a petition with the DPU seeking approval of the Project pursuant to G.L. c. 164, §72 (“Section 72”). Exh. VW-5. The DPU issued a referral and consolidation order on April 4, 2018 and the DPU referred consideration of the Section 72 and zoning exemption petitions to the Siting Board.

¹ The page citation for exhibits referenced herein is to the caption for the respective exhibit; if the exhibit contains no caption, the page citation is to the original document page numbering.

On March 21, 2018, the Siting Board issued a Notice of Adjudication and Public Comment Hearing and the Siting Board held a public comment hearing in Hyannis, Massachusetts on April 24, 2018. Petitions to intervene were filed by May 8, 2018 and the Siting Board issued the original Procedural Schedule in this Proceeding on May 23, 2018.

Yarmouth is a full party in the Proceeding. *Ruling on Motions to Intervene and Motions to Participate as a Limited Participant* (May 23, 2018). Barnstable, the Alliance to Protect Nantucket Sound, NSTAR Electric Company and Mr. Spencer Bode are also full parties in the Proceeding. *Id.* Bay State Wind, LLC, Ms. Susan Brita, Ms. Ronna Johnson, Ms. Chris Greeley, Mr. Robert Berry and Ms. Kathleen Benson, Mr. John C. Henderson and Mr. David Bernstein are limited participants in the Proceeding (many of these individuals are Yarmouth residents living nearby the potential Lewis Bay landfall site). *Id.* In addition, Mr. Edmund Janiunas and Mr. Michael Dunbar (two separate commercial oyster farmers in Lewis Bay) are also limited participants in the Proceeding. *Ruling on Late Filed Request to Intervene* (September 26, 2018).

On October 3, 2018 (the day before evidentiary hearings commenced in the Proceeding), Vineyard Wind filed notice with the Siting Board that its original preferred route for the Project (landfall at New Hampshire Avenue) was going to be its noticed alternative route for the Project, replacing its original noticed alternative (landfall at Covell's Beach in Barnstable), which became Vineyard Wind's preferred route. EFSB-G-1(S-2). On the same date, Vineyard Wind also provided the Siting Board with a copy of a Host Community Agreement ("HCA") between the Company and Barnstable governing the landfall in Barnstable and other Project related construction and mitigation in the town. EFSB-G-1(S-2)(1).

Vineyard Wind now seeks approval from the Siting Board for construction of the Project with a preferred landfall in Barnstable. Vineyard Wind's alternative landfall location is in

Yarmouth.² EFSB-G-1(S-2). The Siting Board held nine days of evidentiary hearings during the period of October 4, 2018 through October 26, 2018 where Company witnesses testified in consideration of Covell's Beach as the Company's preferred landfall site.

III. PROJECT LANDFALL SUMMARY

The Project's wind turbine array will be located in federal waters south of Martha's Vineyard, subject to a lease the Company has obtained from the Federal Bureau of Ocean Energy Management. Exh. VW-9 at 16. The Siting Board jurisdiction is limited to the offshore export transmission cable corridor in state waters, the onshore export transmission cable to be underground in duct bank and a new substation in Barnstable. *Id.* The Company is proposing to connect the offshore export cables with the onshore export cables through a landfall at Covell's Beach in Barnstable. EFSB-G-1(S-2) at 11; Exh. VW-9 at 44. The Company's alternative proposal is to make the cable transition through a landfall in Yarmouth at the end of New Hampshire Avenue, in Lewis Bay. *Id.*

Covell's Beach is a residents-only public beach in Barnstable located in front of a large paved parking area. Exh. VW-9 at 44. Barnstable owns and manages the beach. *Id.* The Company is proposing to utilize horizontal directional drilling ("HDD") below the sea floor to bring the export cables onshore at Covell's Beach. Exh. VW-9 at 20. According to the Company, HDD is utilized to "avoid impacts to sensitive resources or recreational interests." Exh. VW-2 at 1-25. The Company will set up for HDD within a portion of the large parking lot

² There is Siting Board precedent for approval of a petitioner's route preference that changes during the evidentiary hearings. See *NSTAR Electric Company d/b/a Eversource Energy*, EFSB 16-02 (2018) ("*Boston-Needham*") (Siting Board approved a noticed alternative route presented as the new preferred route during the evidentiary hearings when company could not acquire certain property rights necessary to construct on its original preferred route).

and use HDD to “avoid any disturbance of the beach front and intertidal zone” at Covell’s Beach. Exh. VW-9 at 44.

New Hampshire Avenue is owned by Yarmouth and ends at a seawall on the north shore of Lewis Bay. Exh. VW-9 at 44. As noted by several public comments filed as part of the Massachusetts Environmental Protection Act (“MEPA”) process for the Project, Lewis Bay is an estuary that is home to many boat moorings, swimming beaches open to tourists and residents, a recreational shell fishing program, a sailing program and commercial oyster aquafarms, making it a major recreational attraction in Yarmouth and on Cape Cod. See, e.g., RR-EFSB-20(1) at 140, 141, 145, 147.

As opposed to the less environmentally destructive HDD method, the Company’s preference is to utilize open-cut trenching (temporary cofferdam) on the sea floor itself to bring the export cables onshore at New Hampshire Avenue if it utilizes that route. Exh. VW-9 at 44. Open-cut trenching involves sheet piling through the intertidal zone and seafloor in Lewis Bay. *Id.* The Company has identified HDD as a potentially viable alternative construction method to make landfall at New Hampshire Avenue but states that its preference is open-cut trench because it is a “somewhat faster” method, that the construction set-up footprint is smaller and because open-cut trench is less disruptive to the “space constrained neighborhood” near the New Hampshire Avenue landfall. *Id.* There is also no question that open-cut trenching is cheaper than HDD. Exh. VW-2 at 4-54. The Company’s construction staging area for open-cut trenching or HDD would be a small Town-owned parking area at Englewood Beach, approximately 300 feet north of the end of New Hampshire Avenue. *Id.*

IV. STANDARD OF REVIEW

Section 69J provides that parties seeking approval for proposed energy facilities (including the Project that is the subject of the instant matter), petition the Siting Board for approval to construct their facility. Section 69J. The Siting Board must determine that the petition meets certain requirements, including that the plans for the construction of the facility are consistent with the policies stated in G.L. c. 164, §69H. *Id.* The Siting Board must determine that the proposed facility provides a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost. G.L. c. 164, §69H.

In conducting its review pursuant to Section 69J, the Siting Board will require a petitioner to satisfy the following requirements: (1) that additional energy resources are needed; (2) that, on balance, the proposed project is superior to alternative approaches in terms of reliability, cost, and environmental impact, and in its ability to address the identified need; (3) that the applicant has considered a reasonable range of practical facility siting alternatives and that the proposed facilities are sited in locations that minimize costs and environmental impacts; (4) that environmental impacts of the project are minimized and the project achieves an appropriate balance among conflicting environmental concerns as well as among environmental impacts, cost, and reliability; and (5) that plans for construction of the proposed facilities are consistent with the current health, environmental protection and resource use and development policies of the Commonwealth. *Boston-Needham* at 8.

In this Initial Brief, Yarmouth is primarily focused on the Siting Board's consideration of the environmental impacts of the landfall sites and whether the Project, in its approach to landfall route selection, achieves an appropriate balance among environmental impacts, cost and reliability. The Siting Board requires a Section 69J petitioner to demonstrate that the proposed

route for the facility is superior to the alternative route on the basis of balancing environmental impact, cost, and reliability of supply. *NSTAR Boston-Needham* at 32. This showing requires satisfaction of a two-prong test. First, the Siting Board must consider whether the petitioner has provided sufficient information regarding environmental impacts and potential mitigation measures to enable the Siting Board to make such a determination. *NSTAR Boston-Needham* at 32. Second, the Siting Board must examine the environmental impacts of the proposed facility and determine whether the environmental impacts would be minimized and whether an appropriate balance would be achieved among conflicting environmental impacts, as well as among environmental impacts, cost and reliability. *Id.* Vineyard Wind has failed to satisfy this standard with respect to its proposed alternative landfall in Yarmouth.

V. ARGUMENT

A. **The Company Failed to Properly Consider the Marine, Commercial and Recreational Interests of Lewis Bay in its Landfall Site Selection.**

The Siting Board requires site selection analysis to be detailed enough to capture significant differences between route options and that the criteria used to evaluate the various options must be carefully selected. *Cape Wind Associates LLC and Commonwealth Electric Company, d/b/a NSTAR Electric*, EFSB 02-02 at 46 (2005) (“*Cape Wind*”). Vineyard Wind described its site selection for the landfall sites as including specific guidance from town officials and screening level environmental reviews, which it described as looking at aerial photos, other resource maps and site reconnaissance visits. Exh. VW-2 at 4-7; Tr. Vol. 2 at 282, lines 11-14. Yet, confoundingly, Vineyard Wind included no consideration of shellfish habitat or impacts on commercial and recreational uses of marine resources at the landfall sites in its weighted criteria

supporting its route selection analysis. Exh. VW-2, Table 4-5. As a result, Vineyard Wind did not adequately address the Lewis Bay marine habitat in its landfall selection criteria.

Lewis Bay is unique, as noted by the Town and several members of the public in comments throughout this Proceeding and the Project's MEPA process. See, e.g., Exh. VW-8; RR-EFSB-20(1). The Massachusetts Division of Marine Fisheries ("DMF") identifies Lewis Bay as home to a variety of marine resources, including winter flounder, horseshoe crabs and shellfish. Exh. VW- 8 at 75. The shoreline west of the entrance channel to Lewis Bay is a mapped horseshoe crab spawning beach and waters within Lewis Bay also provide a juvenile horseshoe crab habitat. *Id.* In addition, DMF notes that many areas of the shoreline are mapped for soft shell clam and American oyster habitat; and that oyster aquaculture grants are present along the eastern shoreline of the bay; and that most of the waters of the bay are identified as bay scallop habitat. *Id.* Lewis Bay is also home to a seasonal bay scallop fishery from October to April. *Id.*

For Yarmouth, the scallop fishery is an "intricate part of the commercial and recreational fishery activity that the Town has worked diligently to improve." Exh. VW-8 at 94. Yarmouth sees a moderate to high amount of recreational, commercial and aquaculture shell fishing activity in Lewis Bay. *Id.* The Company's Supplemental Draft Environmental Impact Report ("SDEIR") concedes the vibrant nature of this activity:

Lewis Bay is an area where bay scallops can be effectively targeted for commercial harvest. There are approximately 20 licensed vessels participating in the fishery, and approximately ten of those are actively harvesting from Lewis Bay on a daily basis, during the season. The vessels participating in this fishery are typically small boats that are often launched from trailers at either Englewood Beach or the Hospital Ramp.

According to the Town of Yarmouth, the 2016 commercial bay scallop season was open in Bass River, Lewis Bay, and Nantucket Sound with an estimated 1,012 bushels harvested. It is believed that commercial landings from Lewis Bay

represent the majority of this harvest. Each fisherman with commercial permit has a daily limit of five bushels, or approximately 30 pounds of processed meat. Where a high market value of \$22 per pound of processed bay scallop meat may occur early in the bay scallop season, an estimated total value of the 2016 bay scallop harvest in the Town of Yarmouth is approximately \$136,200.

Exh. VW-9 at 177.

In addition, a large part of the shoreline at Lewis Bay, including the landfall site at New Hampshire Avenue, is mapped quahog habitat. Exh. VW-8 at 75. The Town also uses Lewis Bay as a quahog relay area for contaminated shellfish transplanted from Mount Hope Bay. *Id.* The Company describes this important activity for the Town in its Draft Environmental Impact Report (“DEIR”):

The shellfish in Lewis Bay provide a locally important natural resource, both in terms of commercial and recreational value. The Yarmouth Division of Natural Resources (YDNR) is responsible for managing the shellfish resources throughout town and supplementing the native shellfish population through its propagation and seeding programs. These efforts have helped shellfish stocks to recover in recent years, and Lewis Bay continues to provide recreational and commercial shell fishermen with a harvest of quahogs and bay scallops...

The town’s recreational quahog fishery is primarily maintained through a relay program whereby, every other year, the YDNR transplants quahogs from an area of the Taunton River basin...to the town’s recreational shellfishing area in Lewis Bay... For the past few years, the town has relayed 96,000 pounds of mature quahogs bi-annually to this part of the Lewis Bay shoreline.

Lewis Bay is also open to commercial harvest of quahogs... The town also purchases and distributes seed quahogs, typically 500,000 per year, which are distributed in both the commercial and recreational shellfish areas in Lewis Bay and elsewhere throughout town.

Exh. VW-6 at 4-3 – 4-4.

The Town has significant concern that construction of the Project using open-cut trenching methodology and jet plowing for installation of the two export cables in Lewis Bay will adversely affect the health of the wild and propagated shellfish. RR-EFSB-20(1) at 62. Despite acknowledging that HDD is both available and effective to “avoid impacts to sensitive

resources,” the Company continues to prefer use of open-cut trenching for laying cable in Lewis Bay. Exh. VW-2 at 1-25; Exh. VW-9 at 44. The Siting Board should take notice that it is the preference of DMF to utilize HDD. Indeed, despite Vineyard Wind’s pursuit of open trenching, DMF has specifically stated with respect to landfall at New Hampshire Avenue that, “[a]n HDD approach would avoid direct disturbance of benthic habitat and marine resources for that length of the cable and, depending on length, could avoid the existing quahog relay area and additional mapped shellfish habitat.” Exh. VW-8 at 76.

Lewis Bay is also a sensitive watershed. Past studies of the bay area concluded it was a nitrogen-impaired ecosystem on matters relating to water quality, bottom vegetation, benthic animal communities, eelgrass, flushing and sediment accretion. Exh. VW-6 at 11-70 – 11-71. Yarmouth is required by the Massachusetts Department of Environmental Protection to restrict total maximum daily nitrogen loads in this watershed. Exh. VW-8 at 93. About 28 percent of the nitrogen load comes from the sediment in Lewis Bay. *Id.* Construction and operation of the Project in Lewis Bay could release additional nitrogen and increase total suspended solids, leading to decreased light levels and further adversely impact what is already a degraded water body. *Id.* at 93-94. The Town also has significant concern that the placement of cables in Lewis Bay, given their installation depth, could prevent or limit future Town dredging projects and related efforts to improve the flushing of Lewis Bay. RR-EFSB-20(1) at 62.

Mr. Janiunas and Mr. Dunbar, limited participants in this Proceeding, are two commercial oyster farmers with aquaculture leases from the Town in the eastern end of Lewis Bay. RR-EFSB-14(1). Several other entities also hold aquaculture leases in this area and the Town has two of its own shellfish propagation sites in this area. *Id.* Mr. Janiunas and Mr. Dunbar have laid out extensive credible concerns regarding the potential environmental impacts associated

with the export cable coming ashore in Lewis Bay, including, but not limited to, sedimentation associated with cable-laying operations and the potential for silt smothering and choking of oysters. RR-EFSB-20(1) at 315-20. These oyster farms are not only beneficial to the Town's economy but are also beneficial to Lewis Bay. An oyster can filter 35 to 50 gallons of water daily and assist in the elimination of the nitrogen in the bay. *Id.* at 319. The nitrate content of Lewis Bay is reduced each year from the presence of these aquafarms. *Id.*

The Town also maintains about 60 boat moorings that are located 100 – 400 yards offshore between Englewood Beach breakwater and Mill Creek. Exh. VW-6 at 4-6. Figure 4-7 of the DEIR shows the Englewood Beach ramp and mooring area within Lewis Bay. In addition, the Town's Sailing Center is located at Englewood Beach, and provides instructional sailing lessons in Lewis Bay for adults, families and individual children.³ The placement of the cables in a trench (rather than in a subsurface conduit via HDD) and the required safeguards with respect thereto would cause further impacts to the Town, including, among others, to the vital tourism, recreation and aquaculture industry.

B. Additional Study Regarding Lewis Bay is Necessary.

A petitioner seeking approval to construct a facility under Section 69J must provide the Siting Board with sufficient information to allow the Siting Board to determine whether the facility as proposed has achieved a proper balance among cost, reliability and environmental impacts. *NSTAR Electric Company d/b/a Eversource Energy*, EFSB 14-2 at 39, 81 (2017) (“*Walpole-Holbrook*”). Vineyard Wind has failed to provide sufficient information regarding Lewis Bay to allow the Siting Board to properly compare the environmental impacts of the two landfall sites.

³ <https://www.yarmouth.ma.us/1154/SAILING>.

The record is devoid of a detailed, pre-construction, environmental, water quality and habitat study of the whole of Lewis Bay. RR-EFSB-20(1) at 61. The Town maintains this baseline is necessary to assist in providing proper mitigation for a Project landfall in Lewis Bay. *Id.* The Company has undertaken no such studies and admits the real interest of the Company's marine survey was the 800-meter wide overall cable corridor. Tr. Vol. 3 at 434, lines 5-11. In a hollow attempt to accommodate the Town's concerns with respect to Lewis Bay, the Company notes it has expanded its marine survey area "somewhat," taken "some" sediment samples and "some" benthic grabs. Tr. Vol. 3 at 434, lines 2-4. Nonetheless, as detailed below, the Company has failed to produce adequate modeling or survey work specific to Lewis Bay to support the Company's claims regarding the environmental impact from cable laying operations at the landfall site.

The record lacks sufficient survey information on the current state of shellfish habitat in Lewis Bay. Shellfish survey work is a common requirement for local permitting of piers, docks, channels and shellfish aquaculture leases.⁴ At the beginning of the MEPA process, DMF recommended both pre- and post-construction shellfish surveys for the Lewis Bay section of the proposed landfall site at New Hampshire Avenue. RR-EFSB-20(1) at 12. The Office of Coastal Zone Management ("CZM") also recommended a similar survey. Exh. VW-8 at 199 (results of a shellfish survey plan, prepared in consult with DMF and National Marine Fisheries Service and a summary of discussions with such agencies to avoid and minimize possible impacts to marine resources should be provided). Yet, as noted by DMF in its most recent MEPA comment letter, "[t]o date, no shellfish surveys have been conducted to site the cable in Lewis Bay in a manner

⁴ See, e.g., Yarmouth Wetland Protection Regulations <https://www.yarmouth.ma.us/1222/Wetland-Protection-Regulations-Other-Inf> (requiring shellfish surveys to be conducted for docks and piers and dredging by a qualified marine or shellfish biologist or other acceptable environmental professional).

that would minimize impacts to shellfish by avoiding high density shellfish areas.” *Id.* The Town has also requested such surveys throughout the MEPA comment process. RR-EFSB-20(1) at 61.

Since Vineyard Wind has chosen to ignore the comment from DMF and CZM, both agencies have asked for additional information as part of the Final Environmental Impact Report (“FEIR”). DMF recommends that details regarding a better delineation of shellfish habitat and resources with the zone of potential cable laying and the feasibility of micrositing the cable within this zone should be included in the Project’s FEIR. RR-EFSB-20(1) at 12. Similarly, CZM submits that Vineyard Wind should continue to work with DMF and the Yarmouth shellfish program to delineate shellfish resources within the proposed cable construction in Lewis Bay. *Id.* at 2. CZM states that details of how the cable could be sited to avoid high density shellfish and how time of year restrictions could be employed to minimize impacts to resources in Lewis Bay should be included in the Project’s FEIR. *Id.*

Also, while Vineyard Wind casually acknowledges general concern about silting and material moving into the bay, the record lacks sufficient survey information regarding sedimentation in Lewis Bay. Tr. Vol. 4 at 591, 593. Vineyard Wind presented updated sediment dispersion modeling information in its SDEIR, which includes identification of a 20 mm sediment deposition threshold for impacts to shellfish.⁵ Exh. VW-9, Attachment F. However, DMF cannot find “any references or written justification for this threshold” in the study. RR-EFSB-20(1) at 12. It was not until the evidentiary hearings, when Yarmouth requested this information, that the Company presented some literature to support its findings. RR-YAR-2.

⁵ Twenty (20) mm is the depth of deposition at which survival of shellfish would start to be impaired. Tr. Vol. 5 at 722, lines 5-7.

Markedly, these studies presented by Vineyard Wind do not take into account the cultured or wild conditions that exist in the Lewis Bay aquaculture environment. See, e.g., RR-YAR-2 (Colden and Lipcius (2015) study is specific to oyster reef conditions in the Mid-Atlantic region (Chesapeake Bay area) and the testing regarding oyster growth supporting the analysis was performed in a manner that is not common to Massachusetts aquaculture operations). In addition, it was not until the end of the evidentiary hearings that the Company provided a summary of additional sediment dispersion modeling specific to Lewis Bay. RR-EFSB-36. This summary provides no explanation of how the number and location of additional sediment samples were arrived at, evidencing a level of uncertainty regarding the additional sampling.⁶ RR-EFSB-36(1). This level of uncertainty should be accounted for either quantitatively (i.e., level of error) or qualitatively based on previous experience or sensitivity analysis. The updated modeling also failed to consider at least two factors that may further influence suspended sediment transport and deposition: wind and lunar tide cycle (e.g., Cape Cod estuaries are south-facing and may be sensitive to wind events with regard to sediment resuspension and water movement). *Id.* Further, the Company's sediment dispersion modeling does not assess the comparable impacts between use of HDD and open-cut trench as a methodology for cable laying operations in Lewis Bay. Tr. Vol. 3 at 370, lines 5-7.

As stated, *supra*, the Town remains concerned that there may be adverse impacts to the health of the wild and propagated shellfish population and its harvest and marketability at or below the sensitivity threshold identified by Vineyard Wind in the SDEIR. RR-EFSB-20(1) at 62. The Town's concern stems from the potential for liquefaction of the sediment, particularly

⁶ There is no experimental design or prior protocol identified to determine the minimum number of samples necessary to be confident, at a defined level, that the samples would be sufficient to adequately represent conditions for use in the sediment transport modeling work. RR-EFSB-36(1).

as it relates to the suspension and deposition of fine clay, sand and silt sediments identified in Vineyard Wind's marine survey. *Id.* The Company's survey also did not consider the effect of sediment on taste or commercial quality of shellfish, or the effects of phytoplankton or microalgae from sand clouding within Lewis Bay. Tr. Vol. 5 at 725-26.

DMF also recommends that additional study on impacts of electromagnetic fields from the cables to marine species should be further assessed by Vineyard Wind. RR-EFSB-20(1) at 13. DMF states that the SDEIR is lacking in detail on electromagnetic field ("EMF") impacts to marine species and fails to provide sufficient detail to determine potential impacts. *Id.* Importantly, DMF notes, "The EMF Report does not cite any literature substantiating its claims of lack of impact on marine species." *Id.* at 14.⁷

C. The Record Lacks a Complete Mitigation Plan for the Environmental Impacts to Lewis Bay.

The record contains proposals but no finalized mitigation plan for the environmental impacts associated with landfall in Lewis Bay. Given Vineyard Wind's lack of study of Lewis Bay impacts in general, this omission is not surprising and only compounds its failure to meet its burden in this Proceeding. Despite acknowledging during the evidentiary hearings that most of the concerns the Company heard regarding mitigation had been specific to Lewis Bay issues (Tr. Vol. 4 at 622, lines 4-6) the Company has yet to finalize its mitigation plan for impacts to shellfish and aquaculture interests in Lewis Bay. Tr. Vol. 4 at 617-18; *see also* Exh. VW-9 at 91 (no specific mitigation measures have been finalized between Vineyard Wind and the Town regarding the potential for reseeding programs); Tr. Vol. 4 at 657, lines 7-18 (no specific

⁷ It should also be noted that the Company is aware of recent reports that the cable at the Block Island, Rhode Island wind farm has become exposed in the landfall area post-construction but hasn't taken any affirmative steps to determine the cause of the cable exposure at Block Island such as independently studying the potential for such exposure to occur in Lewis Bay. The Company has simply pointed to information in public news reports and documents. Tr. Vol. 3 at 409, lines 8-12 and at 410-11.

mitigation measures been finalized between Vineyard Wind and the aquaculture farmers in Lewis Bay).⁸ Notably, DMF has determined that the Company's mitigation is not fully developed:

The mitigation options presented for the New Hampshire Avenue site are feasible, but need to be more fully developed. Avoidance or minimization of impacts to marine resources for the New Hampshire Avenue site would require staging to avoid winter flounder and shellfish spawning seasons as well as cable route micrositing to avoid direct impacts to areas of prime shellfish habitat or high concentrations of shellfish resources.

RR-EFSB-20(1) at 12. However, no proper shellfish surveys have been conducted to date that would allow the Company to undertake such mitigation.⁹ See Section V(B), *supra*.

The Company's position is that the mitigation is "complex" and "taking some time." Tr. Vol. 4 at 657, lines 15-18. The Siting Board, however, is not required to consider how complex a mitigation measure is or that mitigation takes time to work out; rather, it is required to determine if the record establishes that there are potential mitigation measures in place in order to properly balance its consideration of environmental impacts. *Walpole-Holbrook* at 39.

Remarkably, during evidentiary hearings, the Company acknowledged it has no familiarity with wind farms installed near aquaculture operations in the United States and its only reference for addressing the concerns of the oyster farmers is to point to the sediment dispersion modeling that DMF has called into question. Tr. Vol. 4 at 660-61.¹⁰

In addition, the Draft Benthic Monitoring Plan proposed by the Company is lacking the required pre- and post-construction monitoring specific to Lewis Bay. Exh. VW-9, Attachment

⁸ In contrast, no such shellfish or aquaculture mitigation is required for landfall at Covell's Beach. Tr. Vol. 4 at 655, lines 15-19 (there are no similar shellfish resources at Covell's Beach).

⁹ The Company has also undertaken no quantitative analysis of impacts to bay scallop habitat from use of HDD vs. open-cut trench. Tr. Vol. 4 at 711, lines 15-23.

¹⁰ In addition, during the evidentiary hearings the Company witnesses acknowledged they did not hold degrees in marine ecology or hold themselves out as experts in shellfish biology. Tr. Vol. 5 at 755-56.

D. The Company stated during the evidentiary hearing that the “specific sample sites for the benthic habitat monitoring plan were developed for the route in its entirety” and the none were specifically planned in Lewis Bay. Tr. Vol. 5 at 744, lines 11-18. DMF also notes that, “[m]ore sites are needed to improve the power with which impact is measured. Further discussion of the appropriate number of sites to test for impact is needed as well as their spatial distribution relative to the cable laying corridor.” RR-EFSB-20(1) at 16.

D. The Impacts from Landfall at New Hampshire Avenue Are More Significant Than at Covell’s Beach.

It is well settled that the Siting Board must assess all impacts of a proposed facility to determine whether appropriate balance is achieved among conflicting environmental concerns as well as among environmental impacts, cost and reliability. *Cape Wind* at 52; *Cambridge Electric Light Company*, EFSB 00-3 at 24 (2001), *Boston Edison Company*, EFSB 96-1 at 59 (1997).

With respect to the landfall sites, the record clearly shows there are more impacts at New Hampshire Avenue than at Covell’s Beach. Exh. VW-9, Table 1-7.

DMF has determined there will be more marine resource impact with landfall associated at Lewis Bay. RR-EFSB-20(1) at 11. Notably, DMF states “New Hampshire Avenue, within Lewis Bay, will potentially impact shellfish beds, a depuration area, bay scallop habitat and a mooring field.” *Id.* Lewis Bay contains two shellfish suitability areas, covering 1.75 nautical miles, while Covell’s Beach contains none. DEIR, Figure 4-15 (Exh. VW-6). The Company acknowledges that the impacts to mapped shellfish are distinct to the landfall at Lewis Bay. Tr. Vol. 4 at 613-14. In comparison, although surf clam habitat is mapped at Covell’s Beach, the Company is successfully avoiding that area with its most recent HDD layout. Tr. Vol. 4 at 615.

There are commercial and recreational fisheries in Lewis Bay, while there are none surrounding the landfall at Covell’s Beach. See generally, Exh. VW-2. There are seven

aquaculture grants in the Lewis Bay area. Exh. VW-2 at 5-13. In contrast, the Company is aware of no aquaculture operations in the near field at Covell's Beach. Tr. Vol. 4 at 625, lines 9-11. In fact, since 2016, the area in close proximity to Covell's Beach has been closed to shellfishing. Exh. VW-9 at 177.

Moreover, the use of open-cut trenching to lay cable will impact an estimated 400-foot wide area in the Town's mooring field in Lewis Bay due to the need for exclusion zones around the two cables. Tr. Vol. 3 at 429, 443-44. The restriction could potentially be for *all* moorings within this exclusion zone for the life of the Project given future operation and maintenance needs, adversely affecting all recreational and commercial uses in this area. *Id.* at 431. In comparison, Covell's Beach has no similar moorings and the Company is not aware of any plans by Barnstable to place a mooring field at Covell's Beach; thus, there will be no similar impact associated with landfall at Covell's Beach. *Id.* at 443, 445.

The construction for landfall at New Hampshire Avenue is more constrained than it is at Covell's Beach – there are more residents in the near vicinity of New Hampshire Avenue landfall than there are at Covell's Beach. RR-EFSB-23; Tr. Vol. 2 at 289, lines 5-13. The residents of Yarmouth have expressed significant concern regarding the Project. See, e.g., public comment docketed in this Proceeding; Exh. VW- 8; RR-EFSB-20(1). In comparison, no such opposition is presented by residents in Barnstable. Tr. Vol. 2 at 280, lines 13-14.

Finally, the Company's future operation and maintenance activities could involve the need to come back into Lewis Bay and rebury cables or add cable protection if necessary. Tr. Vol. 4 at 573, lines 15-20 and 22-23; at 575, line 24 through 576, line 3; at 576, lines 5-6. Such future activities would further adversely impact the marine, commercial and recreational interests in Lewis Bay.

E. Construction at the New Hampshire Avenue Landfall Presents More Challenges Than at Covell's Beach.

A route to landfall at New Hampshire Avenue presents additional technical challenges for the Company. Cable laying for the landfall would have to cross the existing National Grid Nantucket Cable, which DMF notes, "will likely require concrete mattresses." RR-EFSB-20(1) at 12. The Company has stated that additional cable armoring or other cable protection may be necessary in order to cross the existing National Grid Nantucket Cable, which is of concern to the fishing community, as fisherman believe the concrete mattresses could lead to gear snag. Tr. Vol. 2 at 220, lines 19-20; Tr. Vol. 4 at 645, lines 10-13. The Company expects that 1,300 square feet of cable protection is necessary to address crossing of the existing cable. Tr. Vol. 4 at 644, lines 20-22. No similar cable crossing is required for landfall at Covell's Beach. Tr. Vol. 2 at 220, lines 18-19.

The shallow nature of the estuary also presents technical challenges for the Company. Shallow depths in Lewis Bay present concerns for cable laying vessels that enter Lewis Bay and for using the open-cut trench method proposed by Vineyard Wind. Exh. VW-6, Figure 2-4. The Company has acknowledged that it is generally easier to undertake its jet plowing and cable laying operations in deeper water. Tr. Vol. 4 at 563. No such concern exists at the approach to Covell's Beach as the Company has proposed to utilize HDD. Exh. VW-9 at 44. In addition, the Company's current qualitative comparison of required anchoring of installation vessels for landfall construction shows that more anchoring may occur in Lewis Bay than at Covell's Beach. Tr. Vol. 4 at 707, lines 16-18.

Construction associated with landfall at New Hampshire Avenue also has more time-of-year restrictions. DMF states that the time-of-year restriction recommendation for New Hampshire Avenue is January 15 – October 30. RR-EFSB-20(1) at 16. No comparable

restrictions exist at Covell's Beach, given the Company's proposal to use HDD at that landfall site. RR-EFSB-20(1) at 12, 16.

Project construction at New Hampshire Avenue is also longer than at Covell's Beach. The offshore route to New Hampshire Avenue is four to five miles longer than the route to Covell's Beach and the onshore route to the NSTAR substation is .7 miles longer with a landfall in Yarmouth. Tr. Vol. 1 at 198, lines 5-13; Tr. Vol. 2 at 217, lines 19-20. The record is clear that all things being equal, a shorter construction route is preferable and has fewer environmental impacts. Tr. Vol. 2 at 217, lines 22-23.

F. The Balancing of Environmental Impact, Costs and Reliability.

The Siting Board must consider environmental impacts, costs and reliability as part of its balancing test in approving a facility. *NSTAR Boston-Needham* at 32. The publicly available record information on total Project cost is limited in this Proceeding, due to the Presiding Officer's determination on the Company's motions for protective treatment. Ruling on Motions for Protective Treatment, July 25, 2018. Nonetheless, in the publicly available data, as most recently supplemented in early October 2018, the Company notes that the costs of the Project with landfall at New Hampshire Avenue and Covell's Beach are comparable. EFSB-G-1(S2); Attachment G (Revised Public) (Supp. 1). The Company's stated position during the evidentiary hearings is that the costs of the two landfall options are comparable. Tr. Vol. 1 at 97, 101. In addition, the Company's position is that the reliability considerations for the Project are also comparable between the two landfall routes. Tr. Vol. 1 at 101, lines 13-15; Exh. VW-2 at 4-55 (e.g., both onshore routes are underground cables, less susceptible to weather-induced outages and no significant permitting concerns between the routes, etc.).

The Town submits that with cost and reliability for the landfall routes being comparable, the totality of the impacts associated with landfall at New Hampshire Avenue, as stated, *supra*, prevent the Siting Board from approving this noticed alternative. See *Boston-Needham* at 73 (when cost and reliability are comparable among the routes, environmental impacts are controlling factor in Siting Board decision); *New England Power Company d/b/a National Grid*, EFSB 13-2 at 89 (2014) (greater impacts associated with noticed alternative lead Siting Board to conclude that primary route is preferable).

Even assuming, *arguendo*, that the Siting Board deems New Hampshire Avenue and Covell's Beach to be comparable with respect to cost, reliability *and* environmental impacts, the Siting Board will consider public support (or lack thereof) for a project as part of its balancing. *NSTAR Electric Company d/b/a Eversource Energy and New England Power Company d/b/a National Grid*, EFSB 15-04 at 135 (2018) (approval of preferred route when noticed alternative and preferred route are comparable on environmental impact, cost and reliability, but noticed alternative route has no known public support and no party asserts that the noticed alternative route is superior).

Here, the HCA between Barnstable and Vineyard Wind indicates their support for Covell's Beach as the preferred landfall site. EFSB-G-1(S2)(1). In comparison, there is a vast public outcry from Yarmouth residents opposing landfall at New Hampshire Avenue. See, e.g., RR-EFSB-20(1) at 140-317. No such public opposition is coming from Barnstable. Tr. Vol. 2 at 280, lines 13-14. Moreover, the Town continues to have significant concerns regarding the potential environmental impacts associated with construction, operation and maintenance of the export cables in Lewis Bay and the lack of sufficient mitigation for such impacts. See, e.g., RR-EFSB-20(1) at 61-65.

G. Groundwater Protection.

The preferred and noticed alternative routes include Vineyard Wind’s proposal for construction of a new electric substation where the 220 kV export cables will step down to 115 kV in preparation for interconnection at the existing 115 kV switching station in Barnstable. Exh. VW-6 at 1-10. The new substation would be located in Barnstable, but close in proximity to Yarmouth. Exh. VW-3 at Figure 1-12. The new substation is located in a Zone II Wellhead Protection Area (defined in 310 C.M.R. § 22.02) and in the Barnstable Groundwater Overlay Protection District. Exh. VW-6 at 8-2 and 8-3. The Siting Board’s approval of the Project must include all conditions necessary to ensure protection of groundwater and public water supplies, including, but not limited to, robust containment mechanisms and state and federal mandated spill prevention and protection measures during construction and operation of the substation.

H. Any Siting Board Approval of Landfall in Yarmouth Should Require Additional Process.

In the unlikely event that the Siting Board analysis supports approving construction of the Project with landfall at New Hampshire Avenue, the Town urges the Siting Board to allow the Town to participate in additional process before the Siting Board (e.g., expert and fact witness testimony and hearings as necessary) to address the open environmental issues associated with landfall in Lewis Bay. These issues include, but are not limited to, the need for pre- and post-construction surveys of Lewis Bay, proper sedimentation studies in Lewis Bay, proper benthic monitoring of Lewis Bay, and mitigation for shellfish loss and aquaculture activities.

VI. CONCLUSION

For the reasons set forth above, the Town respectfully requests that the Siting Board not approve the alternative landfall at New Hampshire Avenue.

Respectfully Submitted,

THE TOWN OF YARMOUTH

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