

No. 23-1501

**UNITED STATES COURT OF APPEALS
FOR THE FIRST CIRCUIT**

NANTUCKET RESIDENTS AGAINST TURBINES; VALLORIE OLIVER,

Plaintiffs - Appellants,

v.

U.S. BUREAU OF OCEAN ENERGY MANAGEMENT; NATIONAL OCEANIC
AND ATMOSPHERIC ADMINISTRATION; NATIONAL MARINE FISHERIES
SERVICE; DEBRA HAALAND, Secretary of the Interior; GINA M.
RAIMONDO, Secretary of Commerce; VINEYARD WIND 1, LLC,

Defendants - Appellees.

On Appeal from the United States District Court for the District of Massachusetts,
No. 1:21-cv-11390-IT – Hon. Indira Talwani

**OPENING BRIEF OF APPELLANTS, NANTUCKET RESIDENTS
AGAINST TURBINES, ET AL.**

Thomas Stavola Jr. Esq.

tstavolajr@stavolalaw.com

Law Office of Thomas Stavola Jr. LLC

209 County Road 537

Colts Neck, NJ 07722

Telephone: 732-790-0639

Counsel for Appellants

CORPORATE DISCLOSURE STATEMENT

Pursuant to Fed. R. App. P. 26(1), Appellants submit the following Corporate Disclosure Statement. Appellant Nantucket Residents Against Turbines is a 501(c)(3) non-profit, non-governmental corporation that has no parent corporation, nor is there any publicly held corporation that owns 10% or more of this party's stock.

Dated: September 23, 2023

/s/ Thomas Stavola Jr. Esq.

Thomas Stavola Jr. Esq.

TABLE OF CONTENTS

STATEMENT OF JURISDICTION	1
STATEMENT OF THE ISSUES PRESENTED FOR REVIEW	1
STATEMENT OF THE CASE.....	2
SUMMARY OF THE ARGUMENT	6
ARGUMENT	11
I. STANDARD OF REVIEW	11
II. BOEM VIOLATED NEPA BY ISSUING A LEGALLY DEFICIENT EIS, NMFS VIOLATED ESA THROUGH ITS LEGALLY INADEQUATE BIOP WHICH CONCLUDED NO JEOPARDY, AND BOTH BOEM AND NMFS CONTRAVENED THE ESA BY THEIR FAILURE TO ENSURE THROUOH CONSULTATION THAT THE PROJECT’S IMPACTS WOULD NOT JEOPARDIZE THE NARW	14
A. NMFS and BOEM violated the ESA through their failure to rely on the best scientific and commercial data available	14
B. NMFS and BOEM violated the ESA and NEPA by arbitrarily and capriciously finding that the suite of mitigation measures would sufficiently protect NARW from vessel strikes and pile driving noise	22
C. NMFS and BOEM violated the ESA and NEPA through inadequate consideration of entanglement risk.....	28
D. NMFS and BOEM failed to adequately consider risk of operational noise in violation of ESA and NEPA	30

E. NMFS and BOEM failed to adequately consider baseline conditions and recovery of NARW in violation of ESA and NEPA	32
CONCLUSION	37

TABLE OF AUTHORITIES

Cases

<i>Audubon Soc'y of Portland v. Haaland,</i> 40 F.4th 917 (9 th Cir. 2022).....	11
<i>Boston Redevelopment Auth. v. Nat'l Park Serv.,</i> 838 F.3d 42 (1 st Cir. 2016)	18
<i>Burlington Truck Lines v. United States,</i> 371 U.S. 156, 168 (1962).....	11
<i>Burlington Truck Lines, Inc. v. United States,</i> 371 U.S. 156, 168 (1962).....	20
<i>Conner v. Burford,</i> 848 F.2d 1441 (9 th Cir. 1988)	14
<i>Conner v. Burford,</i> 848 F.2d 1441, 1454 (9 th Cir. 1988).....	12
<i>Conservation Cong. v. United States Forest Serv.,</i> 720 F.3d 1048 (9 th Cir. 2013).....	11
<i>Ctr. for Biological Diversity v. Bernhardt,</i> 982 F.3d 723, 734 (9 th Cir. 2020).....	12
<i>Ctr. for Biological Diversity v. United States BLM,</i> 698 F.3d 1101, 1121 (9 th Cir. 2012)	12

<i>Defenders of Wildlife v. Zinke,</i> 856 F.3d 1246, 1248 (9 th Cir. 2017)	10
<i>Def. of Wildlife v. Zinke,</i> 856 F.3d 1248, 1256-57 (9 th Cir. 2017).....	11
<i>Great Basin Res. Watch v. BLM,</i> 844 F.3d 1095, 1101 (9 th Cir. 2016)	31
<i>Kern Cty. Farm Bureau v. Allen,</i> 450 F.3d 1072, 1080 (9 th Cir. 2006)	12
<i>Kern v. United States BLM,</i> 284 F.3d 1062, 1071 (9 th Cir. 2002)	12
<i>Marasco & Nesselbush, LLP v. Collins,</i> 6 F.4th 150 (1 st Cir. 2021).....	27
<i>Me. Lobstermen's Ass'n v. Nat'l Marine Fisheries Serv.,</i> 70 F.4th 582, 587 (D.C. Cir. 2023)	27
<i>Miccosukee Tribe of Indians v. United States,</i> 566 F.3d 1257, 1265 (11 th Cir. 2009)	13
<i>Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.,</i> 463 U.S. 29, 43 (1983).....	11, 20
<i>Native Village of Chickaloon v. Nat'l Marine Fisheries Serv.,</i> 947 F. Supp. 2d 1031 (D. Alaska 2013).....	24

<i>Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.,</i> 524 F.3d 917 (9 th Cir. 2008)	31, 33
<i>Natural Res. Def. Council v. U.S. Dep't of the Interior,</i> 113 F.3d 1121, 1124 (9 th Cir. 1997)	12
<i>NRDC v. Pritzker,</i> 62 F. Supp. 3d 969 (N.D. Cal. 2014)	24
<i>Pac. Coast Fed'n of Fishermen's Ass'ns,</i> 265 F.3d at 1034 (9 th Cir. 2001)	12
<i>Pac. Coast Fed'n of Fishermen's Ass'ns, Inc. v. Nat'l Marine Fisheries Serv.,</i> 265 F.3d 1028, 1034 (9 th Cir. 2001)	10
<i>Wild Fish Conservancy v. Salazar,</i> 628 F.3d 513 (9 th Cir. 2010)	34

Statutes

16 U.S.C. § 1540(g)	1
16 USCS § 1536.....	11
16 USCS § 1536(a)(2).....	13
28 U.S.C. § 1331	1
28 U.S.C. § 1346.....	1
28 U.S.C. § 1391(e)	1
28 U.S.C. § 2201	1

28 U.S.C. §1291	1
42 U.S.C. §4321	1
5 U.S.C. § 701	1

Rules

50 CFR 402.02(d)	33
50 CFR 402.14(g)(8).....	13, 18

ORAL ARGUMENT REQUEST

Because this appeal raises important issues, and oral argument may aid the Court's consideration, ACK RATs respectfully requests that the Court schedule an oral argument.

STATEMENT OF JURISDICTION

The U.S. District Court for the District of Massachusetts had jurisdiction over this action pursuant to 16 U.S.C. § 1540(g) (Endangered Species Act, citizen suit provision); 28 U.S.C. § 1331 (federal questions), 28 U.S.C. § 1346 (United States as defendant), 28 U.S.C. § 2201 (declaratory judgment), and 28 U.S.C. § 2202 (injunctive relief); 42 U.S.C. §4321 et seq. (National Environmental Policy Act), and 5 U.S.C. § 701 through 706 (Administrative Procedures Act).

Venue was proper in the district court under 28 U.S.C. § 1391(e). The district court's order of May 17, 2023 denied Plaintiffs' Motion for Summary Judgement. Plaintiffs timely filed a notice of appeal on June 13, 2023. This Court has jurisdiction over this appeal of a final decision of the District Court, pursuant to 28 U.S.C. §1291.

STATEMENT OF THE ISSUES PRESENTED FOR REVIEW

The pertinent issues are whether:

1. The National Marine Fisheries Service ("NMFS") in issuing the 2021 Biological Opinion ("BiOp"), failed to adequately consider the Vineyard Wind Project's ("Project") impact on the North Atlantic Right Whale ("NARW") and instead concluding that the Project would not jeopardize

- the species in violation of Section 7(a)(2) of the Endangered Species Act (“ESA”);
2. The NMFS and the Bureau of Ocean Energy Management (“BOEM”) violated and continue to violate Section 7(a)(2) of the ESA by failing to ensure through consultation that BOEM’s approval of impacts of the Project will not jeopardize the NARW;
 3. BOEM violated the National Environmental Policy Act (“NEPA”) by failing to take the required hard look at the environmental consequences to the NARWs and issuing a final environmental impact statement (“EIS”) that parroted the flawed analysis of the BiOp.

STATEMENT OF THE CASE

This appeal concerns Plaintiff Nantucket Residents Against Turbines (“ACK RATS”) challenge of the approval of the Vineyard Wind I offshore wind energy project. ACK RATS filed their complaint in the District Court on August 25, 2021, and thereupon their amended complaint on February 10, 2022. The amended complaint sought orders vacating and setting aside the October 18, 2021 BiOp, the Record of Decision (“ROD”) and attendant final EIS for the Vineyard Wind Project, as well as orders obviating BOEM and NMFS from issuing any permit, approval or other action in the Vineyard Wind area of potential effect (“APE”) (or elsewhere that

could adversely affect federally-listed species) until an adequate BiOp is completed, and enjoining BOEM from issuing any permit, approval or other action that might adversely affect the human or natural environment until an adequate EIS is completed.

The factual basis of the case is the imperiled NARW, with fewer than 350 whales remaining in population, a population subject to interminable threats from vessel strikes, entanglement in fishing gear, and other anthropogenic threats, eventuating in heightened mortality rates and decreased reproduction rates for the NARW. Plaintiff Vallorie Oliver of ACK RATs is a resident of Nantucket, has observed NARW in the past and maintains concrete plans to observe same in the future. ADD.000025-000026. As such, her concrete and particularized legally protected interest has been harmed, and therefore, ACK RATs the organization has been injured as well , as conceded in the District Court Order. *Id.*

ACK RATs contends the Project's environmental review documents prepared by BOEM and NMFS were highly deficient in innumerable ways, in contravention of both the ESA and NEPA. Pertinent to the case at bar, the environmental review process initiated with BOEM publishing the Draft EIS on December 7, 2018. ADD.000004. Thereafter, on June 12, 2020, BOEM prepared a Supplemental DEIS in consideration of comments received during the NEPA process. ADD.000005-000006. BOEM's final EIS became available on March 12, 2021. ADD.000006.

ACK RATs was entirely unsatisfied with the amended environmental impact statements, as they continued to exhibit the same deficiencies regarding inadequacy of risk assessment to NARWs, inter alia. The BiOp was initially issued by NMFS on September 11, 2020, and following reinstatement of biological consultation with BOEM and NMFS, a new BiOp eventuated on November 1, 2021. ADD.000007-000009.

The reinstated 2021 BiOp and the FEIS documents served as the fulcrum of the District Court case, and accordingly, this appeal, as such documents deviate from the statutorily prescribed stipulations of both the ESA and NEPA. ACK RATs and Defendants submitted cross-motions for summary judgements, replies associated therewith, and a Joint Appendix comprising over 13,000 pages. Appendix (ECF 117). Thereupon, the critical issues in dispute were argued at a Motion Hearing on January 24, 2023. ADD.000053.

Of greatest significance to the instant appeal is the NMFS' and BOEM's abdication of their statutorily imposed duties to consider the best scientific evidence available and ensure the NARWs would not be jeopardized by the Project, and NMFS' and BOEM's derelictions in their failure to analyze several, salient risks posed to the NARW. Moreover, as discussed *infra*, NMFS and BOEM assign far too much risk reduction efficacy to the putative suite of mitigation protocols. The District Court explained that such measures cannot be examined in a vacuum

(ADD.000046), but even when assessed synergistically, those protocols are grossly inadequate in terms of countervailing the risks presented by vessel strikes, pile driving noise, soft starts, and entanglements.

Rather than objectively examine all the relevant evidence before them, the NMFS and BOEM arbitrarily and capriciously predicated their BiOp and FEIS on insufficient data, neglecting to adequately analyze integral aspects of the problem, including baseline data, entanglement risk, pile driving noise, operational turbine noise, and vessel strikes. The District Court erred in its determination that agency deference applied in all the hitherto mentioned aspects of the analysis. While the jurisprudential doctrine of agency deference creates a rebuttable presumption of accuracy, it is not a vehicle whereby agency determinations should automatically be greenlighted without proper regard to critical aspects of the issue. Absent an order from this Court reversing the District Court summary judgement denial, the Project, which is now in the inchoate stages of construction, will be permitted to continue, sending the already highly endangered NARW careening further down the road toward extinction.

SUMMARY OF THE ARGUMENT

BOEM and NMFS acted arbitrarily and capriciously in their environmental review of the Vineyard Wind Project. NMFS violated the ESA by issuing a legally deficient BiOp that incorrectly concluded that the Project's impact would not jeopardize the NARW. BOEM contravened NEPA by issuing a legally deficient final EIS that mirrored the BiOp's flawed conclusions. BOEM and NMFS violated the ESA by their dual failure to ensure through consultation that BOEM's approval of the impacts of the Project would not jeopardize the NARW. The NARW, an already highly endangered species, will be sent careening further on its peregrination toward extinction due to the NMFS' and BOEM's arbitrary and capricious environmental review of the Project. As the BiOp explicitly admits regarding the NARW:

“Given the above information. North Atlantic right whales' resilience to future perturbations is expected to be very low (Hayes et al. 2018a) . . . Consistent with this, recent modelling efforts indicate that the species may decline towards extinction if prey conditions worsen and anthropogenic mortalities are not reduced.” ADD.000339.

As such, the BiOp itself acknowledges that the NARW will continue declining toward extinction if anthropogenic mortalities are not reduced, yet, the BiOp and FEIS arbitrarily and capriciously greenlighted the Project's impacts, with little focus on the very real and substantial risks posed by the Project.

First, NMFS and BOEM violated the ESA through their failure to rely on the best scientific and commercial data available. ACK RATs adduced numerous scientific studies in their Summary Judgement briefs attesting to the significantly enhanced risk that the Project would pose to NARW. The agencies were aware of these studies, but refrained from genuinely considering their data and importing same into the environmental review and attendant conclusions of the BiOp and FEIS. For example, the studies demonstrate that the vast, vast majority of the NARW population is present in, and relies heavily on, the RI/MA wind energy area, within which the Project is located. Over 90% of the NARW population relies on this relatively small region. The NARW has experienced a significant amount of mortality in recent years (nigh 5% loss in total population), as discussed *infra*, and offshore wind projects catalyze various pernicious perturbations such as habitat changes, water column stratification, increased vessel noise, and increased vessel traffic and risk of collisions with whales. The BiOp and FEIS did not delve deeply into these issues.

Another critical omission from the BiOp and FEIS is discussion on the increasing, and overall high prevalence of NARW in the critical Project area during the June 1-October 31 period. In fact, the Quintana-Rizzo study found that the month of August featured the second highest NARW sighting rate of the calendar year, contrary to Defendants' assertions that NARWs are low during the June-November

1 window.¹ This is the period during which the pile driving activities are set to occur. But the BiOp and FEIS assume low numbers of NARW during this period. Many of the other studies ACK RATs cited demonstrate the high amount of commercial fishing in the area surrounding the Project and its attendant threat to NARW; that the calving interval is disturbingly low 7.6 years; that the NARW deaths outnumber births by 3:2; and that the potential biological removal level is such that the NARW cannot absorb even one human induced death per year and maintain its already very low population. The District Court simply deferred to the agencies determinations as to which scientific information to employ or discard, incorrectly relying on the agency deference doctrine when the agencies abrogated their statutorily imposed duties to consider the biological data before them.

Second, the District Court erroneously deferred to the agencies in their conclusions that the Project's suite of mitigation protocols would adequately obviate NARWs from suffering serious injury or death by way of vessel strike and pile driving noise. The District Court - in its opinion denying ACK RAT's summary judgement motion - averred that ACK RATs cannot challenge the procedures in a vacuum. But as per the available data and case precedent citing to passages from the

¹ ADD.000460, ADD.000314, ADD.000315, ADD.000317.

NMFS' rule itself, it is ostensible that the putative suite of mitigation techniques is ineffectual even when considered synergistically.

In fact, the efficacy of the acclaimed protected species observer is only a 9% detection probability, and the efficacy of the passive acoustic monitoring only 25% detection probability. Importantly, the protected species observers only have the ability to “see” NARW out to 1.5 km from the pile driving site, and the passive acoustic monitoring is only employed 3.2-5 km from the pile driving site. Meanwhile, the ensonified zone of Level A harassment noise extends to 7.5 km from the construction site. So, the highly ineffective mitigation protocols will only be employed in a part of the ensonified area, and within the ensonified zone overlaid with the putative mitigation measures, most NARWs will not be successfully detected.

Third, the agencies greatly underestimated the risk of entanglement posed by commercial fishing operations in the area surrounding the Project. The District Court incorrectly deferred to the agencies in their conclusion that the risk of entanglement was so low such that it could not be meaningfully measured. The data belies this assumption.

Fourth, the agencies abdicated their duty to properly consider operational turbine noise impacts; they adopted an older study rather than a more recent study

that considered the same turbines Vineyard Wind seeks to construct. This appears to be a form of confirmation bias, namely, the data endorsed was ostensibly more auspicious for the Project. This is not an objective consideration of all the relevant biological information available, pursuant to statutory and regulatory mandate.

And fifth, the agencies failed to properly consider the degraded baseline condition of the NARW in their recovery analyses. If one does not assess the starting point veraciously, then it will be nigh impossible to accurately determine the influence of ensuing Project impacts.

In all of the above, the District Court deferred to the agencies' conclusions and incorrectly determined that they complied with both the ESA and NEPA. In reality, this was an archetypal case of arbitrary and capricious environmental review, as the agencies failed to utilize the best scientific and commercial data available, and failed to adequately consider a number of important, significant risks to the NARW induced by the Project, and incorrectly found that the suite of mitigation measures would adequately obviate NARW injury and death. The District Court's denial of ACK RAT's summary judgement should be reversed, and the BiOp, FEIS, and attendant record of decision for Vineyard Wind project should be set aside.

ARGUMENT

I. STANDARD OF REVIEW

When examining a grant of summary judgement, the Court undertakes a “de novo” review. *Defenders of Wildlife v. Zinke*, 856 F.3d 1246, 1248 (9th Cir. 2017).

Agency determinations under the ESA and NEPA are reviewed pursuant to the APA, which requires that an agency action be “upheld unless it is found to be ‘arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.’” *Id.* at 1247 (citing *Pac. Coast Fed'n of Fishermen's Ass'ns, Inc. v. Nat'l Marine Fisheries Serv.*, 265 F.3d 1028, 1034 (9th Cir. 2001)). However, the parlance in *Conservation Cong. v. United States Forest Serv.*, 720 F.3d 1048 (9th Cir. 2013) is more pertinent and salutary to the analysis herein, namely, that an agency action is arbitrary and capricious if it, “relied on factors Congress did not intend it to consider, entirely **failed to consider an important aspect of the problem**, or **offered an explanation that runs counter to the evidence before the agency** or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise (emphasis added).” *Id.* at 1054.

The APA serves as the vehicle for ACK RATs’ NEPA and ESA challenges,² and notwithstanding the deferential nature of the arbitrary and capricious standard, the agency is required to “articulate a satisfactory explanation for its action including a ‘rational connection between the facts found and the choice made.’” *Audubon Soc’y of Portland v. Haaland*, 40 F.4th 917 (9th Cir. 2022) (citing *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (quoting *Burlington Truck Lines v. United States*, 371 U.S. 156, 168 (1962))).

Pursuant to the ESA’s stipulations in 16 USCS § 1536(a)(2), agencies must utilize the “best scientific and commercial data available” in determining that an agency action will not jeopardize the continued existence of any endangered species or threatened species. This “best data available” stipulation obviates an agency from “disregarding available scientific evidence that is in some way better than the evidence [it] relies on.” *Kern Cty. Farm Bureau v. Allen*, 450 F.3d 1072, 1080 (9th Cir. 2006). The agency must “not ignore available biological information.” *Id.* at 1080-81 (quoting *Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988)). Moreover, a BiOp is arbitrary and capricious in contravention of the ESA if it “fails to consider the relevant factors and articulate a rational connection between the facts found and

² “We review an agency's compliance with the ESA . . . and NEPA under the ‘arbitrary and capricious’ standard of the APA.” *Def’s. of Wildlife v. Zinke*, 856 F.3d 1248, 1256-57 (9th Cir. 2017).

the choice made.” *Ctr. for Biological Diversity v. United States BLM*, 698 F.3d 1101, 1121 (9th Cir. 2012) (citing *Pac. Coast Fed'n of Fishermen's Ass'ns*, 265 F.3d at 1034 (9th Cir. 2001) (quoting *Natural Res. Def. Council v. U.S. Dep't of the Interior*, 113 F.3d 1121, 1124 (9th Cir. 1997))).

Concordantly, NEPA challenges are analyzed through the lens of the APA’s arbitrary, capricious and abuse of discretion standard, and where courts are charged with reviewing the adequacy of an EIS under NEPA, “a rule of reason” analysis is employed, “to determine whether the discussion of the environmental consequences included in the EIS is sufficiently thorough.” *Ctr. for Biological Diversity v. Bernhardt*, 982 F.3d 723, 734 (9th Cir. 2020) (quoting *Kern v. United States BLM*, 284 F.3d 1062, 1071 (9th Cir. 2002)).

In view of the fact that ACK RATs’ surviving noticed claim under NEPA is that the final EIS “parrots the flawed analysis and conclusions set forth in the BiOp,” the argument, *infra*, is structured by way of consideration of EIS (NEPA) and ESA (BiOp) violations together (as was undertaken by the District Court).

II. BOEM VIOLATED NEPA BY ISSUING A LEGALLY DEFICIENT EIS, NMFS VIOLATED ESA THROUGH ITS LEGALLY INADEQUATE BIOP WHICH CONCLUDED NO JEOPARDY, AND BOTH BOEM AND NMFS CONTRAVENED THE ESA BY THEIR FAILURE TO ENSURE THROUGH CONSULTATION THAT THE PROJECT'S IMPACTS WOULD NOT JEOPARDIZE THE NARW

A. NMFS and BOEM violated the ESA through their failure to rely on the best scientific and commercial data available

Pursuant to the ESA, 16 USCS § 1536(a)(2), and its implementing regulations, 50 CFR 402.14(g)(8), agencies must employ the best scientific and commercial data available in their ascertainment of jeopardy, and the NMFS and BOEM have abdicated that duty through their promulgation and reliance on the 2021 BiOp. The District Court cites *Miccosukee Tribe of Indians v. United States*, 566 F.3d 1257, 1265 (11th Cir. 2009) in defending its assertion that the decision of which studies are the ‘best available’ is “itself a scientific determination deserving deference.” ADD.000039. However, the *Miccosukee* court explained that the species should be accorded the benefit of the doubt in the absence of abundant data, “[t]he Conner opinion does not suggest that there is any presumption in favor of the species **if, as in this case, there is abundant data** [emphasis added].” *Id.* at 1267.

In *Conner v. Burford*, 848 F.2d 1441 (9th Cir. 1988), the court therein found that the Fish and Wildlife Service’s BiOp was not predicated upon abundant data, as

it failed to consider certain biological information, which rendered its determination discordant with the “best science” standard.³

As is the case here, NMFS and BOEM failed to consider certain salient information. First, the Quintana-Rizzo 2021 (“QR”) study,⁴ which ACK RATs discussed in both their Motion for Summary Judgement Memorandum (ECF 89), and Reply in Support of their Summary Judgement (ECF 105), epitomizes the “best available scientific data” standard. It expounds upon multifarious critical facts that should have been considered in the BiOp. For example, it discusses the recent shifts in right whale distribution and foraging behavior, namely that NARWs are becoming more reliant on the southern New England region for survival, and that the “enormous development [offshore wind energy leases] could have a local impact on right whales at a critical time when they are becoming more reliant on the region.” APPX.000450. The BiOp does not discuss the critical importance of this region for the NARW survival. *Id.*

ACK RATs described numerous other compelling points from the study; first, is the fact that offshore wind projects catalyze various perturbations such as habitat

³ “...[T]he FWS **cannot ignore available biological information** or fail to develop projections of oil and gas activities which may indicate potential conflicts between development and the preservation of protected species [emphasis added].” *Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988) (holding that FWS violated the ESA through failure to consider the best information).

⁴ APPX. 000449 – 000466.

changes, water column stratification, increased vessel noise, increased vessel traffic and risk of collisions with whales, “Collectively, these perturbations could affect the use of this region by right whales as well as influence their migratory movement throughout the mid-Atlantic region (Schick et al. 2009).” APPX.000451. The BiOp does not assess the influence of these perturbations on the NARW’s use of the RI/MA wind energy area (“WEA”) or its migration through the mid-Atlantic. *Id.*

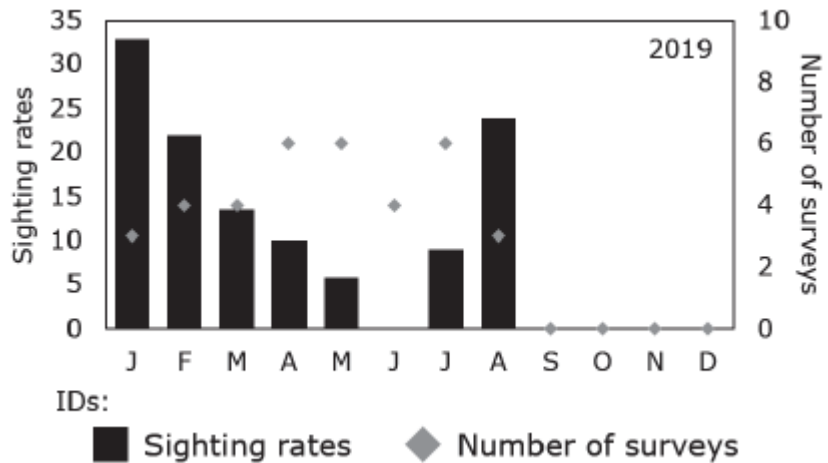
Next, the QR study identified 327 unique NARW⁵ in the RI/MA WEA, **comprising 93% of their total** remaining population [emphasis added].⁶ The BiOp entirely omits this critical fact. Nearly all of the remaining NARW utilize this diminutive region as a feeding area; the NARW are not merely nomads passing through it. *Id.* The study further explains that 16 of 327 NARW had died⁷ as of December 2020, a nearly 5% loss in their population. This should have been discussed in baseline condition analysis (see, *infra*). Another salient finding of QR was that NARW **sighting rates were high during the summer months** [emphasis added], in particular August, notwithstanding the climax of activity in January. APPX.000456. In fact, sighting rates of NARWs were at their second highest rates

⁵ APPX.000455.

⁶ “The North Atlantic right whale is one of the world’s most endangered large whale species; the latest preliminary estimate suggests there are fewer than 350 remaining.” See: <https://www.fisheries.noaa.gov/species/north-atlantic-right-whale>.

⁷ APPX.000455.

of the year in the month of August – second only to the month of January. This runs contrary to Defendants assertions of low NARW prevalence during the June 1-October 31 period. Approximately 25 NARWs were sighted in August in 2019,⁸ which is significant given the diminutive total population:



Defendants attempted, ineffectively, to contest this, “Vineyard Wind showed that pile driving would take place at a time when very few, if any, right whales would be near the Project Area.” ECF 115, Vineyard Reply in Support of Motion for Summary Judgement, p. 8.

But defendants misconceive the reality of the situation: while comparatively, numbers are higher in the winter (January), NARW presence is still high during the time of year wherein pile driving is set to (and is) occurring. In the BiOp’s discussion of mitigation measures, it, too, suggests that NARW numbers are low during June

⁸ APPX.000456.

through November 1, “Right whale occurrence in the [wind development area] WDA is lowest during the May 15-October 31, period (Roberts et al. 2020).” ADD.000460. But the QR study belies that conventional wisdom. The QR study underscores that the increasing NARW presence in summer and autumn, “deserves special attention since this **will overlap with the current schedule for pile driving for turbine foundations in the next few years, the phase of construction considered to have the greatest impact [emphasis added].**” APPX.000462. The QR study explicitly characterizes the Project area as a NARW “hotspot” yet the BiOp provides no evaluation of this. APPX.000452–000453, APPX.000457. Moreover, the unremitting and increasing presence of NARWs in the Project area is highly redolent of the fact that the area is rich in copepods and is a preferred feeding ground for the whale. APPX.000450 – 000463.

The second study NMFS and BOEM fail to consider is the Atlantic Large Whale Take Reduction Team Key Outcomes Memorandum (“TRT”) which examines the shift of NARW feeding patterns into “Area 537” that surrounds the Project area. This “Area 537” is replete with commercial fishing operations which pose a risk to NARWs, including “approximately 987 to 2,650 vertical [buoy] lines” in the water at a given time, with the highest number, 1,717 to 2,650 lines, fixed in place May-October, a time period congruous with Project pile driving. ADD.000314 - ADD.000316, ADD.000309, ADD.000583. The BiOp cites these buoy line data but

only discusses it in the context of impacts to lobster, crab, and black sea bass. ADD.000581-000584. The BiOp does not discuss the potential for pile driving to compel NARW into this Area 537 wherein the density of fishing gear and vessel use is high.

The third and fourth key studies BOEM and NMFS fail to consider - in violation of the statutory stipulation to utilize the best science available - are “The North Atlantic Right Whale Consortium 2020 Annual Report Card” and “NOAA Technical Memorandum NMFS-NE-271, The US Atlantic and Gulf of Mexico Marine Mammal Stock Assessments 2020,” which provide integral information about the NARW’s population trends.⁹ The calving interval for NARW is 7.6 years (which is defined as the time period from the birth of one calf to the next), and “detected mortalities outnumbered births 3:2.” APPX.000144, APPX.000148 – table 2. Moreover, the NOAA Stock Assessment provides that NARW have shifted location and are “seen in large numbers in a region south of Martha’s Vineyard and Nantucket Islands.” NOAA Stock Assessment, p. 12. Furthermore, in view of the NARW’s potential biological removal (“PBR”) of 0.8¹⁰ “human-caused mortality or serious injury for this stock must be considered significant.” *Id.*, p 25.

⁹ <https://media.fisheries.noaa.gov/2021-07/Atlantic%202020%20SARs%20Final.pdf?null%09>

¹⁰ PBR is the maximum number of animals that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimal sustainable

The District Court averred that the hereinabove data from at least two of these studies were “used” and “considered” by BOEM and NMFS (ADD.000040), but the definition of “use” is “to put into action or service, avail oneself of, employ,”¹¹ and the definition of “consider” is “to think about carefully. . .such as. . . with regard to taking some action.”¹² The agencies’ passing mention of the data is not tantamount to “use” per the statutory and regulatory stipulations of the ESA. 50 CFR 402.14(g)(8). While the District Court cited to *Boston Redevelopment Auth. v. Nat'l Park Serv.*, 838 F.3d 42 (1st Cir. 2016) as support for its characterization of NMFS’ analysis as “considered determinations” (ADD.000040), that very same case acknowledges that an agency action is arbitrary and capricious if it “**failed to consider pertinent aspects of the problem** [emphasis added],” which is very much the case here. *Boston Redevelopment Auth.*, 838 F.3d at 47.

Additionally, with respect to the NOAA 2020 Stock Assessment study, the District Court concedes that the BiOp does not rely on it, and explains that NFMS should be accorded deference in discounting it “because the information contained

population size. Given a 0.8 (less than 1) PBR for NARWs, this – practically - means that the goal should be no human caused fatalities.

¹¹ <https://www.merriam-webster.com/dictionary/use#:~:text=use%2C%20employ%2C%20utilize%20mean%20to,or%20instrument%20to%20an%20end.>

¹² <https://www.merriam-webster.com/dictionary/consider#:~:text=1,regard%20to%20taking%20some%20action.>

in the Stock Assessment was from 2018, it was appropriate for NMFS to rely on more recent scientific studies.” ADD.000042. If recency is a prominent touchstone against which a study’s utility is measured, then why was the operational noise, Stober study,¹³ published in 2021, rejected, in favor of Elliott, et al. (2019), a less recent study? ECF 100, Vineyard Wind Memorandum of Law in Support of Motion for Summary Judgement, p. 10. While Defendants asserted to the contrary, the fact is, the Stober study considered the proper turbines. Vineyard Wind suggested that the justification for NMFS’ rejection of Stober was because it only assessed gearbox-driven turbines, not the quieter direct-drive turbines Vineyard Wind planned to install.¹⁴ But that was and is counterfactual: even the BiOp concedes that Stober analyzed the direct-drive turbines. ADD.000435.

This type of unsubstantiated cherry-picking of studies exemplifies the arbitrary and capricious conduct of the NMFS and BOEM in their consideration of the available scientific information. The District Court excused this unsubstantiated study selectivity, for example, stating, “to the extent NMFS determined that it need not consider the TRT Key Outcomes Memorandum, that determination is entitled to deference, particularly where the Memorandum was the outcome of a meeting

¹³ APPX. 000588 – 000593.

¹⁴ Vineyard Wind Motion for Summary Judgement Memorandum of Law, ECF 100, p. 10.

NMFS convened. . .” ADD.000042. However, the agencies, in deciding which studies’ conclusions to adopt must “articulate a satisfactory explanation for its action including a ‘rational connection between the facts found and the choice made.’” *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)). But no such satisfactory explanation was provided for the agencies’ lack of consideration of any of the hereinabove discussed studies. As such, BOEM and NMFS arbitrarily and capriciously failed to utilize the best available scientific and commercial data in their jeopardy analyses pursuant to the ESA.

B. NMFS and BOEM violated the ESA and NEPA by arbitrarily and capriciously finding that the suite of mitigation measures would sufficiently protect NARW from vessel strikes and pile driving noise

Both the BiOp and the final EIS failed to adequately assess the risk posed by vessel strikes and pile driving noise to NARWs. Defendants’ primary argument is that the “suite of mitigation measures” will obviate NARW serious injury or death. This argument is unsupported for the ensuing reasons.

At the outset, the following is irrefragable: the Level A¹⁵ harassment ensonified area extends out to 7.25 km from the pile driving site, as noted by the

¹⁵ Noise that has the potential to injure a marine mammal.

BiOp,¹⁶ under the 6 dB of attenuation condition via the bubble curtain (undisputed by Defendants).¹⁷ From June 1 to October 31, the time period during which most pile driving is expected to occur, the BiOp requires Vineyard Wind to establish a NARW “clearance zone” using passive acoustic monitoring (“PAM”), and this clearance zone extends only 5 km from the pile driving site.¹⁸ But this clearance zone distance is established before pile driving, and the clearance zone during pile driving (i.e., “shutdown” zone), for June 1 to October 31 is only 3.2 km.¹⁹ This means that during active pile driving, “no shut-down order will be given unless a whale is detected within that 3.2-km zone. Whales swimming outside the 3.2-km shut-down zone but within the 7.25-km Level A noise contour will be exposed to Level A noise, and no shut-down order will be given to protect them.” ECF 105, Plaintiffs’ Reply in Support of Motion for Summary Judgement, p. 4.

The BiOp notes that construction of the Project will require circa 102 days of pile driving to install the wind turbines on the sea floor. ADD.000428-000429. It acknowledges that pile driving catalyzes repeated bursts of high intensity noise that

¹⁶ ADD.000445, ADD.000456, ADD.000460.

¹⁷ Federal Defendants’ Reply in Support of Motion for Summary Judgement, ECF 114, p. 27; Motion Hearing Transcript, p. 60.

¹⁸ ADD.000456. The PAM clearance zone before pile driving begins is 5 km for monopiles and 3.2 km for jacket piles. During pile driving, the shut-down zone is 3.2 km for all foundation types. ADD.000315.

¹⁹ ADD.000456.

can inimically affect marine mammals, such as NARWs. ADD.000464. It further determined that the Project's 102 days of pile driving could expose 1.39 NARWs to Level A harassment noise (causes auditory injury and permanent hearing loss). ADD.000448 - Table 7.1.12, ADD.000453 - Table 7.1.16. This noise constitutes a "Take" under the ESA, yet the BiOp concludes that no takes will occur due to the mitigation measures. ADD.000663, ADD.000460. This is an incorrect conclusion as discussed below. Further, given the fact that the NARW cannot absorb even 1 human caused death and maintain their population (more in Section E *infra*), and the fact that a deaf whale is likely a dead whale, these pile driving procedures will likely push the NARW further toward extinction. Defendants Vineyard and the agencies rely upon mitigation measures as their putative fail-safe to obviate NARW Level A takes, injury, and death.

Defendants generally cite to three principal mitigation protocols in their putative suite of techniques which purportedly guard against injury or death to NARWs: PAM, protected species observers ("PSO"), and vessel speed restrictions. Regarding vessel speed restrictions, ACK RATs primary contentions are that the 10-knot speed restriction is inapplicable to crew transfer vessels²⁰ and that all vessels can disregard the 10-knot restriction when transiting from mainland Massachusetts

²⁰ ADD.000015; ADD.000307, ADD.000528. BiOp - BOEM 77304, 7752

to the Project.²¹ It is incontrovertible, and conceded by the BiOp, that the optimal prophylactic protocol for vessel strikes is vessel speed restrictions of 10 knots or less.²² Yet, the majority of the Project’s anticipated vessel trips comprise crew transfer vessels, which average 90 feet in length and travel at 25 knots, which significantly supersedes the 15-knot threshold known to be 100% fatal to NARW.²³

Defendants contend the PSOs and PAM will countermand the vessel strike risk and the pile-driving noise within the clearance zones. In *Native Village of Chickaloon v. Nat'l Marine Fisheries Serv.*, 947 F. Supp. 2d 1031 (D. Alaska 2013), the Court discussed defendant Apache Alaska Corporation’s acknowledgement regarding the material limitations of acoustic monitoring:

“Apache's application acoustic monitoring has limitations for detecting marine mammals because ‘it requires that the animals produce sounds . . . [and] it requires those sounds to be of sufficient amplitude to be detected at the monitoring location.’ The ‘received levels of the biological sounds [also must] exceed background noise and other measurement noise. . . .’” *Id.* at 1043-44.

As was thoroughly discussed by ACK RATs in their summary judgement filings, PAM requires that the NARW actively vocalize as a first condition, but even if they do vocalize, those vocalizations must still surmount background noise and

²¹ ADD.000307.

²² ADD.000522, ADD.000527.

²³ Plaintiffs’ Reply in Support of Summary Judgement, ECF 105, p. 5-6, citing Vineyard Wind DEIS, BOEM 34746, 34861. See APPX.000100, APPX.000105.

other measurement noise, and furthermore, the vocalizations must exhibit sufficient magnitude to be received at the monitoring site.

Moreover, and importantly, in *NRDC v. Pritzker*, 62 F. Supp. 3d 969 (N.D. Cal. 2014), plaintiff environmental groups sought injunctive relief against federal officials to limit the Navy's use of low frequency sonar, which plaintiffs therein contended was harming marine mammals. The court discussed the efficacy of many of the same mitigation measures which are the fulcrum of this case, and it found, directly quoting a NMFS final rule, that **passive acoustic [monitoring] exhibits only a 25 percent detection probability, and visual monitoring exhibits an estimated 9 percent detection probability** [emphasis added]. *Id.* at 996, quoting 77 FR 50290.

Therefore, whales swimming beyond 3.2-5 km will be exposed to Level A noise pre-pile driving initiation, whales swimming beyond 3.2 km will be exposed to Level A noise during pile driving. As to whales within 3.2 km, PAM imparts only 25% detection efficacy. PSOs can only observe to 1.5 km,²⁴ and its efficacy is only 9%. So, at most, within the equal to or less than 1.5 km PSO/PAM overlap zone, there might be a combined PSO/PAM efficacy of 34% (25% + 9%), which is very

²⁴ ADD.00046, "At distances more than 1,500 m from the pile the observers' ability to detect whales is reduced and observations beyond this distance may be unreliable and incomplete (Roberts et al. 2016) . . ."

low, and certainly, too low to serve as sufficient countervailing mechanisms (as Defendants assert) to the risks posed by vessel strikes and pile driving noise. Thus, even within 1.5 km, most NARWs will be exposed to Level A harassment noise.

Finally, Vineyard and Federal Defendants characterize the “soft start” procedure²⁵ as another technique in the suite of mitigation measures.²⁶ While they allege the soft-start exhibits efficacy, the BiOp itself concedes there is no such evidence of efficacy:

“However, we are not able to predict the extent to which the soft start will reduce the number of whales exposed to pile driving noise . . . we are not able to modify the estimated take numbers to account for any benefit provided by the soft start.”²⁷

As such, in reality, the BiOp underscores that confidence of “soft start” efficacy is far too low to result in an impact to the total take estimate of NARWs. In other words, there’s no empirical evidence it works.

And as ACK RATs noted in its Summary Judgement Reply regarding the FEIS:

²⁵ “Soft start procedure is designed to provide a warning to marine mammals or provide them with a chance to leave the area prior to the hammer operating at full capacity.” ADD.000461.

²⁶ Federal Defendants Reply in Support of Motion for Summary Judgement, ECF 114, p. 23, “soft-start procedures are an integral part of pile driving intended to reduce impacts to right whales.” Vineyard Wind Motion for Summary Judgement Memorandum, ECF 100, p. 15, “The “soft start” process is one of these “minimization measures.”

²⁷ ADD.000461.

“[the] EIS mixes its discussion of project impacts on right whales with its discussion of mitigation measures for those impacts. Thus, the quality and accuracy of the EIS’s analysis of pile driving noise and vessel strikes on right whales is directly determined by the adequacy of the mitigation measures recommended to address those impacts.”²⁸

Accordingly, the BiOp’s and FEIS’ conclusions that the suite of mitigation measures will prevent jeopardy to NARWs is arbitrary and capricious, as even when considered synergistically and not in a “vacuum,” the protocols exhibit very poor efficacy. Thus, the District Court erred in deferring to BOEM and NMFS.

C. NMFS and BOEM violated the ESA and NEPA through inadequate consideration of entanglement risk

ACK RATs have asserted that neither the BiOp or FEIS adequately considered the risk of fishing gear entanglement posed by the Project, directly by way of Vineyard Wind’s fishery studies or indirectly through Vineyard’s “soft-start” procedures which can drive NARWs into high-risk zones.²⁹ NMFS alleges that entanglement risk is so diminutive it “cannot be meaningfully measured.”³⁰ The District Court, again, expressed dismissiveness of ACK RAT’s claims, and deferred

²⁸ ECF 105, Plaintiffs’ Reply in Support of Motion for Summary Judgment, p. 60.

²⁹ ADD.000048.

³⁰ ADD.000584.

to the agencies. However, the agencies “failed to consider an important aspect of the problem.” *Marasco & Nesselbush, LLP v. Collins*, 6 F.4th 150 (1st Cir. 2021).

As explicated in *Me. Lobstermen's Ass'n v. Nat'l Marine Fisheries Serv.*, 70 F.4th 582, 587 (D.C. Cir. 2023), “most NARWs die from vessel strikes or entanglement in fishing gear. Entanglement may also reduce calving rates.” The court therein quotes data from the NMFS which indicates that two documented entanglement NARW deaths occurred 2010-18 in the U.S., but importantly, observed NARW deaths only account for 36% of actual deaths.³¹ As per the data the court cited, there have been circa 48 documented NARW entanglement deaths 2010-18 (see below chart), which, when calibrating for the 36% of actual, yields 133 actual NARW deaths by entanglement for that 2010-18 period (and 133 is 38% of the 350 total population). In view of the fact that over 90% of the NARW population is active in the Rhode Island/Massachusetts wind energy area, how can entanglement risk possibly be adjudged as so small it “cannot meaningfully be measured”? It follows, a fortiori, that most of the NARW deaths ascribed to entanglements (which are significant) ultimately have their origin in the southern New England region. As

³¹ *Id.* at 589, citing Richard M. Pace et al., *Cryptic Mortality of North Atlantic Right Whales*, 3 Conservation Sci. and Practice 1, 6 (2021), “We used an abundance estimation model to derive estimates of cryptic mortality for North Atlantic right whales and found that observed carcasses accounted for only **36% of all estimated death during 1990–2017 [emphasis added]**.” Study commissioned by NMFS.

such, the BiOp and FEIS arbitrarily and capriciously failed to consider the more significant risk posed by entanglements in the Project area.

D. NMFS and BOEM failed to adequately consider risk of operational noise in violation of ESA and NEPA

Both the BiOp and FEIS failed to adequately consider the impacts of the Project's operational noise on NARW, due in large part to the agencies' lack of consideration of the Stober study.³² Vineyard avers that Stober was discounted because it only "assessed gearbox-driven turbines, not the quieter 'direct-drive' turbines Vineyard Wind plans to install."³³ But this is apocryphal, as the Stober study **did assess** those turbines [emphasis added].³⁴ The BiOp acknowledges that Stober assessed the direct-drive turbines Vineyard plans to employ.³⁵ The fact is: Stober analyzed the underwater noise ramifications of turbines generating more than 10 MW of power, which is highly analogous to the Project's intended power capacity of 14 MW. Thus, the Stober analysis provides a veracious proxy for the Vineyard project. Stober's analysis, *inter alia*, cited the deleterious effect of low frequency sound emanated by operational turbines on baleen whales such as the NARW.³⁶

³² APPX. 000588 – 000593.

³³ Vineyard Wind Memorandum of Law in Support of Motion for Summary Judgement, ECF 100, p. 10.

³⁴ APPX.000592.

³⁵ ADD.000435.

³⁶ APPX.000589-000593.

Rather than examine Stober, the BiOp relied upon “operational noise data from the Block Island Wind Farm (BIWF), which has just 5 WTGs, each with a power capacity of only 6 MW”³⁷ – the epitome of an inaccurate proxy.

Key findings from the Stober study include the following:

- “For impact pile driving, sound levels increase with pile diameter and thus with overall size and nominal power output. A similar relationship exists between operational noise and wind turbine size.” APPX.000589.
- “Furthermore, it is important to consider that most of the energy of operational noise is in the lower frequency range (i.e., well below 1kHz). Many of the offshore wind farms planned beyond Europe overlap with essential habitats of baleen whales and fishes that are suspected to be sensitive at those frequencies.” APPX.000589.
- “[I]mpact assessment for turbines larger than 6MW has not been performed. Thus, the potential impact of planned offshore wind farms on marine life is unknown.” APPX.000589.
- “With the potentially larger impact ranges for larger wind turbines, impact zones will be more likely to overlap and form one impact area that might cover the whole wind farm.” APPX.000592.

³⁷ ADD.000435, ADD.000467.

These findings are particularly pertinent in view of the fact that the Project exhibits a power capacity of 14 MW. And moreover, Stober underscores that larger turbines would yield larger impact ranges,³⁸ yet there's no evidence that the BiOp or FEIS carefully considered these risks. In fact, the BiOp, only makes a transient reference to the Stober study and does not actually use it to assess the Project's risk to NARWs. ADD.000435.

Therefore, BOEM and NMFS violated NEPA and the ESA respectively by arbitrarily and capriciously failing to adequately consider the operational noise in connection with the Project.

E. NMFS and BOEM failed to adequately consider baseline conditions and recovery of NARW in violation of ESA and NEPA

Agencies must conduct a baseline analysis under the ESA and NEPA, and here, NMFS and BOEM arbitrarily and capriciously derogated from that stipulation. The District Court contends that there is no statutory or regulatory requirement to conduct a baseline analysis, but that is counterfactual.³⁹ For example, *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917 (9th Cir. 2008) held that – in the context of a BiOp pursuant to the ESA – the “jeopardy analysis also **failed to incorporate degraded baseline conditions** and failed to adequately consider the

³⁸ APPX.000592-000593.

³⁹ Order, Summary Judgement, p. 51.

proposed action's impacts on the listed species' chances of recovery [emphasis added].” And moreover, without knowing the starting point, how can an action’s impact be properly assessed? “The district court correctly held that NMFS inappropriately evaluated recovery impacts without knowing the in-river survival levels necessary to support recovery.” *Id.* at 936. And furthermore, baseline analysis is required under NEPA too:

“Establishing appropriate baseline conditions is critical to any National Environmental Policy Act of 1969 (NEPA) analysis. **Without establishing the baseline conditions which exist before a project begins, there is simply no way to determine what effect the project will have on the environment** and, consequently, no way to comply with NEPA [emphasis added].” *Great Basin Res. Watch v. BLM*, 844 F.3d 1095, 1101 (9th Cir. 2016).

As to the evidence that NMFS and BOEM abrogated those duties, ACK RATs demonstrated that the agencies failed to consider: the high prevalence (93%) of the NARW population now in the RI/MA wind energy area (see, *supra*, discussion of QR study), the recent increased deaths of NARW (16 of 323 unique NARW dead between 2011 and 2019),⁴⁰ the fact that the Project area is a hotspot of NARW (See *supra*), the NARW deaths outnumber births 3:2 (see *supra*), and the NARW’s potential biological removal level is now less than 1, which means the species cannot

⁴⁰ APPX.000455.

“absorb even one human-caused death per year and maintain its already disturbing low population?”⁴¹

Additionally, as ACK RATs explained in its Summary Judgement motion, the environmental review documents also failed to adequately consider existing vessel speeds, stratified by vessel size, in the waters surrounding the Project area. The relevance is that Vineyard Wind intends to compel NARWs out of the Project area during construction via pile driving, and keep them out of the area until turbine installation. As such, the NARW will be compelled to remain in the waters surrounding the Project area for protracted periods (as they will not be able to return to the waters of the Project area given the intense noise). These waters surrounding the Project area are replete with commercial fishing activity and vessel traffic (as discussed supra). Those vessels outside the Project area are not subject to agency regulations and thus are not restricted by the 10-knot speed limit. Moreover, although of little value, there will be no PSOs or PAM as mitigation tools in these surrounding waters.

In order to veraciously assess the impact of the Project on NARW, the agencies were required to acknowledge and understand the baseline predicament of the NARW, which they did not. Moreover, the BiOp entirely omits proper recovery

⁴¹Plaintiffs’ Reply in Support of Motion for Summary Judgement (ECF 105), p. 60.

analysis, and merely “assumes the project’s mitigation measures will be enough to prevent project-related impacts from impairing recovery.”⁴² The implementing regulations of the ESA are ostensible; the definition of “jeopardizing the continued existence” includes the impact an action has on a species survival and recovery:

“Jeopardize the continued existence of means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species [emphasis added].” 50 CFR 402.02(d).

The court in *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917 (9th Cir. 2008) concluded that:

“the district court properly held that NMFS violated the ESA by failing to ensure that proposed FCRPS operations would not destroy or adversely modify critical habitat for any listed fish. Specifically, **the district court found inadequate NMFS's analysis of impacts on the recovery value of critical habitat** for Snake River Spring/Summer Chinook salmon, Snake River Fall Chinook salmon, and Snake River sockeye salmon, the only three listed species with designated critical habitat at the time the 2004 BiOp was issued [emphasis added].”

Moreover, a project’s impacts may be sufficient to undermine the recovery of a species already in steep decline, especially where the project’s effects contribute to known impediments of recovery. *Wild Fish Conservancy v. Salazar*, 628 F.3d 513 (9th Cir. 2010) (“Even before a population is extinguished, it may reach a point at

⁴²Plaintiffs’ Reply in Support of Motion for Summary Judgement, ECF 105, p. 7.

which it is no longer recoverable”); see also *Nat’l Wildlife Federation*, 524 F.3d at 931 (9th Cir. 2008) (“a species can cling to survival even when recovery is far out of reach”).

How does the Project do this? The Project will eventuate in heightened risks of vessel strikes and entanglements, as discussed *supra*, by way of the ensonification of large region within which 90%+ of all remaining NARWs rely on. This ensonification zone, from pile driving noise, and later, from operational turbine noise, will drive NARWs away from the Project area, and as discussed, into the surrounding region which is heavily fished and poses significant entanglement risks. The putative mitigation protocols are highly ineffective, and will be incapable of detecting the vast majority of NARWs.

And congruently, the FEIS is also legally flawed “because it relies almost entirely on the flawed analysis set forth in the BiOp.”⁴³ Accordingly, the NMFS and BOEM arbitrarily and capriciously failed to adequately analyze the NARW’s baseline condition and attendant recovery, in the context of the Project’s impacts.

⁴³ Plaintiffs Reply in Support of Motion for Summary Judgement, ECF 105, p. 58.

CONCLUSION

For the aforesaid reasons, the District Court's denial of Plaintiffs' Motion for Summary Judgement should be reversed, and Plaintiffs respectfully request the Court set aside the BiOp, FEIS, and Record of Decision for the Vineyard Wind project.

Date: September 23, 2023

Respectfully submitted,

/s/ Thomas Stavola Jr. Esq.

Thomas Stavola Jr. Esq.

CERTIFICATE OF COMPLIANCE

This document complies with the type-volume limitation of Federal Rule of Appellate Procedure 32(a)(7)(B) because, excluding the parts of the document exempted by Rule 32(f), it contains 7,938 words.

This document likewise complies with the typeface requirements of Rule 32(a)(5) and the type-style requirements of Rule 32(a)(6) because it has been prepared in a proportionally spaced face using Microsoft Office Word in 14-point Times New Roman font, case names are italicized, and serifs are used throughout.

Dated: September 23, 2023

/s/ Thomas Stavola Jr. Esq.
Thomas Stavola Jr. Esq.

CERTIFICATE OF SERVICE

I hereby certify that I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the First Circuit by using the appellate CM/ECF system on September 23, 2023. I certify that all participants in the case are registered CM/ECF users, and that service will be accomplished by the appellate CM/ECF system.

/s/ Thomas Stavola Jr. Esq.
Thomas Stavola Jr. Esq.

No. 23-1501

**UNITED STATES COURT OF APPEALS
FOR THE FIRST CIRCUIT**

NANTUCKET RESIDENTS AGAINST TURBINES; VALLORIE OLIVER,

Plaintiffs - Appellants,

v.

U.S. BUREAU OF OCEAN ENERGY MANAGEMENT; NATIONAL OCEANIC
AND ATMOSPHERIC ADMINISTRATION; NATIONAL MARINE FISHERIES
SERVICE; DEBRA HAALAND, Secretary of the Interior; GINA M.
RAIMONDO, Secretary of Commerce; VINEYARD WIND 1, LLC,

Defendants - Appellees.

On Appeal from the United States District Court for the District of Massachusetts,
No. 1:21-cv-11390-IT – Hon. Indira Talwani

ADDENDUM TO APPELLANTS' OPENING BRIEF

INDEX

1.	<u>Order on Motion for Summary Judgment (ECF No. 130)</u>	ADD. 000001- 000052
2.	<u>Complaint (ECF No. 1)</u>	ADD. 000053 - 000088
3.	<u>Amended Complaint (ECF No. 59)</u>	ADD. 000089 - 000152
4.	<u>May 21, 2021, Vineyard Wind Final Incidental Harassment Authorization</u>	ADD. 000153 - 000178
5.	<u>Final Record of Decision for Vineyard Wind 1 Signed</u>	ADD. 000179 - 000278
6.	<u>2021 Biological Opinion</u>	ADD. 000279 - 000772

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

NANTUCKET RESIDENTS AGAINST	*	
TURBINES and VALLORIE OLIVER,	*	
	*	
Plaintiffs,	*	
	*	
v.	*	
	*	
U.S. BUREAU OF OCEAN ENERGY	*	Civil Action No. 1:21-cv-11390-IT
MANAGEMENT, et al.,	*	
	*	
Defendants,	*	
	*	
and	*	
	*	
VINEYARD WIND 1 LLC,	*	
	*	
Intervenor-Defendant.	*	

MEMORANDUM & ORDER

May 17, 2023

TALWANI, D.J.

Plaintiffs, Nantucket Residents Against Turbines (“ACK RATs”) and Vallorie Oliver, a founding member of ACK RATs, bring this action against the U.S. Bureau of Ocean Energy Management (an agency within the U.S. Department of the Interior) and Deb Haaland in her official capacity as Secretary of the Interior (collectively, “BOEM”) and the National Marine Fisheries Service (an agency within the Department of Commerce) and Gina Raimondo in her official capacity as Secretary of Commerce (collectively, “NMFS”). Plaintiffs contend that BOEM and NMFS’s decisions approving an offshore wind energy project off the coast of Martha’s Vineyard and Nantucket (the “Vineyard Wind Project” or the “Project”) was based on inadequate environmental assessments in violation of the National Environmental Policy Act (“NEPA”), 42 U.S.C. §§ 1421, et seq., the Endangered Species Act (“ESA”), 15 U.S.C. §§ 1531,

et seq., and the Administrative Procedure Act (“APA”), 5 U.S.C. §§ 701-706. This action is one of four pending challenges to the Project in this District.¹

Now before the court are cross-motions for summary judgment by Plaintiffs [Doc. No. 88], Defendants [Doc. No. 95], and Defendant-Intervenor Vineyard Wind 1 LLC (“Vineyard Wind”) [Doc. No. 99].

I. Background Concerning the Project

The following background is drawn from the Administrative Record, as certified by BOEM and NMFS, and is common to all four pending challenges to the Project.

A. BOEM’s Development of The Wind Energy Area

In 2009, BOEM began evaluating the possibility of developing wind energy in the Outer Continental Shelf offshore from Massachusetts pursuant to BOEM’s authority under the Outer Continental Shelf Lands Act (“OCSLA”), 43 U.S.C. § 1331, et seq. Final Environmental Impact Statement (“Final EIS”) Vol. II, BOEM_0068786 at -9170. In December 2010, BOEM published an initial Request for Interest (“RFI”) regarding wind energy development in the Outer Continental Shelf offshore from Massachusetts. The RFI also invited public submissions on environmental issues. Id.; see also Joint Record of Decision (“Joint ROD”), BOEM_0076799 at -6802 (citing 75 Fed. Reg. 82,055 (Dec. 29, 2010)). In response to comments, BOEM reduced the planning area by 50%. Final EIS Vol. II, BOEM_0068786 at -9170.

In February 2012, BOEM published a Call for Information and Nominations in the Federal Register to gauge interest in commercial leases for wind energy projects. Id. (citing 77

¹ See Melone v. Coit et al., 1:21-cv-11171-IT; Seafreeze Shoreside, Inc. et al. v. Dep’t of Interior et al., 1:22-cv-11091-IT; Responsible Offshore Development Alliance v. Dep’t of Interior et al., 1:22-cv-11172-IT (“the Related Actions”).

Fed. Reg. 5821 (Feb. 6, 2012)). BOEM also published a notice of intent to prepare an environmental assessment in connection with potential wind energy leases and site assessment activities offshore from Massachusetts. Id.

In May 2012, BOEM identified a further reduced area for consideration for potential wind energy development (“the Wind Energy Area”) in the Outer Continental Shelf south of Nantucket and Martha’s Vineyard, Massachusetts, based on public comments concerning high sea duck concentrations and an area of high-value fisheries. Final EIS Vol. II, BOEM_0068786 at -9170. BOEM then prepared an Environmental Assessment, regarding the proposed Wind Energy Area, to guide its leasing. See 2014 Revised Env’t Assessment, BOEM_0000090 at -118.

In June 2014, BOEM issued its Revised Environmental Assessment concerning the proposed wind energy area. Id. At the time, BOEM concluded leasing and site assessment actions would not significantly impact the environment. Id. at -100.

On June 18, 2014, BOEM published a proposed sale notice and invited public comment on a proposal to sell four wind energy leases in the Wind Energy Area. Final EIS Vol. II, BOEM_0068786 at -9171. Following public comment, BOEM published a final sale notice reflecting its intent to sell commercial wind energy leases in the Wind Energy Area, including Lease “OCS-A 0501.” See Final EIS Vol. II, BOEM_0068786 at -9171, -9235.

B. BOEM’s Award of the Lease

In January 2015, BOEM conducted a competitive lease sale for Lease OCS-A 0501 (the “Lease”), ultimately awarding the Lease to Offshore MW, LLC, later renamed Vineyard Wind 1, LLC. Final EIS Vol. II, BOEM_0068786 at -9171. The lease area covers 166,886 acres in the

Outer Continental Shelf (the “Lease Area”). Id.; April 1, 2015 Lease, BOEM_0000764 at -0776. The Lease became effective April 1, 2015. Id. at BOEM_0000764.

The Lease granted Vineyard Wind the right to seek approval for a Site Assessment Plan (“SAP”) and a Construction Operations Plan (“COP”). Id. On November 22, 2017, Vineyard Wind submitted a Site Assessment Plan (“SAP”) to BOEM for the Vineyard Wind Lease Area. May 10, 2018 Approval of SAP, BOEM_0013366. On May 10, 2018, BOEM approved Vineyard Wind’s SAP, subject to numerous conditions, including for the protection of cultural resources, marine mammals and sea turtles, and implementation of mitigation measures. Id.

C. Biological Review(s) of the Project’s Impacts by BOEM and NMFS

1. Environmental Impact Statement(s) prepared by BOEM

On December 19, 2017, Vineyard Wind submitted to BOEM for consideration under OCSLA a proposed COP for the Project to be constructed in 65,296 acres of the Vineyard Wind Lease Area, referred to as the Wind Development Area or “WDA.” Dec. 19, 2017 COP Submission Letter, BOEM_0006004-06; December 19, 2017 COP BOEM_0001361-6003. On March 30, 2018, BOEM published a notice of its intent to prepare an EIS for the COP. 83 Fed. Reg. 13,777 (Mar. 30, 2018), BOEM_0012028. The notice described the Project and invited the public to participate in public comment and public scoping meetings BOEM later conducted. Id.; BOEM_012406-13078 (April 2018 meeting transcripts)). On December 7, 2018, BOEM published a notice of availability of the Draft EIS in the Federal Register. 83 Fed. Reg. 63,184 (Dec. 7, 2018), BOEM_0034694. As summarized in the notice, the Draft EIS analyzed the proposed COP and several alternatives, including different locations for cable landfall, reduction in project size, several options for turbine layout, and a no-action alternative. Id. The notice

invited public comment and/or participation at public hearings BOEM later conducted. Id.; see also BOEM_035872-36269 (Draft EIS public meeting transcripts).

Vineyard Wind submitted numerous updates to the proposed COP over the course of BOEM's review. See Final EIS Vol. I, BOEM_0068434 at -8440 (listing prior iterations of the COP). The updates addressed comments from BOEM, modified the Project design envelope, and accounted for the possibility of higher capacity wind turbine generators, which would ultimately reduce the number of wind turbines to be installed and reduce the total Project area. See, e.g., Jan. 22, 2021 Letter from Vineyard Wind to BOEM, BOEM_0067698-7701.

On June 12, 2020, BOEM published a notice in the Federal Register that the supplement to the Draft EIS (“Supplemental Draft EIS”) was available on BOEM’s website, invited public comment in connection with the notice and participation at public meetings BOEM later held virtually. 85 Fed. Reg. 35,952 (June 12, 2020), BOEM_0057578; June-July 2020 Public Meeting Transcripts, BOEM_058001-59241. BOEM prepared the Supplemental Draft EIS “in consideration of the comments received during the [NEPA] process and in connection with cooperating agencies.” Supplemental Draft EIS, BOEM_0056950 at -6954. In particular, BOEM expanded its analysis of the reasonably foreseeable effects from cumulative activities for offshore development, included previously unavailable fishing data, considered a new transit lane alternative through the WDA, and addressed changes to the proposed COP since publication of the Draft EIS. Joint ROD, BOEM_0076799 at -6803-04; 85 Fed. 35,952 (June 12, 2020), BOEM_0057578; Supplemental Draft EIS, BOEM_0056950 at -6954. The transit lane alternative that was included was in response to a proposal from the Responsible Offshore Development Alliance for a northwest/southeast transit corridor to facilitate transit for fishing

vessels from southern New England to fishing areas. Supplemental Draft EIS, BOEM_0056950 at -6958.

On December 1, 2020, Vineyard Wind notified BOEM that it was withdrawing the proposed COP from review in order to conduct a technical and logistical review of the turbines selected for inclusion in the final Project design. Dec. 1, 2020 Vineyard Wind Letter to BOEM, BOEM_0067649-50; see also Final EIS Vol. I, BOEM_0068434 at -8440 n.3. Vineyard Wind's notice of withdrawal indicated that Vineyard Wind intended to rescind the withdrawal upon completion of its due diligence review. Dec. 1, 2020 Vineyard Wind Letter to BOEM, BOEM_0067649-50. On December 16, 2020, following Vineyard Wind's notification that it was withdrawing the COP pending further technical and logistical review, BOEM published a notice in the Federal Register stating that "since the COP has been withdrawn from review and decision-making, there is no longer a proposal for major federal action awaiting technical and environmental review, nor is there a decision pending before BOEM...[the] notice advises the public that the preparation of an EIS is no longer necessary, and the process is hereby terminated." Fed. Reg. 81,486 (Dec. 16, 2020), BOEM_0067694.

On January 22, 2021, Vineyard Wind notified BOEM that Vineyard Wind had completed its review and "had concluded that the proposed turbines did not fall outside of the project design envelope being reviewed in the COP" and requested that BOEM resume review of the COP, most recently updated on September 20, 2020. Joint ROD, BOEM_0076799 at -6804.

On March 3, 2021, BOEM published a notice in the Federal Register stating it was resuming preparation of a final environmental impact statement related to the COP. Joint ROD, BOEM_0076799 at -6804. On March 12, 2021, BOEM posted the Final EIS, which consists of 1,600 pages in four volumes assessing the environmental, social, economic, historic, and cultural

impacts of the Vineyard Wind Project, from construction to decommissioning, on BOEM's website and issued a notice of availability in the Federal Register. 86 Fed. Reg. 14,153 (Mar. 12, 2021), BOEM_0071036; see also Final EIS, BOEM_0068434-70061.

2. Biological Opinion

On December 6, 2018, BOEM sent a request to NMFS to conduct a biological consultation pursuant to Section 7 of the ESA. BOEM ESA Consultation Request, BOEM_0034533-4688. BOEM made the request in its capacity as the lead Federal agency in the Section 7 consultation process for the Vineyard Wind Project on behalf of itself, the Army Corps of Engineers ("Corps"), and NMFS Office of Protected Resources ("NMFS/OPR"). 2021 Biological Opinion, BOEM_0077276 at -7280. On May 1, 2019, NMFS's Greater Atlantic Regional Office ("NMFS/GAR") agreed to initiate formal consultation to consider the effects of the proposed actions on ESA-listed whales, including the North Atlantic right whale, sea turtles, fish, and the critical habitat for various species that may be present in the proposed action area. NMFS Initiation Letter, NMFS 16008. On September 11, 2020, NMFS/GAR issued a biological opinion (the "2020 BiOp") pursuant to its obligations under Section 7(a)(2) of the ESA on behalf of itself, BOEM, NMFS/OPR, and the Corps. Sept. 11, 2020 NMFS BiOp Transmittal Letter to BOEM, NMFS 16027-28; 2020 BiOp, NMFS 16029-354. The 2020 BiOp concluded that the "proposed action may adversely affect but is not likely to jeopardize the continued existence" of the North Atlantic right whales, among other species. Sept. 11, 2020 NMFS BiOp Transmittal Letter, NMFS 16029; 2020 BiOp, NMFS 16029 at -6317.

On May 7, 2021, BOEM requested that NMFS/GAR reinstate its biological consultation. 2021 BiOp, BOEM_0077276 at -7281; May 7, 2021 Letter from BOEM to NMFS/GAR, BOEM_0076721. On May 27, 2021, NMFS/GAR advised BOEM that it agreed that consultation

must be reinitiated and that it anticipated such consultation would result in a new BiOp that would replace the 2020 BiOp. 2021 BiOp, BOEM_0077276 at -7281. The biological consultation was reinitiated to consider (i) the effects of monitoring surveys identified in the Joint ROD by BOEM, at NMFS's recommendation, as conditions of COP approval, which were not considered in the 2020 BiOp, and (ii) new information concerning the status of the right whale. 2021 BiOp Transmittal Mem., NMFS 017683 at -7683-84; BOEM Mem. to Record, BOEM_077788-89.

On October 18, 2021, NMFS/GAR issued the reinitiated BiOp, and on November 1, 2021, NMFS reissued the reinitiated BiOp ("2021 BiOp") with corrections after typos and other non-substantive errors were identified and corrected. See Oct. 18, 2021 NMFS Transmittal Letter to BOEM, NMFS 16668; Nov. 1, 2021 Transmittal Letter, NMFS 17172; 2021 BiOp, BOEM_0077276-7779. The 2021 BiOp supersedes the 2020 BiOp. Nov. 1, 2021 Transmittal Letter, NMFS 17172 at -74; Oct. 18, 2021 NMFS Transmittal Letter to BOEM, NMFS 16668 ("this Opinion replaces the Opinion we issued to you on September 20, 202[0]"). In formulating its biological opinions, NMFS/GAR considered documents prepared by BOEM, including each iteration of the EIS, Vineyard Wind's proposed COP and updates, BOEM's COP Approval, and the Incidental Harassment Authorization issued by NMFS/OPR, discussed further below. 2021 BiOp, BOEM_0077276 at -7285-86, -88, -63-64. The 2021 BiOp analyzed the direct and indirect effects of the approved COP, the modifications proposed by BOEM, and those proposed by NMFS/OPR in the IHA. Id. NMFS/GAR also updated the 2021 BiOp to reflect the best scientific information available concerning right whales and explain whether any of the new information affected the analysis. Oct. 15, 2021 Transmittal Mem., NMFS 17683 at -86-87.

Like the 2020 BiOp, the 2021 BiOp concludes the proposed action is not likely to jeopardize the continued existence of the right whales. 2021 BiOp, BOEM_0077276 at -7657. Also like the 2020 BiOp, the 2021 BiOp included an incidental take statement (“ITS”) and imposed reasonable and prudent measures and their implementing terms and conditions to minimize and document the take of ESA-listed species. 2021 BiOp, BOEM_0077276 at -7657-78; 2020 BiOp, NMFS 16029-354. The 2021 BiOp reflects that NMFS anticipates the incidental take of up to 20 right whales by Level B harassment, harassment that has the potential to “disturb a marine mammal...in the wild by causing disruption of behavioral patterns,” due to exposure to pile driving noise based on the “maximum impact scenario” for the Project. 2021 BiOp BOEM_0077660-62, -7299. The maximum impact scenario is defined as 90 monopiles being placed in the Wind Development Area, with 12 jackets, at a rate of one pile being driven per day, assuming only 6 decibels of attenuation, or reduction of sound through mitigation measures. 2021 BiOp, BOEM_0077276 at -7660-61. The 2021 BiOp notes that Vineyard Wind may install fewer turbines and models the corresponding decrease in likely harassment to right whales and other animals. Id. The 2021 BiOp concludes that “neither Vineyard Wind nor NMFS expect[s] serious injury or mortality to result from this activity, and therefore, NMFS has determined that an IHA is appropriate.” Id. at -7284; see also id. at -7658 (reflecting in all modeled scenarios that no injury is anticipated with respect to right whales). BOEM and NMFS/OPR each adopted the 2021 BiOp. 2021 BiOp, BOEM_0077276 at -7788; NMFS 3557. The 2021 BiOp concluded, based on all scenarios modeled with 12 decibels sound attenuation, that no right whales would be subject to Level A harassment, which is defined under the Marine Mammal Protection Act (“MMPA”) as “harassment” that has the potential to injure a marine mammal. 2021 BiOp,

BOEM_0077276 at -7299-300.² The 2021 BiOp includes an analysis of the effect of Project vessels, estimating that the Project will increase overall vessel traffic by 4.8% during the construction phase and by 1.6% during the operational phase of the Project. *Id.* at -7508. The 2021 BiOp concludes, based on traffic, combined with mitigation measures and other requirements for project vessels, that it is “extremely unlikely that a project vessel will collide with a whale.” *Id.* at -7527.

On December 1, 2021, NMFS filed a Memorandum for the Record regarding the issuance of the 2021 BiOp, reflecting that the NMFS Permits and Conservation Division (PR1) was adopting the 2021 BiOp. NMFS Mem. to Record, NMFS 3557. On January 20, 2022, BOEM determined, pursuant to 50 C.F.R. § 402.15(a), that “because the activities authorized under BOEM’s COP approval—including the monitoring surveys—are subject to the terms and conditions and reasonable and prudent measures found in the 2021 BiOp, no further action is required in order for Vineyard Wind to proceed with construction and operation of the Project.” BOEM Information Mem. to Record, BOEM_077788-89.

D. Other Agency Review³

1. Incidental Harassment Authorization

Meanwhile, on September 7, 2018, Vineyard Wind submitted a request under the MMPA to NMFS/OPR for an Incidental Harassment Authorization, seeking authorization of the likely

² Vineyard Wind did not seek authorization for Level A harassment because it anticipated that that such harassment “will be avoided through enhanced mitigation and monitoring measures proposed specifically for North Atlantic right whales.” 2021 BiOp, BOEM_0077276 at -7451.

³ The Vineyard Wind Project was also subject to review by other agencies whose actions were not challenged by Plaintiffs here or in the Related Actions. *See* Final EIS Vol. II, BOEM_0068786 at -9170-78 (discussing review under several other statutes, including the Coastal Zone Management Act, the National Historic Preservation Act, and the Magnuson-Stevens Fishery Conservation and Management Act).

incidental taking by harassment that may occur from impact pile driving in connection with the Project. Draft IHA Application, NMFS 14218-14550; Transmittal Email, NMFS 14451. In October 2018, and then January 2019, Vineyard Wind submitted revised versions of its IHA application to NMFS/OPR. Transmittal Emails, NMFS 14457, NMFS 14581; January 2019 Draft IHA Application, NMFS 14737-4984. The Vineyard Wind IHA Application was deemed complete on February 15, 2019. 84 Fed. Reg. 18,346 (April 30, 2019), NMFS 3392. Notice inviting public comment on the proposed IHA was published in the Federal Register 74 days later, on April 30, 2019. Id. The public comment period closed on May 30, 2019. Id.

Approximately two years later, on May 21, 2021, NMFS issued the IHA to Vineyard Wind. May 21, 2021 Letter Issuing IHA, NMFS 3514; IHA, NMFS 3489-3509. On June 25, 2021, NMFS/OPR issued notice of its approval of an IHA under the MMPA, 16 U.S.C. §§ 1361, et seq., NMFS 3415; see also 86 Fed. Reg. 33,810 (June 25, 2021) (“Notice of Issuance of IHA”), NMFS 3515-3556. The notice responded to the public comments NMFS/OPR received, explained the basis for the agency’s decision, and described the mitigation, monitoring, and reporting requirements that were imposed by the IHA. Notice of Issuance of IHA, NMFS 3515-3556.

The IHA is valid from May 1, 2023, through April 30, 2024. IHA, NMFS 3489. The IHA authorizes a maximum take by Level B harassment of 20 incidents to right whales. Notice of Issuance of IHA, NMFS 3515 at -3551. The Notice of Issuance defines Level B Harassment as “the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.” Notice of Issuance of IHA, NMFS 3515 at -3532; see also 50 C.F.R. § 216.3.

2. Clean Air Act Permits

On August 17, 2018, Vineyard Wind applied to the U.S. Environmental Protection Agency (“EPA”) for a permit under the Clean Air Act concerning construction of a wind farm. 2021 BiOp, BOEM_0077276 at -7282-83. On April 19, 2019, Vineyard Wind submitted a subsequent application for an operating permit in accordance with 310 C.M.R. 7.00. Id. On June 28, 2019, the EPA issued a draft permit for public comment. Id. On May 19, 2021, the EPA issued a permit to Vineyard Wind. Id.

3. Rivers and Harbors & Clean Water Act Permits

On December 26, 2018, the Corps issued a public notice in the Federal Register regarding proposed permits under the Rivers and Harbors Act and Section 404 of the Clean Water Act, to permit Vineyard Wind to construct, maintain, and eventually decommission an 800 megawatt wind energy facility, two electronic service platforms, scour protection around the bases of the wind turbine generators and electronic service platforms, connection between the turbines and the service platforms, and two export cables with scour protection within a single 23.3 mile long corridor. Joint ROD, BOEM_0076799 at -6803, -6807. The public comment period ran from December 26, 2018, to January 18, 2019. Joint ROD, BOEM_0076799 at -6828. The Corps did not receive any comments from the public during or after the public comment period. Id. The Corps issued a permit, with special conditions, to Vineyard Wind on August 9, 2021. 2021 BiOp, BOEM_0077276 at -7282.

E. The Approved Vineyard Wind Project

On May 10, 2021, BOEM, NMFS, and Corps issued a Joint ROD adopting the Final EIS. Joint ROD, BOEM_0076799-898. The Joint ROD consolidated the records of decision by each respective agency, specifically, BOEM’s action to approve the COP under OCSLA, the Corps’

issuance of permits under the Clean Water Act and Rivers and Harbors Act, and NMFS/OPR's issuance of an IHA under the MMPA. Joint ROD, BOEM_0076799-898. The Joint ROD reflects that BOEM's approval of the COP would be subject to mitigation and monitoring measures outlined in the Final EIS and any additional technical, navigational, and safety conditions imposed by BOEM. Joint ROD, BOEM_0076799 at -6820-21, -6827.

On July 15, 2021, BOEM issued final approval of Vineyard Wind's COP under OCSLA. July 15, 2021 VWI COP Project Easement and Approval Letter ("COP Approval Letter"), BOEM_0077150-265. The Project, as approved, will involve 84 or fewer wind turbines to be installed in 100 of the locations proposed by Vineyard Wind in the Wind Development Area, in an east-to-west orientation, with a minimum spacing of 1 nautical mile each. Joint ROD, BOEM_0076799 at -6821. The Project is located approximately 14 nautical miles south of Nantucket Island and Martha's Vineyard at its nearest point. Final EIS Vol. II, BOEM_0068786 at -8863. As part of construction of the Project, project-related vessels will travel primarily from New Bedford, Massachusetts, approximately fifty miles from the WDA, although some vessel trips will originate in Canadian ports. 2021 BiOp, BOEM_0077276 at -7294.

BOEM's final approval is subject to numerous terms and conditions, including compliance with all "statutes, regulations, and permits and authorizations issued by Federal and state agencies for the [P]roject." COP Approval Letter, BOEM 077150 at -152. The COP Approval Letter also noted that all activities authorized thereunder by BOEM "will be subject to any terms and conditions and reasonable and prudent measures resulting from a BOEM-reinitiated consultation for the Project's BiOp." COP Approval Letter, BOEM 077150 at -7152. The IHA set forth a number of minimization and monitoring measures, which were incorporated into the conditions of the COP Approval and set forth in the 2021 BiOp. IHA, NMFS 3489-3509.

Numerous other measures were laid out in the Joint ROD pertaining to right whales and other ESA-listed animals. See Joint ROD, Appendix A, BOEM_0076852-897. The mitigation measures include:

1. **Seasonal restriction on pile driving.** Pile driving is not permitted from January 1 through April 30 to avoid the time of year with highest densities of right whales in the Project Area. Pile driving is not permitted in December, except in the event of unanticipated delays, and will require enhanced protection measures and approval by BOEM. 2021 BiOp, BOEM_0077276 at -7451-52; IHA, NMFS 3489 at -3490.
2. **A “soft start” pile driving procedure.** Vineyard Wind will begin pile driving activities with three rounds of three impact hammer strikes at a reduced energy, each followed by a one-minute waiting period. Vineyard Wind will use this “soft start” approach for each pile to be driven at the beginning of a day’s pile driving activities, and at any point where pile driving has ceased for thirty minutes or longer. 2021 BiOp, BOEM_0077276 at -7458. This “soft start” procedure is designed to “provide a warning to any marine mammals” and the opportunity to disperse from the area prior to higher intensity pile driving, to reduce the change of Level A or Level B harassment of right whales. 2021 BiOp, BOEM_0077276 at -7458.

Although NMFS expects soft-start procedures to reduce the effects of pile driving on right whales, NMFS was unable to modify the estimated taken numbers to account for such benefit because NMFS could not predict the extent to which soft start would reduce exposure. 2021 BiOp, BOEM_0077276 at -7458.

3. **The use of protected species observers.** Vineyard Wind must employ qualified, trained protected species observers (“PSOs”) to conduct monitoring for marine mammals during pile driving activity. These individuals must be approved by NMFS and are subject to certain conditions, including that they must be independent observers, rather than construction personnel. IHA, NMFS 3489 at -3499-3500. At least two PSOs must be stationed on the pile driving vessel at all times sixty minutes prior to, during, and thirty minutes after pile driving. IHA, NMFS 3489 at -3490.
4. **Passive Acoustic Monitoring & Other Reporting.** Passive Acoustic Monitoring (“PAM”) will be used “record ambient noise and marine mammal vocalizations in the [L]ease [A]rea before, during, and after [construction] to monitor project impacts relating to vessel noise, pile driving noise, [wind turbine] operational noise, and to document whale detections in the WDA.” 2021 BiOp, BOEM_0077276 at -7298. PAM-generated noise data must be interpreted by an expert trained to discern the species of whale making sounds detected. Id.

5. **The establishment of pile driving clearance zones.** Vineyard Wind PSOs must establish clearance zones for right whales between sixty minutes prior pile driving activities and thirty minutes after completion of pile driving activities. The clearance zones range depending on the time of year from 2-10 km for visual and 5-10 km for PAM. Zones are the smallest from June to December 31, when the BiOp concludes there is a lower probability of right whales being present in the pile driving area. 2021 BiOp, BOEM_0077276 at -7319.

Vineyard Wind vessels must also use all other available sources of information on right whale presence, including the Right Whale Sightings Advisory System, WhaleAlert app, and monitoring of Coast Guard channels to plan vessel routes. IHA, NMFS 3489 at -3496.

6. **Vessel Speed Restrictions.** Vessels must comply with the NOAA Ship Strike Rules' speed restrictions, that restrict speed to 10 knots in certain restricted zones. IHA, NMFS 3489 at -3497; see also 2021 BiOp, BOEM_0077276 at -7520. All vessels travelling over 10 knots must have a dedicated visual observer on duty at all times, such as a PSO or crew member. IHA, NMFS 3489 at -3496. Where a crew transfer vessel is not subject to the 10-knot speed limit, it must employ an additional PSO or other enhanced detection method to monitor for right whales, in addition to PAM. Id. at -3497.

7. **Heightened Measures in Dynamic Management Areas and Slow Zones.** Dynamic Management Areas ("DMA"), as defined by the 2008 NOAA Ship Strike Rules (73 Fed. Reg. 60,173), are temporary protection zones designed to reduce lethal right whale strikes and are triggered when three or more whales are sighted within 2-3 miles of each other outside of the seasonal protection zones, See 2021 BiOp, BOEM_0077276 at -7675. NMFS adopted an additional protective measure, referred to as Right Whale Slow Zones, based on acoustical detection of a vocalizing right whale. When a right whale is detected acoustically, notifications of a "Slow Zone," covering a protective circle with a radius of 20 nautical miles from any point of detection, are triggered. Id.; see also NOAA Fisheries, Help Endangered Whales: Slow Down in Slow Zones (Dec. 23, 2021) available at <https://www.fisheries.noaa.gov/feature-story/help-endangered-whales-slow-down-slow-zones>. In instances where a DMA or Slow Zone has been triggered, NMFS requires that Vineyard Wind use an increased number of PSOs, and establish an extended exclusion zone with PAM, in addition to other restrictions established by the rules pertaining to DMAs and Slow Zones. 2021 BiOp, BOEM_0077276 at -7675.

As the 2021 BiOp acknowledges, numerous mitigation measures are designed not only to protect right whales from harassment, but also to protect other species. For instance, Vineyard Wind is required to implement PSOs for several species of sea turtles, and the soft-start pile driving

procedures are designed to disperse any undetected sea turtles, right whales, and other marine species from the Area. See 2021 BiOp, BOEM_0077276 at -7480-82, -7458.

II. Factual Record as to Plaintiffs' Standing

A. Plaintiff Vallorie Oliver

Plaintiff Vallorie Oliver is a lifelong resident of Nantucket Island. Joint Statement of Undisputed Facts (“Joint SOF”) ¶ 3 [Doc. No. 118]; Decl. of Vallorie Oliver in Supp. of Pls. Mot. for Summ. J. (“Oliver Decl.”) ¶ 3 [Doc. No. 88-2]. Oliver founded Plaintiff ACK RATs in 2018 and serves as its president. Joint SOF ¶ 4 [Doc. No. 118]; Oliver Decl. ¶ 2 [Doc. No. 88-2]. Oliver enjoys the opportunity to observe marine animals in their natural habitat, Oliver Decl. ¶ 3 [Doc. No. 88-2], and has seen right whales in the waters around Nantucket, including “water potentially affected by the proposed Vineyard Wind [P]roject,” Supplemental Declaration of Vallorie Oliver in Support of Plaintiffs' Motion for Summary Judgment and in Opp. to Cross-Motions for Summary Judgment (“Oliver Suppl. Decl.”) ¶ 4 [Doc. No. 108].⁴ Oliver has “concrete” plans to observe right whales in the waters around Nantucket in the future, id., but has provided no details regarding those plans.⁵ Oliver states that, were any harm to come to right

⁴ Defendants and Vineyard Wind challenge this statement as “vague and not substantiated with evidence of Ms. Oliver traveling to the Project Area.” Fed. Defs. Resp. to Pls. Suppl. Separate Statement of Undisputed Facts ¶ 3 [Doc. No. 113]; Vineyard Wind Resp. to Pls. Suppl. Separate Statement of Undisputed Facts ¶ 3 [Doc. No. 116]. However, where Oliver’s Supplemental Declaration states, under oath, that she has direct knowledge of the facts set forth therein, the court takes her unrebutted statements of fact as true for purposes of summary judgment.

⁵ Defendants and Vineyard Wind dispute Oliver’s statement “as conclusory and unsupported by credible evidence” where she has not identified any such plans. See Fed. Defs. Resp. to Pls. Suppl. Separate Statement of Undisputed Facts ¶ 4 [Doc. No. 113]; Vineyard Wind Resp. to Pls. Suppl. Separate Statement of Undisputed Facts ¶ 4 [Doc. No. 116]. Again, however, where Oliver’s Supplemental Declaration states, under oath, that she has direct knowledge of the facts set forth therein, the court takes her unrebutted statements of fact as true for purposes of summary judgment.

whales because of the Project, she would feel she has failed in her duty to protect them. Oliver Decl. ¶ 3 [Doc. No. 88-2]. Oliver states further that she would suffer “ecological grief” were she to hear about the loss of even one right whale to the Project. Oliver Suppl. Decl. ¶ 8 [Doc. No. 108]. Oliver states that she would similarly experience “heartsickness” if the Project’s pile driving activities were to cause hearing damage to any right whales or force the right whales outside of the construction zone and towards other threats. Oliver Suppl. Decl. ¶ 9 [Doc. No. 108].

Oliver states that her respiratory health will be affected because the Project’s emissions will affect the entire southeastern Massachusetts region, including Nantucket, where Oliver lives, as well as Barnstable and New Bedford, Massachusetts, where Oliver frequently visits. Oliver Suppl. Decl. ¶ 12 [Doc. No. 108]. Oliver states that she will also be affected by the increase in greenhouse gas emissions caused by the Project because they may exacerbate climate change as experienced on and near Nantucket. Oliver Suppl. Decl. ¶ 13 [Doc. No. 108].

B. Plaintiff Nantucket Residents Against Turbines (ACK RATs)

ACK RATs is a non-profit organization incorporated in Massachusetts. Joint SOF ¶ 1 [Doc. No. 118]. ACK RATs’ members include Oliver and non-party Amy DiSibio.

DiSibio, joined ACK RATs in 2021 and serves on the Organization’s board of directors. Joint SOF ¶ 5 [Doc. No. 118]; Decl. of Amy DiSibio in Supp. of Pls. Mot. for Summ. J. (“DiSibio Decl.”) ¶ 3 [Doc. No. 88-3]. DiSibio owns a home on Nantucket Island. DiSibio Decl. ¶ 2 [Doc. No. 88-3]. DiSibio and her family have been visiting Nantucket for more than thirty years. Id. DiSibio enjoys the opportunities to observe marine mammals in their natural habitat surrounding Nantucket. Id. ¶ 4. DiSibio and her family enjoy whale watching off Nantucket. Id.

DiSibio states that she feels a responsibility to protect the right whale from damage that could be caused by the Vineyard Wind Project. Id.

Plaintiffs have not identified any members of ACK RATs other than Oliver and DiSibio and has not provided any other information about its members. Joint SOF ¶ 10 [Doc. No. 118].

III. Procedural Background

Plaintiffs ACK RATs and Vallorie Oliver notified Defendants of their intent to sue on May 27, 2021, and instituted this action on August 27, 2021. Complaint [Doc. No. 1]. On November 27, 2021, Plaintiffs submitted the revised 60-Day Letter to the Defendants (“60-Day Letter”). [Doc. No. 96-3]. Two days later, Plaintiffs submitted a supplement to the 60-Day Letter regarding the 2021 BiOp’s purported failure to identify or describe any existing “take” authorizations for numerous listed species in the section discussing the Environmental Baseline for the Project. [Doc. No. 96-4].

On January 7, 2022, the court granted Vineyard Wind’s motion to intervene. Jan. 7, 2022 Mem. and Order [Doc. No. 54]; see also Vineyard Wind Mot. to Intervene [Doc. No. 11].

On February 10, 2022, Plaintiffs filed an amended complaint. First Amended Complaint [Doc. No. 59]. Plaintiffs claim that NMFS acted arbitrarily, capriciously, and unlawfully in issuing the 2021 BiOp in violation of ESA Section (7)(a)(2) by failing to adequately consider the Project’s impact on North Atlantic right whales, including by failing to engage in the “best available” science with respect to right whales as required by the ESA. First Amended Complaint ¶¶ 71-73 [Doc. No. 59]. Plaintiffs further contend that both NMFS and BOEM violated and continue to violate Section 7(a)(2) of the ESA by failing to ensure through consultation that BOEM’s approval of impacts of the Project will not jeopardize the right whale. First Amended Complaint ¶¶ 75-76 [Doc. No. 59]. Finally, Plaintiffs claim that BOEM violated

NEPA by failing to take the requisite “hard look” at the environmental consequences of the Project, both as to the right whales and as to the air quality and emissions impacts, instead issuing a Final EIS that reflected many of the same claimed procedural and substantive defects as the 2021 BiOp. First Amended Complaint ¶¶ 7, 67-69 [Doc. No. 59].⁶

Defendants certified the Administrative Record on April 11, 2022, Fed. Defendants’ Notice of Filing Certified Indices to Administrative Records [Doc. No. 71], and filed Addenda on May 19, 2022, June 13, 2022, and July 1, 2022, Fed. Defendants’ Notices of Filing Certified Index to NMFS Administrative Record Addenda [Doc. Nos. 75, 76, 78, 83]. The parties’ pending cross-motions and consolidated briefing followed. [Docs Nos. 88-89, 92, 95-96, 98-102, 105-109, 112-118, 127].

IV. Standard of Review

Under Federal Rules of Civil Procedure 56(a), summary judgment is appropriate when “the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” A fact is material when, under the governing substantive law, it could affect the outcome of the case. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986); Baker v. St. Paul Travelers, Inc., 670 F.3d 119, 125 (1st Cir. 2012). A dispute is genuine if a reasonable jury could return a verdict for the non-moving party. Anderson, 477 U.S. at 248.

The moving party bears the initial burden of establishing the absence of a genuine dispute of material fact. Celotex Corp. v. Catrett, 477 U.S. 317, 323 (1986). This burden can be satisfied

⁶ Plaintiffs have waived several additional claims by failing to raise them in their summary judgment papers, including that Defendants violated NEPA by failing to consider the cultural and aesthetic impacts of the Project and any ESA or NEPA claims as to animals other than right whales. Compare First Amended Complaint ¶¶ 7, 67-68 [Doc. No. 59], with Pls. Mem. in Support of Summary Judgment (“Pls. Mem.”) at 6-7, 43-49 [Doc. No. 89].

in two ways: (1) by submitting affirmative evidence that negates an essential element of the non-moving party's claim or (2) by demonstrating that the non-moving party failed to establish an essential element of its claim. Id. at 331. Once the moving party establishes the absence of a genuine dispute of material fact, the burden shifts to the non-moving party to set forth facts demonstrating that a genuine dispute of material fact remains. Anderson, 477 U.S. at 255-56.

The non-moving party cannot oppose a properly supported summary judgment motion by “rest[ing] on mere allegations or denials of [the] pleadings.” Id. at 256. Disputes over facts “that are irrelevant or unnecessary” will not preclude summary judgment. Anderson, 477 U.S. at 248. When reviewing a motion for summary judgment, the court must take all properly supported evidence in the light most favorable to the non-movant and draw all reasonable inferences in the non-movant's favor. Griggs-Ryan v. Smith, 904 F.2d 112, 115 (1st Cir. 1990). “Credibility determinations, the weighing of evidence, and the drawing of legitimate inferences from the facts are jury functions, not those of a judge . . . ruling on a motion for summary judgment.” Anderson, 477 U.S. at 255.

The fact that the parties have filed cross motions does not alter these general standards; rather the court reviews each party's motion independently, viewing the facts and drawing inferences as required by the applicable standard, and determines, for each side, the appropriate ruling. See Wightman v. Springfield Terminal Ry. Co., 100 F.3d 228, 230 (1st Cir. 1996) (noting that cross-motions for summary judgment do not “alter the basic Rule 56 standard” but rather require the court “to determine whether either of the parties deserves judgment as a matter of law on facts that are not disputed”).

V. Standing

The court begins with a threshold jurisdictional issue. Defendants and Vineyard Wind contend that Plaintiffs have failed to establish that they will suffer a concrete injury and thus lack standing. Plaintiffs contend that declarations provided by Plaintiff Vallorie Oliver, [Doc. Nos. 88-2; 108], and non-party Amy DiSibio [Doc. No. 88-3] are sufficient to establish standing on summary judgment.

A. Applicable Law

The doctrine of standing is rooted in Article III of the Constitution, which confines federal courts to the adjudication of actual “cases” and “controversies.” See U.S. Const. Art. III, § 2, cl. 1; Lujan v. Defs. of Wildlife, 504 U.S. 555, 560–61 (1992). Standing consists of three elements: “[t]he plaintiff must have (1) suffered an injury in fact, (2) that is fairly traceable to the challenged conduct of the defendant, and (3) that is likely to be redressed by a favorable judicial decision.” Spokeo, Inc. v. Robins, 578 U.S. 330, 338 (2016), as revised (May 24, 2016) (quoting Defs. of Wildlife, 504 U.S. at 560-61). “The standing inquiry is claim-specific: a plaintiff must have standing to bring each and every claim that she asserts.” Katz v. Pershing, LLC, 672 F.3d 64, 71 (1st Cir. 2012) (citing Pagán v. Calderón, 448 F.3d 16, 26 (1st Cir. 2006)).

To establish the first element of standing, an injury-in-fact, a plaintiff must demonstrate “an invasion of a legally protected interest” that is “concrete and particularized” and “actual or imminent, not conjectural or hypothetical.” Defs. of Wildlife, 504 U.S. at 560. “The particularization element of the injury-in-fact inquiry reflects the commonsense notion that the party asserting standing must not only allege injurious conduct attributable to the defendant but also must allege that he, himself, is among the persons injured by that conduct.” Hochendoner v. Genzyme Corp., 823 F.3d 724, 731-32 (1st Cir. 2016).

Standing also requires causation and redressability, which “‘overlap as two sides of a causation coin.’” Carpenters Indus. Council v. Zinke, 854 F.3d 1, 6 n.1 (D.C. Cir. 2017) (quoting Dynalantic Corp. v. Dep’t of Def., 115 F.3d 1012, 1017 (D.C. Cir. 1997)). “[I]f a government action causes an injury, enjoining the action usually will redress that injury.” Id.⁷

An association cannot establish standing to sue on behalf of its members unless “at least one of [its] members possesses standing to sue in his or her own right.” United States v. AVX Corp., 962 F.2d 108, 116 (1st Cir. 1992). An association must also establish that the interests at stake are germane to the organization’s purpose, and that “neither the claim asserted nor the relief requested requires individual members’ participation in the lawsuit.” Friends of the Earth, Inc. v. Laidlaw Environ. Servs. (TOC), Inc., 528 U.S. 167, 169 (2000).

Because standing is not a “mere pleading requirement[] but rather an indispensable part of the plaintiff’s case,” standing must be supported “with the manner and degree of evidence required at the successive stages of the litigation.” Defs. of Wildlife, 504 U.S. at 561; see also People to End Homelessness v. Develco Singles Apartments Assoc., 339 F.3d 1, 8 (1st Cir. 2003). While at the pleadings stage, “general factual allegations of injury” may suffice, and at summary judgment, such allegations must be supported by affidavits which will be taken to be true, where standing remains a controverted issue at trial, the specific facts establishing standing “must be ‘supported adequately by the evidence adduced at trial.’” Id. (quoting Gladstone Realtors v. Village of Bellwood, 441 U.S. 91, 114, 115 n.31 (1979)).

⁷ Neither Defendants nor Vineyard Wind challenge causation or redressability on summary judgment.

B. Endangered Species Act Claim

Plaintiffs point to several interests they contend are sufficient to establish injury-in-fact for standing purposes under the ESA. First, Plaintiffs contend that both Oliver and DiSibio have deep connections to the right whales and their preservation by way of their long-established ties to Nantucket. Pls. Mem. of Points and Authorities in Opp. to Cross-Motions; Pls. Reply in Supp. of Mot. for Summ. J. (“Pls. Opp.”) 11-13 [Doc. No. 105] (citing Oliver and DiSibio Decls.). Second, Plaintiffs point to the degrees of emotional distress each woman attests she would experience if any right whales were harmed or killed as a result of the Project. Pls. Opp. 12, 14-16 [Doc. No. 105]; Oliver Decl. ¶¶ 2-3 [Doc. No. 88-2]; Oliver Suppl. Decl. ¶¶ 8-9 [Doc. No. 108]; DiSibio Decl. ¶ 4 [Doc. No. 88-3]. Oliver contends that she has seen right whales in the past and that she has “concrete plans” to view them in the future. Oliver Suppl. Decl. ¶ 9 [Doc. No. 108]. DiSibio states recreational and aesthetic interest in the right whale. See DiSibio Decl. ¶ 4 [Doc. No. 88-3] (“My family and I enjoy whale watching off Nantucket”). Defendants, joined by Vineyard Wind, contend that Oliver and DiSibio do not provide specific facts to reflect that either has the “requisite environmental or aesthetic interest in right whales” because neither offers the kind of “concrete plans” required under Defenders of Wildlife, 504 U.S. at 565.

The citizen-suit provision of the ESA grants “any person” the authority to commence a civil suit in to enforce a violation of any provision of the ESA. 26 U.S.C. § 1540 (g)(1). This “authorization of remarkable breadth” abrogates the traditional prudential limitation that “a plaintiff’s grievance must arguably fall within the zone of interests protected or regulated by the statutory provision or constitutional guarantee invoked in the suit.” Bennett v. Spear, 520 U.S. 154, 162-164 (1997). Nonetheless, Article III of the Constitution requires that a party filing suit under the ESA state not only an injury-in-fact but that “the party seeking review be himself

among the injured.” Sierra Club v. Morton, 405 U.S. 727, 735 (1972). Plaintiffs must present more than “‘general averments’ and ‘conclusory allegations,’” Friends of the Earth, Inc., 528 U.S. at 168-69 (quoting Lujan v. Nat’l Wildlife Fed’n, 497 U.S. 871, 888 (1990)), or “‘some day intentions’ to visit endangered species halfway around the world,” Id. (quoting Defs. of Wildlife, 504 U.S. at 564).

1. Plaintiff Vallorie Oliver’s Claimed Injuries-in-Fact

Certain of Oliver’s claimed injuries are more concrete than others. First, Oliver’s strong ties to Nantucket and the ecosystem are not, in and of themselves, sufficient. Proximity does not equate to injury. See Nat’l Wildlife Fed’n, 497 U.S. at 887 (holding that an alleged injury was insufficient to establish standing where the plaintiffs did not use land in the area affected by the challenged activity but instead only roughly “in the vicinity” of the affected land).

Likewise, Oliver’s anticipated ecological grief is insufficient. See Humane Soc. of United States v. Babbitt, 46 F.3d 93, 98-99 (D.C. Cir. 1995) (collecting cases). “[G]eneral emotional harm, no matter how deeply felt, cannot suffice for injury-in-fact for standing purposes.” Id.; see also Strahan v. Sec’y, Mass. Exec. Office of Energy & Env’tl. Affairs, 2021 WL 9038570, at *8 (D. Mass. Nov. 30, 2021) (“injury-in-fact may not be established by [Plaintiffs’] ‘sincere and passionate interest in the well-being of the whales alone.’”). Even if emotional distress were sufficient, Oliver’s statements are too speculative. Oliver states that *if* right whales are killed or injured through vessel-related strikes or other means related to the Project the news of this loss would be “psychologically devastating” and she would suffer “ecological grief.” Oliver Suppl. Decl. ¶¶ 8-9 [Doc. No. 108]. Defendants rightly describe this as a “contingent future mental health injury” for which she offers no support. See Fed. Defs. Resp. to Pls. Suppl. Separate Statement of Undisputed Facts ¶ 9 [Doc. No. 113]. The risk of this injury is dependent on the

occurrence of a future event –the death or serious injury of North Atlantic right whales *because* of the Project–and is contradicted by evidence in the Administrative Record that the Project is unlikely to cause the death of any right whale. See, e.g., 2021 BiOp, BOEM_0077276 at -7657.

Oliver’s final stated interest, that she has seen right whales in the past and has “concrete plans” to observe them in the future, is marginally sufficient. Defendants and Vineyard Wind contend that more is required under Defenders of Wildlife. Fed. Defs. Reply 3-5 [Doc. No. 114]; Vineyard Wind Reply in Support of Its Mot. for Summ. J. (“Vineyard Wind Reply”) 2-3 [Doc. No. 115]. While Defendants and Vineyard Wind are correct that Defenders of Wildlife required more than “‘some day’ intentions,” they overlook the context and limits of that holding.

In Defenders of Wildlife, the plaintiff organization challenged the decision by two agencies to limit ESA Section 7(a)(2) consultation to actions taken in the United States or on the high seas, contending that their members would be harmed by the risk to endangered and threatened species abroad. 504 U.S. at 558-559. To support standing, two members put forth affidavits professing their intent to return to foreign countries to observe threatened species. Id. One member put forth an affidavit stating she “intend[s] to return to Sri Lanka,” but when subsequently deposed, she stated that she had no current plans to return, adding that “[t]here is a civil war going on right now. I don’t know. Not next year, I will say. In the future.” Id. at 563-4 (quoting deposition testimony). It is in this context that the Court rejected “affiants’ profession of an intent to return to places they had visited before –where they will presumably, this time, be deprived of the opportunity to observe animals of the endangered species,” holding that “[s]uch ‘some day’ intentions” are “simply not enough.” Id. at 564.

Unlike Defenders of Wildlife, there are no speculative statements about trips to far-flung destinations here. Instead, it is undisputed that Oliver lives on Nantucket Island, in the vicinity of

coastal waters that right whales frequent. See Joint SOF ¶ 3 [Doc. No. 118]. It is also undisputed that Oliver has seen right whales in the past. See Fed. Defs. Resp. to Pls. Suppl. Separate Statement of Undisputed Facts ¶ 4 [Doc. No. 113]; Vineyard Wind Resp. to Pls. Suppl. Separate Statement of Undisputed Facts ¶ 4 [Doc. No. 116]. And where Defendants did not offer deposition testimony or any other evidence to counter Oliver’s assertion, the court finds Oliver’s un rebutted statement that she has “concrete plans to observe right whales in the waters around Nantucket in the future,” Oliver Suppl. Decl. ¶ 4 [Doc. No. 108], a sufficiently “concrete and particularized” legally protected interest to establish an injury-in-fact.

Oliver has thus put forth sufficient facts to establish injury for purposes of summary judgment. No party challenges causation or redressability. Therefore, Defendants and Vineyard Wind’s standing challenges to Oliver’s ESA claims fail.

2. *Plaintiff ACK RATs*

Because Oliver has put forth sufficient facts to establish injury for purposes of summary judgment and was a member of ACK RATs at the time the suit was filed, ACK RATs has also established such injury for purposes of summary judgment. See Friends of the Earth, Inc., 528 U.S. at 168-69. It is undisputed that the interests at stake are germane to ACK RATs’ purpose. Friends of the Earth, Inc., 528 U.S. at 168-69. Moreover, neither the claims asserted, nor the relief requested require the participation of individual members. Id. Accordingly, Defendants’ and Vineyard Wind’s standing challenge on summary judgment as to ACK RATs’ ESA claims fail.⁸

⁸ The court’s finding does not rely on Amy DiSibio’s Declaration where DiSibio did not establish that she was a member of ACK RATs on the date this action was initiated. As a result, her statements do not change the standing analysis. See LA Alliance for Human Rights v. County of Los Angeles, 14 F.4th 947, 959 n.9 (9th Cir. 2021) (rejecting Plaintiffs’ attempt to

C. National Environmental Policy Act Claims

Plaintiffs assert that they have also established Plaintiffs' injury-in-fact as to the NEPA claims. Pls. Mem. and Points of Authorities in Supp. of Mot. for Summ. J. ("Pls. Mem.") 12 [Doc. No. 89]; Pls. Opp. 17-21 [Doc. No. 105]. Defendants maintain that Plaintiffs cannot establish a concrete injury, let alone a procedural injury, and thus lack standing for any of their claims. See Fed. Defs. Reply 2-5 [Doc. No. 114]. Vineyard Wind argues further that Plaintiffs' evidence as to standing for the NEPA claims fails where Plaintiffs offered no expert testimony or other similar supporting evidence as to air quality impacts. Vineyard Wind Mem. in Supp. of Summ. J. ("Vineyard Wind Opening Mem.") 3-6 [Doc. No. 100]; Vineyard Wind Reply 3-6 [Doc. No. 115].

NEPA "does not mandate particular results, but simply prescribes the necessary process." Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989). Where a plaintiff seeks "to enforce a procedural requirement the disregard of which could impair a separate concrete interest of theirs," the plaintiff can establish standing "without meeting all the normal standard for redressability and immediacy." Defs. of Wildlife, 504 U.S. at 572 & n.7. But this less demanding showing for redressability and immediacy does not relieve the plaintiff of the requirement to demonstrate an injury-in-fact. AVX Corp., 962 F.3d at 119. Plaintiffs must "show that 'the government act performed without the procedure in question [here, sufficient NEPA review] will cause a distinct risk to a particularized interest of the plaintiff.'" Town of Winthrop v. F.A.A., 535 F.3d 1, 6 (1st Cir. 2008) (quoting City of Dania Beach v. F.A.A., 485 F.3d 1181, 1185 (D.C. Cir. 2007)) (brackets in original). "[P]rocedural standing requirements may be

remedy a standing defect where it had not alleged that supplemental declarations were offered by members who had joined the plaintiff organization prior to date the suit was filed).

satisfied so long as ‘the plaintiff’s interests are [not] so marginally related to or inconsistent with the purposes implicit in the statute that it cannot reasonably be assumed that Congress intended to permit the suit.’” Nulankeyutmonen Nkihtaqmikon v. Impson, 503 F.3d 18, 30 (1st Cir. 2007) (quoting Dennis v. Higgins, 498 U.S. 439, 461 (1991)).

1. Plaintiffs’ NEPA Claim as to the Right Whales

Where Plaintiffs have alleged a sufficient injury-in-fact as to maintain their ESA claims, that injury-in-fact is sufficiently particularized to maintain Plaintiffs’ NEPA claims concerning right whales. For NEPA standing, Plaintiffs need only demonstrate a particularized injury-in-fact that is not “so marginally related to or inconsistent with” NEPA that it cannot be assumed that Congress intended to permit Plaintiffs’ lawsuit. Here, Plaintiffs have a particularized interest in right whales, which is not so marginally related to NEPA review of the Vineyard Wind Project as to preclude standing.

Accordingly, Defendants and Vineyard Wind’s standing challenges to Plaintiffs’ NEPA claim regarding right whales fail.

2. Plaintiffs’ NEPA Claim as to Air Quality/Emissions Concerns

Vineyard Wind contends that Plaintiffs have provided insufficient evidence to demonstrate a concrete injury with respect to the Project’s potential air emissions or contributions to greenhouse gases, Vineyard Wind Opening Mem. 4-5 [Doc. No. 100], pointing to Plaintiffs’ lack of expert testimony regarding air quality, as well as the ultimate conclusions of the Final EIS, which reflect that the air quality impacts of the Project are (1) not anticipated to impact Nantucket residents, (2) are likely to be “negligible to minor” and “minor to beneficial,” and (3) the anticipated impacts are not expected to exceed the applicable National Ambient Air Quality Standards. Id. at 5-6; see also Joint SOF ¶¶ 162-164 [Doc. No. 118].

Plaintiffs respond that Vineyard Wind has set the bar for standing under NEPA claims too high, pointing to Hall v. Norton, 266 F.3d 969 (9th Cir. 2001), as instructive of their burden. Pls. Opp. 18-19 [Doc. No. 105]. In Hall, the plaintiff, a resident of Las Vegas, Nevada, brought NEPA and Clean Air Act claims against the U.S. Bureau of Land Management over its decision to exchange land with a private developer after estimating that the proposed development in the Law Vegas Valley would generate increased emissions in an area already not in attainment with federal air-quality standards. Id. The Ninth Circuit reversed the district court’s grant of summary judgment to the government on the grounds that Hall had averred his existing respiratory issues would be aggravated by emissions from the development and held that “evidence of a credible threat to plaintiff’s physical well-being from airborne pollutants falls well within the range of injuries to cognizable interests that may confer standing.” Id. at 976. As Plaintiffs point out, the Ninth Circuit concluded that “Hall need not establish causation with the degree of certainty that would be required of him to succeed on the merits, say, of a tort claim.” Pls. Opp. 19 [Doc. No. 105] (quoting Hall, 266 F.3d at 977).

But while Plaintiffs may only need to establish the “‘reasonable probability’ of the challenged action’s threat to his concrete interest,” id. (citing Hall, 266 F.3d at 977), such evidence is absent here. Plaintiffs contend that the Project will emit air pollutants, which are harmful to human health. Pls. Opp. 21 [Doc. No. 105]. Oliver states generalized concerns for her respiratory health, and the health of the entire region, from the Project’s potential air quality impacts. Oliver Suppl. Decl. ¶ 12 [Doc. No. 108]. She likewise states a generalized concern about the Project’s potential to increase greenhouse gas emissions and contribute to the effects of climate change. Id. at ¶ 13. However, Oliver does not point to any evidence to suggest the risk to her will increase, even marginally. Generalized concerns regarding harm to the environment

alone are insufficient to confer standing. See Summers v. Earth Island Institute, 555 U.S. 488, 494 (2009); see also Ctr. for Bio. Div. v. U.S. Dep’t of Interior, 563 F.3d 466, 478 (D.C. Cir. 2009) (“climate change is a harm that is shared by humanity at large”). As Vineyard Wind points out, the Record reflects that the air quality impacts for the Project are “negligible to minor and minor beneficial” and that emissions will not impact Nantucket onshore. Joint SOF ¶¶ 162-166 [Doc. No. 118]. As a result, Oliver cannot establish standing as to the NEPA air quality and greenhouse gas claims. Absent standing for any one member, ACK RATs cannot establish associational standing. See AVX Corp., 962 F.2d at 116.

Thus, the court does not have jurisdiction to consider Plaintiffs’ NEPA air quality and emission claims.⁹

VI. Discussion

A. Applicable Law

1. Administrative Procedure Act

A summary judgment motion has a “special twist in the administrative law context.” Boston Redevelopment Auth. v. Nat. Park Serv., 838 F.3d 42, 47 (1st Cir. 2016) (quotations omitted). In an APA action, a motion for summary judgment serves as “a vehicle to tee up a case for judicial review and, thus, an inquiring court must review an agency action not to determine whether a dispute of fact remains but, rather, to determine whether the agency action was arbitrary and capricious.” Id. (citing cases); see also 5 U.S.C. § 706(2)(A) (“The reviewing court

⁹ Because Plaintiffs do not have standing to bring these claims, the court does not address Vineyard Wind’s argument that Plaintiffs’ air quality-related NEPA claims are barred by the doctrine of administrative waiver. See Vineyard Wind Opening Mem. 22-23 [Doc. No. 100].

shall...hold unlawful and set aside agency action...found to be...arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law[.]”).

Because the APA affords great deference to agency decision-making and agency actions are presumed valid, “judicial review [under the APA], even at the summary judgment stage, is narrow.” Assoc’d Fisheries of Maine, Inc. v. Daley, 127 F.3d 104, 109 (1st Cir. 1997) (citing Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 415-16 (1971)). Courts should “uphold an agency determination if it is ‘supported by any rational view of the record.’” Marasco & Nesselbush, LLP v. Collins, 6 F.4th 150, 172 (1st Cir. 2021) (quoting Atieh v. Riordan, 797 F.3d 135, 138 (1st Cir. 2015)). Even where an inquiring court disagrees with the agency’s conclusions, the court cannot “‘substitute its judgment for that of the agency.’” Boston Redevelopment Auth., 838 F.3d at 47 (quoting Assoc’d Fisheries, 127 F.3d at 109). Rather, an agency’s action should only be vacated where it “has relied on factors which Congress had not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.” Nat’l Ass’n of Home Builders v. Defs. of Wildlife, 551 U.S. 644, 658 (2007) (quotations omitted).

2. *Endangered Species Act*

Section 7(a)(2) of the Endangered Species Act commands that “[e]ach Federal agency shall...insure that any action authorized, funded, or carried out by such agency...is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species[.]” 16 U.S.C. § 1536(a)(2).

“This substantive requirement is backed up by a scheme of procedural requirements that set up a

consultation process between the agency...and [NMFS]...to determine whether endangered species or critical habitat are jeopardized by proposed agency action and whether this adverse impact may be avoided or minimized.” Water Keeper Alliance v. U.S. Dep’t of Def., 271 F.3d 21, 25 (1st Cir. 2017); see also 16 U.S.C. § 1536; 50 C.F.R. § 402.14. NMFS is required to utilize the “best scientific and commercial data available” in rendering its biological opinion. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(d).

Section 9 of the ESA prohibits the “take” of any endangered or threatened species. 16 U.S.C. § 1538(a). Under the ESA, the term “take” means to harass, hunt, shoot, capture, trap, kill, collect, wound, harm, or pursue, or attempt any such activities. 16 U.S.C. § 1532(19). Despite this prohibition, taking may be permitted where it is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.” 16 U.S.C. § 1539(a)(1)(B). Incidental take can be exempted from liability as part of the consultation process. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(g)(7), (i). Where NMFS’ biological opinion concludes that it will result in “incidental take” of ESA listed species, and that such take will not violate ESA Section 7(a)(2), the biological opinion must include a written statement that (i) specifies the impact of such incidental take on the species; (ii) specifies the reasonable and prudent measures necessary or appropriate to minimize the impact of said take; (iii) specifies those measures necessary to comply with the MMPA and applicable regulations; and (iv) sets forth terms and conditions that must be complied with by the agency and/or applicant to implement (ii) and (iii). 16 U.S.C. § 1536(b)(4).

3. *National Environmental Policy Act*

NEPA obligates federal agencies to “consider every significant aspect of the environmental impact of a proposed action...[and] ensures that the agency will inform the public

that it has indeed considered environmental concerns in its decisionmaking process.” United States v. Coalition for Buzzards Bay, 644 F.3d 26, 31 (1st Cir. 2011) (quotations omitted).

NEPA requires that any agency considering action that would have a significant impact on the environment prepare an EIS, that contains a “detailed statement” regarding the environmental impacts of the proposed action and all reasonable alternatives. Dubois v. Dep’t of Agriculture, 102 F.3d 1273, 1285 (1st Cir. 1996); 42 U.S.C. § 4332. NEPA “does not mandate particular results, but simply prescribes the necessary process.” Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989); see also Winter v. Nat. Resources Def. Council, Inc., 555 U.S. 7 (2008). “So long as the environmental effects of a proposed action have been adequately identified and studied, the agency is free to weigh those effects and decide—within the limits fixed by the APA—that other values overbalance environmental costs.” Coalition for Buzzards Bay, 644 F.3d at 31 (citing Robertson, 490 U.S. at 350).

B. Notice/Waiver¹⁰

Defendants and Vineyard Wind contend Plaintiffs failed to provide Defendants with adequate notice as to their objections to BOEM and NMFS: (i) approving soft-start pile driving procedures that would cause right whales to flee the Project Area into vessel traffic (Pls. Mem. 22-23 [Doc. No. 89]); (ii) failing to consider the potential biological removal threshold (“PBR”) for right whales in the 2021 BiOp (Pls. Mem. 22-23 [Doc. No. 89]); (iii) approving override

¹⁰ Defendants and Vineyard Wind contend, and Plaintiffs do not dispute, that certain allegations in Plaintiffs’ Amended Complaint are waived for failure to raise them in summary judgment briefing. See Fed. Defs. Opening Mem. 50, n.37 [Doc. No. 96]; Vineyard Wind Opening Mem. 24 [100]. Specifically, Plaintiffs do not discuss any ESA-listed species other than the right whale (Am. Compl. ¶¶ 72, 76 [Doc. No. 59]), nor do they raise arguments concerning the Incidental Take Statement (id. ¶ 73), or the Joint ROD (id. ¶ 69). These claims have been waived, and summary judgment is granted to Defendants and Vineyard Wind as to these issues.

procedures that would permit the Vineyard Wind lead engineer to override shutdown directives and continue pile driving if necessary for safety or for the integrity of the pile driving installation; (Pls. Mem. 30-31 [Doc. No. 89]); (iv) approving pile driving “clearance zones” that do not cover the entirety of the potential Level A harassment noise impact area (Pls. Opp. 25-26 [Doc. No. 105]); and (v) approving a passive acoustic monitoring detection limit that does not cover the entirety of the potential Level A harassment noise impact area (Pls. Mem 32 [Doc. No. 89]; Pls. Opp. 25-26 [Doc. No. 105]). See Fed. Defs. Opening Mem. 9-10 [Doc. No. 96]; Vineyard Wind Opening Mem. 7 [Doc. No. 100].

Under Section 11(g)(2)(A)(i) of the ESA, citizens seeking to sue the government for violations of the ESA are first are required to submit a written notice of the alleged violation(s), and then must wait at least sixty days from submitting the notice before filing commencing a civil suit. 16 U.S.C. § 1540(g)(2)(A)(i). The notice must “at a minimum, provide sufficient information of a violation so that the Secretary or agency can identify and attempt to abate the violation.” Ctr. for Bio. Div. v. Haaland, 2023 WL 2401662, at *6-*7 (D.C. Cir. Mar. 8, 2023) (quotations and brackets omitted). The court addresses the sufficiency of Plaintiffs’ notice as to each of these issues in turn. ¹¹

i. Soft Start Pile Driving Procedures

Plaintiffs’ 60-Day Letter states:

The BiOp fails to assess vessel strike risk to right whales and other federally-listed species in the context of the already-crowded shipping lanes in or near

¹¹ Plaintiffs asserted in briefing that they do not need to satisfy the 60-Day notice requirement for their 2021 BiOp claims (against NMFS), because the claims arise under the APA, not the ESA. Pls. Opp. 22 [Doc. No. 105] (citing Strahan v. Linnon, 967 F. Supp. 581, 592 (D. Mass. 1997)). At the summary judgment hearing, however, Plaintiffs’ counsel waived that argument. Jan. 24, 2023 Tr. 23:15-24:8, 32:16-33:10.

the Project Area. In addition, the BiOp assumes that right whales and other federally-listed species will move out of the Project Area as an “avoidance response” to pile driving noise; however, if this is true, these animals, in their efforts to swim away from the pile driving noise, will likely enter areas of high vessel traffic, increasing the risk of ship strikes. This impact is not analyzed in the BiOp.

60-Day Intent to Sue Letter, Comment 36 [Doc. No. 96-3]. While the Letter does not mention the use of soft-start procedures in particular, Plaintiffs’ articulated concern—that pile driving noise will provoke an avoidance response and cause right whales to enter high-traffic areas, thus increasing the risk of vessel strikes—applies to both soft-start and other pile driving activity. The 60-Day Letter adequately apprised Defendants of that concern.

ii. PBR

PBR is a metric from the MMPA for the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. 16 U.S.C. § 1362(20). As the parties concede, neither the 2021 BiOp nor Plaintiffs’ 60-Day Letters uses the term “PBR.” See Jan. 24, 2023 Tr. 27:12-15. However, the 60-Day Letter states:

The BiOp’s no jeopardy determination fails to account for recent sharp declines in right whale populations. It also fails to account for the extremely low abundance number for the species, which is now less than 350 individuals. Given the low number of right whales and the consistent loss of calf-bearing females, the BiOp should analyze and explain how project-related take of any individual could be absorbed without jeopardizing the species as a whole. BiOp, however, provides no such analysis or explanation and is therefore deficient as a matter of law.

60-Day Letter, Comment 28 [Doc. No. 96-3]; Pls. Opp. 24 [Doc. No. 105].

To the extent Plaintiffs claim that the 2021 BiOp needed to discuss the threat the Project poses to the declining right whale populations, Plaintiffs have provided adequate notice. To the extent Plaintiffs claim that the 2021 BiOp needed to expressly address the specific PBR, that claim is waived.

iii. Override Procedures

Plaintiffs' 60-Day Letter provides two comments regarding the "feasibility" and "practicability" exceptions to the pile driving limitations imposed by BOEM and NMFS.

Plaintiffs claim that under these exceptions:

Vineyard Wind can continue pile driving even in the presence of right whales or other listed species if halting the pile driving work is not feasible [or practicable]. Th[ese] exception[s] makes the pile driving protections and limitations meaningless, as it gives Vineyard Wind complete discretion as to when and under what circumstances they can be disregarded.

See 60-Day Letter, Comments 13, 14 [Doc. No. 96-3]; Pls. Opp. 24-25 [Doc. No. 105]. In both instances, these comments adequately apprised Defendants of Plaintiffs' concern that Vineyard Wind's ability to override certain protections by way of their discretion makes these limitations meaningless. Accordingly, Plaintiffs provided adequate notice as to their claims regarding the override procedures.

iv. Clearance Zones & PAM Detection Limits

Plaintiffs point to a single comment in their 60-Day Letter as putting Defendants on notice as to concerns regarding the size and sufficiency of the pile driving clearance zones and the limitations of PAM. Specifically, the 60-Day Letter states:

The BiOp improperly accepts Vineyard Wind's position that the project will result in no Level A harassment of right whales. That position is based on the unproven and unsubstantiated efficiency of Vineyard Wind's proposed "detect & avoid" measures – the very same measures that include a host of exceptions, qualifications, and loopholes.

60-Day Letter, Comment 38 [Doc. No. 96-3]; Pls. Opp. 25-26 [Doc. No. 105]. While it may not be necessary for Plaintiffs to mention PAM or clearance zones specifically, Comment 38 is far too generalized to put Defendants on notice as to concerns about whether the size of the area from which right whales should be excluded is sufficient such that Defendants can identify and attempt to abate the concerns. See Ctr. for Bio. Div., 2023 WL 2401662 at *6-*7. Accordingly,

Plaintiffs have waived claims regarding the sufficiency and size of the clearance zones and the limitations on PAM detection for failure to provide notice to Defendants.

C. Merits of the Noticed Claims

The court now turns to the merits of the claims for which Plaintiffs provided proper notice, specifically: (i) whether in issuing the 2021 BiOp, NMFS acted arbitrarily, capriciously, and unlawfully by failing to adequately consider the Project's impact on North Atlantic right whales and instead concluding the Project would not jeopardize the species in violation of ESA Section (7)(a)(2); (ii) whether NMFS and BOEM violated and continue to violate Section 7(a)(2) of the ESA by failing to ensure through consultation that BOEM's approval of impacts of the Project will not jeopardize the right whale; and (iii) whether BOEM violated NEPA by failing to take the requisite "hard look" at the environmental consequences to the right whales, instead issuing a Final EIS that reflected many of the same claimed procedural and substantive defects as the 2021 BiOp. Because Plaintiffs' sole surviving claim under NEPA is that the Final EIS "parrots the flawed analysis and conclusions set forth in the BiOp," the court considers Plaintiffs' ESA and NEPA claims together.

1. 2021 BiOp: Best Scientific and Commercial Data Available

Plaintiffs argue that the 2021 BiOp is flawed because it fails to engage with the "best scientific and commercial data available," as required under the ESA, and that, as a result NMFS and BOEM have violated the ESA by promulgating and relying on the 2021 BiOp. Pls. Mem. 14 [Doc. No. 89] (citing 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(g)(8)). Plaintiffs point to five

studies¹² which they contend the 2021 BiOp either does not adequately engage with or does not address at all:

1. Quintana-Rizzo, et al., “Residency, demographics, and movement patterns of North Atlantic right whales *Eubalaena glacialis* in an offshore wind energy development area in southern New England, USA” *Endangered Species Research*, Vol. 45: 251-268 (2021) (“Quintana-Rizzo”). NMFS 53318-35; Joint Appendix, JA012307-325 [Doc No. 117-27].
2. A. Key Outcomes Memorandum dated October 4, 2019 regarding an April 23-26, 2019 Atlantic Large Whale Take Reduction Team Meeting convened by NMFS (“2019 Key Outcomes Memorandum”). BOEM_0194534-48; Joint Appendix, JA008867-881 [Doc. No. 117-24].
3. The North Atlantic Right Whale Consortium 2020 Annual Report Card. (“2020 Report Card”). BOEM_0208677-98, Joint Appendix, JA009302-23 [Doc. No. 117-25].
4. NOAA Technical Memorandum NMFS-NE-271, The US Atlantic and Gulf of Mexico Marine Mammal Stock Assessments 2020 (“2020 Stock Assessment”).¹³
5. Stober, U, Thomsen F. 2021. How could operational underwater sound from future offshore wind turbines impact marine life? *J. ACOUST. SOC. AM.* 2021 Mar; 149(3) (“Stober”). NMFS 57131-36; Joint Appendix, JA012446-51 [Doc. No. 117-27].

Pls. Mem. 17-24 [Doc. No. 89]. Plaintiffs argue that, in failing to rely on these studies as the “best scientific and commercial data available”, the 2021 BiOp’s conclusions are flawed, and that, in issuing and relying on a legally deficient BiOp, NMFS and BOEM acted arbitrary and

¹² In connection with their Opposition [Doc. No. 105], Plaintiffs offer a sixth study, Barkaszi, M. et al., PAMGuard Quality Assurance Module for Marine Mammal Detection Using Passive Acoustic Monitoring (August 2020). See Decl. of David Hubbard [Doc. No. 109]. The court construes this submission as a motion to supplement the record, which is denied as untimely. See Scheduling Order [Doc. No. 58] (“Any motions related to disputes about the administrative record... must be filed no more than 30 days after service of the administrative record.”). The court does not reach Defendants’ substantive critiques of Barkaszi where it is not part of the Record.

¹³ Although referenced in the 2021 BiOp, the court was unable to locate this document in the AR or the Joint Appendix. The document is available at <https://media.fisheries.noaa.gov/2021-07/Atlantic%202020%20SARs%20Final.pdf?null%09>, last accessed May 12, 2023.

capriciously in violation of the ESA. See Pls. Mem. 5-6, 17-24 [Doc. No. 89]. Defendants contend that the 2021 BiOp considered the best available scientific and commercial information available, and that, in each instance, NMFS either did consider the offered materials or was not required to do so. Fed. Defs. Opening Mem. 12-22 [Doc. No. 96]; see also Vineyard Wind Opening Mem. 9-10 [Doc. No. 100].

As part of the consultation process under the ESA, “each agency shall use the best scientific and commercial data available.” 16 U.S.C. § 1536(a)(2). The ESA’s regulations direct:

In formulating its biological opinion, any reasonable and prudent alternatives, and any reasonable and prudent measures, the Service will use the best scientific and commercial data available and will give appropriate consideration to any beneficial actions as proposed or taken by the Federal agency or applicant, including any actions taken prior to the initiation of consultation. Measures included in the proposed action or a reasonable and prudent alternative that are intended to avoid, minimize, or offset the effects of an action are considered like other portions of the action and do not require any additional demonstration of binding plans.

50 C.F.R. § 402.14(g)(8)). Neither the ESA nor its implementing regulations provide direction as to what constitutes the “best scientific and commercial data available.” Rather, determining which studies and data are the “best available” is “itself a scientific determination deserving deference.” See Miccosukee Tribe of Indians of Florida v. United States, 566 F.3d 1257, 1265 (11th Cir. 2009) (citing March v. Or. Natural Res. Council, 490 U.S. 360, 377-78 (1989)); see also Balt. Gas & Elec. Co. v. Nat. Res. Def. Council, 462 U.S. 87, 103 (1983) (a reviewing court should “generally be at its most deferential” where an agency “is making predictions, within its area of special expertise, at the frontiers of science[.]”). “The obvious purpose of the requirement...is to ensure that the ESA not be implemented haphazardly, on the basis of speculation or surmise.” Bennett v. Spear, 520 U.S. 154, 176 (1997).

In light of the Record before the court and the deference accorded to NMFS in determining what constitutes the “best scientific and commercial data available,” the court finds

Plaintiffs' arguments unpersuasive. First, NMFS did "use" certain of these studies in the 2021 BiOp. As to Quintana-Rizzo, Plaintiffs are incorrect that the 2021 BiOp does not "engage" with the study. Plaintiffs acknowledge as much in the Joint Statement of Undisputed Facts. Joint SOF ¶ 118 [Doc. No. 118] ("The BiOp cites to and recognized the findings of Quintana-Rizzo et al. (2021), which indicated, among other things, that the North Atlantic right whale presence within the Project Area remains seasonal[.]"). NMFS considered whether Quintana-Rizzo would change the conclusions it reached in the 2020 BiOp, and it did not. Fed. Defs. Reply. 13 n.12 [Doc. No. 114]. Similarly, the 2020 Annual Report Card was considered in the 2021 BiOp. See 2021 BiOp, BOEM_0077276 at -7330-31 (discussing calving rates for right whales from 2006 to 2017 and 2019-2020). Plaintiffs disagree with NMFS's conclusions after review of the data, but the court may not second-guess NMFS's considered determinations. Boston Redevelopment Auth., 838 F.3d at 47; see also Blue Water Fishermen's Ass'n v. Nat. Marine Fish. Serv., 226 F. Supp. 2d 330, 338 (D. Mass. 2002) ("This [c]ourt therefore may not champion a competing interpretation of the data over an agency's conclusion that finds support in the record.").

Second, NMFS considered certain of these studies and effectively concluded that they were not the "best available." For instance, as Vineyard Wind points out, the 2021 BiOp reflects that NMFS examined Stober's conclusions regarding underwater operational noise levels, and after evaluating it, NMFS concluded that the study was less reliable and that an alternative study was superior. See Vineyard Wind Opening Mem. 9-10 [Doc. No. 100]; 2021 BiOp, BOEM_0077276 at -7432 ("Without information on soundscape, water depth, sediment type, wind speed, and other factors, it is not possible to determine the reliability of any predictions from the Stober and Thomsen paper to the Vineyard Wind project."). "Thus, in reviewing and rejecting [a contrary] position, NMFS did not ignore the best available data. Rather it considered

and disagreed with [the contrary] interpretation of the data.” Blue Water Fishermen’s Ass’n, 226 F. Supp. 2d at 339. Plaintiffs contend that the 2021 BiOp’s rejection of Stober is unsupported, but Plaintiffs’ bare contention cannot overcome the deference accorded to NMFS in making such determinations. Finally, Plaintiffs’ passing argument that, in discounting Stober, NMFS failed to “give the benefit of the doubt to the species,” Pls. Opp. 39 [Doc. No. 105] (quoting Conner v. Burford, 848 F.2d 1441, 1454 (9th Cir. 1988)), is inapplicable. Unlike in Conner, NMFS did not ignore the available data.

Plaintiffs are likewise incorrect that the 2020 BiOp did not consider the 2020 Stock Assessment. Plaintiffs contend that NMFS’s omission of this study is critical because of the study’s discussion of the right whale PBR, Pls. Mem. 22-23 [Doc. No. 89], but as discussed supra, Plaintiffs have waived any argument concerning discussion of the PBR specifically. The court agrees with Defendants that the Record reflects NMFS did consider the right whale’s survival rate, even if it did not discuss PBR specifically. See Fed. Defs. Opening Mem. 18 [Doc. No. 96]. The 2021 BiOp states:

[d]ue to the declining status of North Atlantic right whales, the resilience of this population to stressors that would impact the distribution, abundance, and reproductive potential of the population is low. The species faces a high risk of extinction...ongoing effects in the action area (e.g. global climate change, decreased prey abundance, vessel strikes, and entanglements in U.S. state and federal fisheries) have contributed to concern for the species’ persistence.

2021 BiOp, BOEM_0077276 at -7627.¹⁴ Second, although the 2021 BiOp does not rely on the 2020 Stock Assessment, the court defers to NMFS’s conclusion that, because the information

¹⁴ Plaintiffs’ argument additionally fails where, as the Defendants contend, NMFS and BOEM was not required to have addressed PBR in the context of the 2021 BiOp, because PBR is a concept from the Marine Mammal Protection Act (“MMPA”), not the ESA or NEPA, and NMFS/GAR considered PBR in the context of its issuance of the Incidental Harassment Authorization under the MMPA. See Fed. Defs. Opening Mem. 17 and n.17 [Doc. No. 96].

contained in the Stock Assessment was from 2018, it was appropriate for NMFS to rely on more recent scientific studies in order to comply with its requirement to use the “best scientific” information available. See Fed. Defs. Opening Mem. 17-18, n.18 [Doc. No. 96]; Fed. Defs. Reply 17-18 [Doc. No. 114] (citing 2021 BiOp, NMFS 17234).

Plaintiffs’ argument that NMFS’s failure to discuss the TRT Key Outcomes Memorandum in the 2021 BiOp amounts to a failure to consider the risks of entanglement, Pls. Opp. 21-22 [Doc. No. 105], is also unavailing. To the contrary, the 2021 BiOp contains extensive discussion of the entanglement risk and reflects that NMFS “reviewed the most recent data available on reported entanglements for the ESA listed whale stocks that occur in the action area.” 2021 BiOp, BOEM_0077276 at -7411 (citing, as to right whales, the 2020 and 2021 Stock Assessments). Further, to the extent NMFS determined that it need not consider the TRT Key Outcomes Memorandum, that determination is entitled to deference, particularly where the Memorandum was the outcome of a meeting NMFS convened and reflects recommendations that “NMFS intends to use...to guide rulemaking starting in May 2019,” TRT Key Outcomes Memorandum, BOEM_0194534, reflecting that NMFS was engaged in discussions, strategy, and rulemaking that considered the risk of entanglement well before it issued the 2020 or 2021 BiOp. See also Fed. Defs. Opening Mem. 16 [Doc No. 96] (citing Dist. 4 Lodge of the Int’l Ass’n of Machinists and Aerospace Workers Local Lodge 2017 v. Raimondo, 40 F.4th 36, 41 (1st Cir. 2022) (considering challenge to NMFS’s regulations prohibiting vertical buoy lines in certain areas to protect right whales)). The concern that NMFS is operating “on the basis of speculation or surmise” is not present here.

Accordingly, Plaintiffs have not shown that NMFS and BOEM violated the ESA by failing to rely on the “best scientific and commercial data available” during the consultation process.

2. *2021 BiOp & Final EIS: Assessment of the Risk of Project-Related Vessel Strikes*

Plaintiffs contend that both the 2021 BiOp and Final EIS fail to adequately consider the risk of Project-related vessel strikes of right whales. First, Plaintiffs contend that neither document contains “key” information concerning vessel traffic, specifically, how many Project-related vessels may travel at speeds exceeding the 10 knots per hour limit intended to prevent lethal strikes and the total miles that Project-related vessels may travel. Pls. Mem. 35, 47 [Doc. No. 89]. Second, Plaintiffs contend that neither document considers that pile driving procedures, soft-start and otherwise, will prompt right whales to flee into areas of heavy vessel traffic, increasing their risk of injury or death. *Id.* at 36, 46. Finally, Plaintiffs contend that the risk of vessel strikes is not adequately assessed where the 2021 BiOp relies on mitigation procedures that are “unproven” and “facially ineffective,” such as the use of speed restrictions, PSOs and PAM. *Id.* at 36-38 (citing Nat’l Wildlife Fed’n v. Nat. Marine Fish. Serv., 184 F. Supp. 3d 861, 873 (D. Or. 2016)). Defendants respond that the 2021 BiOp, Final EIS, and IHA each contain detail concerning vessel traffic and Plaintiffs have not provided a basis for why the total miles Project vessels must travel is required over the data Defendants do provide, that the 2021 BiOp reasonably concluded that the Project is not likely to result in death or injury to right whales, including in response to soft-start procedures, and that the mitigation measures are designed to be considered as a complete set, not in isolation as Plaintiffs propose. Fed. Defs. Opening Mem. 31-33 [Doc. No. 96].

Plaintiffs have not offered any authority that Defendants' failure to consider or include one metric over another is either arbitrary or capricious or in violation of NEPA. Nor have they offered any evidence to support their speculative argument that right whales will flee *into* vessel traffic.¹⁵ And where NMFS has considered the issue of vessel strikes and relied on available data, it is entitled to deference, even if that data is not conclusive. See Pac. Shores Subdiv. Cal. Water Dist. v. U.S. Army Corps of Eng'rs, 538 F. Supp. 2d 242, 250 (D.D.C. 2008).

As to Plaintiffs' attacks on the mitigation measures, the court reviews the suite of measures adopted by Defendants as a result of the 2021 BiOp process and not the measures in isolation where NMFS and BOEM based their conclusions concerning the risk of vessel strikes on the suite of measures as a whole. Specifically, the 2021 BiOp stated "measures that will be required of all project vessel operations will ensure that the opportunity for detection of any ESA-listed whale that could co-occur with a vessel's transit route will be maximized...Combined with the requirements for vessel speed restrictions, [NMFS] expect[s] that these measures will make it extremely unlikely that a project vessel will collide with a whale." 2021 BiOp, BOEM_0077276 at -7527. Where the Record demonstrates that NMFS carefully considered this suite of factors, along with other preexisting rules, and came to a well-supported conclusion, the court concludes Plaintiffs' challenges as to some measures is

¹⁵ In their arguments concerning the risk of vessel-strikes and entanglement, Plaintiffs assert that "NMFS Statistical Area 537," the large geographic area within which the WDA is located, is particularly high risk for right whales. Pls. Opening Mem. 21-22, 33 [Doc. No. 89]; Pls. Opp. 32-33 [Doc. No. 105]. Defendants and Vineyard Wind contest Plaintiffs' theory and dispute several of Plaintiffs' factual assertions as unsupported by the Record. Fed. Defs. Opening Mem. 15 [Doc. No. 96]; Vineyard Wind Reply 8-9 [Doc. No. 115]. Where the court concludes that both NMFS and BOEM's consideration of the risks to right whales and decision to implement mitigation measures are entitled to deference, the court need not wade into the parties' dispute regarding the character of Area 537.

insufficient to deem the 2021 BiOp invalid. See Nat'l Ass'n of Home Builders v. Defs. of Wildlife, 551 U.S. 644, 658 (2007).

Similarly, Plaintiffs have not demonstrated that BOEM, in preparing the Final EIS, violated NEPA by failing to adequately consider the risk of vessel strikes. Rather, the environmental effects “were adequately identified and studied” and the agency acted “within the limits fixed by the APA.” Coalition for Buzzards Bay, 644 F.3d at 31. Accordingly, Plaintiffs’ claims concerning Defendants’ assessment of the risk of vessel strikes fails.

3. 2021 BiOp & Final EIS: Pile Driving Noise

Plaintiffs contend that neither the 2021 BiOp nor the Final EIS appropriately consider the level of harassment to which right whales will be exposed from pile driving during the construction of the Vineyard Wind Project. Pls. Mem. 29-35, 49 [Doc. No. 89].¹⁶ In support of this claim, Plaintiffs reiterate that three mitigation measures: PSOs, PAM, and soft-start procedures, are inadequate insofar as they will not ensure right whales are clear of pile driving noise that may amount to Level A harassment. Id. Defendants contend that Plaintiffs’ concerns

¹⁶ Plaintiffs’ contention that the soft-start pile driving procedure is a prohibited, intentional take is without merit. Pls. Mem. 30 [Doc. No. 89]; Pls. Opp. 43-44 [Doc. No. 105]. NMFS regulations instruct that “[i]ncidental harassment, incidental taking and incidental, but not intentional, taking all mean an accidental taking. This does not mean that the taking is unexpected, but rather it includes those takings that are infrequent, unavoidable or accidental.” 50 C.F.R. § 216.103. Here, the 2021 BiOp reflects that any such take is expected to be infrequent and accidental. First, pile driving will only occur in conjunction with other mitigation measures designed to minimize the risk that right whales may be in the area. See supra, [Fact section]; see, e.g., 2021 BiOp, BOEM_0077276 at -7461 (“the proposed requirement that pile driving can only commence when the full extent of all clearance zones are fully visible to PSOs will ensure a high marine mammal detection capability[.]”). Moreover, pile driving of any kind would not proceed in instances where a whale has been detected in the area. 2021 BiOp, BOEM_0077276 at -7547. Therefore, the 2021 BiOp reflects that the procedure would only ever be used where a right whale has been undetected by the myriad of other mitigation measures implemented by Vineyard Wind and thus would be “accidental.” Incidental take is permitted under the MMPA. 16 U.S.C. § 1371(a)(5)(D)(i).

regarding pile driving noise were considered as part of public comment on the IHA process, and that Plaintiffs' critiques do not acknowledge the suite of mitigation measures to be implemented. Fed. Defs. Opening Mem. 27, 38 [Doc. No. 96]; Fed. Defs. Reply 28 [Doc. No. 114].

As to soft-start procedures, the 2021 BiOp expressly acknowledges that NMFS cannot predict the level or extent that this procedure may reduce right whale exposure to pile driving noise, and that, as a result "while the soft start is expected to reduce effects of pile driving we are not able to modify the estimated take numbers to account for any benefit provided by the soft start." 2021 BiOp, BOEM_0077276 at -7458. Plaintiffs' contention that NMFS's assessment of pile driving noise was inadequate because its reliance on soft-start procedures fails where NMFS disclaimed any reliance on soft-start procedures in its conclusions about the anticipated level of take by harassment of right whales. Nor can Plaintiffs contend that BOEM or the Final EIS improperly relied on the 2021 BiOp's conclusions regarding the use of soft-start procedures where the use of the procedure has no impact on the 2021 BiOp's take assessment.

As with vessel strikes, Plaintiffs reiterate that PSOs and PAM are inadequate to prevent harm to right whales from pile driving noise. However, where NMFS and BOEM considered a suite of mitigation measures, Plaintiffs cannot challenge such procedures in a vacuum. Plaintiffs have not shown that NMFS's consideration of the suite of mitigation measures, or NMFS and BOEM's reliance on them, was arbitrary or capricious. See Nat'l Ass'n of Home Builders v. Defs. of Wildlife, 551 U.S. 644, 658 (2007). Accordingly, Plaintiffs' challenges to the 2021 BiOp and the Final EIS regarding its consideration of pile driving noise fail.

4. 2021 BiOp and Final EIS: Assessment of Operational Noise

Plaintiffs contend that the 2021 BiOp and Final EIS do not adequately address the impacts of the operational noise of the Vineyard Wind Project on right whales, relying

principally on Stober. Pls. Mem. 23-24, 38-39, 48-49 [Doc. No. 89]. Plaintiffs further argue that NMFS and BOEM do not know what the impact of the Project will be on right whales because a project of this size has never been completed or studied. Pls. Mem. 23 [Doc. No. 89]. In response, Defendants point to the 2021 BiOp and Final EIS as having adequately considered the risk of operational noise in their respective analysis. Fed. Defs. Opening Mem. 21, 48 [Doc. No. 96]; see also 2021 BiOp, BOEM_0077276 at -7431; Final EIS Vol I, BOEM_0068434 at -8599.

As discussed supra, NMFS considered Stober, and declined to follow it, instead adopting a more recent study on operational noise. Fed. Defs. Opening Mem. 33 [Doc. No. 96]. While Plaintiffs read the available data differently than NMFS, where NMFS's assessment of operational noise is supported by a rational view of the record, Plaintiffs have not shown a violation of the ESA. See Marasco & Nesselbush, LLP, 6 F.4th at 172. Similarly, Plaintiffs' disagreement with NMFS's analysis does not demonstrate that BOEM failed to conduct the analysis required under NEPA. See Lovgren v. Locke, 701 F.3d 5, 38 (1st Cir. 2012) ("That [Plaintiffs] disagree[] with this conclusion is not a basis for deeming it invalid."). Accordingly, Plaintiffs have not shown that Defendants failed to adequately consider operational noise in connection with the Project.

5. 2021 BiOp and Final EIS: Increased Stress Due to Loss of Foraging Opportunities

Plaintiffs contend that the 2021 BiOp does not adequately assess the extent to which Vineyard Wind's pile driving activities will reduce right whales' foraging opportunities. Pls. Mem. 40 [Doc. No. 89]. Similarly, Plaintiffs contend that the EIS does not adequately assess the quality of the foraging habitat in the light of the Project. Pls. Mem. 39, 48 [Doc. No. 89]. In both instances, Plaintiffs contend that "recent studies" show that the right whales' food source is changing, and will change further based on the Project, however, Plaintiffs' only support for this

argument is Quintana-Rizzo. As discussed supra, NMFS considered and relied on Quintana-Rizzo in its analysis of behavioral impacts of the Project and pile driving to right whales. BOEM_0077461-62. Where Plaintiffs' argument as to both the 2021 BiOp and the Final EIS is premised on its disagreement about how the agencies have interpreted Quintana-Rizzo, that argument fails, both because of the deference accorded to the agency in determining how to use the best available data, supra, and because Plaintiffs' disagreement is not a basis to challenge the agency's actions as arbitrary and capricious or in violation of NEPA. See Marasco & Nesselbush, LLP, 6 F.4th at 172; see also Lovgren, 701 F.3d at 38.

6. 2021 BiOp and Final EIS: Entanglement in Fishing Gear

Plaintiffs contend that neither the 2021 BiOp nor the Final EIS adequately consider the risk of fishing gear entanglement posed by the Project, both directly, in the form of fisheries studies Vineyard Wind will be required to conduct, and indirectly, as soft-start procedures may drive right whales into areas of higher entanglement risk. Pls. Mem. 40-41, 47-48 [Doc. No. 89].

Plaintiffs' argument regarding the risk of entanglement stemming from soft-start procedures is speculative. As Defendants point out, the biological consultation process was reinitiated in May 2021 in part so that NMFS could consider the effects of the proposed fishery monitoring surveys, and NMFS concluded that the risk of entanglement from the survey is so small "it cannot be meaningfully measured." Fed. Defs. Opening Mem. 12 [Doc. No. 96]; 2021 BiOp, BOEM_ BOEM_0077276 at -7581 (discussing the "Impacts to Habitat" of the proposed marine resource survey and monitoring activities). Defendants also contend that the Final EIS specifically addresses any concerns regarding the risks of fisheries surveys, including by requiring the use of "weak-link technology to minimize whale entanglement" and seasonally restricting survey activity when right whales may be present. Fed. Defs. Opening Mem. 46 [Doc.

No. 96]; see also Final EIS Vol. II, BOEM_0068786 at -9201. As with the other concerns raised by Plaintiffs, the Record reflects that BOEM and NMFS did consider these issues, and that Plaintiffs' critiques amount to disagreements with the agencies' conclusions that cannot serve as a basis for determining the agency action is invalid.

7. 2021 BiOp and Final EIS: Cumulative Impacts

Plaintiffs claim that the 2021 BiOp did not consider all of the stressors of the construction and operation of the Project “synergistically,” and that, as a result the 2021 BiOp’s “no jeopardy” determination as to the right whales is flawed. Pls. Mem. 42 [Doc. No. 89].¹⁷ Similarly, they contend that the Final EIS did not look at the cumulative impacts of the Project on right whales, in conjunction with numerous other potential wind-farm projects, with the sufficiently “hard look” required under NEPA. Id. On both points, Plaintiffs rely on their arguments as to the flaws in NMFS’s analysis concerning vessel strikes, pile driving and operational noise, fishing entanglement risk, and loss of foraging habitats. Because Plaintiffs do not offer any new arguments regarding the “synergistic” impacts, Plaintiffs’ challenges to the 2021 BiOp and Final EIS’s consideration of cumulative impacts fail for the reasons previously discussed.

¹⁷ Plaintiffs also argue that the 2021 BiOp fails to adequately assess the right whales’ abundance and recovery goals. Pls. Mem. 42 [Doc. No. 89]; Pls. Opp. 57, 63 [Doc. No. 105]. As to recovery, the court agrees with Defendants that the Record reflects NMFS considered the right whales’ recovery goals in the context of the proposed action and that consideration is entitled to deference. See Fed. Defs. Reply. 43 [Doc. No. 114] (citing 2021 BiOp, NMFS 17528-32). As to abundance, the court likewise agrees that analysis is not necessary where Defendants do not anticipate the Project will affect species abundance because the take authorized is neither lethal nor anticipated to reduce right whale reproduction. See Fed. Defs. Reply. 42-43 [Doc. No. 114].

8. *2021 BiOp and Final EIS: Inadequate Description of Baseline Conditions*

Plaintiffs allege that, under the ESA and implementing regulations, the 2021 BiOp does not meet the minimum standards for describing baseline conditions because it fails to consider the currently degraded status of the right whale, underemphasizes the significance of the larger Rhode Island/Massachusetts Wind Energy Area as a habitat for foraging and otherwise, and fails to include the speed and size breakdown of vessels in the immediate area. Pls. Mem. 25-27 [Doc. No. 89]. Plaintiffs rely on their interpretation of Quintana-Rizzo in support. Defendants contend that NMFS did consider the appropriate environmental baseline where it relied on the best data available concerning the status of the right whale and included an analysis of the vessel traffic. Defendants further contend that Plaintiffs' challenges to the baseline conditions lack merit where they do not point to superior evidence that NMFS failed to consider. Fed. Defs. Opening Mem. 23 [Doc. No. 96] (citing Bays' Legal Fund v. Browner, 828 F. Supp. 102, 106 n.7 (D. Mass. 1993)). NMFS's consideration of the environmental baseline must include:

the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation process.

50 C.F.R. § 402.02.

Where Plaintiffs rely on the Quintana-Rizzo study that the court has already concluded Defendants considered in preparing the 2021 BiOp, Plaintiffs' challenge lacks merit. Plaintiffs have not raised any issues regarding the environmental baseline that Defendants "entirely failed to consider."

Plaintiffs contend that both the 2021 BiOp and the Final EIS contain an inadequate description of the baseline conditions because they omit the current PBR threshold for right whales. As discussed supra, because Plaintiffs have waived claims concerning specific

discussion of PBR, Plaintiffs have waived this claim. To the extent Plaintiffs challenge the 2021 BiOp and Final EIS as deficient because they fail to discuss the survival rate of the right whale, as discussed supra, Plaintiffs are incorrect. see 2021 BiOp, 2021 BiOp, BOEM_0077276 at -7628; see also Final EIS Vol I, BOEM_0068434 at -8573 (discussing, in the context of baseline conditions for a no-action alternative to the Project, the baseline conditions for right whales of reduced calving and increased entanglement as a “combination of factors [that] threatens the very survival of the species.”).

Defendants contend that, as to the Final EIS, NEPA does not require an assessment of the environmental baseline, but, in any event, the Final EIS does describe the baseline conditions for right whales. Fed. Defs. Opening Mem. 42-43 [Doc. No. 96]. Defendants point to discussion in the Final EIS concerning the “No Action Alternative and Affected Environment,” wherein BOEM addresses (i) seasonal foraging trends of right whales in the Action Area and New England waters, (ii) recent changes to right whale distribution and patterns, (iii) the risk posed to whales, especially right whales, by commercial fishing activities, (iv) increased mortality events from fishing-related entanglements and vessel strikes, and (v) reduced calving rates. Final EIS VOL I, BOEM_0068434 at -8571-8576; see also Fed. Defs. Opening Mem. 42-43 [Doc. No. 96]. Plaintiffs do not point to any statutory or regulatory requirement that Defendants consider the environmental baseline under NEPA,¹⁸ and, in any event, Defendants discuss the environmental

¹⁸ Neither of Plaintiffs’ cited cases stand for the proposition that NEPA requires an EIS set forth an environmental baseline. See Pls. Mem. 46 [Doc. No. 89]. Rather, American Rivers v. Fed. Energy Reg. Comm’n, 201 F.3d 1186 (9th Cir. 1999), addresses whether an environmental baseline is required in an EIS under the Federal Power Act and Half Moon Bay Fisherman’s Mktg Ass’n v. Carlucci, 857 F.2d 505 (9th Cir. 1988), is appropriately limited to the nature of the proposed action at issue. There, the court held that the agency must establish an environmental baseline for an ocean area under NEPA before considering how dumping a large volume of dredged materials would impact the area.

baseline for right whales in the Final EIS. BOEM's determination of what details are relevant to the environmental baseline contained in the Final EIS is entitled to deference.

Because Plaintiffs have not shown that either the 2021 BiOp or Final EIS contains an inadequate description of baseline conditions in violation of the ESA or NEPA, this challenge also fails.

VII. Conclusion

For the foregoing reasons, Plaintiffs have failed to demonstrate that NMFS or BOEM violated the Endangered Species Act or the National Environmental Policy Act in considering and issuing the 2021 Biological Opinion or the Final Environmental Impact Statement for the Vineyard Wind Project. Accordingly, Defendants and Vineyard Wind's Motions for Summary Judgment are GRANTED and Plaintiffs' Motion for Summary Judgment is DENIED.

IT IS SO ORDERED

May 17, 2023

/s/ Indira Talwani
United States District Judge

1 Steven P. Brendemuehl (Bar No. 553225)
2 Law Office of Steven P. Brendemuehl
3 5 Commonwealth Road ~ Suite 4A
4 Natick, MA 01760
5 Phone: (508) 651-1013
6 Fax: (508) 651-0508
7 Email: Steven@lawofficespb.com

8 Attorney for Plaintiffs,
9 ACK Residents Against Turbines,
10 and Vallorie Oliver

11 **UNITED STATES DISTRICT COURT**
12 **DISTRICT OF MASSACHUSETTS**

13 ACK RESIDENTS AGAINST)
14 TURBINES; and VALLORIE)
15 OLIVER,)

16 Plaintiffs,)

17 v.)

18 U.S. BUREAU OF OCEAN ENERGY)
19 MANAGEMENT; NATIONAL OCEANIC)
20 AND ATMOSPHERIC)
21 ADMINISTRATION; NATIONAL)
22 MARINE FISHERIES SERVICE; DEB)
23 HAALAND Secretary of the Interior; GINA)
24 M. RAIMONDO, Secretary of Commerce,)

25 Defendants,)
26)
27)
28)

Case No.

**COMPLAINT FOR DECLARATORY
AND INJUNCTIVE RELIEF UNDER
THE NATIONAL ENVIRONMENTAL
POLICY ACT (NEPA) AND THE
ENDANGERED SPECIES ACT (ESA)**

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

I. INTRODUCTION

1. This is an action for declaratory and injunctive relief challenging the failure of the Bureau of Ocean Energy Management (BOEM), an agency within the U.S. Department of the Interior, to comply with the National Environmental Policy Act (NEPA), 42. U.S.C. §§ 4321, *et seq.* and the Endangered Species Act (ESA), 16 U.S.C. § 1531, *et seq.*, when assessing, disclosing, and mitigating the environmental effects of its decision to approve the Vineyard Wind 1 offshore wind project (the “Vineyard Wind project”), proposed for construction off the southern coast of Nantucket, Massachusetts. Despite preparing an Environmental Impact Statement (EIS) and a Supplement to the EIS (SEIS), BOEM failed to take the requisite “hard look” at the Vineyard Wind project’s adverse impacts on whales and other marine mammals, fish, sea turtles, birds, air quality, greenhouse gas emissions, cultural resources, aesthetics, and other resource categories. BOEM’s two NEPA documents also failed to examine a legally adequate range of alternatives; failed to mitigate the project’s impacts; and grossly underreported the project’s cumulative effects.

2. For these reasons, alleged in greater detail below, BOEM failed to conduct an adequate environmental review of the Vineyard Wind project and failed to provide the public with the information required by NEPA.

3. In addition, Plaintiff’s challenge both BOEM and the National Oceanic and Atmospheric Administration/National Marine Fisheries (“NOAA/Fisheries”) for failing to ensure that the Vineyard Wind project would not jeopardize the survival of

1 federally-listed species, such as the North Atlantic Right Whale and to avoid
2 jeopardizing the continued existence of such federally-listed species. (16 U.S.C. §
3 1536.) Further, the Biological Opinion (“BiOp”) that NOAA/Fisheries prepared for
4 the Vineyard Wind project is analytically deficient and not supported by the best
5 available data. By approving the Vineyard Wind project, BOEM violated the
6 procedural and substantive requirements of the ESA. By issuing a defective BiOp,
7 NOAA/Fisheries also violated the procedural and substantive requirements of the
8 ESA. This action arises and alleges violations under the ESA (16 U.S.C. §§ 1531, *et*
9 *seq.*) and the Administrative Procedures Act (APA) (5 U.S.C. §§ 551, *et seq.*).
10
11
12

13 4. The North Atlantic Right Whale is perhaps the most iconic marine
14 animal on the eastern seaboard of the United States. It is also one of the most
15 imperiled species in the entire world, with fewer than 400 individuals known to exist
16 in the wild. Worse, the species is under constant threat from vessel strikes,
17 entanglement in fishing gear, and loss of food sources, resulting in high mortality and
18 low reproduction rates. In a word, the North Atlantic Right Whale is on the verge of
19 extinction. However, one of its longtime safe havens – where there is ample food and
20 protective areas for birthing and rearing young – is the area immediately south-
21 southwest of Nantucket Island. Unfortunately, this is the exact place that BOEM has
22 selected for purposes of constructing the largest offshore wind array ever assembled.
23 The Vineyard Wind project is one – but only one – of the offshore wind projects
24 proposed for this area. In the original Draft EIS, however, BOEM did not disclose
25
26
27
28

1 that Vineyard Wind was part of a much larger offshore wind program. It was not until
2 Plaintiffs and others criticized BOEM for failing to analyze Vineyard Wind in this
3 larger offshore wind development context, that BOEM agreed to prepare a
4 “supplement” to the Draft EIS that purported to address the Vineyard Wind project’s
5 *cumulative* impacts.
6

7
8 5. NOAA/Fisheries and BOEM also botched the analysis of Vineyard
9 Wind’s potential to jeopardize North Atlantic Right Whales and other federally-listed
10 sea animals, including three sea turtle species. Not only did the BiOp issued for the
11 project assume project parameters different from those ultimately discussed in the
12 Supplement to the EIS (the “SEIS”), the BiOp grossly underreported the likelihood of
13 vessel strikes against listed whale species, relied extensively on unproven and
14 unrealistic mitigation measures to reduce such vessel strikes, and failed to even assess
15 the negative impacts of the Project on whale echolocation, which is the primary
16 means by which whales communicate and navigate. BOEM and NOAA/Fisheries
17 also failed to take the steps required to ensure the survival of the affected listed
18 species and to facilitate their eventual recovery, as required by the ESA.
19
20
21

22
23 6. The North Atlantic Right Whale and the other listed species affected by
24 the Vineyard Wind project are irreplaceable parts of the fragile ecosystem that exists
25 off the coast of Massachusetts. By failing to comply with NEPA and the ESA, BOEM
26 and NOAA/Fisheries have put that ecosystem and the species within in it in grave
27
28

1 danger, perhaps even pushing at least one species – the North Atlantic Right Whale –
2 to the point of extinction.

3
4 7. In approving the Final EIS – which consists of the original Draft EIS
5 and the SEIS – BOEM also provided an inadequate analysis of the Vineyard Wind
6 project’s impacts on air quality, greenhouse gas (GHG) emissions, cultural resources,
7 aesthetics, growth, hazards, noise, and flight navigation and safety.

8
9 8. Therefore, Plaintiffs seek an order from the Court overturning BOEM’s
10 and NOAA/Fisheries’ unlawful management decisions and requiring these agencies
11 to comply with NEPA and the ESA.
12

13 II. JURISDICTION AND VENUE

14
15 9. The Court has jurisdiction over this action pursuant to 16 U.S.C. §
16 1540(g) (ESA); 28 U.S.C. §§ 1331 (federal questions), 1346 (United States as
17 defendant), 2201 (declaratory judgment), and 2202 (injunctive relief); and 5 U.S.C.
18 §§ 701 through 706 (APA).

19
20 10. Pursuant to 16 U.S.C. § 1540(g), On May 24, 2021, Plaintiffs sent a 60-
21 day notice of intent (NOI) to sue to NOAA/Fisheries and BOEM over their respective
22 failures to comply with the ESA when reviewing and approving the Vineyard Wind
23 project, including issuance of the Project’s BiOp, dated September 11, 2020. On July
24 24, 2021, NOAA/Fisheries responded to Plaintiff’s NOI, stating that BOEM had
25 requested re-consultation under ESA section 7 to address new data that might bear
26 upon Vineyard Wind’s impacts on listed species, including the North Atlantic Right
27
28

1 Whale. NOAA/Fisheries also indicated the re-consultation effort would result in a
2 new BiOp that would supersede the current BiOp, which was issued on September
3 11, 2020. However, NOAA/Fisheries gave no expected date for the new BiOp. In
4 addition, NOAA/Fisheries stated explicitly that the current BiOp would remain in
5 effect until the new BiOp was issued. As of the date of this filing, NOAA/Fisheries
6 has not issued a new BiOp. Thus, the BiOp issued on September 11, 2020 – which
7 was the subject of Plaintiffs’ NOI dated May 24, 2021 – remains in effect.
8
9

10 11. For all claims brought under the APA, Plaintiffs have exhausted all
11 administrative remedies available to them.
12

13 12. Venue is properly vested in this Court pursuant to 28 U.S.C. § 1391(e)
14 because Plaintiff ACK RATs is incorporated and based in Nantucket, Massachusetts,
15 and its members reside in Massachusetts. In addition, Plaintiff Vallorie Oliver
16 resides in Nantucket, Massachusetts. Finally, the Vineyard Wind project, which is
17 the subject of the federal actions challenged herein, is to be constructed and operated
18 in waters off the coast of Massachusetts and will cause environmental impacts in
19 Massachusetts.
20
21

22 **III. PARTIES**

23

24 13. Plaintiff ACK RATs (which stands for Nantucket Residents Against
25 Turbines) is a 501(c)(3) non-profit corporation established to protect the natural and
26 human resources that are threatened by BOEM’s massive offshore wind energy
27 program and its component elements, including the Vineyard Wind project. Members
28

1 of ACK RATs will be able to view the proposed wind farm from public and private
2 vantage points on Nantucket. In addition, ACK RATs members routinely travel on,
3 through, and over coastal waters that would be affected by the Vineyard Wind
4 project, including waters that support marine mammals and turtles listed as
5 endangered or threatened under the ESA. ACK RATs and its members have an
6 interest in protecting these species. ACK RATs and its members also have an interest
7 in protecting the cultural and historical heritage of this part of New England from the
8 impacts of the Vineyard Wind project. The failure of BOEM and NOAA/Fisheries to
9 comply with NEPA and the ESA will degrade the natural and human environment in
10 Nantucket, resulting in harm to ACK RATs and its members.
11
12
13

14 14. Plaintiff VALLORIE OLIVER is an individual who resides in Nantucket
15 and has done so her entire life. She travels on and through and makes use of the
16 waters around Nantucket. She considers it her responsibility to protect those waters
17 and all the plant and animal life within it. She also routinely visits the beaches long
18 Nantucket's southerly and westerly shores, where currently the vistas are
19 unobstructed. This will change once the Vineyard Wind project is constructed, as the
20 Project's wind turbines will be clearly visible from the Nantucket shoreline. The
21 proposed Vineyard Wind project – as well as BOEM's entire offshore wind program
22 – threatens the very resources that make Nantucket the unique place that Ms. Oliver
23 has chosen to call home. Ms. Oliver is also deeply committed to the historical
24 heritage of Nantucket, which the Vineyard Wind project is sure to damage. The
25
26
27
28

1 failure of BOEM and NOAA/Fisheries to comply with NEPA and the ESA will
2 degrade the natural and human environment in Nantucket, resulting in harm to Ms.
3 Oliver. Ms. Oliver is a founding member of ACK RATs.
4

5 15. Defendant UNITED STATES BUREAU OF OCEAN ENERGY
6 MANAGEMENT (“BOEM”) is an agency of the United States government within
7 and under the jurisdiction of the Department of the Interior. BOEM’s stated mission
8 “is to manage development of U.S. Outer Continental Shelf energy and mineral
9 resources in an environmentally and economically responsible way.” For purposes of
10 this action, BOEM is the federal agency that issues leases and permits for offshore
11 wind projects such as Vineyard Wind. BOEM is also responsible for ensuring that its
12 actions, including authorization of offshore wind projects, comply with NEPA and
13 the ESA. To this end, BOEM must prepare the requisite NEPA document (either an
14 Environmental Assessment (EA) or EIS) and must consult with NOAA/Fisheries
15 whenever any of its actions has the potential to jeopardize a listed species. Here,
16 BOEM prepared the Final EIS for the Vineyard Wind project; consulted with
17 NOAA/Fisheries regarding the project’s impacts on listed species; and approved the
18 project pursuant to a Record of Decision (ROD) issued on May 10, 2021. In addition,
19 BOEM must ensure that all projects it approves comply with the Outer Continental
20 Shelf Lands Act (43 U.S.C. §§ 1331, *et seq.*)
21
22
23
24
25

26 16. Defendant NOAA/FISHERIES is an agency of the United States
27 Government within and under the jurisdiction of the Department of Commerce.
28

1 According to its mission statement, NOAA/Fisheries “is responsible for the
2 stewardship of the nation’s ocean resources and their habitat.” In addition,
3 NOAA/Fisheries must use “sound science” and an “ecosystem-based” approach to
4 managing the nation’s ocean resources, a task which includes the “recovery and
5 conservation of protected resources” such as marine mammals and fish listed under
6 the ESA and Marine Mammal Protection Act. Among the species within the
7 regulatory and protective jurisdiction of NOAA/Fisheries are the whales (including
8 the North Atlantic Right Whale), sea turtles, and listed fish species that will be
9 adversely affected by the Vineyard Wind project. NOAA/Fisheries does not approve
10 offshore wind projects. Instead, pursuant to Section 7 of the ESA, NOAA/Fisheries
11 engages in consultation with BOEM to determine whether and to what extent a
12 proposed offshore wind project will jeopardize listed species within NOAA/Fisheries
13 jurisdiction or adversely modify their critical habitat. If it appears that a given project
14 has the potential to take or jeopardize a listed species or adversely modify its habitat,
15 NOAA/Fisheries must prepare a Biological Opinion (“BiOp”) setting forth its
16 analysis and identifying reasonable and prudent measures to avoid or minimize take
17 of listed species. If necessary, the BiOp must also include an authorization to take a
18 certain number of particular listed species. In this case, NOAA/Fisheries engaged in
19 consultation with BOEM over the potential impacts of the Vineyard Wind project on
20 listed species and, based on that consultation, prepared and issued a BiOp dated
21 September 11, 2020. Plaintiffs have been informed that BOEM and NOAA/Fisheries

1 have initiated re-consultation on the Vineyard Wind project but that the original BiOp
2 issued on September 11, 2020, remains in effect.
3

4 17. Defendant DEB HAALAND is the Secretary of the United States
5 Department of the Interior and, among other things, is charged with overseeing the
6 management of the nation's continental shelf lands and oceans, including those
7 affected by the Vineyard Wind project. In this regard, Secretary Haaland oversees
8 BOEM and is ultimately responsible for the decisions taken by BOEM. Further,
9 Secretary Haaland is responsible for ensuring that all agencies within the Department
10 of the Interior, including BOEM, comply with NEPA, the ESA, and the Outer
11 Continental Shelf Lands Act. In this action, Plaintiffs are suing Secretary Haaland in
12 her official capacity as Secretary of the Interior.
13
14
15

16 18. Defendant GINA RAIMONDO is the Secretary of the United States
17 Department of Commerce and, among other things, is charged with overseeing
18 commercial activities within the United States and abroad. Among the agencies
19 under Secretary Raimondo's supervision is NOAA/Fisheries. Thus, Secretary
20 Raimondo is responsible for ensuring that NOAA/Fisheries complies with the ESA.
21 In this action, Plaintiffs are suing Secretary Raimondo in her official capacity as
22 Secretary of Commerce.
23
24
25
26
27
28

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

IV. LEGAL BACKGROUND

A. The National Environmental Policy Act (NEPA)

19. The purpose of NEPA is to “promote efforts which will prevent or eliminate damage to the environment.” 42 U.S.C. § 4321. NEPA’s fundamental purposes are to guarantee that agencies take a “hard look” at the environmental consequences of their actions before such actions occur. To conduct a “hard look” the agency in question must (1) carefully consider detailed information regarding the action’s potentially significant environment effects, and (2) make relevant information available to the public so that it may play a role in both the decision-making process and the implementation of the decision itself. See, e.g., 42 U.S.C. § 4332(2)(C); 40 C.F.R. § 1500.1.

20. For any “major federal action” that “significantly affects” the “human environment,” NEPA requires the federal agency in question (here, BOEM) to prepare a detailed EIS that analyzes and discloses the action’s environmental consequences. 42 USC § 4332(c); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). If the agency does not conduct this analytical “hard look” prior to the point of commitment, the agency deprives itself of the ability to “foster excellent action.” See 40 CFR § 1500.1(c); *Marsh v. Oregon Nat. Resources Council*, 490 U.S. 360, 371 (1989).

1 21. Relatedly, NEPA requires that the EIS fully analyze all direct, indirect,
2 and cumulative impacts of a proposed federal action or project. 40 CFR § 1502.16.
3 Direct effects include those “which are caused by the action and occur at the same
4 time and place.” 40 CFR § 1508.8(a). Indirect effects include those “which are
5 caused by the action and are later in time or farther removed in distance, but are still
6 reasonably foreseeable.” 40 CFR § 1508(b). Indirect effects may also include
7 growth inducing impacts and other effects that prompt changes in land use patterns,
8 population density or growth rates, and related effects on air and water and other
9 natural systems, including ecosystems. *Ibid.* Cumulative impacts include those
10 which result from the incremental impact of the action when added to other past,
11 present, and reasonably foreseeable future actions regardless of what agency (Federal
12 or non-Federal) or person undertakes such other actions. Cumulative impacts can
13 result from individually minor but collectively significant actions taking place over
14 time. 40 CFR § 1508.7.

15 22. The EIS must provide a complete and accurate discussion of the
16 proposed project’s foreseeable environmental impacts, including those that cannot be
17 avoided. 5 USC § 706(2)(D); 40 CFR § 1502.22. However, when information is
18 incomplete or unavailable, the EIS must “always make clear that such information is
19 lacking.” 40 CFR § 1502.22. And if the missing information can be feasibly obtained
20 and is necessary for a “reasoned choice among alternatives,” the agency must include
21
22
23
24
25
26
27
28

1 the information in the EIS. *Ibid.* Where the cost of the data is too expensive to
2 secure, the agency must still attempt to analyze the impacts in question. *Ibid.*

3
4 23. The EIS must provide an accurate presentation of key facts and
5 environmental impacts, as this is “necessary to ensure a well-informed and reasoned
6 decision, both of which are procedural requirements under NEPA.” *Natural*
7
8 *Resources Defense Council v. U.S. Forest Serv.*, 421 F.3d 797, 812 (9th Cir. 2005).
9 An EIS that is incomplete or provides misleading information can “impair[] the
10 agency’s consideration of the adverse environmental effects and . . . skew . . . the
11 public’s evaluation of the proposed agency action.” *Id.*, at 811. For this reason,
12 erroneous factual assumptions and misrepresentations of important facts can fatally
13 undermine the information value of the EIS to the public and decision-makers. *Id.*, at
14
15 808.

16
17 24. In addition, if the EIS identifies a significant effect, the EIS must
18 propose and analyze “appropriate mitigation measures.” 40 CFR § 1502.14;
19
20 *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 352-53 [“omission of a
21 reasonably complete discussion of possible mitigation measures would undermine the
22 ‘action-forcing’ function of NEPA”]. Finally, the EIS must examine a reasonable
23 range of alternatives to the proposed action, and focus on those that reduce the
24 identified impacts of that action. 42 U.S.C. § 4332(2)(e); 40 CFR § 1502.1. So
25 important is the alternatives analysis that the Council on Environmental Quality
26
27 (CEQ) regulations describe it as the “heart” of the EIS. 40 CFR § 1502.14. These
28

1 same regulations require the agency to “[r]igorously explore and objectively evaluate
2 all reasonable alternatives.” 40 CFR § 1502.14(a).
3

4 **B. The Endangered Species Act**

5
6 25. *Listing of Species.* For purposes of marine species (including marine
7 mammals, pelagic fish, anadromous fish, and coral), the ESA requires the Secretary
8 of the Commerce to issue regulations listing species as endangered or threatened
9 based on the present or threatened destruction, modification, or curtailment of a
10 species’ habitat or range; overutilization for commercial, recreational, scientific, or
11 educational purposes; disease or predation; the inadequacy of existing regulatory
12 mechanisms; or other natural or manmade factors affecting the species’ continued
13 existence. 16 U.S.C. § 1533(a)(1). An endangered species is one “in danger of
14 extinction throughout all or a significant portion of its range.” 16 U.S.C. § 1532(a).
15 A threatened species is one that will become endangered if current circumstances
16 continue. The ESA requires the Secretary to make listing decisions “solely on the
17 basis of the best scientific and commercial data available.” 16 U.S.C. §
18 1533(b)(1)(A). Only if officially listed does a species receive the full protection of
19 the ESA. The ultimate goal of the ESA is to conserve and recover species so that
20 they no longer require the protections of the Act. 16 U.S.C. §§ 1533(b), 1532(3).
21 The Secretary has delegated the task of listing marine species under the ESA to
22 NOAA/Fisheries.
23
24
25
26
27
28

1 26. *Critical Habitat.* Concurrently with listing a marine species as
2 threatened or endangered, the Secretary of Commerce, must also designate the
3 species' "critical habitat". 16 U.S.C. § 1533(b)(2). "Critical habitat" is the area that
4 provides the physical and biological features essential to the conservation of the
5 species and which may require special protection or management. 16 U.S.C. §
6 1532(5)(A). The ESA requires the Secretary to make critical habitat designations and
7 amendments "on the best scientific data available." 16 U.S.C. § 1533(b)(2). The
8 ESA defines "conservation" to mean "the use of all methods and procedures which
9 are necessary to bring any endangered species or threatened species to the point at
10 which the measures provided pursuant to this Act are no longer necessary." 16
11 U.S.C. § 1532(3). This definition of "conservation" is broader than mere survival; it
12 also includes recovery of the species. *Id.* The Secretary has delegated the task of
13 designating critical habitat for listed marine species to NOAA/Fisheries.

14
15
16
17
18 27. *Recovery Plans.* Section 4(f) of the ESA requires the Secretary of
19 Commerce to develop and implement plans for the conservation and survival of
20 endangered and threatened marine species. Such plans are typically referred to as
21 "Recovery Plans". Recovery Plans must describe site-specific management actions
22 that may be necessary to achieve the conservation and survival of the species; set
23 forth objective, measurable criteria which, if met, would support a determination that
24 the species can be removed from the ESA list; estimate the time and cost necessary to
25
26
27
28

1 implement those measures needed to achieve the plan’s goals. 16 U.S.C. §
2 1533(f)(1).
3

4 28. *Duty to Conserve.* Federal agencies have an affirmative duty to promote
5 the conservation and recovery of threatened and endangered species. Section 2(c) of
6 the ESA provides that it is “the policy of Congress that all Federal departments and
7 agencies shall seek to conserve endangered species and threatened species and shall
8 utilize their authorities in furtherance of the purposes of the Act.” 16 U.S.C. §
9 1531(c)(1). Section 7(a) also establishes an affirmative duty to conserve listed
10 species. 16 U.S.C. § 1536(a)(1). The duty to conserve applies to the Secretary of the
11 Interior, the Secretary of Commerce, BOEM, and NOAA/Fisheries.
12
13

14 29. *Duty to Insure Survival and Recovery; Duty to Consult.* Section 7(a)
15 mandates that all federal agencies “insure that any action authorized, funded or
16 carried out by such agency . . . is not likely to jeopardize the continued existence of
17 any endangered or threatened species or result in the destruction or adverse
18 modification of habitat of such species . . . determined . . . to be critical” 16
19 U.S.C. § 1536(a)(2). To fulfill this mandate, the acting agency must prepare a
20 biological assessment to identify all endangered and threatened species likely to be
21 affected by the action. U.S.C. § 1536(c)(1). Where, as here, the affected species are
22 marine animals, the acting agency must consult with NOAA/Fisheries to determine
23 the extent of the impact to the species in question and identify measures to minimize
24 take.
25
26
27
28

1 30. *Biological Opinion.* Following consultation under Section 7(a)(2),
2 NOAA/Fisheries must prepare a Biological Opinion (BiOp) that determines whether
3 the proposed action is likely to jeopardize the continued existence of a listed marine
4 species or destroy or adversely modify a marine species' designated critical habitat.
5 The BiOp must summarize the information on which it is based and analyze how the
6 proposed action would affect listed species and their critical habitat. If the BiOp
7 concludes the action has the potential to jeopardize the species or adversely modify
8 its critical habitat, the BiOp must include an Incidental Take Statement which
9 specifies the impact of any incidental taking, provides reasonable and prudent
10 measures to minimize such impacts, and sets forth terms and conditions that must be
11 followed. 16 U.S.C. § 1536(b)(4). Where an agency action may affect a listed
12 species, the absence of a valid BiOp means that the acting agency (here, BOEM) has
13 not fulfilled its duty to insure through consultation with NOAA/Fisheries that its
14 actions will neither jeopardize a listed species nor destroy or adversely modify the
15 species' critical habitat.

16 31. The BiOp must evaluate the "cumulative effects on the listed species."
17 50 CFR § 402.14(g)(3). Cumulative effects include those of other federal actions, as
18 well as those of "future State or private activities, not involving Federal activities,
19 that are reasonably certain to occur within the action area of the Federal action
20 subject to consultation." 50 CFR § 402.02.

1 32. The BiOp must use the “best scientific and commercial data available.”
2 16 U.S.C. § 1536(a)(2); 50 CFR § 402.14(d). In addition, the BiOp must consider all
3 relevant evidence and factors, and articulate a rational connection between the facts
4 and its ultimate conclusions.
5

6 33. *Prohibition Against Unauthorized “Take”*. Section 9 of the ESA and its
7 implementing regulations prohibit any person from “taking” a threatened or
8 endangered species. 16 U.S.C. § 1538(a)(1); 50 CFR § 17.31. A “person” includes
9 private entities, such as the applicant for the Vineyard Wind project, as well as local,
10 state, and federal agencies. 16 U.S.C. § 1532(13). The ESA defines “take” broadly
11 to include harming, harassing, trapping, capturing, wounding, or killing a listed
12 species either directly or by degrading its habitat to such an extent that it impairs or
13 disrupts that species’ essential behaviors. 16 U.S.C. § 1532(19). However, there is
14 an exception to the Section 9 prohibition on take. A public agency or private party
15 may take listed species if they secure an Incidental Take Statement from either the
16 United States Fish and Wildlife Service (for take of terrestrial and freshwater species)
17 or NOAA/Fisheries (for take of marine and anadromous species). 16 U.S.C. §
18 1536(b)(4). So long as the permittee complies with the terms and conditions of the
19 Incidental Take Statement, no take violation of Section 9 will occur. 16 U.S.C. §
20 1536(o)(2).
21
22
23
24
25
26
27
28

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

V. FACTUAL BACKGROUND

A. Project Description

34. In December 2017, Vineyard Wind LLC (Vineyard Wind) submitted to BOEM a Construction and Operation Plan (COP) for an 800-megawatt wind energy facility on the Outer Continental Shelf (OCS) off the Massachusetts coast (the “Project”). The COP proposes installing up to 100 wind turbine generators and one or two offshore substations or electrical service platforms. The Project would be located approximately 14 miles southeast of Martha’s Vineyard and a similar distance southwest of Nantucket, within federal Lease Area OCS-A 0501. The turbines would be located in water depths ranging from 121 to 161 feet. According to the COP, the Project will include one export/transmission cable landfall near the town of Barnstable, Massachusetts. Staging and onshore construction of Project components will take place at the New Bedford Marine Commerce Terminal.

36. The Project will not operate as an isolated or individual offshore wind array, but rather will be part of a constellation of windfarms slated for installation on adjoining leaseholds – all of them located within 15 to 20 miles of Martha’s Vineyard and Nantucket. Specifically, the Vineyard Wind 1 leasehold (OCS-A 0501), which is the subject of this action, is immediately west of and adjacent to offshore wind Lease Area OCS-A 0520, which is adjacent to offshore wind Lease Area OCS-A 0521, which is adjacent to offshore wind Lease Area OCS-A 0522. The Vineyard Wind 1

1 leasehold is also immediately east and adjacent to offshore wind Lease Area OCS-A
2 500, which is within a mile of offshore wind Lease Area OCS-A 0487, which is
3 adjacent to offshore wind Lease Areas OCS-A 0517 and 0486. When taken together,
4 these eight (8) offshore wind Lease Areas will be home to more than 600 wind
5 turbines, all of them extending from the sea floor, through the water column, into the
6 sky. Each of these 600+ wind turbines will reach more than 650 feet above the
7 surface of the ocean and many will be visible from Nantucket and Martha's Vineyard.
8

9
10 **B. The Draft EIS**

11
12 37. As required by NEPA, BOEM prepared a Draft EIS for the Vineyard
13 Wind Project, and released it for public review and comment on December 7, 2018.
14 According to the Federal Register notice, the public comment period was to close on
15 January 22, 2019. The Draft EIS concluded that the Project would not have any
16 significant/major Project-related impacts on aesthetics, air quality/greenhouse gases
17 (GHGs), biological resources, cultural resources, or hazards.
18

19
20 38. By letter dated January 22, 2019, Plaintiffs submitted comments to
21 BOEM identifying deficiencies in the Draft EIS. These included the following:

- 22
- 23 • General
 - 24 ○ Inadequate explanation of the Project' "Purpose and Need"
 - 25 ○ No Analysis of the Project's growth inducing impacts
 - 26 ○ Inadequate range of alternatives
 - 27 ○ Inadequate cumulative impacts analysis
 - 28

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

- Inadequate and unsupported thresholds for determining impact significance

- Aesthetics

- Inadequate assessment of the Project’ impacts on views from Nantucket Island.

- No evidentiary support for Draft EIS conclusion that the Project’s aesthetic impacts would be “minor”.

- Air Quality and GHG Emissions

- Inadequate analysis and disclosure of Project’s construction-related emissions of pollutants subject to National Ambient Air Quality Standards (NAAQS).

- Inadequate analysis and disclosure of Project’s construction-related emissions of GHGs.

- Inadequate analysis of Project’s operational emissions.

- Biology

- Inadequate assessment of Project’s potential to cause loss of foraging habitat for migratory birds.

- Inadequate analysis of Project’s impacts on whale echolocation.

- Inadequate assessment of Project’s noise impacts on whale behavior.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

- Inadequate assessment of Project’s potential to cause vessel collisions with whales.
- Inadequate evidence to support Draft EIS conclusion that Project impacts on North Atlantic Right Whales will be “minor”.
- Indecipherable tables showing noise impacts on whales.
- Inadequate evidence to support Draft EIS claim that “soft start” construction activities will reduce project-related noise impacts on listed marine species.
- Inadequate analysis of Project’s operational noise impacts on whales and other marine mammals.
- Inadequate analysis of Project’s EMF (electromagnetic field) impacts on listed sea turtles.
- Inadequate assessment of Project impacts on soft seabed habitat.
- Inadequate assessment of Project’s operational impacts on birds, including three listed species.
- Failure to analyze and quantify magnitude of Project’s bird collision impacts.
- Draft EIS avian abundance maps lack key information and mislead the public.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

- Inadequate analysis of Project’s impacts on listed bat species.
- Inadequate analysis of Project’s impacts on water circulation, benthic morphology, and associated biological resources and processes.
- Inadequate mitigation for Project’s impacts on benthic resources.
- Inadequate and misleading analysis of Project’s impacts on invertebrate and fish habitat.
- Inadequate analysis of Project’s construction impacts on fish, such as winter flounder, American lobster, and monkfish.
- Failure to provide data from Essential Fish Habitat study.
- Underreporting of Project’s impact on flounder.
- Sound-Distance Noise table is indecipherable.
- Inadequate analysis of Project’s pile-driving impacts on fish.
- Failure to assess Project’s sub-lethal impacts on fish.
- Inadequate analysis of Project’s “decommissioning” noise impacts on marine species.
- Failure to assess whether and to what extent Project will use anti-fouling paint, which has adverse impacts on marine species.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

- Failure to analyze Project’s potential to increase local water temperature and thereby affect biotic resources.
- Failure to analyze impact of Project vessels discharging untreated waste and ballast water into area of potential effect (APE).
- Failure to analyze Project’s potential to introduce invasive species into the APE.

- Cultural Resources

- Draft EIS improperly defers analysis of Project’s impacts on cultural resources.
- Inadequate assessment of Project’s impacts on shipping and fishing heritage of Nantucket.

- Hazards

- No analysis of hazard impacts associated with oil stored and used in Project’s wind turbines.
- No analysis of Project’s potential hazard impacts to local watercraft.

39. On February 11, 2019, BOEM held a “town hall” meeting on Nantucket to describe the Vineyard Wind project and respond to questions from the public.

1 40. On February 22, 2019, Plaintiffs submitted a second letter to BOEM, in
2 response to the information presented at the February 11 town hall meeting. This
3 letter identified additional defects in the Draft EIS, including the following:
4

- 5 • Failure to adequately analyze Project-related hazards to commercial
6 fishing activities.
- 7
- 8 • Failure to adequately assess Project’s potential to damage lobster,
9 squid, and flounder fisheries.
- 10
- 11 • Inadequate and misleading simulations of Project’s visual impacts.
- 12
- 13 • Draft EIS’s cumulative impact analysis ignores wind power leases
14 adjacent or proximate to the Vineyard Wind 1 leasehold.
- 15
- 16 • Inadequate mitigation for potential impacts on North Atlantic Right
17 Whales.

18 **C. The Supplement to the Draft EIS**

19 41. In late 2019, BOEM announced that it would be preparing a Supplement
20 to the Draft EIS for purposes of analyzing the Project’s *cumulative* impacts within the
21 context of the other offshore wind projects whose leaseholds are adjacent to or near
22 that of Vineyard Wind 1.
23

24 42. On June 12, 2020, BOEM released the Supplement to the Draft EIS
25 (SEIS) for public review and comment.
26

27 43. By letter dated July 27, 2020, Plaintiffs submitted comments to BOEM
28 indicating that the SEIS had not addressed the deficiencies described in Plaintiffs’

1 prior comment letters regarding the Draft EIS. Plaintiffs’ July 27, 2020 letter also
2 identified additional defects in the SEIS’s alleged “cumulative” analysis of the
3 Project’s impacts. These included the following:
4

- 5 • Failure to explain the meaning of the terms “negligible”, “minor”,
6 “moderate”, and “major” with respect to Project-related impacts;
7 failure to explain how such terms were derived.
8
- 9 • Failure to analyze the Project’s impacts in conjunction with those
10 of the other offshore wind projects currently proposed for the
11 coast of New England.
12
- 13 • Failure to quantify the Project’s cumulative impacts.
14
- 15 • Failure to determine and explain whether the Project’s cumulative
16 impacts will have a significant effect on biological resources.
17
- 18 • Failure to explain or analytically account for the increase in
19 number of Project wind turbines to be installed.
20
- 21 • Inadequate description of benthic resources in the cumulative
22 Area of Potential Effect (APE).
23
- 24 • Inadequate analysis of Project’s cumulative impacts on fin fish.
25
- 26 • Inadequate analysis of Project’s cumulative impacts on marine
27 mammals, especially the North Atlantic Right Whale.
28
- Inadequate, piecemeal assessment of Project’s impacts on marine
species.

- 1 • Inadequate discussion of scientific literature relevant to impacts
2 on marine mammals, including North Atlantic Right Whales.
3
- 4 • Failure to account for GHG reduction benefits of whales and how
5 the Project and the other offshore wind projects, by causing whale
6 mortality, will cause those benefits to disappear.
7
- 8 • Inadequate analysis of Project’s cumulative impacts on birds.
- 9 • Failure to assess the fossil-fuel energy required to produce, install,
10 and operate Vineyard Wind 1 and the other offshore wind projects
11 contemplated under BOEM’s offshore wind energy program.
12
- 13 • Inadequate assessment of Project’s cumulative impacts on
14 aesthetics/visual resources, especially given that the size and
15 height of the wind turbines had increased since release of the Draft
16 EIS.
17
- 18 • Inadequate assessment of Project’s cumulative potential to release
19 invasive species into the APE through discharge of vessel ballast
20 water.
21
- 22 • Incomplete list of cumulative projects.
23

24 **D. The Vineyard Wind BiOp Issued By NOAA/Fisheries**

25 43. In 2019 and 2020, while it was preparing the SEIS, BOEM was engaged
26 in ESA section 7 consultations with NOAA/Fisheries regarding the Project’s potential
27 impacts on federally-listed threatened and endangered species.
28

1 44. The Section 7 consultation culminated in a BiOp, which
2 NOAA/Fisheries issued on September 11, 2020. The BiOp was not released to the
3 public for review or comment.
4

5 45. The BiOp concludes that the Project is not likely to jeopardize the
6 following listed species: fin whales, sei whales, sperm whales, blue whales, North
7 Atlantic Right Whales, loggerhead sea turtles, green sea turtles, Kemp’s ridley or
8 leatherback sea turtles, and Atlantic sturgeon.
9

10 46. The BiOp also concludes that the Project will/will not adversely modify
11 designated critical habitat for the North Atlantic Right Whale.
12

13 47. The BiOp includes an Incidental Take Statement through which BOEM
14 may authorize Vineyard Wind to take the following listed species: fin whales, sei
15 whales, sperm whales, North Atlantic Right Whales, loggerhead sea turtles, green sea
16 turtles, Kemp’s ridley, and leatherback sea turtles.
17

18 48. The BiOp was and remains legally deficient. By approving and issuing a
19 legally deficient BiOp for the Project, NOAA/Fisheries violated the procedural and
20 substantive mandates of the ESA.
21

22 49. On May 24, 2021, pursuant to the Citizen Suit provisions of the
23 Endangered Species Act, Plaintiffs submitted to NOAA/Fisheries a “60-Day Notice
24 of Intent to Sue,” setting forth in detail the various deficiencies in the September 11,
25 2020 BiOp that NOAA/Fisheries issued for the Vineyard Wind Project. The letter
26 concludes by stating that if NOAA/Fisheries does not correct the deficiencies therein
27
28

1 described, the Plaintiffs would file suit in federal court and request an order
2 invalidating the BiOp.

3
4 48. On July 23, 2021, counsel for Plaintiffs received an email from the legal
5 department at NOAA/Fisheries, stating that BOEM had requested re-consultation
6 under Section 7 of the ESA, and that such re-consultation would result in a new BiOp
7 for the Project. According to the email, the new BiOp, when issued, would supersede
8 the BiOp issued on September 11, 2020 (the “original/current BiOp”). The email
9 expressly stated, however, that the original/current BiOp would remain in full force
10 and effect until the new BiOp was issued, the timing for which was not provided. As
11 of the date of this complaint, the original/current BiOp – which is the subject of
12 Plaintiff’s 60-day Notice of Intent to Sue letter – is still in effect.

13
14
15
16 **E. Vineyard Wind’s Withdrawal and “Resubmittal” of Project**

17 49. On November 3, 2020, the United States presidential election was held.
18 In that election, Joseph Biden defeated Donald Trump, ushering in a change in
19 administration.

20
21 50. Plaintiffs are informed and believe, and on that basis allege, that
22 Vineyard Wind was concerned that the out-going Trump Administration would deny
23 its Project in whole or in part, prior to the inauguration of President-elect Biden.

24
25 51. On December 14, 2020, United States Solicitor Daniel H. Jorjani
26 submitted a legal memorandum to then-Secretary of the Interior, David Bernhardt,
27 stating that the offshore wind projects currently proposed for the Atlantic seaboard,
28

1 including Vineyard Wind, would unreasonably interfere with activities protected
2 under the Outer Continental Shelf Lands Act (OCSLA). 43 U.S.C. § 1337(p).
3
4 According to Mr. Jorjani’s memorandum, this unreasonable interference rendered the
5 offshore wind projects inconsistent and incompatible with the OCSLA.

6 52. Plaintiffs are informed and believe, and on that basis allege, that
7 Vineyard Wind learned of Mr. Jorjani’s memorandum and, fearing that its Project
8 would be denied, withdrew its Project and COP from further consideration by BOEM
9 on December 14, 2020.

10
11 53. On January 20, 2021, Joseph Biden was inaugurated as the 46th President
12 of the United States. On or about January 22, 2021, Vineyard Wind resubmitted its
13 Project. BOEM allowed the Vineyard Wind Project to proceed as if the Project had
14 not been withdrawn. Thus, no new NEPA or ESA documents were required or
15 prepared, and BOEM continued to process the Project under the pre-existing Draft
16 EIS, SEIS, and BiOp.
17
18

19
20 **F. The Final EIS and Record of Decision**

21 54. BOEM issued the Final EIS for the Vineyard Wind Project on March 12,
22 2021. It consisted of the Draft EIS and the SEIS, as well as related appendices. The
23 Final EIS did not mention any potential conflict between the Project and the OCSLA.
24

25 55. By letter dated April 7, 2021, Plaintiffs submitted comments to BOEM
26 identifying new and continuing deficiencies in the Final EIS.
27
28

1 avoided should the proposed action be implemented; (3) alternatives to the proposed
2 action; (4) the relationship between local short-term uses of the environment and the
3 maintenance and enhancement of long-term productivity; and (5) any irreversible and
4 irretrievable commitment of resources that would be involved in the action should it
5 be implemented. 42 U.S.C. § 4332(C). An EIS must “inform decision-makers and
6 the public of the reasonable alternatives which would avoid or minimize adverse
7 impacts or enhance the quality of the human environment.” 40 CFR § 1502.1.
8 NEPA also requires federal agencies, such as BOEM, to analyze the direct, indirect,
9 and cumulative impacts of the proposed action and to take a hard look at those
10 impacts. 40 CFR §§ 1508.7, 1508.8. In addition, NEPA requires federal agencies to
11 consider mitigation measures to minimize the environmental impacts of a proposed
12 action. 40 CFR § 1502.14 (alternatives and mitigation measures); 40 CFR § 1502.16
13 (environmental consequences and mitigation measures).

14
15
16
17
18 62. The ROD and Final EIS that BOEM prepared and approved for the
19 Vineyard Wind Project failed to comply with each of these NEPA requirements. The
20 Final EIS does not analyze an adequate range of alternatives; nor does it adequately
21 analyze the Project’s impacts on the human and natural environment, as discussed in
22 Plaintiffs’ comment letters to BOEM and as set forth in this Complaint. The Final
23 EIS also fails to consider mitigation measures capable of reducing the action’s
24 impacts on human and natural resources and relies on outdated, inaccurate,
25
26
27
28

1 incomplete, and inadequate information when assessing the impacts of the proposed
2 action.

3
4 63. For each of the reasons set forth above, BOEM’s adoption of the ROD
5 and Final EIS for the Vineyard Wind Project was arbitrary, capricious, and not in
6 accordance with law as required by NEPA, its implementing regulations, and the
7
8 APA.

9
10 **Second Claim for Relief**

11
12 **(Against NOAA/Fisheries for Issuing Legally Deficient BiOp)**

13 64. In issuing the September 11, 2020 BiOp for the Vineyard Wind Project
14 (GARFO-2019-00343), NOAA/Fisheries acted arbitrarily, capriciously, and
15
16 unlawfully because the conclusions set forth in the BiOp were not based on the best
17 available science, as required by the ESA. 16 U.S.C. § 1536(a)(2).

18 65. NOAA/Fisheries’ issuance of the BiOp was arbitrary, capricious, and
19
20 unlawful because the BiOp failed to adequately address the proposed action’s
21 individual and cumulative impacts on federally-listed species, including the North
22 Atlantic Right Whale, and relied on unproven, unsupported, and ineffective measures
23
24 to protect such species from take and other forms of harm.

25 66. NOAA/Fisheries’ issuance of the BiOp was arbitrary, capricious, and
26
27 unlawful because the BiOp included an Incidental Take Statement that underreported
28 and underestimated the number of individuals of each affected listed species that

1 would be taken by the proposed action. The Incidental Take Statement also failed to
2 include a complete or effective set of reasonable and prudent measures that would
3 minimize impacts, including taking, on the affected listed species. 16 U.S.C. §
4 1536(b)(4).
5

6 67. For each of the reasons set forth above, and the reasons described in
7 Plaintiffs' 60-Day Notice of Intent to Sue letter, NOAA/Fisheries' issuance of the
8 September 11, 2020 BiOp was arbitrary, capricious, and unlawful. 5 U.S.C. §§ 701-
9 706.
10

11 **Third Claim for Relief**

12 **(Against BOEM and NOAA/Fisheries for Violating the ESA** 13 **by Failing to Insure Against Jeopardy)** 14

15 68. BOEM and NOAA/Fisheries violated, and continue to violate, Section
16 7(a)(2) of the ESA and its implementing regulations by failing to ensure through
17 consultation that BOEM's approval of the proposed Vineyard Wind Project will not
18 jeopardize the North Atlantic Right Whale and other federally-listed species within
19 the APE.
20

21
22 69. BOEM is violating the ESA by carrying out the actions necessary to
23 implement the Vineyard Wind Project, despite the fact that the September 11, 2020
24 BiOp is legally defective and based on inadequate scientific data. NOAA/Fisheries
25 violated the ESA by authorizing BOEM to take the actions necessary to the
26 implementation of the Vineyard Wind Project – actions that will jeopardize the
27
28

1 federally-listed species within the APE. Such violations are subject to judicial review
2 pursuant to 16 U.S.C. § 1540(g).
3

4 **PRAYER FOR RELIEF**

5 WHEREFORE, Plaintiffs respectfully request that this Court:

6 (1) Adjudge and declare that Defendant BOEM’s approval of the ROD for
7 the Vineyard Wind Project, including its Final EIS, violates NEPA and its
8 implementing regulations;
9

10 (2) Adjudge and declare that Defendant NOAA/Fisheries September 11,
11 2020 BiOp for the Vineyard Wind Project (GARFO-2019-00343) was arbitrary,
12 capricious, and unlawful;
13

14 (3) Adjudge and declare that Defendant NOAA/Fisheries September 11,
15 2020 BiOp for the Vineyard Wind Project (GARFO-2019-00343) violates Section
16 7(a)(2) of the ESA because it concludes, with insufficient evidence, that BOEM’s
17 action (i.e., approval of the Vineyard Wind Project) will not jeopardize the North
18 Atlantic Right Whale or any other federally-listed species;
19

20 (4) Adjudge and declare that Defendant BOEM’s approval of the Vineyard
21 Wind Project violates Section 7(a)(2) of the ESA because BOEM has failed to insure
22 that its actions do not jeopardize the North Atlantic Right Whale and all other
23 federally-listed species potentially affected by the Project;
24

25 (5) Order Defendant NOAA/Fisheries to vacate and set aside the September
26 11, 2020 BiOp for the Vineyard Wind Project;
27
28

1 (6) Order Defendant BOEM to vacate and set aside the ROD for the
2 Vineyard Wind Project and its attendant Final EIS;

3
4 (7) Pending completion of an adequate BiOp for the Vineyard Wind Project,
5 enjoin Defendants BOEM and NOAA/Fisheries from issuing any permit, approval, or
6 other action within the Vineyard Wind APE or elsewhere that could adversely affect
7
8 federally-listed species;

9 (8) Pending completion of an adequate EIS for the Vineyard Wind Project,
10 enjoin Defendant BOEM from issuing any permit, approval, or other action that
11
12 might adversely affect the human or natural environment;

13 (9) Award Plaintiffs their fees, costs, expenses and disbursements, including
14 reasonable attorneys' fees as provided by the ESA, 16 U.S.C. § 1540(g)(4), or the
15
16 Equal Access to Justice Act, 28 U.S.C. § 2412; and

17 (10) Grant Plaintiffs such additional and further relief as the Court deems just
18
19 and proper.

20 The Plaintiffs,
21 ACK Residents Against Turbines
22 and Vallorie Oliver,
23 By Their Attorney,

24 /s/ Steven P. Brendemuehl
25 Steven P. Brendemuehl (BBO# 553225)
26 Law Office of Steven P. Brendemuehl
27 5 Commonwealth Road ~ Suite 4A
28 Natick, MA 01760
Phone: 508-651-1013
Fax: 508-651-0508
steven@lawofficespb.com

DATED: August 25, 2021

**UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS**

ACK RESIDENTS AGAINST TURBINES and
VALLORIE OLIVER,

Plaintiffs,

v.

U.S. BUREAU OF OCEAN ENERGY
MANAGEMENT; NATIONAL OCEANIC
AND ATMOSPHERIC ADMINISTRATION;
NATIONAL MARINE FISHERIES SERVICE;
DEB HAALAND, Secretary of the Interior;
GINA A. RAIMONDO, Secretary of Commerce,

Defendants,

and

VINEYARD WIND 1 LLC,

Intervenor-Defendant.

Case No. 1:21-CV-11390-IT

Hon. Indira Talwani

**FIRST AMENDED COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF
UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)
AND THE ENDANGERED SPECIES ACT (ESA)**

Steven P. Brendemuehl (BBO No. 553225)
Law Office of Steven P. Brendemuehl
5 Commonwealth Road ~ Suite 4A
Natick, MA 01760
Phone: (508) 651-1013
Fax: (508) 651-0508
Email: Steven@lawofficespb.com

David P. Hubbard, *Pro Hac Vice* (CA Bar No. 148660)
Gatzke Dillon & Ballance LLP
2762 Gateway Road
Carlsbad, CA 92009
Phone: (760) 431-9501
Fax: (760) 431-9512
Email: dhubbard@gdandb.com

Attorney for Plaintiffs,
ACK Residents Against Turbines and Vallorie Oliver

I. INTRODUCTION

1. This is an action for declaratory and injunctive relief that challenges the failure of the Bureau of Ocean Energy Management (BOEM), an agency within the U.S. Department of the Interior, to comply with the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321, *et seq.* and the Endangered Species Act (ESA), 16 U.S.C. § 1531, *et seq.*, when it approved the Vineyard Wind 1 offshore wind project (the “Vineyard Wind project”), which is construction off the southern coast of Nantucket, Massachusetts. Despite preparing an Environmental Impact Statement (EIS) and a Supplement to the EIS (SEIS), BOEM failed to take the requisite “hard look” at the Vineyard Wind project’s adverse impacts on whales and other marine mammals, fish, sea turtles, birds, air quality, greenhouse gas emissions, cultural resources, aesthetics, and other resource categories. BOEM’s two NEPA documents also failed to examine a legally adequate range of alternatives; failed to mitigate the project’s impacts; and grossly underreported the project’s cumulative effects.

2. For these reasons, alleged in greater detail below, BOEM failed to conduct an adequate environmental review of the Vineyard Wind project and failed to provide the public with the information required by NEPA.

3. In addition, Plaintiffs herein sue BOEM and the National Marine Fisheries Service (NMFS) for failing to ensure that the Vineyard Wind project would not jeopardize the survival of federally-listed species, including the North Atlantic right whale. (16 U.S.C. § 1536.) Further, the Biological Opinion (BiOp), dated October 18, 2021, that NMFS prepared for the Vineyard Wind project is analytically deficient and not supported by the best available data. By approving the Vineyard Wind project, BOEM violated the procedural and substantive requirements of the ESA. By issuing a defective BiOp, NMFS also violated the procedural and substantive requirements of

the ESA. This action arises and alleges violations under the ESA (16 U.S.C. §§ 1531, *et seq.*) and the Administrative Procedures Act (APA) (5 U.S.C. §§ 551, *et seq.*).

4. The North Atlantic right whale is perhaps the most iconic marine animal on the eastern seaboard of the United States. It is also one of the most imperiled species in the entire world, with fewer than 350 individuals known to exist in the wild. Worse, the species is under constant threat from vessel strikes, entanglement in fishing gear, loss of food sources and other human-caused threats, resulting in high mortality and low reproduction rates. In a word, the North Atlantic right whale is on the verge of extinction. However, one of its longtime safe havens – where there is ample food and protective areas for key stages of the whale’s life history – is the area immediately south-southwest of Nantucket Island. Unfortunately, this is the exact place that BOEM has selected for purposes of constructing the largest offshore wind array ever assembled. The Vineyard Wind project is one – but only one – of the offshore wind projects proposed for this area. In the original Draft EIS, however, BOEM did not disclose that Vineyard Wind was part of a much larger offshore wind program. It was not until Plaintiffs and others criticized BOEM for failing to analyze Vineyard Wind in this larger offshore wind development context, that BOEM agreed to prepare a “supplement” to the Draft EIS that purported to address the Vineyard Wind project’s *cumulative* impacts.

5. NMFS and BOEM also botched the analysis of Vineyard Wind’s potential to jeopardize North Atlantic right whales and other federally-listed sea animals, including four sea turtle species. For example, the BiOp grossly underreported the likelihood of vessel strikes against listed whale species, relied extensively on unproven and unrealistic mitigation measures to reduce such vessel strikes, and failed to even assess the negative impacts of the Project on whale navigation and communication. BOEM and NMFS also failed to take the steps required to ensure

the survival of the affected listed species and to facilitate their eventual recovery, as required by the ESA. In addition, the BiOp makes no attempt to assess the cumulative impacts of the Vineyard Wind project when combined with the impacts of other existing and foreseeable projects that have or will receive authorization from NMFS to take North Atlantic right whale and other listed species.

6. The North Atlantic Right Whale and the other listed species affected by the Vineyard Wind project are irreplaceable parts of the fragile ecosystem that exists off the coast of Massachusetts. By failing to comply with NEPA and the ESA, BOEM and NMFS have put that ecosystem and the species within in it in grave danger, perhaps even pushing at least one species – the North Atlantic right whale – to the point of extinction.

7. In approving the Final EIS – which consists of the original Draft EIS and the SEIS – BOEM also failed to adequately analyze the Vineyard Wind project’s impacts on air quality, greenhouse gas (GHG) emissions, cultural resources, aesthetics, growth, hazards, noise, and flight navigation and safety.

8. Therefore, Plaintiffs seek an order from the Court overturning BOEM’s and NMFS’s unlawful management decisions and requiring these agencies to comply with NEPA and the ESA.

II. JURISDICTION AND VENUE

9. The Court has jurisdiction over this action pursuant to 16 U.S.C. § 1540(g) (ESA); 28 U.S.C. §§ 1331 (federal questions), 1346 (United States as defendant), 2201 (declaratory judgment), and 2202 (injunctive relief); and 5 U.S.C. §§ 701 through 706 (APA).

10. Pursuant to 16 U.S.C. § 1540(g), on November 26, 2021, Plaintiffs sent a 60-day notice of intent (NOI) to sue to NMFS, BOEM, and other federal agencies over their respective

failures to comply with the ESA when they approved the Vineyard Wind project and its various federal entitlements, including the Project's BiOp, dated October 18, 2021. On November 29, 2021, Plaintiffs submitted to BOEM and NMFS a supplement to their 60-day NOI. As required by 16 U.S.C. § 1540(g), Plaintiffs have brought this action after the 60-day correction period.

11. For all claims brought under the APA, Plaintiffs have exhausted all administrative remedies available to them.

12. Venue is properly vested in this Court pursuant to 28 U.S.C. § 1391(e) because Plaintiff ACK RATs is incorporated and based in Nantucket, Massachusetts, and its members reside in Massachusetts. In addition, Plaintiff Vallorie Oliver resides in Nantucket, Massachusetts. Finally, the Vineyard Wind project, which is the subject of the federal actions challenged herein, is to be constructed and operated in waters off the coast of Massachusetts and will cause environmental impacts in Massachusetts.

III. PARTIES

13. Plaintiff ACK RATs (which stands for Nantucket Residents Against Turbines) is a 501(c)(3) non-profit corporation established to protect the natural and human resources that are threatened by BOEM's massive offshore wind energy program and its component elements, including the Vineyard Wind project. Members of ACK RATs will be able to view the proposed wind farm from public and private vantage points on Nantucket. In addition, ACK RATs members routinely travel on, through, and over coastal waters that would be affected by the Vineyard Wind project, including waters that support marine mammals and turtles listed as endangered or threatened under the ESA. ACK RATs and its members have an interest in protecting these species and, for this reason, ACK RATs itself is a member of the Save the Right Whale Coalition, a national organization dedicated to reducing threats to the North Atlantic right whale. ACK RATs

and its members also have an interest in protecting the cultural and historical heritage of this part of New England from the impacts of the Vineyard Wind project. The failure of BOEM and NMFS to comply with NEPA and the ESA will degrade the natural and human environment in Nantucket, resulting in harm to ACK RATs and its members.

14. Plaintiff VALLORIE OLIVER is an individual who resides in Nantucket and has done so her entire life. She travels on and through and makes use of the waters around Nantucket. She considers it her responsibility to protect those waters and all the plant and animal life within it, including the federally-endangered North Atlantic right whale. She also routinely visits the beaches along Nantucket's southerly and westerly shores, where currently the vistas are unobstructed. This will change once the Vineyard Wind project is constructed, as the Project's wind turbines will be clearly visible from the Nantucket shoreline. The proposed Vineyard Wind project – as well as BOEM's entire offshore wind program – threatens the very resources that make Nantucket the unique place that Ms. Oliver has chosen to call home. Ms. Oliver is also deeply committed to the historical heritage of Nantucket, which the Vineyard Wind project is sure to damage. The failure of BOEM and NMFS to comply with NEPA and the ESA will degrade the natural and human environment in Nantucket, resulting in harm to Ms. Oliver. Ms. Oliver is a founding member of ACK RATs.

15. Defendant UNITED STATES BUREAU OF OCEAN ENERGY MANAGEMENT (BOEM) is an agency of the United States government within and under the jurisdiction of the Department of the Interior. BOEM's stated mission "is to manage development of U.S. Outer Continental Shelf energy and mineral resources in an environmentally and economically responsible way." For purposes of this action, BOEM is the federal agency that issues leases and permits for offshore wind projects such as Vineyard Wind. BOEM is also responsible for ensuring

that its actions, including authorization of offshore wind projects, comply with NEPA and the ESA. To this end, BOEM must prepare the requisite NEPA document (either an Environmental Assessment (EA) or EIS) and must consult with NMFS whenever any of its actions has the potential to jeopardize a listed species. Here, BOEM prepared the Final EIS for the Vineyard Wind project; consulted with NMFS regarding the project's impacts on listed species; and approved the project pursuant to a Record of Decision (ROD) issued on May 10, 2021. In addition, BOEM must ensure that all projects it approves comply with the Outer Continental Shelf Lands Act (43 U.S.C. §§ 1331, *et seq.*)

16. Defendant NMFS is an agency of the United States Government within and under the jurisdiction of the Department of Commerce. According to its mission statement, NMFS “is responsible for the stewardship of the nation’s ocean resources and their habitat.” In addition, NMFS must use “sound science” and an “ecosystem-based” approach to managing the nation’s ocean resources, a task which includes the “recovery and conservation of protected resources” such as marine mammals and fish listed under the ESA and Marine Mammal Protection Act. Among the species within the regulatory and protective jurisdiction of NMFS are the various whales (including the North Atlantic right whale), sea turtles, and listed fish species that will be adversely affected by the Vineyard Wind project. NMFS does not approve offshore wind projects. Instead, pursuant to Section 7 of the ESA, NMFS engages in consultation with BOEM to determine whether and to what extent a proposed offshore wind project will jeopardize listed species within NMFS jurisdiction or adversely modify their critical habitat. If it appears that a given project has the potential to take or jeopardize a listed species or adversely modify its habitat, NMFS must prepare a Biological Opinion (BiOp) setting forth its analysis and identifying reasonable and prudent measures to avoid or minimize take of listed species. If necessary, the BiOp may also

include an authorization to take a certain number of particular listed species. In this case, NMFS engaged in consultation with BOEM over the potential impacts of the Vineyard Wind project on listed species and, based on that consultation, prepared and issued a BiOp dated October 18, 2021.

17. Defendant DEB HAALAND is the Secretary of the United States Department of the Interior and, among other things, is charged with overseeing the management of the nation's continental shelf lands and oceans, including those affected by the Vineyard Wind project. In this regard, Secretary Haaland oversees BOEM and is ultimately responsible for the decisions taken by BOEM. Further, Secretary Haaland is responsible for ensuring that all agencies within the Department of the Interior, including BOEM, comply with NEPA, the ESA, and the Outer Continental Shelf Lands Act. In this action, Plaintiffs are suing Secretary Haaland in her official capacity as Secretary of the Interior.

18. Defendant GINA RAIMONDO is the Secretary of the United States Department of Commerce and, among other things, is charged with overseeing commercial activities within the United States and abroad. Among the agencies under Secretary Raimondo's supervision is NMFS. Thus, Secretary Raimondo is responsible for ensuring that NMFS complies with the ESA. In this action, Plaintiffs are suing Secretary Raimondo in her official capacity as Secretary of Commerce.

IV. LEGAL BACKGROUND

A. The National Environmental Policy Act (NEPA)

19. The purpose of NEPA is to “promote efforts which will prevent or eliminate damage to the environment.” 42. U.S.C. § 4321. NEPA's fundamental purposes are to guarantee that agencies take a “hard look” at the environmental consequences of their actions before such actions occur. To conduct a “hard look” the agency in question must (1) carefully consider detailed information regarding the action's potentially significant environment effects, and (2) make

relevant information available to the public so that it may play a role in both the decision-making process and the implementation of the decision itself. See, e.g., 42 U.S.C. § 4332(2)(C); 40 C.F.R. § 1500.1.

20. For any “major federal action” that “significantly affects” the “human environment,” NEPA requires the federal agency in question (here, BOEM) to prepare a detailed EIS that analyzes and discloses the action’s environmental consequences. 42 USC § 4332(c); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). If the agency does not conduct this analytical “hard look” prior to the point of commitment, the agency deprives itself of the ability to “foster excellent action.” See 40 CFR § 1500.1(c); *Marsh v. Oregon Nat. Resources Council*, 490 U.S. 360, 371 (1989).

21. Relatedly, NEPA requires that the EIS fully analyze all direct, indirect, and cumulative impacts of a proposed federal action or project. 40 CFR § 1502.16. Direct effects include those “which are caused by the action and occur at the same time and place.” 40 CFR § 1508.8(a). Indirect effects include those “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” 40 CFR § 1508(b). Indirect effects may also include growth inducing impacts and other effects that prompt changes in land use patterns, population density or growth rates, and related effects on air and water and other natural systems, including ecosystems. *Ibid.* Cumulative impacts include those which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over time. 40 CFR § 1508.7.

22. The EIS must provide a complete and accurate discussion of the proposed project's foreseeable environmental impacts, including those that cannot be avoided. 5 USC § 706(2)(D); 40 CFR § 1502.22. However, when information is incomplete or unavailable, the EIS must "always make clear that such information is lacking." 40 CFR § 1502.22. And if the missing information can be feasibly obtained and is necessary for a "reasoned choice among alternatives," the agency must include the information in the EIS. *Ibid.* Where the cost of the data is too expensive to secure, the agency must still attempt to analyze the impacts in question. *Ibid.*

23. The EIS must provide an accurate presentation of key facts and environmental impacts, as this is "necessary to ensure a well-informed and reasoned decision, both of which are procedural requirements under NEPA." *Natural Resources Defense Council v. U.S. Forest Serv.*, 421 F.3d 797, 812 (9th Cir. 2005). An EIS that is incomplete or provides misleading information can "impair[] the agency's consideration of the adverse environmental effects and . . . skew . . . the public's evaluation of the proposed agency action." *Id.*, at 811. For this reason, erroneous factual assumptions and misrepresentations of important facts can fatally undermine the information value of the EIS to the public and decision-makers. *Id.*, at 808.

24. In addition, if the EIS identifies a significant effect, the EIS must propose and analyze "appropriate mitigation measures." 40 CFR § 1502.14; *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 352-53 ["omission of a reasonably complete discussion of possible mitigation measures would undermine the 'action-forcing' function of NEPA"]. Finally, the EIS must examine a reasonable range of alternatives to the proposed action, and focus on those that reduce the identified impacts of that action. 42 U.S.C. § 4332(2)(e); 40 CFR § 1502.1. So important is the alternatives analysis that the Council on Environmental Quality (CEQ) regulations describe it as the "heart" of the EIS. 40 CFR § 1502.14. These same regulations require the agency

to “[r]igorously explore and objectively evaluate all reasonable alternatives.” 40 CFR § 1502.14(a).

B. The Endangered Species Act

25. *Listing of Species.* For purposes of marine species (including marine mammals, pelagic fish, anadromous fish, and coral), the ESA requires the Secretary of the Commerce to issue regulations listing species as endangered or threatened based on the present or threatened destruction, modification, or curtailment of a species’ habitat or range; overutilization for commercial, recreational, scientific, or educational purposes; disease or predation; the inadequacy of existing regulatory mechanisms; or other natural or manmade factors affecting the species’ continued existence. 16 U.S.C. § 1533(a)(1). An endangered species is one “in danger of extinction throughout all or a significant portion of its range.” 16 U.S.C. § 1532(a). A threatened species is one that will become endangered if current circumstances continue. The ESA requires the Secretary to make listing decisions “solely on the basis of the best scientific and commercial data available.” 16 U.S.C. § 1533(b)(1)(A). Only if officially listed does a species receive the full protection of the ESA. The ultimate goal of the ESA is to conserve and recover species so that they no longer require the protections of the Act. 16 U.S.C. §§ 1533(b), 1532(3). The Secretary has delegated the task of listing marine species under the ESA to NMFS.

26. *Critical Habitat.* Concurrently with listing a marine species as threatened or endangered, the Secretary of Commerce, must also designate the species’ “critical habitat”. 16 U.S.C. § 1533(b)(2). “Critical habitat” is the area that provides the physical and biological features essential to the conservation of the species and which may require special protection or management. 16 U.S.C. § 1532(5)(A). The ESA requires the Secretary to make critical habitat designations and amendments “on the best scientific data available.” 16 U.S.C. § 1533(b)(2). The

ESA defines “conservation” to mean “the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary.” 16 U.S.C. § 1532(3). This definition of “conservation” is broader than mere survival; it also includes recovery of the species. *Id.* The Secretary has delegated the task of designating critical habitat for listed marine species to NMFS.

27. *Recovery Plans.* Section 4(f) of the ESA requires the Secretary of Commerce to develop and implement plans for the conservation and survival of endangered and threatened marine species. Such plans are typically referred to as “Recovery Plans”. Recovery Plans must describe site-specific management actions that may be necessary to achieve the conservation and survival of the species; set forth objective, measurable criteria which, if met, would support a determination that the species can be removed from the ESA list; estimate the time and cost necessary to implement those measures needed to achieve the plan’s goals. 16 U.S.C. § 1533(f)(1).

28. *Duty to Conserve.* Federal agencies have an affirmative duty to promote the conservation and recovery of threatened and endangered species. Section 2(c) of the ESA provides that it is “the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of the Act.” 16 U.S.C. § 1531(c)(1). Section 7(a) also establishes an affirmative duty to conserve listed species. 16 U.S.C. § 1536(a)(1). The duty to conserve applies to the Secretary of the Interior, the Secretary of Commerce, BOEM, and NMFS.

29. *Duty to Insure Survival and Recovery; Duty to Consult.* Section 7(a) mandates that all federal agencies “insure that any action authorized, funded or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat of such species . . . determined . . . to be critical

...” 16 U.S.C. § 1536(a)(2). To fulfill this mandate, the acting agency must prepare a biological assessment to identify all endangered and threatened species likely to be affected by the action. U.S.C. § 1536(c)(1). Where, as here, the affected species are marine animals, the acting agency must consult with NMFS to determine the extent of the impact to the species in question and identify measures to minimize take.

30. *Biological Opinion.* Following consultation under Section 7(a)(2), NMFS must prepare a Biological Opinion (BiOp) that determines whether the proposed action is likely to jeopardize the continued existence of a listed marine species or destroy or adversely modify a marine species’ designated critical habitat. The BiOp must summarize the information on which it is based and analyze how the proposed action would affect listed species and their critical habitat. If the BiOp concludes the action has the potential to jeopardize the species or adversely modify its critical habitat, the BiOp must include an Incidental Take Statement which specifies the impact of any incidental taking, provides reasonable and prudent measures to minimize such impacts, and sets forth terms and conditions that must be followed. 16 U.S.C. § 1536(b)(4). Where an agency action may affect a listed species, the absence of a valid BiOp means that the acting agency (here, BOEM) has not fulfilled its duty to insure through consultation with NMFS that its actions will neither jeopardize a listed species nor destroy or adversely modify the species’ critical habitat.

31. The BiOp must evaluate the “cumulative effects on the listed species.” 50 CFR § 402.14(g)(3). Cumulative effects include those of other federal actions, as well as those of “future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.” 50 CFR § 402.02.

32. The BiOp must use the “best scientific and commercial data available.” 16 U.S.C. § 1536(a)(2); 50 CFR § 402.14(d). In addition, the BiOp must consider all relevant evidence and factors, and articulate a rational connection between the facts and its ultimate conclusions.

33. *Prohibition Against Unauthorized “Take”*. Section 9 of the ESA and its implementing regulations prohibit any person from “taking” a threatened or endangered species. 16 U.S.C. § 1538(a)(1); 50 CFR § 17.31. A “person” includes private entities, such as the applicant for the Vineyard Wind project, as well as local, state, and federal agencies. 16 U.S.C. § 1532(13). The ESA defines “take” broadly to include harming, harassing, trapping, capturing, wounding, or killing a listed species either directly or by degrading its habitat to such an extent that it impairs or disrupts that species’ essential behaviors. 16 U.S.C. § 1532(19). However, there is an exception to the Section 9 prohibition on take. A public agency or private party may take listed species if they secure an Incidental Take Statement from either the United States Fish and Wildlife Service (for take of terrestrial and freshwater species) or NMFS (for take of marine and anadromous species). 16 U.S.C. § 1536(b)(4). So long as the permittee complies with the terms and conditions of the Incidental Take Statement, no take violation of Section 9 will occur. 16 U.S.C. § 1536(o)(2).

V. FACTUAL BACKGROUND

A. Project Description

34. In December 2017, Vineyard Wind LLC (Vineyard Wind) submitted to BOEM a Construction and Operation Plan (COP) for an 800-megawatt wind energy facility off the Massachusetts coast (the “Project”). The COP proposes installing up to 100 wind turbine generators and one or two offshore substations or electrical service platforms. The Project would be located approximately 14 miles southeast of Martha’s Vineyard and a similar distance southwest of Nantucket, within federal Lease Area OCS-A 0501. The turbines would be located

in water depths ranging from 121 to 161 feet. According to the COP, the Project will include one export/transmission cable landfall near the town of Barnstable, Massachusetts. Staging and onshore construction of Project components will take place at the New Bedford Marine Commerce Terminal.

35. The Project will not operate as an isolated or individual offshore wind array, but will be part of a constellation of windfarms slated for installation on adjoining leaseholds – all of them located within 15 to 20 miles of Martha’s Vineyard and Nantucket. Specifically, the Vineyard Wind 1 leasehold (OCS-A 0501), which is the subject of this action, is immediately west of and adjacent to offshore wind Lease Area OCS-A 0520, which is adjacent to offshore wind Lease Area OCS-A 0521, which is adjacent to offshore wind Lease Area OCS-A 0522. The Vineyard Wind 1 leasehold is also immediately east and adjacent to offshore wind Lease Area OCS-A 500, which is within a mile of offshore wind Lease Area OCS-A 0487, which is adjacent to offshore wind Lease Areas OCS-A 0517 and 0486. When taken together, these eight (8) offshore wind Lease Areas will be home to more than 600 wind turbines, all of them extending from the sea floor, through the water column, into the sky. Each of these 600+ wind turbines will reach more than 650 feet above the surface of the ocean and many will be visible from Nantucket and Martha’s Vineyard.

B. The Draft EIS

36. As required by NEPA, BOEM prepared a Draft EIS for the Vineyard Wind Project, and released it for public review and comment on December 7, 2018. According to the Federal Register notice, the public comment period was to close on January 22, 2019. The Draft EIS concluded that the Project would not have any significant/major Project-related impacts on

aesthetics, air quality/greenhouse gases (GHGs), biological resources, cultural resources, or hazards.

37. By letter dated January 22, 2019, Plaintiffs submitted comments to BOEM identifying deficiencies in the Draft EIS. These included, but were not limited to, the following:

- General
 - Inadequate explanation of the Project’ “Purpose and Need”
 - No Analysis of the Project’s growth inducing impacts
 - Inadequate range of alternatives
 - Inadequate cumulative impacts analysis
 - Inadequate and unsupported thresholds for determining impact significance
- Aesthetics
 - Inadequate assessment of the Project’ impacts on views from Nantucket Island.
 - No evidentiary support for Draft EIS conclusion that the Project’s aesthetic impacts would be “minor”.
- Air Quality and GHG Emissions
 - Inadequate analysis and disclosure of Project’s construction-related emissions of pollutants subject to National Ambient Air Quality Standards (NAAQS).
 - Inadequate analysis and disclosure of Project’s construction-related emissions of GHGs.

- Inadequate analysis of Project’s operational air quality and GHG emissions.
- Inadequate analysis of Project’s cumulative emissions.
- Biology
 - Inadequate assessment of Project’s potential to cause loss of foraging habitat for migratory birds.
 - Inadequate analysis of Project’s impacts on whale communication and navigation.
 - Inadequate assessment of Project’s noise impacts on whale behavior.
 - Inadequate assessment of Project’s potential to cause vessel collisions with whales.
 - Inadequate evidence to support Draft EIS conclusion that Project impacts on North Atlantic right whales will be “minor”.
 - Indecipherable tables showing noise impacts on whales.
 - Inadequate evidence to support Draft EIS claim that “soft start” construction activities will reduce project-related noise impacts on listed marine species.
 - Inadequate analysis of Project’s operational noise impacts on whales and other marine mammals.
 - Inadequate analysis of Project’s EMF (electromagnetic field) impacts on listed sea turtles.
 - Inadequate assessment of Project impacts on soft seabed habitat.

- Inadequate assessment of Project’s operational impacts on birds, including three listed species.
- Failure to analyze and quantify magnitude of Project’s bird collision impacts.
- Draft EIS avian abundance maps lack key information and mislead the public.
- Inadequate analysis of Project’s impacts on listed bat species.
- Inadequate analysis of Project’s impacts on water circulation, benthic morphology, and associated biological resources and processes.
- Inadequate mitigation for Project’s impacts on benthic resources.
- Inadequate and misleading analysis of Project’s impacts on invertebrate and fish habitat.
- Inadequate analysis of Project’s construction impacts on fish, such as winter flounder, American lobster, and monkfish.
- Failure to provide data from Essential Fish Habitat study.
- Underreporting of Project’s impact on flounder.
- Sound-Distance Noise table is indecipherable.
- Inadequate analysis of Project’s pile-driving impacts on fish.
- Failure to assess Project’s sub-lethal impacts on fish.
- Inadequate analysis of Project’s “decommissioning” noise impacts on marine species.
- Failure to assess whether and to what extent Project will use anti-fouling paint, which has adverse impacts on marine species.

- Failure to analyze Project’s potential to increase local water temperature and thereby affect biotic resources.
- Failure to analyze impact of Project vessels discharging untreated waste and ballast water into area of potential effect (APE).
- Failure to analyze Project’s potential to introduce invasive species into the APE.
- Cultural Resources
 - Draft EIS improperly defers analysis of Project’s impacts on cultural resources.
 - Inadequate assessment of Project’s impacts on shipping and fishing heritage of Nantucket.
- Hazards
 - No analysis of hazard impacts associated with oil stored and used in Project’s wind turbines.
 - No analysis of Project’s potential hazard impacts to local watercraft.

38. On February 11, 2019, BOEM held a “town hall” meeting on Nantucket to describe the Vineyard Wind project and respond to questions from the public.

39. On February 22, 2019, Plaintiffs submitted a second letter to BOEM, in response to the information presented at the February 11 town hall meeting. This letter identified additional defects in the Draft EIS, including the following:

- Failure to adequately analyze Project-related hazards to commercial fishing activities.

- Failure to adequately assess Project’s potential to damage lobster, squid, and flounder fisheries.
- Inadequate and misleading simulations of Project’s visual impacts.
- Draft EIS’s cumulative impact analysis ignores wind power leases adjacent or proximate to the Vineyard Wind 1 leasehold.
- Inadequate mitigation for potential impacts on North Atlantic right whales.

C. The Supplement to the Draft EIS

40. In late 2019, BOEM announced that it would be preparing a Supplement to the Draft EIS for purposes of analyzing the Project’s *cumulative* impacts within the context of the other offshore wind projects whose leaseholds are adjacent to or near that of Vineyard Wind 1.

41. On June 12, 2020, BOEM released the Supplement to the Draft EIS (SEIS) for public review and comment.

42. By letter dated July 27, 2020, Plaintiffs submitted comments to BOEM indicating that the SEIS had not addressed the deficiencies described in Plaintiffs’ prior comment letters regarding the Draft EIS. Plaintiffs’ July 27, 2020 letter also identified additional defects in the SEIS’s alleged “cumulative” analysis of the Project’s impacts. These included the following:

- Failure to explain the meaning of the terms “negligible”, “minor”, “moderate”, and “major” with respect to Project-related impacts; failure to explain how such terms were derived.
- Failure to analyze the Project’s impacts in conjunction with those of the other offshore wind projects currently proposed for the coast of New England.
- Failure to quantify the Project’s cumulative impacts.

- Failure to determine and explain whether the Project's cumulative impacts will have a significant effect on biological resources.
- Failure to explain or analytically account for the increase in number of Project wind turbines to be installed.
- Inadequate description of benthic resources in the cumulative Area of Potential Effect (APE).
- Inadequate analysis of Project's cumulative impacts on fin fish.
- Inadequate analysis of Project's cumulative impacts on marine mammals, especially the North Atlantic right whale.
- Inadequate, piecemeal assessment of Project's impacts on marine species.
- Inadequate discussion of scientific literature relevant to impacts on marine mammals, including North Atlantic right whales.
- Failure to account for GHG reduction benefits of whales and how the Project and the other offshore wind projects, by causing whale mortality, will cause those benefits to disappear.
- Inadequate analysis of Project's cumulative impacts on birds.
- Failure to assess the fossil-fuel energy required to produce, install, and operate Vineyard Wind 1 and the other offshore wind projects contemplated under BOEM's offshore wind energy program.
- Inadequate assessment of Project's cumulative impacts on aesthetics/visual resources, especially given that the size and height of the wind turbines had increased since release of the Draft EIS.

- Inadequate assessment of Project’s cumulative potential to release invasive species into the APE through discharge of vessel ballast water.
- Incomplete list of cumulative projects.

D. The Final EIS

43. BOEM issued the Final EIS for the Vineyard Wind Project on March 12, 2021. It consisted of the Draft EIS and the SEIS, as well as related appendices. The Final EIS did not mention any potential conflict between the Project and the OCSLA.

44. By letter dated April 7, 2021, Plaintiffs submitted comments to BOEM identifying new and continuing deficiencies in the Final EIS. One such comment criticized the Final EIS for failing to provide information regarding the number of full-time employment (FTE) positions that Vineyard Wind and the other proposed wind energy projects will generate. This information is critical for determining the project’s secondary impacts from both a project-specific and a cumulative perspective. The economic growth and employment opportunities promised by Vineyard Wind and the other wind energy leaseholders come with their own impacts, not the least of which are mobile emissions. Such emissions not only generate criteria air pollutants regulated under the federal Clean Air Act, they also generate greenhouse gases (GHGs) – the very thing the offshore wind projects are supposed to help reduce. The available data indicate that the Vineyard Wind project and the other proposed wind energy facilities will require employee-related automobile trips that greatly exceed the number of cars these projects will allegedly “pull off the road”. Ultimately, then, the offshore wind projects will result in a net increase in GHG emissions, despite promises to the contrary. This impact was not adequately analyzed and disclosed in the Final FEIS.

E. The First Vineyard Wind BiOp (Issued September 11, 2020)

45. In 2019 and 2020, while it was preparing the SEIS, BOEM was engaged in ESA section 7 consultations with NMFS regarding the Project's potential impacts on federally-listed threatened and endangered species.

46. The Section 7 consultation culminated in a BiOp, which NMFS issued on September 11, 2020. The September 11, 2020 BiOp was not released to the public for review or comment.

47. The September 11, 2020 BiOp concluded that the Project was not likely to jeopardize the following listed species: fin whale, sei whale, sperm whale, blue whale, North Atlantic right whale, loggerhead sea turtle, green sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, and Atlantic sturgeon.

48. The September 11, 2020 BiOp also concluded that the Project would not adversely modify designated critical habitat for the North Atlantic right whale.

49. The September 11, 2020 BiOp included an Incidental Take Statement through which BOEM may authorize Vineyard Wind to take the following listed species: fin whales, sei whales, sperm whales, North Atlantic Right Whales, loggerhead sea turtles, green sea turtles, Kemp's ridley sea turtles, and leatherback sea turtles.

50. The September 11, 2020 BiOp was and remains legally deficient. Nevertheless, BOEM relied on it when it approved the ROD for the Vineyard Wind project on May 10, 2021. By approving and issuing a legally deficient BiOp for the Project, NMFS violated the procedural and substantive mandates of the ESA. By relying on a deficient BiOp when issuing the project's ROD, BOEM violated both the ESA, NEPA, and the APA.

51. On May 24, 2021, pursuant to the Citizen Suit provisions of the Endangered Species Act, Plaintiffs submitted to NMFS a “60-Day Notice of Intent to Sue” (NOI), setting forth in detail the various deficiencies in the September 11, 2020 BiOp. The NOI stated that if NMFS did not correct the deficiencies therein described, the Plaintiffs would file suit in federal court and request an order invalidating the BiOp.

52. On July 23, 2021, counsel for Plaintiffs received an email from the legal department at NMFS, stating that BOEM had requested re-consultation under Section 7 of the ESA, and that such re-consultation would result in a new BiOp for the Project. According to the email, the new BiOp, when issued, would supersede the September 11, 2020 BiOp.

F. The Second Vineyard Wind BiOp (Issued October 18, 2021)

53. On October 18, 2021, NMFS issued a second BiOp for the Vineyard Wind project. This BiOp superseded and replaced the September 11, 2020 BiOp. Although BOEM’s ROD for the project was issued on May 10, 2021 and was based, in part, on the analysis set forth in the September 11, 2020 BiOp, BOEM did not rescind, update, and/or reissue the project’s ROD when the September 11, 2020 BiOp was superseded by the October 18, 2021 BiOp. In other words, the ROD remains tethered to the old BiOp, not the new one.

54. On November 26, 2021, plaintiffs submitted to NMFS a 60-day Notice of Intent to Sue letter (NOI letter) identifying and describing numerous deficiencies in the October 18, 2021 BiOp. These included the following:

- The BiOp is unclear as to the number and size of the wind turbine generators (WTGs) Vineyard Wind intends to install. It is critical that this information be stable and reliable, because when the number of WTGs goes down, the size of the WTGs goes up. And the larger the WTG, the more pile driving it requires. The

BiOp does not analyze whether the switch from fewer but larger WTGs will alter, one way or the other, the amount and intensity of pile driving in the Project Area.

- The BiOp never provides the number of estimated vessel miles traveled, which is the only meaningful metric when determining vessel strike risks on North Atlantic right whales and other marine animals, such as the federally-listed Atlantic sturgeon and the four federally-listed sea turtles identified in the BiOp. It is not enough to disclose the number of vessel trips; it is the *length* of those trips that determines whether and to what extent the vessels pose a risk to federally-listed whales, fish, and turtles.
- The BiOp cites no evidence for the claim that each monopile will require only 3 hours of pile driving. This is a critical omission, given that the BiOp’s “no jeopardy” finding and take authorization determinations rely on Vineyard Wind’s assertion that no more than 3 hours of pile driving will occur with respect to each monopile.
- The BiOp indicates that some of the monopiles may be installed via vibratory driving as opposed to impact driving. Yet, the BiOp does not analyze the effects of this pile driving method on North Atlantic right whales or the other federally-listed species known to reside in or use the Project Area.
- The BiOp does not clearly or adequately disclose how many vessel trips and vessel miles will be required to lay the cables that (1) connect the WTGs together and (2) connect the Project’s wind array to onshore transfer facilities. As a result, the BiOp

underreports and/or under-analyzes the impacts of vessel strikes on North Atlantic right whales and other federally-listed species.

- The BiOp admits that procurement for offshore installation activities will require vessel trips from a variety of mainland ports. However, the BiOp also admits that the ports of origin are currently unknown. This makes it impossible to calculate the number of vessel miles that will be traveled to and from the project site for purposes of WTG installation. Without this information, it is likewise impossible to determine the vessel strike risk to North Atlantic right whales and other federally-listed species.
- The vessel miles traveled issue is especially important in scenarios where procurement ships will be traveling from ports in Canada (e.g., Sheets Port, St. John, and Halifax), as these ports are more than 400 miles from the WTG installation site. Moreover, ships from these ports will travel through seas known to be used by the North Atlantic right whale and other federally-listed species. In failing to account for the vessel miles traveled by ships transiting between the project installation site and Canadian ports, the BiOp underreports the vessel strike risks to North Atlantic right whales, Atlantic sturgeon, and federally-listed sea turtles.
- The BiOp's "No Jeopardy" determination as to project impacts on North Atlantic right whales is based on the successful implementation of various "detect and avoid" measures. These measures, however, are so diluted by exceptions, qualifications, and loopholes as to be functionally meaningless. Thus, they cannot

be used to support any “take” or “no jeopardy” determination. In issuing a BiOp that does not protect North Atlantic right whales from jeopardy, NOAA Fisheries has violated Section 7 of the ESA. 16 U.S.C. § 1536(a)(2).

- The BiOp is inconsistent and unclear as to when project-related vessels must travel at speeds less than 10 knots. The BiOp refers to so many overlapping exceptions and qualifications to the 10-knot speed limit that one has no idea what rule will be enforced under any given circumstance. Strict compliance and enforcement of the 10-knot vessel speed limit is imperative to reducing vessel strikes on North Atlantic right whales, Atlantic sturgeon, and federally-listed sea turtles. Reduced vessel speeds would also minimize harm to these species (including mortality) if vessel strikes occur.
- The BiOp indicates that Vineyard Wind will engage in “soft start” pile driving consisting of three single hammer strikes at 40 percent hammer energy, followed by at least a one-minute delay before full energy hammer strikes begin. Although the BiOp does not discuss the purpose of the “soft start” procedure, it is clearly being proposed as a means of “warning” whales and other federally-listed species and encouraging them to leave the action area. Consequently, the “soft start” functions as a form of active, purposeful harassment/hazing that is not incidental to the action in question (i.e., construction and operation of offshore wind farms.) Such purposeful harassment/hazing is a “take” not authorized under the ESA.
- The BiOp’s “take” determinations and “no jeopardy” finding vis-à-vis North Atlantic right whales are based, in part, on the implementation of “seasonal”

protections for the species. The BiOp acknowledges, however, that North Atlantic right whales are present in the project action area year-round. Thus, the proposed seasonal protections will not adequately safeguard the resident/non-migratory population of whales. For this reason, the BiOp fails to provide an adequate take analysis and further fails to protect right whales from jeopardy.

- The BiOp’s “take” and “no jeopardy” determinations rely heavily on the ability of vessel-based Protected Species Observers (PSOs) to visually scan the ocean surface and detect North Atlantic right whales at distances sufficient to allow the vessel to alter course and avoid a collision. The BiOp also relies on PSOs to locate whales that might enter the project impact area during pile driving. There is no evidence, however, that PSOs are effective at detecting North Atlantic right whales under these conditions or for these purposes. First, the BiOp only requires two PSOs to be on watch at any given time. Second, the Project Area, as defined in the BiOp, is huge and cannot be surveilled by two PSOs at a time. Third, PSOs cannot see whales more than a few feet below the surface, and many whale strikes happen below the draft-depth of vessels. Fourth, the PSOs will not be able to effectively detect whales on the surface unless the seas are almost completely calm, a situation that rarely occurs in the Project Area. Moderate to high seas – with corresponding swells – will obscure whales during the brief moments when they surface to breathe or feed. Moreover, Nantucket and the seas around it are among the foggiest areas in the entire country, especially during June and July, two of the months when project-related pile driving is scheduled to occur. The fog rolls in quickly, often too fast for the kind of adjustments Vineyard Wind would have to make to avoid

collisions with whales. Fifth, unlike some marine mammals, North Atlantic right whales have no dorsal fin, which makes them even harder to detect visually on the water's surface. For these reasons, the BiOp's reliance on the PSO "detect and avoid" measures proposed by Vineyard Wind is unsupported and will result in excessive take of right whales. Such take will also result in jeopardy to the species. Reliance on PSOs to protect other federally-listed species in the Project Area is likewise misplaced.

- The mitigation measures described in the BiOp provide a "feasibility" exception to pile during limitations. Under these exceptions, Vineyard Wind can continue pile driving even in the presence of North Atlantic right whales or other listed species if halting the pile driving work is not feasible. This exception makes the pile driving protections and limitations meaningless, as it gives Vineyard Wind complete discretion as to when and under what circumstances they can be disregarded. In other words, the BiOp is deficient because it does not define "feasibility" or describe the criteria that must be met before Vineyard Wind can claim that a given pile during limitation is "not feasible."
- The mitigation measures described in the BiOp provide a "practicability" exception to pile during limitations, under which Vineyard Wind can continue pile driving even in the presence of North Atlantic right whales or other listed species if halting the pile driving work is not practicable. This exception makes the pile driving protections and limitations meaningless, as it gives Vineyard Wind complete discretion as to when and under what circumstances they can be disregarded. In other words, the BiOp is deficient because it does not define the term "practicable"

or describe the criteria that must be met before Vineyard Wind can claim that a given pile during limitation is “not practicable.”

- Vessel speed limits are subject to a host of exceptions, qualifications, and loopholes, thereby reducing their ability to protect North Atlantic right whales and other listed species from unauthorized take and jeopardy.
- The seasonal restriction on pile driving (Jan 1- April 30) does not protect year-round resident whales.
- The BiOp fails to provide an adequate, complete, and legally compliant analysis of project impacts on the survival and recovery of the North Atlantic right whale. This is an especially glaring omission, given the precarious state of North Atlantic right whale populations in New England. Recent reports – i.e., post-COVID – indicate the North Atlantic right whale is having something of a “baby boom”, as 18 calves have been spotted during the last calving season. This likely is the result of COVID-related reductions in large vessels in the area. The BiOp must examine whether this nascent recovery will be impeded or stopped altogether by the Project and the renewal of intense human activity in or near right whale calving areas.
- The BiOp relies on the 2005 Recovery Plan for the North Atlantic right whale, but that plan is now 15 years old and does not account for recent data showing sharp declines in right whale population numbers.

- The BiOp fails to acknowledge that the PSOs will not be able to see effectively at night. There is no prohibition on vessels transiting at night; nor does the BiOp prohibit pile driving at night, provided it begins in the daylight hours.
- The BiOp does not require that PSOs be independent of Vineyard Wind. Without such independence, the PSOs will be subject to “corporate capture” and thus less likely to call for a shutdown of vessel traffic or pile driving when North Atlantic right whales and other listed species may be present in the Project Area.
- The BiOp is unclear whether all transit vessels will be assigned PSOs. The PSO requirement seems to apply only to pile driving activities. Transit vessels are allowed to rely on crew members, all of whom will be incentivized to keep boats running, even if whales are detected. This protocol, to the extent it can be called one, provides little assurance that North Atlantic right whales and other federally-listed species will be adequately protected.
- To protect North Atlantic right whales and other federally-listed species, the BiOp applies a 10-knot speed limit to vessels 65 feet or greater in length. However, Vineyard Wind can circumvent this speed limit by using ships that are 64 feet in length or less. The BiOp fails to assess this contingency or provide mitigation measures or conditions that would address it.
- The BiOp does not adequately address the project’s construction and operational impacts on North Atlantic right whale navigation and communication.

- The BiOp does not consistently address or analyze impacts on North Atlantic right whales for the entire “Project area” as defined in the BiOp.
- The BiOp does not clearly or adequately analyze whether the WTGs, when operational, will emit noise or vibrations capable of affecting whales and other federally-listed species.
- The BiOp fails to adequately assess project-related impacts on North Atlantic right whales in light of recent evidence showing that the species has shifted its feeding grounds to areas in and near the Project Area.
- The BiOp’s no jeopardy determination is based on unsubstantiated and/or outdated whale carcass recovery percentages. As a result, the BiOp underestimates the number of North Atlantic right whales the Project will take and correspondingly fails to make a proper jeopardy finding.
- The BiOp’s no jeopardy determination fails to account for recent sharp declines in North Atlantic right whale populations. It also fails to account for the extremely low abundance number for the species, which is now less than 350 individuals. Given the low number of North Atlantic right whales and the consistent loss of calf-bearing females, the BiOp should analyze and explain how project-related take of any individual could be absorbed without jeopardizing the species as a whole. The BiOp, however, provides no such analysis or explanation and is therefore deficient as a matter of law.

- The data discussed in the BiOp demonstrates that the North Atlantic right whale is in serious peril and headed toward extinction; yet the BiOp concludes that the Project will not hasten this trend nor impede the species' recovery. This conclusion is not supported by the evidence. To the contrary, most of the recent right whale sightings have occurred south of Nantucket Island, precisely where the Vineyard Wind Project is to be installed. This suggests a high likelihood of project-to-whale interaction and conflict, resulting in potential harm to the species.
- The BiOp admits that human-derived threats to the North Atlantic right whale are worsening but does not factor this trend into the jeopardy analysis.
- The BiOp admits that "North Atlantic right whales' resilience to perturbations is expected to be very low" but does not address this fact in its jeopardy analysis.
- The BiOp recognizes that shipping, along with commercial fishing, accounts for most right whale injuries and deaths, but inexplicably concludes that project-related vessels will be able to avoid all contact with the species.
- The BiOp acknowledges that North Atlantic right whales spend most of their time (72%) within 33 feet of the water's surface, making them "particularly vulnerable to ship strike . . ." Yet, the BiOp's "take" and "no jeopardy" determinations ignore this finding and, in the absence of any evidence or analysis, conclude that no North Atlantic right whales will sustain vessel strikes. This is the quintessence of an arbitrary and capricious determination by a federal agency.

- The BiOp indicates that North Atlantic right whale “hot spots” are within the Project Area (namely, the offshore export cable corridor or “OECC”). Again, this suggests a high probability of interaction between project-related activities and right whales, leading to adverse impacts, including take and potential jeopardy. Yet the BiOp ignores these facts.
- The BiOp provides clear evidence of recent mortal vessel strikes on North Atlantic right whales. But then the BiOp disregards this evidence when making determinations as to take and jeopardy. This is arbitrary and capricious.
- The BiOp fails to assess vessel strike risk to North Atlantic right whales and other federally-listed species in the context of the already-crowded shipping lanes in or near the Project Area. In addition, the BiOp assumes that right whales and other federally-listed species will move out of Project Area as an “avoidance response” to pile driving noise; however, if this is true, these animals, in their efforts to swim away from the pile driving noise, will likely enter areas of high vessel traffic, increasing the risk of ship strikes. This impact is not analyzed in the BiOp.
- According to the BiOp, Vineyard Wind has given itself the option of using wind turbines of various sizes, including turbines larger than those originally studied in the EIS. The BiOp must correct this omission by analyzing operational underwater noise generated by the largest turbines contemplated for the Project. To our knowledge, no such analysis has been conducted.
- The BiOp improperly accepts Vineyard Wind’s position that the project will result in no Level A harassment of North Atlantic right whales. That position is based on

the unproven and unsubstantiated efficiency of Vineyard Wind’s proposed “detect & avoid” measures – the very same measures that include a host of exceptions, qualifications, and loopholes.

- BiOp improperly and without evidence assumes that PSOs will be able to adequately surveil a North Atlantic right whale clearance zone that is 10 kilometers in size, as is proposed from 5/1 to 5/14 and 11/1 to 12/31.
- The BiOp, without technical or scientific support, assumes that North Atlantic right whales and other listed species disrupted by pile driving will return to their original locations once the 3-hour pile driving session ends.
- The BiOp improperly limits its evaluation of vessel strikes to the Wind Development Area (WDA) and OECC. It should include the entire Project Area, which consists of the WDA, the OECC, and the vessel transit corridors.
- The BiOp admits that it can only predict increases in vessel traffic for the WDA and OECC – not the entire Project Area. The BiOp says that “this is the only portion of the action area that we have an estimate of baseline trips.” This leaves out the areas where vessels will be transiting between mainland ports and the WDA. Many of these areas are used by North Atlantic right whales.
- The BiOp does not clearly indicate whether the proposed “minimization measures” are mandatory and enforceable. The BiOp also relies on measures that Vineyard Wind has volunteered to implement. Such measures, however, are unenforceable by NMFS and thus should not influence the analyses set forth in the BiOp.

- The BiOp lists the Dynamic Management Areas (DMAs) established for North Atlantic right whales between 2014 and 2020. The list shows that the vast majority of these DMAs are located South of Nantucket, in or near the Project Area. This demonstrates that the Project Area is a major right whale population area, thus increasing the likelihood of project-related conflicts with the whales. The BiOp did not take these data into account when making determinations as to right whale “take” and “jeopardy”.
- The BiOp acknowledges that vessel strikes can occur when whales are below the water’s surface and cannot be visually detected. Nevertheless, the BiOp’s take and jeopardy determinations ignore this fact.
- The BiOp admits that carcass recovery is a poor means for determining the number of whale deaths. Yet the BiOp uses this metric, despite its unreliability, to conclude that no North Atlantic right whales will be killed by vessel strikes.
- The BiOp’s “reasonable and prudent measures” (RPMs) do not appear to include steps to protect North Atlantic right whales from vessel strikes. Rather, the RPMs appear focused exclusively on pile driving noise impacts.
- The BiOp’s environmental baseline does not account for the other offshore wind projects currently proposed on federal leaseholds adjacent to or in the vicinity of the Vineyard Wind leasehold (Lease Area OCS-A 0501). BOEM and NMFS are aware of these nearby projects, as they were the subject of the SEIS and Final EIS that BOEM recently adopted via a Record of Decision on May 10, 2021. These planned offshore wind projects, when combined with Vineyard Wind, will occupy

approximately 1,400,000 acres or more than 2060 square miles, which is roughly the size of the state of Delaware. By not including these other offshore wind projects in the environmental baseline, the BiOp grossly underreports the potential impacts on North Atlantic right whales and other listed species from vessel strikes and other human activities connected to the installation and operation of the proposed wind arrays. These facts suggest that NMFS should prepare a programmatic BiOp that examines all offshore wind projects in the Rhode Island/Massachusetts (RI/MA) Wind Energy Area (WEA) for impacts on federally-listed species.

- The Incidental Harassment Authorization (IHA) that NMFS issued to Vineyard Wind covers the period from May 1, 2023 through April 30, 2024. However, the BiOp says that pile driving might begin as soon as June 1, 2021. This suggests that Vineyard Wind may conduct pile driving activities for a full eleven months prior to the effective date of the IHA, whose sole purpose is to ensure that pile driving impacts on marine mammals are minimized. This is a huge and unlawful disconnect.
- The COP does not restrict the number or location of the Vineyard Wind WTGs. This is a significant regulatory omission that renders it impossible to fully assess the project's impacts on listed species.
- According to the BiOp, "BOEM has updated measures to increase the minimum visibility requirements during pile driving, prohibit pile-driving in December unless certain conditions are met, and require additional information in order for crew

transfer for vessels to exceed 10 knots in Dynamic Management Areas.” These “updated measures”, however, have not been incorporated into the BiOp and thus are unenforceable under the ESA. Thus, they cannot be used in the BiOp’s analysis of project impacts on listed species.

- The entire BiOp relies uncritically on information from Vineyard Wind on a wide range of critical issues, such as whether and how long the project will engage in vibratory pile driving, and how long each pile driving episode – regardless of method – will take.
- According to the BiOp, 46 vessels may be on site at any given time, but that Vineyard Wind expects that number to be 25 vessels. The BiOp does not explain this discrepancy.
- The BiOp states that the number of vessels “involved in the Project Area at one time is highly dependent on the Project’s final schedule, the final design of the Project’s components, and the logistics solution used to achieve compliance with the Jones Act.” In light of these uncertainties, the BiOp should but does not assume the maximum number of vessels – i.e., 43.
- The BiOp recognizes that compliance with the Jones Act may alter (i.e., increase) the number of vessels needed for the project and likely will increase the number of vessel miles as well. Yet the BiOp does not evaluate this contingency, or the impacts associated with it.

- The BiOp states that some project components will be shipped from Europe to ports on the Atlantic coast of North America, where they will be “marshalled” and then transported to the project site. These “marshalling” ports, however, could be located in Massachusetts, Rhode Island, or Canada. Given that these ports are at various distances from the project site, the vessel miles traveled will likewise vary substantially depending on which port is used. The BiOp does not compare the vessel miles from Massachusetts to the site and the vessel miles from Canada to the site. As a result, the BiOp presents an incomplete and inaccurate picture of the actual vessel-related impacts of the project.
- The BiOp mentions nothing about use of Passive Acoustic Monitoring (PAM) outside the immediate construction area of the WGTs. This implies that no PAM will be used along the vessel transit routes between mainland ports and the Project site. As a result, transiting vessels will be relying solely on PSOs to detect whales and avoid collisions. There is insufficient evidence that PSOs will be capable of detecting North Atlantic right whales in the dark, in high seas, or below the water’s surface. Therefore, vessels transiting to and from the project construction site will expose whales to greater risk of collision and injury than reported in the BiOp.
- According to the BiOp, “There are a number of measures designed to avoid, minimize, or monitor effects of the action we consider part of the proposed action. BOEM has incorporated into the conditions of COP approval the measures that Vineyard Wind is proposing to take, the requirements of the IHA issued by NMFS, and the requirements of the Reasonable and Prudent Measures and Terms and Conditions of the Incidental Take Statement included with our 2020 Biological

Opinion.” These various protective measures, however, have not been incorporated as Terms and Conditions of this BiOp, which is the only BiOp currently in existence and the only BiOp that can be enforced. Moreover, only this BiOp – not the COP and not the IHA – can authorize take and mitigate take under the ESA. In other words, unless the mitigation measures are formally included as conditions in this BiOp, they likely cannot be enforced under the ESA.

- The BiOp states that Vineyard Wind entered into an agreement with the National Wildlife Federation that includes commitments to minimize effects on North Atlantic right whale. That agreement, however, is between private parties and not enforceable by NMFS or any other federal agency. Yet, the BiOp implies that the Agreement and its terms have been incorporated into the Incidental Take Statement set forth in the BiOp.
- The COP allows vessels to travel from November 1 to May 14 at speeds in excess of 10 knots, provided at least one PSO (also referred to as a “Visual Observer”) is on board. The BiOp does not provide a scientifically valid reason for abandoning this requirement from May 15 to October 31 given that North Atlantic right whale use and reside in the project area throughout these months.
- The COP conditions also rely heavily on the PSO’s ability to confirm that all North Atlantic right whales have been cleared from the transit route and WDA for 2 consecutive days. The BiOp, however, does not explain how this will be accomplished given that the transit routes in some cases will be 455 miles one-way. Further, there is no way that PAM stations can be set up along the entire transit

route – at least there is nothing in the COP or BiOp indicating that this is a requirement or will otherwise take place. In short, there is no evidence showing that the measures proposed for protecting North Atlantic right whales from vessel strikes will be effective.

- The BiOp does not explain how use of real-time PAM will detect whales at a sufficient distance from vessels to enable the vessel captains to take evasive action and prevent a collision.
- The BiOp indicates that crew transit vessels – of whatever length – may travel at speeds above 10 knots, provided a PSO is on board and real time PAM is being used. This measure provides inadequate protection/mitigation against vessel strikes. First, crew transit vessels represent a majority of the vessels to be used during project construction, which means that the speed limit does not even apply to most of the boats that might collide with a whale. Second, as pointed out above, neither PSOs nor PAM is likely to provide adequate protection against vessel strikes on whales, especially since there is no indication that PAM can take place during the entire length of the transit route. Third, even if the crew transit vessels are less than 65 feet – and nothing in the BiOp says they will be – the danger they pose to whales will remain significant because vessel speed – not size – is what determines whether and how seriously a whale is struck by a passing boat.
- The map on p. 47 (Figure 2) [Vessel Routes from Canadian Ports] shows vessels passing along the eastern edge of designated North Atlantic right whale critical habitat in the Bay of Fundy. This suggests that ships transiting through this

location may in fact cross into North Atlantic right whale critical habitat and adversely modify it. For this reason, the BiOp should have addressed this contingency. It failed to do so.

- The BiOp admits that North Atlantic right whale feeding grounds have shifted “with fewer animals being seen in the Great South Channel and the Bay of Fundy and more animals being observed in Cape Cod Bay, the Gulf of Saint Lawrence, and mid-Atlantic, and South of Nantucket.” This shows that the North Atlantic right whale and the Project are on a collision course. This problem will only be exacerbated by the other 7 wind projects slated for construction adjacent to Vineyard Wind. The BiOp, however, does not analyze this cumulative impact.
- The BiOp includes a great deal of data showing that the North Atlantic right whale is in sharp decline, with a total population that will soon fall below 300 individuals, yet the BiOp fails to interrelate these data and the anticipated impacts of the Vineyard Wind project. That is, the BiOp fails to adequately assess the project’s impacts, such as vessel strikes and noise and potential reductions in prey species, in the context of the North Atlantic right whale’s current struggles to maintain population viability and avoid extinction.
- The BiOp states that “[u]pdated photo-identification data support that the annual mortality rate changed significantly, and the new information reports a faster rate of decline than previously estimated.” Yet, the BiOp never examines whether the project – singly or cumulatively – will exacerbate this situation and accelerate the mortality rate. Nor does the BiOp assess whether the project will impede recovery

of the species, given the challenges to recovery that already exist. Put differently, the BiOp does not assess qualitatively and critically whether the existing state of the North Atlantic right whale population and the dynamics that define it will worsen with implementation of the Vineyard Wind project. Instead, the BiOp is fixated on numeric data – e.g., the mathematically-derived estimate for the number of whales that will sustain Level B hearing impacts – rather than using the quantitative data to effectively evaluate the project’s actual impacts on the species.

- The BiOp indicates that female adult mortality is the main factor influencing the North Atlantic right whale’s poor population growth rate. The BiOp does not, however, explain why the adult female mortality rate is so high or whether project-related activities are among the types of anthropogenic impacts that affect adult female mortality.
- The BiOp acknowledges that North Atlantic right whales vocalize at low source levels, “which may put North Atlantic right whales at greater risk of communication masking compared to other species.” But then, in the next sentence, the BiOp states: “However, recent evidence suggests that gunshot calls with their higher source levels may be less susceptible to masking compared to other baleen whale sounds.” The BiOp fails to clarify that gunshot calls are made only by young males, primarily during mating season. The other types of calls – screams, blows, upcalls, warbles and down calls – are used by males and females, adults and juveniles, for a larger range of communication needs. Thus, the BiOp misleadingly implies that, because gunshot calls are less susceptible to masking, the project will not obstruct/obscure North Atlantic right whale vocalizations or otherwise impede

North Atlantic right whale communication. The evidence indicates the opposite conclusion.

- The BiOp acknowledges the North Atlantic right whale remain the Gulf of Maine and South of Nantucket year-round. Yet, the impact analysis and mitigation measures continue to assume that the North Atlantic right whales in these areas are migratory and will exit the project area for half the year. This renders the BiOp analytically deficient.
- Unlike toothed whales, baleen whales such as the North Atlantic right whale do not use echolocation to locate prey or to navigate. Instead, the North Atlantic right whale relies much more on its ability to see under water. Not only do North Atlantic right whale mothers maintain visual contact with their calves, North Atlantic right whales generally use vision to identify heavy concentrations of zoo plankton for foraging. The BiOp, however, never analyzes whether the project's construction activities or daily operations will create turbidity sufficient to degrade the North Atlantic right whales visual acuity.
- The BiOp admits that vessel sounds “may limit communication space as much as 67 percent compared to historically lower sound conditions.” The BiOp, however, does not explain what such a reduction in “communication space” means in terms of North Atlantic right whale behavior, life history stages, and reproductive success. Nor does the BiOp address whether the vessel noise from project activities will make this situation worse and further shrink the North Atlantic right whale's communication space.

- The BiOp recognizes that vessel strikes and fishing gear entanglement are now the biggest threats to North Atlantic right whale. The BiOp also states that “the total annual North Atlantic right whale mortality exceeds or equals the number of detected serious injuries and mortalities.” According to the BiOp, “these anthropogenic threats appear to be worsening.” Again, however, the BiOp fails to use these data as context for evaluating the project’s impacts, and more specifically, its potential to add to the anthropogenic threats that currently plague the North Atlantic right whale.
- The BiOp states that North Atlantic right whales’ resilience to future perturbations is expected to be very low. Despite this statement, the BiOp later concludes that major construction projects in North Atlantic right whale habitat – such as the refuge area south of Nantucket – will pose no jeopardy risk to the North Atlantic right whale. This conclusion is unsound and unsupported.
- The BiOp states that the total female North Atlantic right whale population will drop to 123 by 2029, and that prey densities are also on the decline, further hastening the North Atlantic right whale’s slide toward extinction. These facts would suggest that any project-related impact on North Atlantic right whale could be devastating, given the extremely low population numbers and the current mortality trends. Yet the BiOp downplays this threat.
- The BiOp briefly summarizes the recovery goals for the North Atlantic right whale but does not evaluate whether the Vineyard Wind project – individually or cumulatively – will impede achievement of these goals.

- According to the BiOp, the Kemp's ridley sea turtle is experiencing declines in nests and in total population. As with the data on North Atlantic right whale population trends, the BiOp does not place the project's impacts within the context of the turtle's current population dynamics, leaving the reader without a meaningful assessment of whether the project will, in fact, impede recovery of this species.
- The BiOp acknowledges that the North Atlantic right whale's obligate prey species are copepods, but it does not address whether the project will affect the density, amount, or location of copepods or whether changes to any of those key indicators will adversely affect North Atlantic right whale foraging.
- The BiOp does not examine whether North Atlantic right whale, in their efforts to avoid the offshore wind complex south of Nantucket, will forego areas where the whales currently forage for copepods.
- According to the BiOp, North Atlantic right whales spend 72 percent of their time in the upper 33 feet (10 meters) of water. This, in part, explains why they are so susceptible to vessel strikes. Again, however, the BiOp makes no effort to correlate this information with the project's anticipated impacts related to vessel movements.
- The BiOp acknowledges that due to warming deep waters in the Gulf of Main, the distribution of right whales has changed. The BiOp further explains that these changes in water temperature have altered when and where late stage copepods concentrate in great numbers. This, in turn, is affecting right whale feeding behaviors. This information is critical for understanding the current and evolving condition of the North Atlantic right whale population in New England, but the

BiOp does not adequately assess how these dynamics of right whale feeding behavior and movement patterns intersect with human activities associated with the Vineyard Wind project.

- The BiOp discloses that North Atlantic right whale depend on the high lipid content of calanoid copepods “and would not likely survive year-round only on the ingestion of small, less nutritious copepods in the area.” Despite this information, the BiOp does not investigate whether and to what extent the MA/RI WEA, including the Vineyard Wind leasehold, currently supports calanoid copepods. If such copepods are currently found in abundance within the WEA, the BiOp should but does not assess whether the project during construction and operation will cause North Atlantic right whale to avoid the area and forego an excellent and perhaps necessary feeding ground.
- The BiOp suggests that the shift in calanoid copepod populations is precisely what has brought more North Atlantic right whale into southern New England and, more particularly, into the waters south of Nantucket where the Vineyard Wind project lease is located. Given these facts, it is reasonable to conclude that the project site and the entire RI/MA WEA now support a greater concentration of calanoid copepods than they did previously, making them an important foraging region for the North Atlantic right whale. If this is true, then the project – singly and cumulatively – has the potential to cut whales off from the very food resource they need to survive. Yet the BiOp does not examine this potential impact. These data correspond with results from recent aerial surveys of the RI/MA WEAs, which

show that North Atlantic right whale occurrence in these areas has increased markedly since 2017.

- According to the BiOp, the Project site and RI/MA WEA generally function as a North Atlantic right whale feeding “hotspot” that whales rely on year-round. This conclusion undercuts many of the analytical assumptions in the BiOp and casts doubt on the “seasonal” protections incorporated into or imposed upon the project.
- The BiOp attempts to downplay evidence of mating in the RI/MA WEA, even though numerous recent studies show that North Atlantic right whale surface active groups (SAGs) have been observed in the area. It is well-established that one of the major functions of SAGs – if not the primary function – is mating. Rather than assume that the occurrence of SAGs in the WEA likely means some level of courtship and mating is going on, the BiOp side-steps this issue and lets it drop. If the project site and the WEA as a whole support both foraging and mating by North Atlantic right whale, the importance of these locations to North Atlantic right whale survival and recovery increases substantially. Correspondingly, the project’s potential to interfere or impede critical whale behaviors – of which foraging and mating are two – likewise increases substantially. The BiOp does not adequately address this issue.
- The BiOp states that in 2021, “NMFS Supplemented the DMA (Dynamic Management Area) program with a new slow zone program which identifies areas recommended for 10 knot speed reductions based on acoustic detection of right whales.” This Slow Zone program, however, is voluntary, and the data show that

compliance with voluntary rules and programs, while variable, tends to be quite low. Thus, it is unlikely that NMFS New Slow Zone program will result in tangible protective benefits of the North Atlantic right whale.

- The BiOp seems not to understand the difference between presenting data and conducting an analysis. While the BiOp does plenty of the former, it rarely engages in the latter. As a result, the BiOp does not engage in a dialogue with data to ascertain how various facts interact and influence each other.
- The BiOp acknowledges that “there are a number of lease areas geographically close to OCS-A 0501 where the proposed project will be built and three lease areas are adjacent to OCS-A 0501.” This confirms that a programmatic BiOp should be prepared for all of the offshore wind projects in this WEA.
- The BiOp fails to assess the Project’s total noise/sound impacts, where project-related noise sources are combined to reflect simultaneous implementation activities. For example, the BiOp does not combine vessel noise with pile driving noise, even though vessel use will likely be occurring during pile driving activities. This is an analytical defect.
- The BiOp does not indicate whether ongoing U.S. Navy operations are included in the Environmental Baseline for purposes of analyzing the project’s impacts on whales and other listed species. Failure to include such naval operations would be legal error.

- At times, the BiOp suggests that all of the project's impacts on North Atlantic right whale and other marine mammals are covered under the Incidental Harassment Authorization (IHA) that NMFS issued pursuant to the Marine Mammal Protection Act. The IHA, however, only covers impacts from pile driving; it does not cover impacts and potential take related to activities other than pile driving, such as vessel strikes, that may occur outside the pile driving impact area. The BiOp should be clear on this point and then assess whether effects not covered under the IHA may jeopardize or result in take of listed species.
- The BiOp indicates that, based on North Atlantic right whale density estimates, the project will expose only one right whale to noise above the Level A harassment threshold. Yet it is unclear whether the IHA authorizes Level A harassment of any right whales. Nor is it clear whether the BiOp fills that gap and authorizes take on North Atlantic right whale due to Level A noise impacts.
- The IHA and BiOp constantly refer to the use of Passive Acoustic Monitoring (PAM) of whale calls as a means of supplementing the PSO effort to detect North Atlantic right whales that might enter the pile driving impact area. However, the BiOp does not describe how the PAM will be conducted; nor does it assess whether PAM can be used in this particular application, especially where vessel noise and pile driving noise may mask the vocalizations of the whales.
- The BiOp acknowledges that approximately 20 North Atlantic right whale will be taken by virtue of Level B noise impacts. Yet the BiOp never analyzes the extent to which this level of take will affect the current population dynamics of the North

Atlantic right whale. That is, the BiOp does not explain why the take of 20 North Atlantic right whale through Level B noise harassment will not jeopardize the ability of the 320 remaining right whales to remain viable as a population. Nor does it explain why such take would not impede recovery of the species. Such explanations are critical given that the North Atlantic right whale appears headed toward extinction, absent radical reductions in anthropogenic threats.

- The BiOp states that the project will use a “soft start” approach to pile-driving, which is intended to gently alert marine mammals of the heavier, noisier work to come later and to encourage those mammals to avoid the project action area: “[G]iven sufficient notice through use of soft start, marine mammals are expected to move away from a sound source that is annoying prior to exposure resulting in a serious injury and avoid sound sources at levels that would cause hearing loss.” There are serious flaws in this analysis and the assumptions that underlie it. There is no indication that this “soft start” pile-driving approach will actually trigger an avoidance reaction in marine mammals, especially where, as here, the underwater sound environment is already noisy. It is just as likely that the soft start will have no effect on North Atlantic right whale behavior at all, given that North Atlantic right whale do not typically respond to noise events or noise sources the way some other whale species do. The more probable outcome is that North Atlantic right whale will not be “moved” by the soft start and won’t actually leave the action area until the pile-driving noise reaches painful/harmful levels. In fact, if the action area holds dense pockets of calanoid copepods, the North Atlantic right whales will likely remain in the action area to feed, even if it means putting up with potentially

damaging noise levels. And even if the soft start does cause North Atlantic right whale and other marine mammals to leave the action area, such forced avoidance of a major foraging area may itself constitute take; yet the BiOp does not assess this potential impact.

- The BiOp cites a number of studies that use population consequences of disturbance (PCoD) models and states: “Nearly all PCoD studies and experts agree that the infrequent exposures of a single day or less are unlikely to impact individual fitness, let alone lead to population level effects.” As noted above, however, the project’s pile driving noise will not cease after a single day, but will go on for many days on end, for at least 3 hours each day. It is unclear whether the studies cited in the BiOp addressed this kind of situation. In addition, the BiOp seems to assume that impacts that degrade individual fitness will not, by themselves, “lead to population level effects.” This may be true in some contexts, with some species. But when the affected species is the North Atlantic right whale, whose entire population stands of approximately 300, any loss of individual fitness may, in fact, have significance consequences for the population as a whole. This BiOp, however, does not discuss this possibility.
- The BiOp assumes that a North Atlantic right whale, once discouraged by pile driving noise from foraging in the action area, will soon find ample foraging opportunities at another nearby location. This assumption, however, is not supported by analysis or evidence.

- The BiOp makes a similar unsupported conclusion regarding the project’s potential to trigger “stress responses” in North Atlantic right whales. Despite documented evidence that right whales show increase stress hormones in response to chronic noise, the BiOp nevertheless concludes that the pile-driving and vessel noise associated with the project’s construction will not increase North Atlantic right whale stress. This conclusion is unsupported.
- The BiOp acknowledges that vessel noise “has the potential to disturb marine mammals and elicit an alerting, avoidance, or other behavior. The BiOp also states that vessel noise can mask whale vocalizations, thus interfering with the animal’s “ability to find prey, find mates, socialize, avoid predators, or navigate.” Despite these facts, the BiOp then states that “[b]ased on the best available information, ESA-listed marine mammals are either not likely to respond to vessel noise or are not likely to measurably respond in ways that would significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding or sheltering.” These two statements are incongruous, making the BiOp internally inconsistent and confusing. Further, the BiOp does not cite or reveal the technical sources that constitute the so-called “best information” on which the BiOp’s conclusion is based.
- The BiOp’s entire discussion of existing vessel traffic in the action area is highly suspect because it relies on automatic identification system (AIS) tracking of ships to determine the number of vessels in a given area over a given period of time. As the BiOp acknowledges, most vessels less than 65 ft in length do not have or use AIS, which means they would not be included in the “existing” vessel traffic

baseline. The BiOp even admits “vessel traffic is significantly more than described.” Yet, the BiOp does not opt for a different method of determining existing vessel traffic.

- The BiOp states that project-related “vessels traveling from Europe are large slow-moving construction/installation or cargo vessels that travel at slow speeds of approximately 10-18 knots.” In the context of vessel strikes – and vessel strike avoidance – 10 to 18 knots is not slow. Any vessel, especially a large one, that travels in excess of 10 knots poses a significant risk of vessel strikes on North Atlantic right whale.
- The BiOp indicates that, on average, 25 vessels will be involved in construction activities on any given day, 7 of which will be transiting to and from ports while the others remain at the action area. The vessel strike risk assessment, however, should have been based on the maximum number of expected vessels per day, not the average. Vessel strikes are, in part, a function of vessel traffic and congestion within a defined space, so if on a given day when 40 or 45 vessels are in the action area (as opposed to the daily average of 25), the risk of vessel strike on that day would be substantially higher than the “average” day assumed in the BiOp.
- The BiOp explains that the North Atlantic right whale, unlike most baleen whales “seem generally unresponsive to vessel sound, making them more susceptible to vessel collisions.” In light of this, the BiOp have applied a different, more sensitive metric for determining whether project-related vessel trips will create a “take” level risk for North Atlantic right whale. The BiOp, however, failed to do so. Also, the

fact that North Atlantic right whale do not respond to vessel noise with avoidance behavior suggest that the species may not react as expected to soft start pile-driving noise either. In other words, in North Atlantic right whale generally do not respond to noise cues with avoidance behaviors, then the project's pile-driving mitigation program – which is based on the assumption that whales will leave the action area once soft start pile driving begins – is flawed and will not achieve the hoped-for result. The BiOp did not address this issue.

- The BiOp states that large whales do not have to be at the water's surface to be struck, because studies show that a whale swimming at a depth one to two times the vessel draft is subject to “pronounced propeller suction-effect.” This “suction effect may draft the whale closer to the propeller, increasing the probability of propeller strikes.” This suggests that whales well below the water's surface – i.e., well below where they can be detected visually by PSOs – are still vulnerable to vessel strikes. For this reason, the entire PSO approach to detecting and avoiding whales is likely to be ineffective. The BiOp, however, does not address this issue.
- The exceptions to the 10-knot vessel speed limit largely render the speed limit ineffectual. For example, the 10-knot maximum does not apply in Nantucket Sound, which is where many North Atlantic right whale are to be found. In addition, the 10-knot speed limit does not apply to crew transit vessels, which is the most common and numerous vessel type used for the Project. The speed limit also does not apply to vessel activity between May 15 and October 31, even though data show that North Atlantic right whale increasingly stay in the waters off New England, including the project action area, all year round. For these

reasons, the 10-knot speed limit does not protect whales to the extent assumed in the BiOp, rendering the BiOp inadequate as a matter of law.

- The BiOp does not analyze the Vineyard Wind project’s potential to cause take of federally-listed bird species, resulting in a major omission.

55. On November 29, 2021, plaintiffs sent a second letter to NMFS identifying yet another defect in the October 18, 2021 BiOp. This letter, which supplements the NOI dated November 26, 2021, points out that the BiOp fails to account for the other incidental take authorizations NMFS has issued for past, current, and future projects with the potential to affect North Atlantic right whales and other listed species. Thus, the BiOp fails to provide a legally adequate cumulative assessment of the Vineyard Wind project’s potential to jeopardize these species and/or impede their recovery.

56. During the 60-day notice period, neither BOEM nor NMFS responded to plaintiffs’ comments. Nor did NMFS revise the BiOp to address or correct the deficiencies identified by plaintiffs.

G. Vineyard Wind’s Withdrawal and “Resubmittal” of Project

57. On November 3, 2020, the United States presidential election was held. In that election, Joseph Biden defeated Donald Trump, ushering in a change in administration.

58. Plaintiffs are informed and believe, and on that basis allege, that Vineyard Wind was concerned that the out-going Trump Administration would deny its Project in whole or in part, prior to the inauguration of President-elect Biden.

59. On December 14, 2020, United States Solicitor Daniel H. Jorjani submitted a legal memorandum to then-Secretary of the Interior, David Bernhardt, stating that the offshore wind

projects currently proposed for the Atlantic seaboard, including Vineyard Wind, would unreasonably interfere with activities protected under the Outer Continental Shelf Lands Act (OCSLA). 43 U.S.C. § 1337(p). According to Mr. Jorjani's memorandum, this unreasonable interference rendered the offshore wind projects inconsistent and incompatible with the OCSLA.

60. Plaintiffs are informed and believe, and on that basis allege, that Vineyard Wind learned of Mr. Jorjani's memorandum and, fearing that its Project would be denied, withdrew its Project and COP from further consideration by BOEM on December 14, 2020.

61. On January 20, 2021, Joseph Biden was inaugurated as the 46th President of the United States. On or about January 22, 2021, Vineyard Wind resubmitted its Project. BOEM allowed the Vineyard Wind Project to proceed as if the Project had not been withdrawn. Thus, no new NEPA or ESA documents were required or prepared, and BOEM continued to process the Project under the pre-existing Draft EIS, SEIS, and BiOp.

H. The Record of Decision

62. On May 10, 2021, BOEM approved the Final EIS and COP for the Project, setting forth both actions in a Record of Decision (ROD) published in the Federal Register.

63. The ROD constituted final agency action regarding the Vineyard Wind Project and its accompanying Final EIS. BOEM's approval of the Project through the ROD also constitutes final agency action for purposes of Section 7 of the ESA. As pointed out above, BOEM issued the ROD based, in part, on the September 11, 2020 BiOp. However, both BOEM and NMFS deemed the September 11, 2020 BiOp insufficient, which is why they initiated "re-consultation" in late May 2021, approximately two weeks after the ROD was approved. BOEM did not rescind or withdraw the ROD it issued on May 10, 2020 or take other steps to ensure the ROD considered

the analysis and findings set forth in the October 18, 2021 BiOp. For that reason, among others, the ROD is legally deficient.

64. In issuing the ROD and approving the Project and its defective Final EIS, BOEM violated the procedural and substantive mandates of NEPA and the ESA.

VI. CLAIMS FOR RELIEF

65. For each of the Claims in this Complaint, Plaintiffs incorporate by reference each and every allegation set forth in this Complaint.

First Claim for Relief

(Against BOEM for Violating NEPA)

66. BOEM has violated NEPA and its implementing regulations by issuing a ROD for the Vineyard Wind Project and by approving the Final EIS for the Project, despite the Final EIS's procedural and substantive defects. 42 U.S.C. § 4331, *et seq*; 40 CFR § 1500, *et seq*. The Final EIS, and the ROD that formalized its approval, are arbitrary and capricious and otherwise not in accordance with the law in violation of 5 U.S.C. § 706.

67. An EIS must provide a detailed statement of: (1) the environmental impacts of the proposed action; (2) any adverse environmental effects that cannot be avoided should the proposed action be implemented; (3) alternatives to the proposed action; (4) the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity; and (5) any irreversible and irretrievable commitment of resources that would be involved in the action should it be implemented. 42 U.S.C. § 4332(C). An EIS must “inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.” 40 CFR § 1502.1. NEPA also requires federal agencies, such as BOEM, to analyze the direct, indirect, and cumulative

impacts of the proposed action and to take a hard look at those impacts. 40 CFR §§ 1508.7, 1508.8. In addition, NEPA requires federal agencies to consider mitigation measures to minimize the environmental impacts of a proposed action. 40 CFR § 1502.14 (alternatives and mitigation measures); 40 CFR § 1502.16 (environmental consequences and mitigation measures).

68. The ROD and Final EIS that BOEM prepared and approved for the Vineyard Wind Project failed to comply with each of these NEPA requirements. The Final EIS does not analyze an adequate range of alternatives; nor does it adequately analyze the Project's impacts on the human and natural environment, as discussed in Plaintiffs' comment letters to BOEM and as set forth in this Complaint. The Final EIS also fails to consider mitigation measures capable of reducing the action's impacts on human and natural resources and relies on outdated, inaccurate, incomplete, and inadequate information when assessing the impacts of the proposed action.

69. BOEM approved the ROD and Final EIS knowing that the September 11, 2020 BiOp, on which both documents rely, was deficient. BOEM and NMFS did not initiate or conduct re-consultation to address the BiOp's deficiencies until *after* the ROD was approved on May 10, 2021. The October 18, 2021 BiOp post-dates the ROD and cannot be used to support its conclusions. Therefore, BOEM approved a ROD that was based, in part, on a legally inadequate 927.BiOp.

70. For each of the reasons set forth above, BOEM's adoption of the ROD and Final EIS for the Vineyard Wind Project was arbitrary, capricious, and not in accordance with law as required by NEPA, its implementing regulations, and the APA.

Second Claim for Relief

(Against NMFS for Issuing Legally Deficient BiOp)

71. In issuing the October 18, 2021 BiOp for the Vineyard Wind Project (GARFO-2021-01265), NMFS acted arbitrarily, capriciously, and unlawfully because the conclusions set forth in the BiOp were not based on the best available science, as required by the ESA. 16 U.S.C. § 1536(a)(2).

72. NMFS' issuance of the BiOp was arbitrary, capricious, and unlawful because the BiOp failed to adequately address the proposed action's individual and cumulative impacts on federally-listed species, including the North Atlantic Right Whale, and relied on unproven, unsupported, and ineffective measures to protect such species from take and other forms of harm.

73. NMFS' issuance of the BiOp was arbitrary, capricious, and unlawful because the BiOp included an Incidental Take Statement that underreported and underestimated the number of individuals of each affected listed species that would be taken by the proposed action. The Incidental Take Statement also failed to include a complete or effective set of reasonable and prudent measures that would minimize impacts, including taking, on the affected listed species. 16 U.S.C. § 1536(b)(4).

74. For each of the reasons set forth above, and the reasons described in Plaintiffs' 60-Day Notice of Intent to Sue letter, NMFS' issuance of the October 18, 2021 BiOp was arbitrary, capricious, and unlawful. 5 U.S.C. §§ 701-706.

Third Claim for Relief

(Against BOEM and NMFS for Violating the ESA by Failing to Insure Against Jeopardy)

75. BOEM and NMFS violated, and continue to violate, Section 7(a)(2) of the ESA and its implementing regulations by failing to ensure through consultation that BOEM's approval of

the proposed Vineyard Wind Project will not jeopardize the North Atlantic Right Whale and other federally-listed species within the APE.

76. BOEM is violating the ESA by carrying out the actions necessary to implement the Vineyard Wind Project, despite the fact that the October 18, 2021 BiOp is legally defective and based on inadequate scientific data. NMFS violated the ESA by authorizing BOEM to take the actions necessary to the implementation of the Vineyard Wind Project – actions that will jeopardize the federally-listed species within the APE. Such violations are subject to judicial review pursuant to 16 U.S.C. § 1540(g).

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs respectfully request that this Court:

(1) Adjudge and declare that Defendant BOEM’s approval of the ROD for the Vineyard Wind Project, including its Final EIS, violates NEPA and its implementing regulations;

(2) Adjudge and declare that Defendant NMFS’s adoption of the October 18, 2021 BiOp for the Vineyard Wind Project (GARFO-2021-01265) was arbitrary, capricious, and unlawful;

(3) Adjudge and declare that Defendant NMFS’s adoption of the October 18, 2021 BiOp for the Vineyard Wind Project (GARFO-2021-01265) violates Section 7(a)(2) of the ESA because BiOp concludes, with insufficient evidence, that BOEM’s action (i.e., approval of the Vineyard Wind Project) will not jeopardize the North Atlantic Right Whale or any other federally-listed species;

(4) Adjudge and declare that Defendant BOEM’s approval of the Vineyard Wind Project violates Section 7(a)(2) of the ESA because BOEM has failed to ensure that its actions do

not jeopardize the North Atlantic Right Whale and all other federally-listed species potentially affected by the Project;

(5) Order Defendant NMFS to vacate and set aside the October 18, 2021 BiOp for the Vineyard Wind Project;

(6) Order Defendant BOEM to vacate and set aside the ROD for the Vineyard Wind Project and its attendant Final EIS;

(7) Pending completion of an adequate Biological Opinion for the Vineyard Wind Project, enjoin Defendants BOEM and NMFS from issuing any permit, approval, or other action within the Vineyard Wind APE or elsewhere that could adversely affect federally-listed species;

(8) Pending completion of an adequate EIS for the Vineyard Wind Project, enjoin Defendant BOEM from issuing any permit, approval, or other action that might adversely affect the human or natural environment;

(9) Award Plaintiffs their fees, costs, expenses and disbursements, including reasonable attorneys' fees as provided by the ESA, 16 U.S.C. § 1540(g)(4), or the Equal Access to Justice Act, 28 U.S.C. § 2412; and

(10) Grant Plaintiffs such additional and further relief as the Court deems just and proper.

DATED: February 10, 2022

The Plaintiffs,
ACK Residents Against Turbines
and Vallorie Oliver,
By Their Attorney,

/s/ Steven P. Brendemuehl
Steven P. Brendemuehl
Law Office of Steven P. Brendemuehl
5 Commonwealth Road ~ Suite 4A
Natick, MA 01760
steven@lawofficespb.com

/s/ David P. Hubbard
David Hubbard
David P. Hubbard, *Pro Hac Vice*
Gatzke Dillon & Ballance LLP
2762 Gateway Road
Carlsbad, CA 92009
dhubbard@gdandb.com

CERTIFICATE OF SERVICE

I hereby certify that this document filed through the CM/ECF system will be sent electronically to the registered participants as identified on the NEF on February 10, 2022.

/s/ David P. Hubbard

David P. Hubbard, *Pro Hac Vice*

Gatzke Dillon & Ballance LLP

2762 Gateway Road

Carlsbad, CA 92009

(760) 431-9501

dhubbard@gdandb.com



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1315 East-West Highway
Silver Spring, Maryland 20910

INCIDENTAL HARASSMENT AUTHORIZATION

Vineyard Wind 1, LLC (Vineyard Wind) is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(D)) to incidentally harass marine mammals, when adhering to the following terms and conditions.

1. This incidental harassment authorization (IHA) is valid from May 1, 2023 through April 30, 2024.
2. This IHA authorizes take incidental to pile driving associated with the construction of the Vineyard Wind Project in the Atlantic Ocean offshore of Massachusetts within the Wind Development Area (WDA) of Lease Area OCS-A 0501.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of Vineyard Wind, the Holder of this IHA (Holder), supervisory construction personnel, lead protected species observers, and on each vessel associated with the Project at all times when activities subject to this IHA are being conducted.
 - (b) The species and/or stocks authorized for taking are listed in Table 1. Authorized take, by Level A and Level B harassment only, is limited to the species and numbers listed in Table 1.
 - (c) The taking by serious injury or death of any of the species listed in Table 1 or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA. Any taking exceeding the authorized amounts listed in Table 1 is prohibited and may result in the modification, suspension, or revocation of this IHA.
 - (d) Vineyard Wind must ensure that construction supervisors and crews, the monitoring team, and relevant Vineyard Wind staff are trained prior to the start of activities subject to this IHA, so that responsibilities, communication procedures, monitoring protocols, and operational procedures are clearly understood. New personnel joining during the project construction must be trained prior to commencing work.
 - (e) Vineyard Wind must abide by the Terms and Conditions of the Biological Opinion, issued by NMFS Greater Atlantic Regional Fisheries Office (GARFO) on September 11, 2020, pursuant to section 7 of the Endangered Species Act.



4. Mitigation Measures

- (a) Seasonal Restrictions on Pile Driving:
 - (i) Pile driving must not occur from January 1 through April 30.
 - (ii) Pile driving must not occur in December unless unanticipated delays due to weather or technical problems, notified to and approved by the Bureau of Ocean Energy Management, arise that necessitate extending pile-driving through December.
- (b) Time of Day Restrictions on Pile Driving:
 - (i) No pile driving may begin until at least one hour after (civil) sunrise.
 - (ii) No pile driving may begin within 1.5 hours of (civil) sunset.
- (c) No more than two monopiles may be driven per day. No more than four jacket piles may be driven per day. For all piles installed, the minimum amount of hammer energy necessary to install the piles must be used.
- (d) Vineyard Wind must use available sources of information on right whale presence, including, at least, daily monitoring of the Right Whale Sightings Advisory System, monitoring of Coast Guard VHF Channel 16 throughout the day to receive notifications of any sightings, and information associated with any Dynamic Management Areas and Slow Zones to plan pile driving to minimize the potential for exposure of any right whales to pile driving noise.
- (e) Implementation of clearance (visual and acoustic) and Passive Acoustic Monitoring (PAM) monitoring zones:
 - (i) Vineyard Wind must deploy at least two active duty protected species observers (PSOs) on the pile driving vessel at all times 60 minutes prior to, during, and 30 minutes after pile driving to monitor for marine mammals unless a Right Whale Dynamic Management Area or Slow Zone is in place that overlaps the Level B harassment zone in which case 3 PSOs must be on duty at the pile driving vessel. PSO requirements are described under condition 5(a).
 - (ii) Visual and passive acoustic monitoring must take place from 60 minutes prior to initiation of pile driving activity through 30 minutes post-completion of pile driving activity.



- (iii) For all pile driving activity, Vineyard Wind must establish clearance and PAM monitoring zones with radial distances as identified in Table 2 and Table 4.
 - (iv) Pile driving may only commence when the visual clearance zones (Tables 2 and 4) are fully visible (i.e., are not obscured by darkness, rain, fog, etc.) for at least 30 minutes immediately prior to pile driving, as determined by the lead PSO.
- (f) Pre-Pile Driving Visual Clearance Measures for North Atlantic Right Whales (NARWs): The following measures apply prior to the commencement of pile driving.
- (i) Vineyard Wind must use PSOs to visually observe for NARWs 60 minutes prior to, during and 30 minutes after all pile driving (see 4(e)(i) for the minimum number of PSOs).
 - (ii) If a PSO located on the pile driving vessel visually observes a NARW at any distance, pile driving shall not begin until PSOs have confirmed they have not detected a NARW from the pile driving vessel for at least 30 minutes.
 - (iii) The visual clearance zones identified in Table 2 must be fully visible and clear of NARWs for at least 30 minutes prior to initiating pile driving.
 - (iv) NARWs must be allowed to remain in the area (*i.e.*, must leave of their own volition), and their behavior must be monitored and documented.
 - (v) Any large whale visually observed by a PSO within 1,000 m of the pile that cannot be identified to species must be treated as if it were a North Atlantic right whale for clearance and shutdown purposes.
 - (vi) The visual clearance zones identified in Table 2 may be adjusted by NMFS for the May 15-December 31 timeframe based on sound source verification such that the minimum visual clearance zone reflects the Level A harassment zone for monopiles (but no less than 2 kms May 15- May 31 and no less than 1 km June 1- December 31, per the Biological Opinion).
 - (vii) From May 1 through May 14, an aerial or vessel-based survey must also be conducted that covers the 10 km extended clearance zone. Vessel-based surveys must not begin until the lead PSO on duty determines there is adequate visibility to detect NARWs. Aerial surveys must not begin until



the lead PSO on duty determines adequate visibility and at least one hour after sunrise (on days with sun glare) to detect NARW.

- (viii) From May 1 through May 14 and November 1 through December 31, if a NARW is detected either via real-time PAM or vessel-based or aerial surveys within 10 km of the pile driving location, pile driving must be postponed and must not commence until the following day, unless a follow-up aerial or vessel-based survey confirms the 10km clearance zone is clear of right whales upon completion of the survey, as determined by the lead PSO. Aerial surveys must not begin until the lead PSO on duty determines adequate visibility and until at least one hour after sunrise on days with sun glare. Vessel-based surveys would not begin until the lead PSO on duty determines there is adequate visibility.
 - (ix) Any sighting of a NARW by Vineyard Wind personnel or by personnel contracted by Vineyard Wind (including vessel crews and construction personnel) must be immediately reported to the lead PSO.
- (g) Pre-Pile Driving Passive Acoustic Monitoring (PAM) Clearance and Monitoring Measures for NARWs: The following PAM measures apply prior to the commencement of pile driving.
- (i) Vineyard Wind must operate PAM systems capable of detecting NARWs in the PAM monitoring zones identified in Table 2 in real-time.
 - (ii) Vineyard Wind must acoustically monitor for NARWs 60 minutes prior to, during, and 30 minutes after all pile driving.
 - (iii) The real-time PAM system must be configured to ensure that the PAM operator is able to review acoustic detections within 30 minutes of the original detection in order to verify whether a right whale has been detected.
 - (iv) The PAM operator must be trained in identification of mysticete vocalizations and is responsible for determining if the acoustic detection originated from a NARW.
 - (v) If the PAM operator has at least 75 percent confidence (e.g., probable detection or greater) that a vocalization originated from a right whale located within 10 km of the pile driving location, the detection will be treated as a NARW detection.



- (vi) Pile driving must be delayed upon a confirmed PAM detection of a NARW, if the detection is confirmed to have been located within the relevant PAM clearance zone (Table 2).
 - (vii) From May 1 through May 14 and November 1 through December 31, if a right whale were detected either via real-time PAM, pile driving must be postponed and will not commence until the following day, or, until a follow-up aerial or vessel-based survey could confirm the extended clearance zone is clear of right whales, as determined by the lead PSO.
 - (viii) From May 15 through May 31 an extended PAM monitoring zone of 10 km must be established for NARW. A confirmed PAM detection of a NARW within this zone must be immediately relayed to visual PSOs to increase situational awareness.
 - (ix) Information on any acoustic detections must be reported to NMFS, as described in Condition 6(b).
- (h) NARW Shutdown Measures: The following measures apply to NARWs during pile driving.
- (i) If a NARW is visually observed or acoustically detected entering or within the shutdown zone (Table 3) after pile driving has commenced, a shutdown of pile driving must be implemented, as described in conditions 4(i)(iv-vi).
- (i) Pre-Pile Driving Clearance and Shutdown Measures for All Other Marine Mammals (non-NARWs): The following measures apply to all non-NARW marine mammals prior to and during pile driving.
- (i) If a marine mammal is observed entering or within the relevant clearance zones (Table 4) 30 minutes prior to the initiation of pile driving activity, pile driving activity must be delayed.
 - (ii) Marine mammals observed within a clearance or shutdown zone must be allowed to remain in the zone (*i.e.*, must leave of their own volition), and their behavior must be monitored and documented.
 - (iii) Pile driving may commence when either the marine mammal(s) has voluntarily left the respective clearance zone and been visually confirmed beyond that clearance zone, or, when 30 minutes have elapsed without re-detection (for mysticetes, sperm whales, Risso's dolphins and pilot whales) or 15 minutes have elapsed without re-detection (for all other marine mammals).



- (iv) In cases where pile driving has commenced and a shutdown is called for, the lead engineer on duty must evaluate the following to determine whether shutdown is technically feasible:
 - 1. Use site-specific soil data and real-time hammer log information to judge whether a stoppage would risk causing piling refusal at re-start of piling; and
 - 2. Check that the pile penetration is deep enough to secure pile stability in the interim situation, taking into account weather statistics for the relevant season and the current weather forecast.
 - 3. Determinations by the lead engineer on duty will be made for each pile as the installation progresses and not for the site as a whole.
- (v) If shutdown is called for but Vineyard Wind determines shutdown is not technically feasible due to human safety concerns or to maintain installation feasibility (as described under 4(i)(iv)), then reduced hammer energy must be implemented, when the lead engineer determines it is practicable.
- (vi) Following a shutdown, pile driving may not commence until either the animal has voluntarily left and been visually confirmed beyond the relevant clearance zone, or, when 30 minutes have elapsed without re-detection (for mysticetes, sperm whales, Risso's dolphins and pilot whales) or 15 minutes have elapsed without re-detection (for all other marine mammals).
- (vii) If an individual from a species for which authorization has not been granted, or a species for which authorization has been granted but the authorized take number has been met, is observed entering or within the clearance zone, pile driving activities must shut down immediately (when technically feasible as described under 4(i)(iv)). Activities must not resume until the animal has been confirmed to have left the relevant clearance zone or the observation time period (as indicated in condition 4(i)(iii)), has elapsed with no further sightings.
- (viii) For in-water construction, heavy machinery activities other than pile driving, if a marine mammal comes within 10 meters of equipment, Vineyard Wind must cease operations until the marine mammal has moved more than 10 m and on a path away from the activity.



- (j) Soft Start:
 - (i) Vineyard Wind must implement soft start techniques for impact pile driving. The soft start must include an initial set of three strikes from the impact hammer at reduced energy, followed by a one-minute waiting period. This process must be repeated a total of three times prior to initiation of pile driving.
 - (ii) Soft start is required at the beginning of driving a new pile and at any time following a cessation of impact pile driving of 30 minutes or longer.
- (k) Vineyard Wind must implement a noise attenuation device(s) during all impact pile driving.
 - (i) If the initial sound field verification (SFV) measurements indicate that the distances to isopleths are larger than those modeled assuming a 6 dB reduction (Tables 5 and 6), Vineyard Wind must apply additional sound attenuation measures before additional piles are installed. Until SFV confirms the distances to isopleths are equal or less than those modeled assuming a 6 dB reduction, the exclusion and monitoring zones must be expanded to match the actual distances to the isopleths of concern. If the use of additional sound attenuation devices still does not achieve distances less than or equal to those modeled assuming a 6 dB reduction and no other actions can reduce sound levels (e.g., reduced hammer energy), then Vineyard Wind must expand the zones to those identified through SFV, in consultation with NMFS.
 - (ii) If the exclusion zones are expanded beyond an additional 1,500 m, additional PSOs must be deployed on additional platforms, with each observer responsible for maintaining watch in no more than 180° an area with a radius no greater than 1,500 m.
 - (iii) If a bubble curtain is used, the following requirements apply:
 1. The bubble curtain(s) must distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column.
 2. The lowest bubble ring must be in contact with the seafloor for the full circumference of the ring, and the weights attached to the bottom ring must ensure 100 percent seafloor contact.
 3. No parts of the ring or other objects may prevent full seafloor contact.



- (iv) Construction contractors must train personnel in the proper balancing of air flow to the bubblets. Construction contractors must submit an inspection/performance report for approval by Vineyard Wind within 72 hours following the performance test. Corrections to the attenuation device to meet the performance standards must occur prior to impact driving.
- (l) Vessel Strike Avoidance Measures: The following measures apply to Vineyard Wind vessels and vessels contracted by Vineyard Wind throughout the project area. These measures do not apply in cases where compliance would create an imminent and serious threat to a person or vessel or to the extent that a vessel is restricted in its ability to maneuver and, because of that maneuverability restriction, cannot comply.
 - (i) Year-round, vessel operators will use all available sources of information on right whale presence, including at least daily monitoring of the Right Whale Sightings Advisory System, WhaleAlert app, and monitoring of Coast Guard VHF Channel 16 throughout the day to receive notifications of any sightings and/or consideration of information associated with any Dynamic Management Areas to plan vessel routes to minimize the potential for co-occurrence with any right whales.
 - (ii) On all vessels, regardless of size or speed it is traveling, operators and crews must maintain a vigilant watch for all marine mammals and slow down, stop their vessel, or alter course, as appropriate and regardless of vessel size, to avoid striking any marine mammal.
 - (iii) Whenever multiple vessels are operating, any visual observations of ESA-listed marine mammals must be communicated to a PSO and/or vessel captains associated with other vessels.
 - (iv) Vessel speeds will immediately be reduced to 10 knots or less if a NARW is sighted by the observer or anyone on the vessel.
 - (v) All vessels traveling over 10 knots must have a dedicated visual observer on duty at all times. The dedicated visual observer must receive prior training on protected species detection and identification, vessel strike minimization procedures, how and when to communicate with the vessel captain, and reporting requirements in this IHA. Visual observers may be third-party observers (i.e., NMFS-approved PSOs) or crew members.
 - 1. Observer training related to these vessel strike avoidance measures must be conducted for all vessel operators and crew prior to the start of in-water construction activities.



2. Confirmation of the marine mammal training and understanding of the IHA requirements must be documented on a training course log sheet and reported to NMFS (see Condition 6(c)).
- (vi) From November 1 through May 14, all vessels, regardless of size, must travel at less than 10 knots (18.5 km/hr.) within the WDA.
 - (vii) From November 1 through May 14, when transiting to or from the WDA, vessels must either travel at less than 10 knots, or, must implement visual surveys with at least one visual observer to monitor for North Atlantic right whales (with the exception of vessel transit within Nantucket Sound unless a DMA is in place).
 - (viii) In the event that any Dynamic Management Area (DMA) is established that overlaps with an area where a vessel would operate, that vessel, regardless of size, will transit that area at 10 knots or less unless it is a crew transfer vessel.
 - (ix) Crew transfer vessels traveling within any designated DMA must travel at 10 knots (18.5 km/hr.) or less, unless NARWs are clear of the transit route and WDA for two consecutive days, as confirmed by vessel based surveys conducted during daylight hours and real-time PAM, or, by an aerial survey, conducted once the lead aerial observer determines adequate visibility.
 1. If confirmed clear by one of the measures above, vessels transiting within a DMA over 10 kts must employ at least two visual observers to monitor for North Atlantic right whales.
 2. If a NARW is observed within or approaching the transit route, vessels must operate at less than 10 knots until clearance of the transit route for two consecutive days.
 - (x) Crew transfer vessels travelling over 10 kts within a Right Whale Slow Zone must employ an additional observer or other enhanced detection methods (e.g., thermal cameras) to monitor for North Atlantic right whales in addition to PAM monitoring in the transit corridor.
 - (xi) All vessels greater than or equal to 65 ft (19.8 m) in overall length must comply with the 10 knot speed restriction in any Seasonal Management Area (SMA) per the NOAA ship strike reduction rule (73 FR 60173; October 10, 2008).



- (xii) Crew transfer vessels may travel at over 10 knots if, in addition to the required dedicated observer (see condition 4(l)(v)), real-time PAM of transit corridors is conducted prior to and during transits.
 - 1. If a North Atlantic right whale is detected via visual observation or PAM within or approaching the transit route, all crew transfer vessels must travel at 10 knots or less for the remainder of that day.
- (xiii) All vessels will reduce vessel speed to 10 knots (18.5 km/hr.) or less when any large whale, any mother/calf pairs, pods, or large assemblages of non-delphinoid cetaceans are observed near (within 100 m (330 ft.)) an underway vessel.
- (xiv) All vessels must maintain a minimum separation distance of 500 m (1,640 ft) from a NARW. If a whale is observed but cannot be confirmed as a species other than a right whale, the vessel operator must assume that it is a right whale and take appropriate action.
- (xv) If underway, vessels must steer a course away from any sighted North Atlantic right whale at 10 knots (18.5 km/hr.) or less such that the 500 m (1640 ft.) minimum separation distance is not violated. If a NARW is sighted within 500 m (1,640ft.) of an underway vessel, the underway vessel must shift the engine to neutral. Engines will not be engaged until the right whale has moved outside of the vessel's path and beyond 500 m.
- (xvi) All vessels must maintain a minimum separation distance of 100 m from sperm whales and non-NARW baleen whales. If one of these species is sighted within 100 m (330 ft.) of an underway vessel, the underway vessel must shift the engine to neutral. Engines will not be engaged until the whale has moved outside of the vessel's path and beyond 100 m.
- (xvii) All vessels must, to the maximum extent practicable, attempt to maintain a minimum separation distance of 50 m (164 ft) from all delphinoid cetaceans and pinnipeds, with an exception made for those that approach the vessel (e.g., bowriding dolphins). If a delphinoid cetacean or pinniped is sighted within 50 m (164 ft.) of an underway vessel, the underway vessel must shift the engine to neutral, with an exception made for those that approach the vessel (e.g., bowriding dolphins). Engines will not be engaged until the animal(s) has moved outside of the vessel's path and beyond 50 m.
- (xviii) When marine mammals are sighted while a vessel is underway, the vessel must take action as necessary to avoid violating the relevant separation distances, e.g., attempt to remain parallel to the animal's course, avoid



excessive speed or abrupt changes in direction until the animal has left the area. If marine mammals are sighted within the relevant separation distance, the vessel must reduce speed and shift the engine to neutral, not engaging the engines until animals are clear of the area. This does not apply to any vessel towing gear or any vessel that is navigationally constrained.

- (xix) All vessels underway will not divert or alter course in order to approach any marine mammal. Any vessel underway will avoid excessive speed or abrupt changes in direction.

5. Monitoring

- (a) Vineyard Wind must prepare and submit Pile Driving and Marine Mammal Monitoring Plans to NMFS for review and approval at least 90 days before the start of pile driving. The plans must include final project design related to pile driving (e.g., number, type of piles, hammer type, sound attenuation systems, anticipated start date, etc.) and all information related to PSO monitoring protocols, respectively.
- (b) Vineyard Wind must submit an Alternative Monitoring Plan to NMFS for NMFS' review and approval at least 90 days prior to the planned start of pile driving (this plan may be included in the Marine Mammal Monitoring Plan). This plan may include deploying additional observers, alternative monitoring technologies (i.e. night vision, thermal, infrared), and/or use of PAM with the goal of ensuring the ability to maintain all exclusion zones for all ESA-listed species in the event of unexpected poor visibility conditions.
- (c) Vineyard Wind must employ qualified, trained PSOs to conduct marine mammal monitoring during pile driving activity. PSO requirements are as follows:
 - (i) PSOs must be independent observers (i.e., not construction personnel).
 - (ii) At least one PSO on active duty must have prior experience working as a PSO in offshore environments.
 - (iii) Other PSOs may substitute education (i.e., degree in biological science or related field) or training for experience.
 - (iv) One PSO must be designated as lead observer or monitoring coordinator. The lead observer must demonstrate prior experience working as a PSO in offshore environments.



- (v) All PSOs must be approved by NMFS. Vineyard Wind must submit the CVs of the initial set of PSO necessary to commence the project to NMFS for approval at least 60 days prior to the first day of pile driving activity.
- (d) Vineyard Wind is required to adhere to visual monitoring protocols as follows:
 - (i) Vineyard Wind must conduct briefings between construction supervisors and crews and the PSO team prior to the start of all pile driving activities, and when new personnel join the work, in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures. An informal guide must be included with the Marine Mammal Monitoring Plan to aid in identifying species if they are observed in the vicinity of the project area.
 - (ii) A minimum of two PSOs must be on active duty on the pile driving vessel from 60 minutes before, during, and for 30 minutes after all pile installation activity concludes. If a DMA is established that overlaps with the Level B harassment zone (Table 6), three PSOs must be on active duty on the pile driving vessel.
 - (iii) PSOs must not exceed four consecutive watch hours on duty at any time, must have a minimum two hour break between watches, and must not exceed a combined watch schedule of more than 12 hours in a 24-hour period.
 - (iv) PSOs must be located at the best vantage point(s) on the pile driving vessel in order to observe the entire clearance zones, while still considering human safety, and have no other construction-related tasks.
 - (v) PSOs must record all incidents of marine mammal occurrence, regardless of distance from the construction activity.
 - (vi) PSOs must observe and collect data on marine mammals in and around the project area as described under 5(b)(ix).
 - (vii) During all observation periods during pile driving, PSOs must use high-magnification (25X), as well as standard handheld (7X) binoculars, and the naked eye to search continuously for marine mammals. During periods of low visibility (e.g., darkness, rain, fog, etc.), PSOs must use alternative technology to monitor clearance zones (e.g., night vision devices, IR/Thermal camera).
 - (viii) Monitoring distances must be measured with range finders or reticule binoculars. Distances to marine mammals observed must be based on the



best estimate of the PSO, relative to known distances to objects in the vicinity of the PSO. Bearings to animals shall be determined using a compass.

- (ix) When monitoring is required during vessel transit, observers must be stationed at the best vantage point (while still considering observer safety), to ensure maintenance of separation distances between marine mammals and vessels. When an observation of a marine mammal occurs during vessel transit, observers must record the following:
1. Time, date and location (lat/long);
 2. The vessel's activity, heading and speed;
 3. Sea state, water depth and visibility;
 4. Marine mammal identification to the best of the observers ability (e.g., NARW, whale, dolphin, seal);
 5. Initial distance marine mammal was observed from the vessel and closest point of approach; and
 6. Any avoidance measures taken in response to the marine mammal sighting.
- (x) For all marine mammal sightings by PSOs on the pile driving vessel, the following information must be collected and reported to NMFS:
1. Identification of the animal(s) (e.g., genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species;
 2. Pace of the animal(s);
 3. Estimated number of animals (high/low/best);
 4. Estimated number of animals by cohort (adults, yearlings, juveniles, calves, group composition, etc.);
 5. Description (as many distinguishing features as possible of each individual seen, including length, shape, color, pattern, scars or markings, shape and size of dorsal fin, shape of head, and blow characteristics);



6. Description of any marine mammal behavioral observations (e.g., observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (e.g., no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);
 7. Animal's closest distance from the pile being driven and estimated time spent within the harassment zone;
 8. Construction activity at time of sighting (e.g., ramp-up, active pile driving, delay, etc.);
 9. Distance and bearing of each marine mammal observed relative to the pile being driven for each sighting (if pile driving was occurring at time of sighting);
 10. Description of any mitigation-related actions called for but not implemented in response to a sighting (e.g., delay, shutdown, etc.), including time, location, and the reason why the mitigation-related action was not implemented;
 11. Watch status (sighting made by PSO on/off effort, opportunistic, crew, alternate vessel/platform);
 12. PSO who sighted the animal;
 13. Time of sighting;
 14. Location of sighting;
 15. Water depth;
 16. Sea and weather state; and
 17. Marine mammal occurrence within relevant Level A or Level B harassment zones must be documented.
- (e) Vineyard Wind must adhere to Passive Acoustic Monitoring protocols as follows:
- (i) Acoustic monitoring must be conducted during all pile driving.
 - (ii) Acoustic monitoring must begin at least 60 minutes prior to initiation of pile driving, during, and 30 minutes post pile driving.



- (iii) Acoustic monitoring must be conducted by at least one acoustic PSO. The acoustic PSO(s) must demonstrate that they have completed specialized training for operating PAM systems and detecting and identifying NARWs.
- (iv) Acoustic PSOs may be on watch for a maximum of four consecutive hours followed by a break of at least two hours between watches.
- (v) The acoustic PSO(s) must immediately communicate all detections of marine mammals to visual PSOs, including any determination regarding species identification, distance, and bearing and the degree of confidence in the determination.
- (vi) The PAM system must not be located on the pile installation platform.
- (vii) For all marine mammal acoustic detections, the following information must be recorded:
 1. Identification, location and depth of recording unit
 2. Time zone for sound files and recorded date/times in data and metadata
 3. Duration of recording (start/end dates and times)
 4. Type of recording (continuous/duty cycled)
 5. Species identification (if possible)
 6. Call type (if known)
 7. Temporal aspects of vocalization (date, time, duration, etc.)
 8. Comparison with any visual sightings
 9. Name of observer/data collector/analyst
 10. A record of the PAM operator's review of any acoustic detections.
 11. Location (if geometry/density of bottom-mounted or sonobuoy array allows) or directionality (directional hydrophones and/or lateral information from towed array) of detected calls including references to location of coincident human sound-producing activities.



- (viii) A Passive Acoustic Monitoring Plan must be submitted to NMFS for review and approval at least 90 days prior to the planned start of pile driving. The Plan must describe all proposed PAM equipment, procedures, and protocols.
- (f) Sound Field Verification
 - (i) To validate the estimated sound fields, Sound field verification (SFV) measurements must be conducted during pile driving of the first monopile and first jacket pile installed over the course of the project, with noise attenuation activated;
 - (ii) In the event that subsequently driven piles are installed that have a larger diameter, or, are installed with a larger hammer or greater hammer energy than the first monopile and jacket foundation, sound field measurements must be conducted for those subsequent piles.
 - (iii) A Sound Field Verification Plan must be submitted to NMFS for review and approval at least 90 days prior to planned start of pile driving. This plan must describe how Vineyard Wind will ensure that the location selected is representative of the rest of the piles of that type to be installed and, in the case that it is not, how additional sites will be selected for sound field verification, or, how the results from the first pile can be used to predict actual installation noise propagation for subsequent piles. The plan must describe how the effectiveness of the sound attenuation methodology will be evaluated based on the results. This plan must also include methodology for collected data on at least three piles, in addition to the information above, if reductions to the clearance zones in Table 2 are requested.
 - (iv) Vineyard Wind must provide the initial results of the field measurements to NMFS as soon as they are available.
- (g) Level A and Level B Harassment Zone Distance Verification
 - (i) Vineyard Wind must conduct SFV monitoring during:
 1. Impact driving of the first monopile used over the duration of the IHA.
 2. Impact driving of the first jacket pile used over the duration of the IHA.



3. Impact driving any piles that have a larger diameter, or, are installed with a larger hammer or greater hammer energy than the first monopile and jacket pile or subsequent pile.
 4. At least three piles of the same size if a reduction to the clearance and shutdown zones in Tables 2 and 4, where possible, is requested.
- (ii) Vineyard Wind must conduct SSV monitoring to empirically determine the distances to the isopleths corresponding to Level A and Level B harassment thresholds, either by extrapolating from *in situ* measurements conducted at several distances from the pile being driven, or by measurements at the distances where the received levels reach the relevant thresholds.
 - (iii) For extent of Level B harassment zone verification, Vineyard Wind must report the measured or extrapolated distances where the received levels SPL_{rms} decay to 160 dB_{rms}, as well as integration time for such SPL_{rms}.
 - (iv) If initial acoustic field measurements indicate distances to the isopleths corresponding to Level A and/or Level B harassment thresholds are greater than the distances predicted by modeling (Tables 5 and 6), Vineyard Wind must implement additional sound attenuation measures prior to conducting additional pile driving. Additionally, in the event that field measurements indicate distances the isopleths corresponding to Level A and Level B harassment thresholds are greater than the distances predicted by modeling, NMFS may expand the relevant clearance and shutdown zones.
- (h) Vineyard Wind must submit a NARW strike avoidance plan 90 days prior to commencement of vessel use. The plan will, at minimum, describe how the required vessel, PAM, or aerial based monitoring will be conducted to ensure the transit corridor is clear of NARWs. The plan will also provide details on the vessel-based observer protocol on transiting vessels and PAM required between November 1 and May 14.

6. Reporting

- (a) If a North Atlantic right whale is observed at any time by PSOs or personnel on any vessel, during any project-related activity or during vessel transit, Vineyard Wind must report sighting information to the NMFS North Atlantic Right Whale Sighting Advisory System: (866) 755-6622 and to the U.S. Coast Guard via channel 16 and through the WhaleAlert app (<http://www.whalealert.org/>) as soon as feasible but no longer than 24 hours after the sighting. Information reported



must include, at minimum, time of sighting, location, and number of NARWs observed.

- (b) If a North Atlantic right whale is detected via PAM, the date, time, location (i.e., latitude and longitude of recorder that had detection) of the detection as well as the recording platform and organization (e.g., Vineyard Wind slocum glider) must be reported to nmfs.pacmdata@noaa.gov as soon as feasible but no longer than 24 hours after the detection. Full detection data and metadata must be submitted within 48 hours via the webform on the NMFS North Atlantic right whale Passive Acoustic Reporting System website (www.fisheries.noaa.gov/new-england-mid-atlantic/endangered-species-conservation/passive-acoustic-research-atlantic-ocean). For assistance, contact nmfs.pacmdata@noaa.gov.
- (c) All required training for Vineyard Wind personnel, including vessel crew and captains, and PSOs must be reported to NMFS (itp.daly@noaa.gov) prior to initiation of project activities.
- (d) Vineyard Wind must compile and submit weekly reports to NMFS during pile driving that document the start and stop of all pile driving daily, any mitigation actions or if mitigation actions could not be undertaken, the start and stop of associated observation periods by the PSOs, details on the deployment of PSOs, and a record of all observations of marine mammals. Weekly reports are due on Wednesday for the previous week (Sunday – Saturday).
- (e) Vineyard Wind must compile and submit monthly reports that include a summary of all information in the weekly reports including project activities carried out in the previous month, including vessel transits (number, type of vessel, and route) and piles installed, and all observations of marine mammals. Monthly reports are due on the 15th of the month for the previous month.
- (f) Vineyard Wind must submit its annual final draft report(s) on all visual and acoustic monitoring conducted under this IHA within 90 calendar days of the completion of monitoring. A final report must be prepared and submitted within 30 calendar days following receipt of any NMFS comments on the draft report. If no comments are received from NMFS within 30 calendar days of receipt of the draft report, the report shall be considered final.
- (g) All draft and final monitoring reports must be submitted to PR.ITP.MonitoringReports@noaa.gov and itp.daly@noaa.gov.
- (h) Acoustic Sound Source Monitoring Reporting: Results of sound field verification of pile driving must be submitted as soon as possible but no later than within 30 days following completion of acoustic monitoring. The final report must include, at minimum, the following:



- (i) Peak sound pressure level (SPL_{pk}), root-mean-square sound pressure level that contains 90% of the acoustic energy (SPL_{rms}), single strike sound exposure level (SEL_{ss}), integration time for SPL_{rms}, SEL_{ss} spectrum, and 24-hour cumulative SEL extrapolated from measurements. All these levels must be reported in the form of (1) median, (2) mean, (3) maximum, and (4) minimum.
 - (ii) The sound levels reported must be in median and linear average (i.e., taking averages of sound intensity before converting to dB).
 - (iii) A description of depth and sediment type at the recording location.
 - (iv) Number of strikes per pile measured, one-third octave band (or decade) spectrum and/or power spectral density.
 - (v) Hydrophone equipment and methods: recording device, sampling rate, distance from the pile where recordings were made; depth of recording device(s).
 - (vi) Description of the PAM hardware and software, including software version used, calibration data, bandwidth capability of hydrophone(s), any filters used in hardware or software, any limitations with the equipment, and other information.
 - (vii) Local environmental conditions, such as references to visibility metrics, transmission loss data collected on-site (or the sound velocity profile), baseline pre- and post-activity ambient noise levels (broad-band and/or within frequencies of concern).
 - (viii) Spatial configuration of the noise attenuation device(s) relative to the pile.
 - (ix) The extents of the Level A and Level B harassment zones.
 - (x) Any action taken to adjust noise attenuation devices.
- (i) Reporting injured or dead marine mammals:
- (i) In the event that personnel involved in the activities covered by the authorization discover an injured or dead marine mammal, Vineyard Wind must immediately report the observation to the NOAA Fisheries Marine Mammal and Sea Turtle Stranding and Entanglement Hotline (866-755-6622) or the NOAA's Dolphin and Whale 911 App. In addition, Vineyard Wind must report the observation to NMFS Office of Protected Resources (OPR) within 24 hours (301-427-8401). If the death or injury was clearly



caused by the specified activity, the Holder must immediately cease the activities until NMFS OPR is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of this IHA. The report must include the following information:

1. Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
2. Species identification (if known) or description of the animal(s) involved;
3. Condition of the animal(s) (including carcass condition if the animal is dead);
4. Observed behaviors of the animal(s), if alive;
5. If available, photographs or video footage of the animal(s); and
6. General circumstances under which the animal was discovered.

(ii) In the event of a vessel strike of a marine mammal by any vessel involved in the activities covered by the authorization, Vineyard Wind must immediately report the incident to the NOAA Fisheries Marine Mammal and Sea Turtle Stranding and Entanglement Hotline (866-755-6622) or the NOAA's Dolphin and Whale App as well as the U.S. Coast Guard via Channel 16. The incident must also be immediately reported to NMFS Office of Protected Resources (301-427-8401). Vineyard Wind must immediately cease the activities until NMFS OPR is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of this IHA. The report must include the following information:

1. Time, date, and location (latitude/longitude) of the incident;
2. Species identification (if known) or description of the animal(s) involved;
3. Vessel's speed during and leading up to the incident;
4. Vessel's course/heading and what operations were being conducted (if applicable);
5. Status of all sound sources in use;
6. Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any,



to avoid strike;

7. Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, visibility) immediately preceding the strike;
 8. Estimated size and length of animal that was struck;
 9. Description of the behavior of the marine mammal immediately preceding and following the strike;
 10. If available, description of the presence and behavior of any other marine mammals immediately preceding the strike;
 11. Estimated fate of the animal (e.g., dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared); and
 12. To the extent practicable, photographs or video footage of the animal(s).
7. This Authorization may be modified, suspended or revoked if the holder fails to abide by the conditions prescribed herein (including, but not limited to, failure to comply with monitoring or reporting requirements), or if NMFS determines: (1) the authorized taking is likely to have or is having more than a negligible impact on the species or stocks of affected marine mammals or (2) the prescribed measures are likely not or are not effecting the least practicable adverse impact on the affected species or stocks and their habitat.

MARZIN.CATHERINE.G.1365836082
NE.G.1365836082

Digitally signed by
MARZIN.CATHERINE.G.1365836082
Date: 2021.05.21 09:27:44 -04'00'

Catherine Marzin, Acting Director
Office of Protected Resources
National Marine Fisheries Service

Date



Table 1. Authorized Numbers of Take, by Species, by Harassment Level.

Species	Stock	Level A harassment	Level B harassment
Fin whale	W. North Atlantic	5 ¹	33 ¹
Humpback whale	Gulf of Maine	10	56
Minke whale	Canadian East Coast	2	98
North Atlantic Right whale	W. North Atlantic	0	20 ¹
Sei Whale	Nova Scotia	2 ¹	4 ¹
Sperm whale	W. North Atlantic	0	5 ¹
Atlantic White-Sided dolphin	W. North Atlantic	28	1107
Bottlenose dolphin	W. North Atlantic, offshore	8	96
Long-finned pilot whale	W. North Atlantic	9	91
Risso's dolphin	W. North Atlantic	6	12
Common dolphin	W. North Atlantic	35	4646
Harbor porpoise	Gulf of Maine/Bay of Fundy	4	150
Gray seal	W. North Atlantic	2	414
Harbor seal	W. North Atlantic	2	214
Harp seal	W. North Atlantic	2	217

¹ For ESA-listed marine mammals, the amount of take authorized may not exceed the amount of take authorized in the corresponding Incidental Take Statement issued pursuant to the ESA. Therefore, if the ITS authorizes less take than provided here, actual take may not exceed the amount of take in the ITS.



Table 2. Radial Distances to NARW Clearance Zones and PAM Monitoring Zones.

Clearance and PAM Monitoring Zones				
Time of Year	Pile Type	Minimum Visual Clearance Zone^{1,2}	PAM Clearance Zone⁵	PAM Monitoring Zone
May 1 - May 14	All	10 km	10 km ⁶	10 km
May 15 - May 31	monopile/jacket	2 km / 1.6 km ^{3,4}	5 km / 3.2 km ³	10 km
June 1 - Oct 31	monopile/jacket	2 km / 1.6 km ^{3,4}	5 km / 3.2 km ³	5 km
Nov 1 - Dec 31	monopile/jacket	2 km / 1.6 km ³	10 km ⁶	10 km

¹ At any time of year, a visual detection of a NARW by a PSO on the pile driving vessel triggers a delay in pile driving.
² At all times of year, any large whale sighted by a PSO within 1,000 m of the pile that cannot be identified to species must be treated as if it were a NARW.
³ Upon receipt of an interim SFV report, NMFS may adjust the clearance zones to reflect SFV measurements such that the minimum visual clearance zones represent the Level A (SELCum) zones and the PAM clearance zones represent the Level B harassment zones. However, zone sizes will not be decreased less than 1km from June 1- Oct 1 and not less than 2 km during May 15-May 31 or if a DMA or Slow Zone is established that overlaps with the Level B harassment zone.
⁴ If a DMA or Slow Zone overlaps the Level B harassment zone, Vineyard Wind will employ a third PSO at the pile driving platform such that 3 PSOs will be on duty. The primary duty of the 3rd PSO is to observe for NARWs.
⁵ At any time of year, a PAM detection (75% confidence) of a NARW within the PAM clearance zone must be treated as a visual detection, triggering a delay in pile driving.
⁶ From May 1-14 and Nov 1- Dec 31, the PAM system must be operated 24/7 if pile driving will occur and must not be less than 10km.
⁷ If a DMA or Slow Zone overlaps the Level B zone, the PAM system must be extended to the largest practicable detection zone to increase situational awareness but must not be smaller than the Level B zone.

Table 3. Radial Distances to NARW Shutdown Zone.

NARW Shutdown Zone (Visual and PAM)	
Pile Type	Shutdown Zone^{1,2}
Monopile/ Jacket	3.2 km

¹ If a marine mammal is observed entering or within the respective clearance zone after pile driving has commenced, a shutdown of pile driving must be implemented when technically feasible as described under Condition 4(f)(ii) of this IHA.
² Upon receipt of an interim SSV report, NMFS may adjust the shutdown zone.



Table 4. Radial Distances to Non-NARW Clearance and Shutdown Zones.

Species Group	Clearance and Shutdown Zones
Non-NARW mysticete whales (including humpback, sei, fin and minke) and sperm whale	500 m
Harbor porpoise	120 m
All other marine mammals (including dolphins and pinnipeds)	50 m

Table 5. Radial distances (m) to Level A Harassment Thresholds for Each Foundation Type with 0, 6, and 12 dB Sound Attenuation Incorporated.

Foundation type	Hearing group	Level A harassment (peak) ¹			Level A harassment (SEL) ¹		
		No attenuation	6 dB attenuation	12 dB attenuation	No attenuation	6 dB attenuation	12 dB attenuation
10.3 m (33.8 ft) monopile	LFC	34	17	8.5	5,443	3,191	1,599
	MFC	10	5	2.5	56	43	0
	HFC	235	119	49	101	71	71
	PPW	38	19	10	450	153	71
Four, 3 m (9.8 ft) jacket piles	LFC	7.5	4	2.5	12,975	7,253	3,796
	MFC	2.5	1	0.5	71	71	56
	HFC	51	26	13.5	1,389	564	121
	PPW	9	5	2.5	2,423	977	269

¹ NMFS may adjust these isopleths based on review of an interim SSV report.



Table 6. Radial Distances (m) to the Level B Harassment Threshold (160 dB_{rms}) for Each Foundation Type with 0, 6, and 12 dB Sound Attenuation Incorporated.

Foundation type	Level B Harassment Isopleths ¹		
	No attenuation	6 dB attenuation	12 dB attenuation
10.3 m (33.8 ft) monopile	6,316	4,121	2,739
Four, 3 m (9.8 ft) jacket piles	4,104	3,220	2,177

¹ NMFS may adjust these distances based on review of an interim SSV report.



DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XA881]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Construction of the Vineyard Wind Offshore Wind Project

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued an incidental harassment authorization (IHA) to Vineyard Wind 1, LLC (Vineyard Wind) to take, by Level A harassment and Level B harassment, marine mammals during construction of a commercial wind energy project offshore Massachusetts.

DATES: The IHA is valid from May 1, 2023 through April 30, 2024.

FOR FURTHER INFORMATION CONTACT: Jaclyn Daly, Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act. In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the “take” of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed incidental take authorization may be provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other “means of effecting the least practicable adverse impact” on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stocks for taking for certain subsistence uses (referred to in shorthand as “mitigation”); and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth.

The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

Summary of Request

On September 7, 2018, NMFS received a request from Vineyard Wind for an IHA to take marine mammals incidental to pile driving associated with the construction of an offshore wind energy project south of Massachusetts. Vineyard Wind submitted revised versions of the application on October 11, 2018 and on January 28, 2019. The application was deemed adequate and complete on February 15, 2019. A notice of proposed IHA was published in the **Federal Register** on April 30, 2019 (84 FR 18346). In response to Vineyard Wind’s request and in consideration of public comments, NMFS has authorized the taking of 15 species of marine mammals by harassment. Neither Vineyard Wind nor NMFS expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

Description of Activity

Vineyard Wind proposes to construct an 800 megawatt (mw) offshore wind energy project in the northern portion of Lease Area OCS-A 0501, offshore Massachusetts (Figure 1). In its request for an IHA, Vineyard Wind states that the project would consist of up to 100 offshore wind turbine generators (WTGs) and one or more electrical service platforms (ESPs), an onshore substation, offshore and onshore cabling, and onshore operations and maintenance facilities. Take of marine mammals may occur incidental to the construction of the project due to in-water noise exposure resulting from pile driving activities associated with installation of WTG and ESP foundations.

BILLING CODE 3510-22-P



Record of Decision

**Vineyard Wind 1 Offshore Wind Energy Project
Construction and Operations Plan**

May 10, 2021

**U.S. Department of the Interior
Bureau of Ocean Energy Management**

**U.S. Department of Defense
U.S. Army Corps of Engineers
New England District**

**U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service**

Table of Contents

1. Introduction.....	3
1.1 Background.....	4
1.2 Authorities.....	8
1.2.1 BOPM Authority.....	8
1.2.2 USACE Authority and Approval.....	8
1.2.3 NMFS Authority.....	8
2. Proposed Project.....	10
2.1 Project Description.....	10
2.2 Purpose and Need for the Proposed Action.....	10
3. Alternatives.....	11
3.1 Alternatives Considered for Detailed Analysis.....	17
3.2 Environmental Consequences of Alternatives.....	17
3.3 Environmentally Preferable Alternatives.....	22
4. Mitigation, Monitoring, and Reporting.....	22
5. Final Agency Decisions.....	23
5.1 The Department of the Interior Decision.....	23
5.2 NEPA Decision.....	30
5.3 NMFS Decision.....	50
5.3.1 NMFS Decision (40 C.F.R. § 1505.2(a)).....	50
5.3.2 Alternatives NMFS Considered (40 C.F.R. § 1505.2(b)).....	51
6. References.....	53
Appendix A. Mitigation and Monitoring Measures.....	54
Appendix B. Compliance Review of the Construction and Operations Plan for the Vineyard Wind 1 Offshore Wind Energy Project.....	100

1. INTRODUCTION

This document coordinates the Bureau of Ocean Energy Management (BOEM), U.S. Army Corps of Engineers (USACE), and National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) joint Record of Decision (ROD) for the final Environmental Impact Statement (EIS) prepared by Vineyard Wind LLC (Vineyard Wind Energy Project) (Project) Construction and Operations Plan (COP). The ROD addresses BOEM's action to approve the COP under section 8(p) of the Outer Continental Shelf (OCS) Leasing Act (OCSLA) (30 U.S.C. § 357(g)), USACE's permitting action under section 10 of the River and Harbors Act (1899) (RHA), 33 U.S.C. § 405 for section 404 of the Clean Water Act (CWA), 33 U.S.C. § 1311, and NMFS' action of issuing an Incidental Harassment Authorization (IHA) to Vineyard Wind under section 101(a)(2)(D) of the Marine Mammal Protection Act, as amended (MMPA), 16 U.S.C. § 1371(a)(2)(D). This ROD was prepared following the requirements of the National Environmental Policy Act (NEPA) 42 U.S.C. §§ 432-437 and 437a and 40 C.F.R. parts 1500-1508.

BOEM prepared the Vineyard Wind Offshore Wind Energy Project EIS with the assistance of a third party contractor, Environmental Resources Management Inc. The USACE, NMFS, Bureau of Safety and Environmental Enforcement (BSEE), the U.S. Coast Guard (USCG), and the U.S. Environmental Protection Agency (USEPA) were cooperating agencies during the development and review of the document. The Navarone Indian Tribe was a cooperating tribal nation. Cooperating state agencies included the Massachusetts Office of Coastal Zone Management (MA CZM), the Rhode Island Coastal Resource Management Council (RI CRMC), and the Rhode Island Department of Environmental Management.

The need for BOEM's actions to execute its duty to approve, approve with modifications, or disapprove the COP. This action fulfills BOEM's responsibility to lease Outer Continental Shelf (OCS) energy resources available for development in an expeditious and orderly manner, subject to environmental safeguards (43 U.S.C. § 1321), and a diligent location of natural resources and existing uses. This responsibility balances different goals and does not hold any one goal, such as that of others, or subject with its own. That is, as stated by the Director of the Interior Solicitor, Secretary's *Discretionary Duties under Antiquities Rights of the Outer Continental Shelf and the Planning Obligations on the Outer Continental Shelf* (M-2007) M-2707 provides that "subsections 5(p)(1) of OCSLA and similar statutes require only that the Secretary strike a national balance between Congress's enumerated goals, i.e., a variety of uses. In making this determination, the Secretary retains wide discretion to weigh those goals as an application of his or her expertise and policy judgment." (M-2007) p. 2.

The EIS also analyzed impacts resulting from the proposed action that are relevant to USACE permitting actions under section 10 of the RHA and section 404 of the CWA and NMFS' action of issuing an IHA under the MMPA.

(1) Title 40, Section 437a which is required for Federal agency implementation of NEPA, is also found in Title 40, including in the proposed provisions of NEPA (40 Fed. Reg. 4374). Since BOEM's NEPA review of the proposed Project began prior to the September 11, 2001, edition of the updated regulations, EISs prepared after 9/11 and the ROD take the previous version of the regulations (40 CFR, as amended in 1996 and 2005).

<http://www.gpo.gov/cgi-bin/getdoc.pl?doc=40cfr>

1.1. BACKGROUND

BOEM expanded on its potential OCS wind energy leasing and development efforts in Massachusetts in 2008 by establishing an intergovernmental renewable energy task force comprised of a select of officials from state, local, and tribal governments and other local agency representatives. BOEM then conducted the following activities to develop a plan and lease up

- A four-page memorandum with the task force, BOEM, and other agencies (the 12-page, 11-mile long off-shore wind corridor) from further consideration for offshore wind leasing to allow some 100 miles in length, east of the 55-mile water depth limit) were removed due to technological limitations.
- In August 2010, BOEM published a Request for Interest (RFI) in the Federal Register to determine commercial interest in wind energy development in an area offshore Massachusetts (Commerce - Leasing for Wind Power on the OCS Offshore Massachusetts - Request for Interest, 75 Fed. Reg. 62055 (December 25, 2010)).
- In February 2013, BOEM published a call for information and nominations (Call) in the Federal Register to solicit industry interest in acquiring commercial leases for developing wind energy projects in the Call area and to seek information on environmental resources and other uses in the Call area (Commerce - Leasing for Wind Power on the Outer Continental Shelf Offshore Massachusetts - Call for Information and Nominations - 77 Fed. Reg. 5539 (February 6, 2012)). In that same month, BOEM published a notice of intent (NOI) to prepare an Environmental Assessment (EA) under NEPA for commercial wind leasing and sale assessment activities offshore Massachusetts in the Federal Register for public review and comment.
- In May 2012, BOEM publicly identified a wind energy area (WEA) offshore Massachusetts, excluding additional areas from commercial leasing addressed in comments from the Call (e.g., areas of high sea data concentration and an area of high-value fisheries).
- In November 2012, BOEM published a notice of availability (NOA) of an EA in accordance with NEPA for preparing commercial wind lease issuance and site assessment activities on the OCS offshore Massachusetts for public review and comment (77 Fed. Reg. 68187 (November 2, 2012)).
- BOEM considered the comments received on the EA and on June 18, 2013, BOEM published an NOA for a revised EA regarding the WEA of Shore Massachusetts in the Federal Register (79 Fed. Reg. 37781 (June 18, 2014)). As a result of the analysis in the revised EA, BOEM issued a finding of no significant impact (FONSI), which concludes that reasonably foreseeable effects associated with the commercial wind lease sale (e.g., site characterization surveys in the WEA and deployment of meteorological towers or buoys) would not significantly affect the environment.
- In June 2014, BOEM published a proposed rule in the Federal Register for public review and comment, identifying 7,278 acres (3,007 square kilometers (km²)) offshore Massachusetts in Federal waters that would be available for commercial wind energy sale (79 Fed. Reg. 34771 (June 18, 2014)).
- BOEM considered the comments received on the proposed rule notice and published a final rule in the Federal Register on November 26, 2014 (79 Fed. Reg. 70745).

- In January 2013, BDECM held a competitive lease sale pursuant to 90 CFR 4.6 (985) for the lease areas within the Massachusetts WEA. Offshore MW LLC (which subsequently changed its name to Vineyard Wind LLC) won the lease (COF-A) used in this auction (Figure 1).
- In January 2017, Vineyard Wind submitted a COF to BDECM for the proposed Project.¹ The COF proposes the development of an offshore wind energy project with a nameplate capacity of approximately 900 megawatts (MW) in the northern portion of the Vineyard Wind lease area (Figure 1) (Proposed Action). The area of the proposed Project is referred to as the wind development area (WDA) and consists of 75,811 acres (336 km²). According to the COF regarding the proposed Project, as set forth in Appendix C to the COF.
- On March 30, 2018, BDECM published an NOI to represent an environmental impact statement (EIS) for Vineyard Wind's proposed wind energy facilities off-shore Massachusetts. During the public comment period, BDECM held five public scoping meetings in Massachusetts and Rhode Island.
- On September 6, 2018, NMFS received a request from Vineyard Wind for an authorization to incidentally take marine mammals under the MMPA during construction of an offshore wind energy project south of Massachusetts.
- On December 7, 2018, BDECM published an NOI for a draft EIS (DEIS) assessing the potential impacts of the Proposed Action on a variety of factors (Notice of Availability of a Draft Environmental Impact Statement for Vineyard Wind, LLC's Proposed Wind Energy Facility Offshore Massachusetts," 83 Fed. Reg. 63184 (December 8, 2018)).
- During the public comment period for the Vineyard Wind DEIS (December 7, 2018, to February 22, 2019),² BDECM held five public hearings in Massachusetts and Rhode Island. BDECM received a total of 371 unique submissions from the public agencies and individuals (including private citizens and stakeholders).
- ISAAC received Vineyard Wind's application for a combined individual permit and activity permit on December 17, 2018. ISAAC was provided additional information on December 18, 2018, and the permit application was determined to be complete.
- ISAAC issued a public notice of Vineyard Wind's permit application on December 26, 2018, with a public comment period due on January 28, 2019. ISAAC published the comments in response at the meeting.
- On April 30, 2019, NMFS published a proposed MMPA IHA for the Federal Register (84 Fed. Reg. 18216 (April 30, 2019)) for public review and comment.
- On June 12, 2019, in response to comments from the public and other Federal and State agencies, BDECM published an NOI for a supplemental EIS to the DEIS in the Federal Register. The supplemental EIS addresses comments with the regulations implementing NEPA ("Notice of Availability of a Supplement to the Draft Environmental Impact Statement for Vineyard Wind, LLC's Proposed Wind Energy Facility Offshore Massachusetts and Public Meetings," 84 Fed. Reg. 25952 (June 12, 2019)). The supplemental EIS analyzed additional foreseeable effects from an expanded cumulative activities scenario for offshore wind development, previously

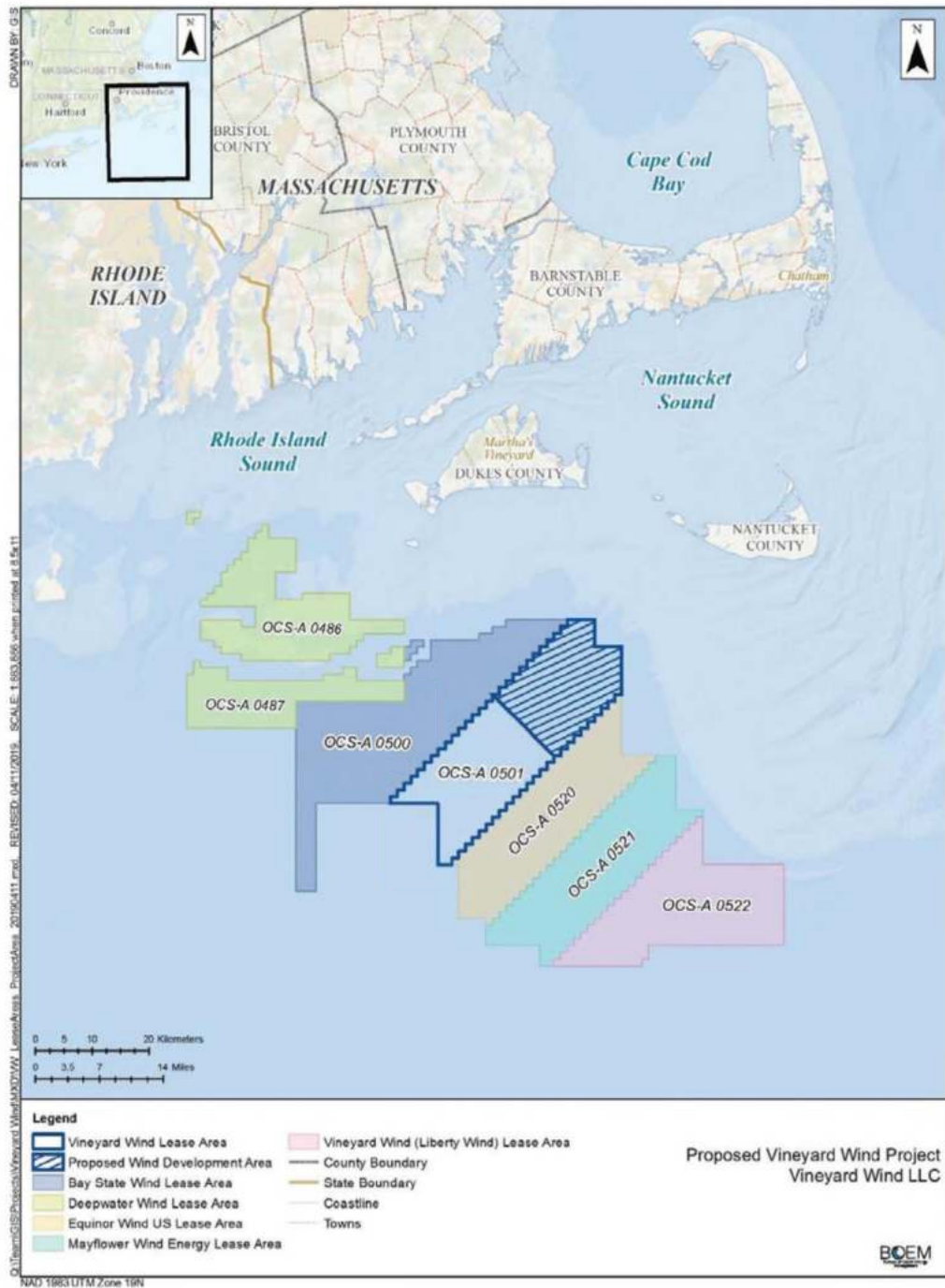
¹ COF-A consists of a draft environmental impact statement for proposed Wind

² Initial 120-day public comment period for the DEIS was extended to 180 days from January 27, 2019 to March 16, 2019. Federal Government Shutdown (GPO) extended the comment period to February 22, 2019, and the public hearings were rescheduled.

unavailable fishing data, a new transit lane alternative, and changes to the COP since publication of the DEIS.

- During the public comment period for the supplement to the DEIS (June 12, 2020, to July 27, 2020) and the five virtual public meetings, BOEM received approximately 3,500 unique submittals from the public, agencies, and other interested groups and stakeholders. Appendix K of the FEIS describes the public comment processing methodology and definitions and includes responses to the substantive comments received on the DEIS and the supplement to the DEIS.
- On September 13, 2020, NMFS issued a biological opinion (BO) for the project covering all potential effects of the proposed Project on Endangered Species Act (ESA)-listed species and designated habitat (NMFS 2020).
- On December 1, 2020, Vineyard Wind withdrew the COP from further consideration by BOEM to conduct additional technical and logistical reviews associated with the inclusion of the General Electric Haliade-X wind turbine generator (WTG) into the final Project design.
- In response to Vineyard Wind's letter, BOEM published a notice informing the public that it was terminating the environmental review. ("Vineyard Wind LLC's Proposed Wind Energy Facility Offshore Massachusetts," 85 Fed. Reg. 81486 (December 16, 2020)).
- By letter dated January 22, 2021, Vineyard Wind notified BOEM that it had completed its technical and logistical due diligence review and had concluded that inclusion of the Haliade-X turbines did not fall outside of the project design envelope being reviewed in the COP and requested BOEM to resume review of the COP.
- BOEM concluded that, since there were no modifications required to the COP, the review would resume.
- On March 3, 2021, BOEM published a notice in the Federal Register notifying stakeholders of the resumption of the NEPA process for the Vineyard Wind COP.
- On March 12, 2021, BOEM published an NOA for the FEIS in the *Federal Register*. The FEIS was made available in electronic form for public viewing at <https://www.boem.gov/Vineyard-Wind/>. BOEM's 30-day waiting period for the FEIS closed on April 12, 2021.

Figure 1 – Project Area



1.2. AUTHORITIES

The following summarizes BOEM, USACE, and NMFS authority as regarding the proposed Project. The FEIS includes a full list of authorizations and permits for the Project in Appendix B, table 1-3-1 and a description of consultations in Appendix C. The agencies adopting the FEIS are these agencies are, by specified authorization, accepting their responsibility for the final USACE authority and adoption are briefly discussed here and its decision and supporting rationale are discussed in section 5.3. The NMFS authorization is briefly discussed here, its facts and supporting rationale are discussed in section 5.3. Additional cooperating agencies participating in the NEPA process for the proposed project are authorized the Project have completed any authorizations that are required of them, or their actions are exempt from NEPA (e.g. Clean Air Act permitting) and therefore discuss separately.

1.2.1. BOEM Authority

The Energy Policy Act of 2005, Public Law 109-58, amended the OCSLA to authorize the Secretary of the Interior to issue leases, easements, and rights-of-way on the OCS for conventional energy development, including wind energy arrays. The Secretary of the Interior must consider certain factors in exercising OCSLA authority on 8(p). Specifically, “[t]he Secretary shall ensure that any activity under [subsection 8(p)] is carried out in a manner that provides for

- (A) safety;
- (B) protection of the environment;
- (C) protection of wages;
- (D) conservation of the natural resources of the outer Continental Shelf;
- (E) coordination with relevant Federal agencies;
- (F) protection of national security interests of the United States;
- (G) protection of mineral rights in the outer Continental Shelf;
- (H) a fair return to the United States for any lease, easement, or right-of-way under this subsection;
- (I) prevention of interference with reasonable uses (as determined by the Secretary) of the exclusive economic zone, the high seas, and the territorial seas;
- (J) consideration of—
 - (i) the location of, and any schedule relating to, a lease, easement, or right-of-way for an array of wind energy on the outer Continental Shelf; and
 - (ii) any other use of the sea or seabed, including use for a fishery, a traditional subsistence activity, or a recreational purpose;
- (K) public notice and comment on any proposal submitted for a lease, easement, or right-of-way under this subsection; and
- (L) energy, inspection, research, monitoring, and enforcement relating to a lease, easement, or right-of-way under this subsection.”

Subsection 8(p) thus requires the Secretary to ensure that activities authorized under a provision 8(p) of OCSLA are carried out in a manner that provides for these twelve different goals. As stated in M-Opinion 170977, “subsection 8(p)(1) of OCSLA imposes a general duty on the Secretary to act in a manner providing for the subsection’s enumerated goals. The subsection does not require the Secretary to ensure that the goals are achieved to a particular degree, and

permit to be discretionary to determine an appropriate balance between two or more projects that are in the same or different areas, and⁵ The Secretary delegated the authority to approve a COP to the former Minerals Management Service, and later to BOEM. Final regulations implementing this authority were promulgated by BOEM on April 29, 2009 (30 Fed. Reg. 17045). These regulations prescribe BOEM's responsibility for determining whether to approve, approve with modifications, or disapprove a Vinyard Wind VLOC in accordance with Executive Order Environmental Quality (CEQ) NEPA regulations (35 Fed. Reg. 1006). BOEM served as the lead Federal agency for the preparation of the EIS.

1.2.2. USACE Authority and Adoption

This permit action is being undertaken through authority delegated to the District by 33 C.F.R. § 325.8 pursuant to section 10 of the RHA (44 U.S.C. § 531) and section 504 of the CWA (33 U.S.C. § 1314). Section 10 of the RHA prohibits the obstruction or alteration of navigable waters of the United States without a permit from USACE. USACE also issues permits under Section 401 of the CWA authorizing the discharge of dredged or fill material into waters of the United States. The applicant proposes a discharge of fill below the high tide line of waters of the United States and to perform work and place structures below the mean high water mark of navigable waters of the United States. These activities require authorization from USACE under section 10 of the RHA and section 401 of the CWA.

USACE is a primary development of the Vinyard Wind EIS as a cooperating agency under the CEQ/NEPA regulations. USACE has reviewed and evaluated the information in the FEIS, including a EIS impact assessment subsequently awarded, in accordance with 40 C.F.R. § 501.6 and 33 C.F.R. part 325, Appendix B. USACE found the information to be a sufficient and accurate assessment. Therefore, USACE adopts the FEIS as appropriate for the purposes of NEPA and the public interest, analysis and alternatives analysis required by 33 C.F.R. § 320.4 and 33 C.F.R. § Part 325, Appendix D.

1.2.3. NMFS Authority

Sections 101(b)(5)(A) and (D) of the NMMPA give NMFS the authority to authorize, upon request, the incidental but not intentional, taking of the limited number of marine mammals (including incidental take by harassment) provided certain determinations are made and statutory and regulatory procedures are met. To authorize the incidental take of marine mammals, NMFS evaluates the best available scientific information to determine whether the take would have a negligible impact on affected species or stocks and whether the activity would have an unmitigable adverse impact on the availability of the species or stocks for subsistence use (if applicable). NMFS cannot issue an authorization if NMFS finds the taking would result in more than a negligible impact on any marine mammal species or stocks or would result in an unmitigable adverse impact on the species or stocks for subsistence uses. NMFS must also prescribe the purposes and methods of take and other measures of allowing the least practicable adverse impact on the species or stocks of marine mammals and their habitat, paying particular attention to

⁵ <http://www.gpo.gov/epd/pubs/100000077>

rockies, baring ground, and other areas of minor significance. All incidental take authorized may include local equipment authorized to conduct the proposed

NMFS permit grants regulate take to comply with the MMPA (50 CFR part 216) including specific instructions for incidental take authorization. Applicants must comply with these regulations, application instructions, and the MMPA. The action being made by NMFS including its decision to allow BOEM's EIS and decision to section 5 of the BOD.

2. Proposed Project

2.1. PROJECT DESCRIPTION

The proposed Project will consist of up to 100 WTGs in any of the US-identified locations, each of which would have an 8 to 14 MW generation capacity, and up to two service vessel platforms (SVPs). The WTGs would be placed in a grid-like array (with WTGs oriented northeast-southwest and northwest-southeast) within the WDA, with typical spacing between WTGs of 0.75 to 1 mile. The proposed Project would occur within the scope of design parameters outlined in the Vineyard Wind COP (Epsilon 2020), subject to applicable mitigation measures. The Proposed Action in the EIS (Action 4.5.3) is to approve the proposed Project.

The proposed Project activities would occur in the WDA, adjacent OCS, and nearby coastal waters (see Figure 2.1). The WDA is located approximately 14 miles (23 kilometers) southeast of Martha's Vineyard. The proposed Project intends to use the New Bedford Marine Commerce Landing as the primary port for staging area. The as-yet-undefined proposed New Bedford Seaport will link the WDA to the coast at Oyster's Beach. The Project's onshore substation would be located on the eastern portion of a previously designated site within the Leavenworth Plaza commercial and industrial area in the Town of Buzzards Bay. More information on the proposed Project can be found in section 2.1 of the EIS and volume 1, section 1.0 of the Vineyard Wind COP (Epsilon 2020).

2.2. PURPOSE AND NEED FOR THE PROPOSED ACTION

Cooperating agencies with jurisdiction over an responsibilities have reviewed BOEM's purpose and need statement, findings, and such cooperating agency has concurred that it meets their obligation under specific standards to the purpose and need. Findings actions by USACE and NMFS are found in sections 2.2 and 5.0.

On December 10, 2017, Vineyard Wind submitted a COP regarding the construction, operation, maintenance, and conceptual decommissioning of a commercial scale ofshore wind energy facility within the area of Lease OCS-A-0011. Vineyard Wind proposed the new maximum date for the COP on September 30, 2020 (Epsilon 2018, 2020, 2020a, 2020b). Vineyard Wind plans to begin construction in 2021.

The purpose of the Federal agency action in response to the Vineyard Wind Project COP (Epsilon 2018, 2020, 2020a, 2020b) is to determine whether to approve, approve with modifications, or disapprove the COP to construct, operate, and decommission an approximately 300 MW commercial-scale wind energy facility within the area of Lease OCS-A-0011. In recent

New England's demand for renewable energy. More specifically, the proposed Project would deliver power to the New England energy grid to contribute to Massachusetts's renewable energy requirements—particularly, the Commonwealth's mandate that distribution companies jointly and competitively solicit proposals for offshore wind energy generation (220 Code of Massachusetts Regulations § 23.04(5)). BOEM's decision on Vineyard Wind's COP is needed to carry out its duty to approve, approve with modifications, or disapprove the proposed Project in furtherance of the United States policy to make OCS energy resources available for expeditious and orderly development, subject to environmental safeguards (43 U.S.C. § 1332(3)), including consideration of natural resources and existing ocean uses.

3. ALTERNATIVES

The FEIS considered a reasonable range of alternatives to the Proposed Action.⁶ BOEM considered a total of 20 alternatives during the preparation of the EIS and carried forward 6 for detailed analysis in the FEIS. The alternatives carried forward included five action alternatives (one of which has two sub-alternatives) and the no action alternative. The other 14 alternatives were not further analyzed because they did not meet the purpose and need or did not meet other screening criteria. See FEIS Appendix C.5.

The DEIS and the supplement to the DEIS contemplated two onshore export cable routes (OECRs): New Hampshire Avenue and Covell's Beach, with alternative options within each route. Due to extensive public comments against the New Hampshire Avenue route in the scoping phase of the NEPA review, alternative B in the DEIS and the supplement to the DEIS limited the OECR to the Covell's Beach option and excluded the New Hampshire Avenue option. Since publication of the supplement to the DEIS, Vineyard Wind said it has acquired all necessary state and local permits for the Covell's Beach OECR. Consequently, Covell's Beach will be the OECR landfall location for this Project. The Proposed Action (Alternative A) and the action alternatives analyzed in the FEIS considered only the Covell's Beach OECR. Alternative B was therefore no longer evaluated as an action alternative in the FEIS or this ROD. The Proposed Action and action alternatives retain the same letter designations as in the DEIS and the supplement to the DEIS.

⁶ As defined in the Department of the Interior's implementing NEPA regulations, reasonable alternatives "includes alternatives that are technically and economically practical or feasible and meet the purpose and need of the proposed action," 43 C.F.R. § 46.420(b).

3.1 ALTERNATIVES CARRIED FORWARD FOR DETAILED ANALYSIS

Table 3-1 Description of Alternatives

Alternative	Description
Alternative A Proposed Action	Under Alternative A, the proposed 30-m ² construction, operation, maintenance and decommissioning (including a net 1,800 MW wind energy facility) on the CCS off-shore. Maintenance will include proposed Project and associated operational expenditure, including a within the range of design parameters outlined in the Vinyard Wind O&M Report (2015, 2016, 2017) subject to applicable mitigation measures.
Alternative C – No Surface Occupancy in the Southern Region of the Project Area Alternative	Under Alternative C, the H-5 (Case One) poles in the Northern and Eastern portion of the Project Area Alternative C construction, operation, maintenance and decommissioning (including a net 1,800 MW wind energy facility) on the CCS off-shore. Maintenance will include proposed Project and associated operational expenditure within the range of the design parameters outlined in the Vinyard Wind O&M, subject to applicable mitigation measures. Operation, no surface occupancy would occur in the Northern portion of the proposed Project area, or potentially within the central portion of the proposed Project area, and central portion of the site will be preserved and maintained in agriculture during the life of the Project. This alternative would result in the avoidance of approximately 65% of the total net WTP location.
Alternative D WJ Turbine Layout Alternative	Under Alternative D, the wind turbine layout for the H-5 Case One Alternative C, the turbines are spaced on a minimum 100-metre distance, decreasing to a minimum 50-metre distance on the CCS off-shore. Maintenance will include proposed Project and associated operational expenditure, including a within the range of design parameters outlined in the Vinyard Wind O&M, subject to applicable mitigation measures. However, additional wind would be added to the wind turbine array layout to potentially reduce impacts on estuarine ecosystems, such as commercial fishing and marine navigation. Location of the below cut alternatives may be modified by selection of an alternative with any or all of the alternatives described above.
Alternative D1 Use Natural Obstacles Between Spacing Alternatives	Under Alternative D1, WJ's would have a minimum spacing of 100 metres between turbines, and the gaps between turbines need not be a minimum of 100 metres to prevent a presence correlation with existing structures or low commercial fishing potential in the region.
Alternative D2 Half-Way and Three-Quarter-Mile Wind Turbine Layout Alternative	Under Alternative D2, the wind turbine layout would be changed at at least two orientations and all WJ's, an east-west orientation would have a minimum spacing of 100 metres between turbines, however, a 50-metre minimum between turbines would be maintained at other orientations. The orientation would potentially reduce the number of turbines per acre and avoid net site fishing for the fishing vessels that would remain in the area and avoid gear trawling, potting and creel fishing in the area of the turbine locations.
Alternative E – Reduced Project Size Alternative	Under Alternative E, the reduced Project Size Alternative, the construction, operation, maintenance and decommissioning of a proposed construction of a net energy facility on the CCS off-shore. Maintenance will include proposed Project and associated operational expenditure within the range of design parameters outlined in the Vinyard Wind O&M, which, in addition to an orientation of 100 metres, a reduction in the proposed Project would result in no more than 84 WJ's in order to potentially reduce impacts on existing commercial and recreational resources.
Alternative J Vessel Passage Alternative	Under Alternative J, vessel traffic through the WJA would be established in a bidirectional surface net open water channel. The bidirectional surface net included in this alternative, and not included in other alternatives, could potentially facilitate transit of vessels through the project area from southeast New Jersey ports, primarily New Jersey, including areas as Georges Bank, with exceptions stipulated by the project area would not be excluded from consideration for navigation to meet the proposed Project south of the WJA. The alternative would also establish a transit channel and an appropriate fish fence to allow for the same alternatives analyzed in this EIS.
Alternative G – No Surface Occupancy	Under Alternative G, the No Surface Occupancy, the proposed Project and associated activities as described in the Vinyard Wind EIS would not be approved in the project.

construction, operation, maintenance, and decommissioning activities would not occur. Any potential environmental and socioeconomic costs and benefits associated with the proposed Project as described under Alternative A, the Proposed Action, would not occur.

COP = Construction and Operations Plan; EIS = Environmental Impact Statement; MW = megawatt; OCS = Outer Continental Shelf; WDA = Wind Development Area; WTG = wind turbine generator

3.2. ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

Table 3-2 below provides a summary and comparison of the impacts from the proposed Project under each action alternative assessed in chapter 3 of the FEIS. Under alternative G (no action), any potential environmental and socioeconomic impacts, including benefits, associated with the proposed Project would not occur; however, impacts could occur from other activities as described in chapter 3 under the cumulative analysis. Tables 3-1 and 3-2 in Appendix B of the FEIS provide definitions for **negligible**, **minor**, **moderate**, and **major** impacts.

Table 3-2: Impacts by Action Alternative Resource Affected ^a

Resources	Proposed Action	Alternative C	Alternative D1	Alternative D2	Alternative E	Alternative F	Preferred Alternative
Coastal Habitats: <i>Project Impacts</i>	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial
Coastal Habitats: <i>Planned Actions with Project Impacts</i>	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Benthic Resources: <i>Project Impacts</i>	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial
Benthic Resources: <i>Planned Actions with Project Impacts</i>	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Finfish, Invertebrates, and Essential Fish Habitat: <i>Project Impacts</i>	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial	Negligible to moderate and moderate beneficial
Finfish, Invertebrates, and Essential Fish Habitat: <i>Planned Actions with Project Impacts</i>	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Marine Mammals: <i>Project Impacts</i>	Negligible to moderate and potentially minor beneficial	Negligible to moderate and potentially minor beneficial	Negligible to moderate and potentially minor beneficial	Negligible to moderate and potentially minor beneficial	Negligible to moderate and potentially minor beneficial	Negligible to moderate and potentially minor beneficial	Negligible to moderate and potentially minor beneficial
Marine Mammals: <i>Planned Actions with Project Impacts</i>	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate

Resources	Proposed Action	Alternative C	Alternative D1	Alternative D2	Alternative E	Alternative F	Preferred Alternative
Sea Turtles: <i>Project Impacts</i>	Negligible to moderate and potentially minor beneficial	Negligible to moderate and potentially minor beneficial	Negligible to moderate and potentially minor beneficial	Negligible to moderate and potentially minor beneficial	Negligible to moderate and potentially minor beneficial	Negligible to moderate and potentially minor beneficial	Negligible to moderate and potentially minor beneficial
Sea Turtles: <i>Planned Actions with Project Impacts</i>	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Demographics, Employment, and Economics: <i>Project Impacts</i>	Negligible to moderate and negligible to minor beneficial	Negligible to moderate and negligible to minor beneficial	Negligible to moderate and negligible to minor beneficial	Negligible to moderate and negligible to minor beneficial	Negligible to moderate and negligible to minor beneficial	Negligible to moderate and negligible to minor beneficial	Negligible to moderate and negligible to minor beneficial
Demographics, Employment, and Economics: <i>Planned Actions with Project Impacts</i>	Minor and moderate beneficial	Minor and moderate beneficial	Minor and moderate beneficial	Minor and moderate beneficial	Minor and moderate beneficial	Minor and moderate beneficial	Minor and moderate beneficial
Environmental Justice: <i>Project Impacts</i>	Negligible to major, depending on the specific community affected, and beneficial	Negligible to major, depending on the specific community affected, and beneficial	Negligible to major, depending on the specific community affected, and beneficial	Negligible to major, depending on the specific community affected, and beneficial	Negligible to major, depending on the specific community affected, and beneficial	Negligible to major, depending on the specific community affected, and beneficial	Negligible to major, depending on the specific community affected, and beneficial
Environmental Justice: <i>Planned Actions with Project Impacts</i>	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Cultural, Historical, and Archaeological Resources: <i>Project Impacts</i>	Negligible to major, depending on the specific resource affected	Negligible to major, depending on the specific resource affected	Negligible to major, depending on the specific resource affected	Negligible to major, depending on the specific resource affected	Minor to major, depending on the specific resource affected	Negligible to major, depending on the specific resource affected	Negligible to major, depending on the specific resource affected

Resources	Proposed Action	Alternative C	Alternative D1	Alternative D2	Alternative E	Alternative F	Preferred Alternative
Cultural, Historical, and Archaeological Resources: <i>Planned Actions with Project Impacts</i>	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Recreation and Tourism: <i>Project Impacts</i>	Negligible to moderate and negligible to minor beneficial	Negligible to moderate and negligible to minor beneficial	Negligible to moderate and negligible to minor beneficial	Negligible to moderate and negligible to minor beneficial	Negligible to moderate and negligible to minor beneficial	Negligible to moderate and negligible to minor beneficial	Negligible to moderate and negligible to minor beneficial
Recreation and Tourism: <i>Planned Actions with Project Impacts</i>	Moderate and minor beneficial	Moderate and minor beneficial	Moderate and minor beneficial	Moderate and minor beneficial	Moderate and minor beneficial	Moderate and minor beneficial	Moderate and minor beneficial
Commercial Fisheries and For-Hire Recreational Fishing: <i>Project Impacts</i>	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Commercial Fisheries and For-Hire Recreational Fishing: <i>Planned Actions with Project Impacts</i>	Major	Major	Major	Major	Major	Major	Major
Navigation and Vessel Traffic: <i>Project Impacts</i>	Negligible to moderate	Negligible to moderate	Negligible to moderate	Negligible to moderate	Negligible to moderate	Negligible to moderate	Negligible to moderate
Navigation and Vessel Traffic: <i>Planned Actions with Project Impacts</i>	Major	Major	Major	Moderate	Major	Moderate to Major	Moderate

Resources	Proposed Action	Alternative C	Alternative D1	Alternative D2	Alternative E	Alternative F	Preferred Alternative
Other Uses: <i>Project Impacts</i>	Military and national security: minor for most but moderate for search and rescue activities; Aviation and air traffic: minor ; Cables and pipelines: negligible ; Radar systems: minor ; Scientific research and surveys: major	Military and national security: minor for most but moderate for search and rescue activities; Aviation and air traffic: minor ; Cables and pipelines: negligible ; Radar systems: minor ; Scientific research and surveys: major	Military and national security: minor for most but moderate for search and rescue activities; Aviation and air traffic: minor ; Cables and pipelines: negligible ; Radar systems: minor ; Scientific research and surveys: major	Military and national security: minor for most but moderate for search and rescue activities; Aviation and air traffic: minor ; Cables and pipelines: negligible ; Radar systems: minor ; Scientific research and surveys: major	Military and national security: minor for most but moderate for search and rescue activities; Aviation and air traffic: minor ; Cables and pipelines: negligible ; Radar systems: minor ; Scientific research and surveys: major	Military and national security: minor for most but moderate for search and rescue activities; Aviation and air traffic: minor ; Cables and pipelines: negligible ; Radar systems: minor ; Scientific research and surveys: major	Military and national security: minor for most but moderate for search and rescue activities; Aviation and air traffic: minor ; Cables and pipelines: negligible ; Radar systems: minor ; Scientific research and surveys: major

Resources	Proposed Action	Alternative C	Alternative D1	Alternative D2	Alternative E	Alternative F	Preferred Alternative
Other Uses: <i>Planned Actions with Project Impacts</i>	Military and national security: minor for most but major for search and rescue activities; Aviation and air traffic: minor ; Cables and pipelines: negligible ; Radar systems: moderate ; Scientific research and surveys: major	Military and national security: minor for most but major for search and rescue activities; Aviation and air traffic: minor ; Cables and pipelines: negligible ; Radar systems: moderate ; Scientific research and surveys: major	Military and national security: minor for most but major for search and rescue activities; Aviation and air traffic: minor ; Cables and pipelines: negligible ; Radar systems: moderate ; Scientific research and surveys: major	Military and national security: minor for most but moderate for search and rescue activities; Aviation and air traffic: minor ; Cables and pipelines: negligible ; Radar systems: moderate ; Scientific research and surveys: major	Military and national security: minor for most but major for search and rescue activities; Aviation and air traffic: minor ; Cables and pipelines: negligible ; Radar systems: moderate ; Scientific research and surveys: major	Military and national security: minor for most but major for search and rescue activities, except for moderate with combined with Alternative D2; Aviation and air traffic: minor ; Cables and pipelines: negligible ; Radar systems: moderate ; Scientific research and surveys: major	Military and national security: minor for most but moderate for search and rescue activities, except for minor Cables and pipelines: negligible Radar systems: moderate Scientific research and surveys: major
Air Quality: <i>Project Impacts</i>	Negligible to minor and minor beneficial	Negligible to minor and minor beneficial	Negligible to minor and minor beneficial	Negligible to minor and minor beneficial	Negligible to minor and minor beneficial	Negligible to minor and minor beneficial	Negligible to minor and minor beneficial
Air Quality: <i>Planned Actions with Project Impacts</i>	Minor	Minor	Minor	Minor	Minor	Minor	Minor
Water Quality: <i>Project Impacts</i>	Negligible to minor	Negligible to minor	Negligible to minor	Negligible to minor	Negligible to minor	Negligible to minor	Negligible to minor
Water Quality: <i>Planned Actions with Project Impacts</i>	Minor	Minor	Minor	Minor	Minor	Minor	Minor

Resources	Proposed Action	Alternative C	Alternative D1	Alternative D2	Alternative E	Alternative F	Preferred Alternative
Birds: <i>Project Impacts</i>	Negligible to minor and potentially minor beneficial	Negligible to minor and potentially minor beneficial	Negligible to minor and potentially minor beneficial	Negligible to minor and potentially minor beneficial	Negligible to minor and potentially minor beneficial	Negligible to minor and potentially minor beneficial	Negligible to minor and potentially minor beneficial
Birds: <i>Planned Actions with Project Impacts</i>	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Bats: <i>Project Impacts</i>	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
Bats: <i>Planned Actions with Project Impacts</i>	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
Terrestrial and Coastal Fauna: <i>Project Impacts</i>	Minor	Minor	Minor	Minor	Minor	Minor	Minor
Terrestrial and Coastal Fauna: <i>Planned Actions with Project Impacts</i>	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Land Use and Coastal Infrastructure: <i>Project Impacts</i>	Negligible to minor and negligible to minor beneficial	Negligible to minor and negligible to minor beneficial	Negligible to minor and negligible to minor beneficial	Negligible to minor and negligible to minor beneficial	Negligible to minor and negligible to minor beneficial	Negligible to minor and negligible to minor beneficial	Negligible to minor and negligible to minor beneficial
Land Use and Coastal Infrastructure: <i>Planned Actions with Project Impacts</i>	Minor and minor beneficial	Minor and minor beneficial	Minor and minor beneficial	Minor and minor beneficial	Minor and minor beneficial	Minor and minor beneficial	Minor and minor beneficial

^a As specified above, the Proposed Action (Alternative A) and action alternatives consider only the Covell's Beach landfall and onshore route. Therefore, Alternative B is no longer evaluated as an action alternative in the FEIS.

Impact rating colors are as follows: orange = **major**; yellow = **moderate**; green = **minor**; light green = **negligible** or **beneficial** to any degree. All impact levels are assumed to be adverse unless otherwise specified as beneficial. Where impacts are presented as multiple levels, the color representing the most adverse level of impact has been applied. The details of particular impacts and explanations for ranges of impact levels are found in each resource section.

The environmental analyses found that impacts from Alternative C would be similar to Alternative A (the Proposed Action) with less impacts on recreation, tourism, and cultural/historical resources. Alternative C would reduce visual impacts by placing fewer WTGs within view of the shore. Alternative C also would have less impacts on navigation and vessel traffic because it would provide more unobstructed space for navigation in the northern portion of the WDA and a narrower access to parts and areas where draft limitations can mainly occur by recreational vessels.

For Alternative D1 (four WTGs) spacing, the narrower spacing of the WTGs would incrementally decrease impacts on navigation and vessel traffic safety in comparison to the Proposed Action. However, the potentially larger number of the WDA would increase the geographical scope of impacts. In addition, the USCG report entitled "Final Massachusetts and Rhode Island Port Access Route Study" (MARIPARKS) notes that "tradition and fishing practices follow a roughly east-west orientation in the Port area even though most traffic appears to move in a north-west to southeast direction" (USCG 2023). Alternative D1 would provide 1 nmi wide vessel transit lanes oriented north-west to southeast but would provide less maneuvering space for fishing vessels with deployed gear operating in an east-west direction. Accordingly, the layout of the WDA would include well-gated fairways, channels, and transit lanes.

For Alternative D2 (two vessel layout with 1 nmi spacing between WTGs), the environmental analysis found that impacts would be similar to the proposed action but on a lesser degree. When analyzing Automatic Identification System (AIS) data, Vessel Monitoring System (VMS) data, and submitted electronic charting maps, a general pattern of east-west (or east-southwest) commercial fishing activity and towlines, southeast trawling activity is apparent in the WDA. The USCG concludes that "Final MARIPARKS report that "[g]iven the traditional use of the water space within the MARIPARKS, it is reasonable to preserve for maintain the ability and option for most commercial vessels to use through the entire length of the MARIPARKS. Safety considerations require a standard and uniform grid pattern with sufficient channel width and spacing between channels to provide adequate maneuvering for vessels to avoid collision in passing, crossing, and overtaking a further set of adequate beam-to-beam-to-beam potential emergency." Alternative D2 would provide a four-foot grid with sufficient spacing between channels. In addition, Alternative D2 would allow vessel-to-vessel interaction, a set of narrow sample course through the WDA and would provide the USCG sufficient maneuver space to conduct search and rescue (SAR) operations timely and successfully.

The environmental analyses found that impacts from Alternative D would be similar to Alternative A, but to lesser degree. Impacts to fish and wildlife resources are local (specifically air quality, water quality, benthic resources, marine mammals, sea turtles, cultural, historical, and archaeological resources, recreation and tourism, commercial fisheries and leisure/recreational fishing, and navigation and vessel traffic).

Alternative B analyzed a single 2- to 4-ft wide vessel transit lane (1/4 mi) in the WDA, in which no surface occupancy would occur. Alternative B is based on a proposal submitted by the Responsible Offshore Development Alliance (RODA), a group made up consisting of commercial fishers and seafood processors. Alternative F analyzes such a transit lane through each of the seven alternative vessel transit analysis scenarios for Alternative A or D1 since these two alternatives define the two layout options for WTGs.

A combination of Alternative B and Alternative A (the proposed action) would cause different impacts when compared to the proposed action alone. Specifically:

- Some commercial fishing impacts related to resources and vessel collisions would be reduced by using a wider transit lane because the additional unobstructed area would provide increased room for vessel traffic. However, even with the presence of a transit lane, mariners would not be required to utilize it.
- A 4 nm wide transit lane may allow for some trap-based scientific research and survey activity not otherwise feasible.
- A transit lane may funnel transiting traffic and create choke and intersection points. Traffic could be more dense at or than these points, resulting in vessel collisions through the transit lane. This funneled traffic could also increase space use conflicts if commercial fishing activity occurs in the transit lane. The presence of harbor areas could not preclude other activities from occurring.
- A transit lane could increase the risk of all-terrain vehicle (ATV) and motor vehicle collisions were not required to use the lane or if active fishing is not precluded in the lane, as the area may be receiving traffic due to conflicting traffic patterns (e.g., transiting through the transit lane and these transiting across the lane instead of through the lane).
- WDGs excluded from the transit lane could be placed further south in the lease area and increase the overall affected area.

Overall, while there would be some differences in impacts on navigational safety and other uses (e.g., trap-based scientific research and survey activity), Alternative A (the proposed action) impacts would be substantially similar to those of Alternative A (the proposed action).

A combination of Alternative B and the northern transit lane through the WDA and Alternative D2 would cause different impacts on navigational safety when compared to Alternative D2 alone:

- The width and fishing and trapping orientation and the orientation of the north-west-west of WDGs on Alternative D2 differ from that of the east-south-east orientation of the northern transit lane under Alternative T and may cause use conflicts between vessels within the transit lane portions A10-4 and A11-4 of the FES. The Alternative D2 layout allows for dispersion of activities and adding a transit lane under Alternative T could concentrate vessel traffic in the same areas for commercial and recreational fishing.
- A northern transit lane would facilitate travel for vessels passing through the WDA, however some commercial and recreational fishing and trapping would be excluded within the lease area off Rhode Island and Massachusetts, including active fishing within the transit lane. The high density of activity at these activities and the funneling of traffic into the area could increase risk of vessel collisions.

While the northern transit lane would facilitate travel for vessels passing through the WDA or combined lease areas, the Final MA/RI-PARS report states that WDGs within the leasing and non-leasing east-west orientation line, the Alternative D2 layout would (i) facilitate traditional fishing methods (east-west travel) in the Project area, (ii) provide for typical transit routes through the unleased lease areas (northwest-south-east), (iii) not require the need for formal or informal vessel routing measures, as such uniform grid system will result in the

fish and equivalent of run means are given credit that can safely accommodate both fisheries, in both, and fish up with the WFA, and just provide the JSUG with a state S&R report (with staff travel) (7/5/77-2020)

3.3. ENVIRONMENTALLY PREFERABLE ALTERNATIVES

DOEM is required by CEQ regulations to identify in the ROD the alternative or alternatives considered to be environmentally preferable (40 CFR 15.121(b)(1)(vii) and consideration and weighting by the Responsible Official of long-term environmental impacts against short-term impacts, not including what is the best practice (i.e., of these alternatives) (40 CFR 15.121(b)(1)(viii)). The environmentally preferable alternatives have been identified as Alternative G (no action) and the Preferred Alternative (a combination of Alternatives C, D, and E).

Negative environmental impacts in the Project area would generally be less significant than potential negative consequences, operations, and decommissioning activities and fishery changes related to the proposed Project would not occur and, therefore, would not impact physical, biological, and cultural resources. Nonetheless, Alternative G would likely result in moderate, long-term adverse impacts on regional air quality because other energy generation facilities would be used to generate future power demands. These facilities might include natural gas, oil, or coal (with carbon capture and sequestration technology), which would emit more pollutants than wind turbines and would have more adverse impacts on air quality (which has contributed to the impacts of global climate change). Adverse impacts on air quality also could disproportionately impact environmental justice communities (low-income and minority populations). These air quality impacts might be counteracted by other impacts because selection of Alternative C could negatively impact future development of offshore wind energy facilities, with loss of beneficial cumulative impacts such as increased employment, improvements in air quality, and reductions in greenhouse gas emissions. In comparison, the Preferred Alternative would result in significant and positive global climate change reduction benefits, and the selection of the Preferred Alternative would positively impact the development of offshore wind energy facilities, increasing the use of these as a friendly option to potential environmental long-term environmental fate of the resources impacted by the Preferred Alternative relative to Alternatives E, as well as global wind and the geographic siting of the Project offshore wind has been identified as a key action for Atlantic states to reach their greenhouse gas emission goals. This is a recently irreplaceable component in state, federal, and international strategies to reduce a carbon footprint at the regional, national, and global levels.

4. MITIGATION, MONITORING, AND REPORTING

This ROD largely covers all measures to be implemented in Appendix D of the EIS to avoid, minimize, reduce, or eliminate adverse environmental harm that could result from the proposed activities. These final adopted measures are in Part 4 in Appendix A of this ROD. BOLM has modified some measures in response to comments regarding the status of the North Atlantic right whale (NARW). While the measures in Part 4 are appropriately considered as protective BOLM, in coordination with NMFS, has applied more protective measures where practicable. Specifically, BOLM has updated measures to increase the minimum visibility requirement, to prohibit less sensitive December unless certain conditions are met, and require

additional information in order for a few transfer vessels to access 10 knees in Oceanic Management Areas. The mitigation, monitoring, and reporting requirements contained in Appendix A of this ROD were developed through input, consultation, and coordination with stakeholders from Federal and State agencies. Pursuant to regulations implementing the ESA section 7 consultation provisions, action agencies are required to determine "whether and in what manner" a project will "interfere with" the return of fish to their former populations and the [NMFS's] biological opinion." (50 C.F.R. § 402.15.) With respect to measures required in the NMFS DC prepared for this proposed project, BOPM, USACE, and NMFS Office of Protected Resources, Permits and Conservation Division (NMFS OPR), acknowledge that the measures set forth in the Opinion's incidental take statement (ITS) are not discretionary and must be undertaken by them as the measures necessary to fully comply with the incidental take exemption in ESA section 7(a)(2) to apply. In addition, all mitigation, monitoring, and reporting requirements contained within the MMPA HAA issued by NMFS OPR to Vineyard Wind are also non-discretionary and must be carried out by Vineyard Wind. BOEM, USACE and NMFS OPR also acknowledge that the potential coverage of section 7(a)(2) may lapse unless a fully compliant response to the rule is submitted, the terms and conditions of (2) require the project sponsor or its contractors to comply with the terms and conditions of the ITS through enforceable terms that are agreed to grants, permits, and contracts as appropriate.

5. Final Agency Decisions

5.1 THE DEPARTMENT OF THE INTERIOR DECISION

After carefully considering the FHS's alternatives, including comments from the public on the DEIS and supplemental to the DEIS, the Department of the Interior has decided to approve the COP for Vineyard Wind using a combination of Alternatives C (No Surface Occupancy in the Northernmost Portion of the Project Area Alternative), D (East-West and One-North-South Turbine Layout Alternative), and E (Reduced Project Size Alternative). DOPM identified this combination as its Preferred Alternative. The BOPM COP is also one of the two most field environmentally preferable alternatives. By selecting the Preferred Alternative, the Department of the Interior will follow section 101(a)(2)(B) of the FCP of the NEPA regulation proposed by Vineyard Wind and will prohibit the installation of WTGs in 6 locations in the northernmost portion of the project area. This decision will also require the turbines to be oriented in a east-west orientation and that all the WTGs in the northernmost east-west orientation will have a minimum spacing of 1,000 feet between them consistent with the I-SCC's recommendations in its final MARPARS report. Vineyard Wind may choose where to locate the 84 to 100 turbines on any of the remaining 100 locations and to a maximum power within the range of the design power in accordance with the Vineyard Wind FCP. For a discussion of how the Preferred Alternative complies with M 37067, subsection 8(p)(1) of OCSLA, and the implementing regulations, please refer to the environmental impact statement Compliance Review of the Location and Operations Plan for the Vineyard Wind Offshore Wind Energy Project for Commercial Lease OCS-A-09-01 included as Appendix B to this ROD.

Alternative C would have less impact on recreation and tourism than Alternative A (the Proposed Action) because fewer WTGs would be within view of the shore (leisure and impact) and impacts on navigation and vessel traffic would be less because more unobstructed space would

is provided for navigation in the northern portion of the WDA, which is a one-way port and over-ship traffic lanes normally used by recreational vessels. Nonetheless, removal of these locations would not preclude the proposed Project from increasing the 800 MW capacity with the increase in WGC capacity. For all these reasons, RCEM has selected Alternative D1 in this ROD.

Alternative D1 could potentially by address impacts on navigation and vessel traffic safety in comparison to the Proposed Action. In addition, a survey between the WTRs, however, a USFWS MARIPARS report notes that traditional fishing practices follow a roughly east-west or east-southwest orientation and tend to move in a northwesterly to southeasterly direction through the Vineyard Wind project area (https://beta.regulations.gov/document/USCG-2019-0151-0101). The 1-nm-wide north-south east-southwest line of orientation would be suitable for straight line travel, but active fishing in an east to west orientation would have less space for maneuver, such as turn with gear deployed. Accordingly, the layout of the WTRs would not be ideal, but for most fishing vessel traffic. In contrast to the strong public support for Alternative D2, discussed below, only two commenters (one affiliated with a fishing group and one affiliated with a non-governmental organization) showed support for D1. For all these reasons, HOUV has not selected Alternative D1 in this ROD.

Alternative D2 would have similar but potentially lower impacts than the Proposed Action. When analyzing AIS data, VMS data, and submitted chart plotter images, a general pattern of east-west (followed by south to north) traffic activity and movements throughout the entire activity is apparent in the WDA. The USCG concluded on page 57 in its Final MARIPARS report that:

[g]iven the traditional use of the waterspace within the MA/RI WDA, it is reasonable to preserve, to the maximum feasible extent, an ability for vessels to move through the entire length of the MA/RI WDA. Safety considerations require a standard and uniform grid pattern with sufficient spacing between lanes, however, to be able to provide adequate sea room for vessels to avoid collisions in passing, crossing, and overtaking situations and adequate room to maneuver in the event of an emergency.

Alternative D2 would provide this uniform grid with sufficient spacing between lanes. In addition, the Alternative D2 layout would allow vessel operators to successfully complete SAR missions. Furthermore, Alternative D2 is a popular topic among a wide range of public commenters on the Supplement to the DEIS (57% of the public meeting speakers and reviewed submissions), including comments from the USCG, the Commonwealth of Massachusetts (the State of Rhode Island, Massachusetts, and the National Wildlife Federation) in behalf of 11 other national and national non-governmental organizations. In addition, HOUV received at least 20,000 fan letters (many provided as an attachment to our comment) in support of the project within 2 years (or more) of the project specifically supporting the layout proposal for all these reasons, RCEM has selected Alternative D2 in this ROD.

Alternative C, in comparison to Alternative A and most of the other alternatives, will reduce impacts on a majority of the environmental resources analyzed, including water quality, aesthetic resources, historic and cultural resources, cultural, historical, and archaeological resources, natural and cultural resources, and fish and wildlife resources, including and

new gear and vessel staff. For all these reasons, BOEM has selected Alternative F in this RCI.

Alternative F analyzes a single 2- to 4-mile, double-lane transit through the WDA in which new cable routes would occur. The range of effects impacts to fisheries with the addition of Alternative F would remain substantially similar to those of Alternative Alpha Proposed Action. While the establishment of a north-south transit (Alternative F) track, like the Alternative D2 layout would facilitate travel for vessels passing through the entire WDA or combined lease areas, the final MARPARS report states the WDA is well suited to a west and north-south-east-west orientation (i.e., the Alternative D2 layout) would (i) facilitate traditional fishing patterns (east-west, north-south); (ii) the Project area will provide for a west-east transit through the combined lease areas (northwest-south-east transit); (iii) not require easement for formal or informal vessel routing measures, as set in a uniform grid pattern (i.e., like the traditional equivalent of easement navigation) considers that can safely accommodate both transit through and fishing within the WDA; and (iv) would provide the U.S.C. with adequate SAZ access (north-south) (U.S.C. 2022).

Moreover, there were over 2,000 comments (some formal letters and some unique submissions) on the solicitation to the DEIS which oppose the addition of a vessel transit lane proposed under Alternative F. These comments were from the offshore wind industry, non-government groups, the Commonwealth of Massachusetts, and private citizens. Only three percent of the total comments and speakers were in favor of the vessel transit lane and those primarily came from commercial fishing and other parties opposed to it. These comments stressed the importance of a transit lane to enable the use of specific gear types within the lease area.

Finally, concerns with the inclusion of a transit lane centered on the precedent that may result with the addition of transit lanes that would limit the potential of offshore wind leases to meet state demand and reduce costs to the benefit of ratepayers. For example, Vineyard Wind submitted comments referencing the revised CEQ regulations and stating that Alternative F was inconsistent with the goals of its proposal (Vineyard Wind 2020). For example, Vineyard Wind stated that the increase in cable lengths due to the addition of a transit lane would significantly increase the installation costs in addition to issues that would result from a near-cable length in event of the selection of Alternative D2). These transmission losses are in addition to other technical difficulties associated with Alternative F such as cable services and cable failure (see, for example, the additional delays associated with project delays for additional geotechnical surveys). These delays would be inconsistent with the goals expressed in Executive Order (EO) 13988: "Executive Order on Improving the Climate Crisis Response: A new and particularly the goal of doubling offshore wind by 2030." Furthermore, Vineyard Wind stated that the combination of its technical complexities and project delays would preclude its ability to meet the current contractual obligations with Massachusetts distribution companies and, therefore, Alternative F would not meet the project purpose and need.

¹ Vineyard Wind's concerns stated that the delays caused by Alternative F would be contrary to Executive Order 13988 (Establishing a Deadline and Accountability in the Environmental Review and Permitting Process for Incentivized Projects) which states (emphasis added):

Overall, the impacts to navigation and search and rescue operations are comparable with Alternatives A and C, but are somewhat reduced by developing vessel lanes (i.e., Alternative F) in Alternative A. They are further reduced when Alternative F is paired with the Alternative I 2% speed limit, but are more reduced with Alternative B alone. The developers of the Massachusetts Statewide Land Use OARL Lease Areas have agreed to a uniform grid and 1-mile by 1-mile layout (Alternative D) for setting a minimum to his speed may increase navigation complexity. The developers' agreement was reached in order to avoid irregular transit corridors such as imposed by RODA. This agreement also significantly reduced the area available for offshore oil development. The implementing Alternative C would further reduce project occurrence, the viability and potential yield the developers to return from the agreement. The economic and technical benefits built up from Alternative F under the reasonable project values BOCM to choose.⁵ For all these reasons, BOCM has not selected Alternative F in this ROD.

Alternative C, the No Action Alternative, is one of the two environmentally preferred alternatives identified in this ROD because it maintains the status quo. Under this Alternative, BOCM would not permit the Vineyard Wind proposed Project activities. In addition, no other permits or authorizations for this proposed Project would be issued. Negative environmental impacts would be generally less severe. Alternative C would also avoid the disturbance associated with decommissioning activities would occur on the OCS, and disturbance would occur on land from the installation of the OCS-based Exportable Cable or a transmission cable over an on-land from the OCS and substation. However, selection of Alternative G would likely result in moderate long-term adverse impacts on air quality from the near to distant and operate new energy generation facilities to meet future power demands. These new power plants might need be fueled by natural gas, oil, or coal. The plants are likely to increase air pollutants and have greater impacts on air quality. The report compares to the Project. In addition, selecting Alternative C could negatively impact future development of offshore wind energy facilities. It also might protect or stimulate beneficial impacts such as seasonal employment, improved air quality, and reduced greenhouse gas emissions. Alternative G was not selected because it would not allow development of BOCM-managed resources that would or meet the purpose and need of the Proposed Action.

In summary, BOCM has selected a number of the set on a limited one would result in lower environmental impacts and use conflicts than Alternative A (the Proposed Action). The FEIS found that a combination of Alternatives C (No Surface Disruption) and No Offshore Portion of the Project Area Alternative (i.e., D2/Eas. West and One Nautical Mile Turbine Layout Alternative) and Reduced Project Size with a narrow wind restrict fewer impacts than all other action alternatives considered, and is consistent with BOCM's purpose and need. This combination of alternatives was identified as the most environmentally preferred alternative in this ROD. Accordingly, BOCM has selected this combination of alternatives.

BOCM weighed all concerns in making decisions regarding this project and has determined that all practicable means within its authority have been adopted to avoid or minimize or compensate

⁵ 40 C.F.R. 15.118 (i) defines "reasonable alternatives" as those "that are technically and economically feasible and the purpose of need for the proposed action and, where applicable, use designed by the applicant." 40 C.F.R. 40.90 specifies that alternatives are "reasonable" if they "are technically and economically practicable and meet the purpose and need of the proposed action."

to fill regions with fine survey data needs over the life of offshore wind operations and to develop and commission new regional data sets to examine other areas. Survey Mitigation Program. The Federal Survey Mitigation Program will evaluate impacts to NDAAs via a set of identify, predict, and mitigate that could be applied to future ofshore wind projects. BOEM cooperates with NMFS to examine the BOEM data sources to mitigate all these impacts. To fully mitigate the impacts of Vineyard Wind 1 and other wind energy developments on NDAAs, a regional programmatic solution is required. BOEM and NMFS have committed to this Federal Survey Mitigation Program and will take several steps to implement the Federal Survey Mitigation Program within 180 days of the COP approval, dependent on available resources. These efforts are in line with the current Survey Mitigation Program as detailed in the FEIS EIS for the proposed BOEM and NMFS Base Case and the final mitigation measure No. 17 in Appendix A, which requires Vineyard Wind 1 to collaborate with NMFS in coordination with BOEM, to propose to establish the Federal Survey Mitigation Program.

In addition to supporting the development of a comprehensive programmatic plan to mitigate impacts to NDAAs via a set of identify, predict, and mitigate that could be applied to future ofshore wind projects through project-specific monitoring plans. The measures incorporate NMFS data collection needs and requirements to the maximum extent practicable but the data is unable and available to help document biological changes in the WDA. Specifically, Vineyard Wind 1 is exhibiting commitment to conduct seasonal and surveys deep of bottom surveys, eelgrass surveys, glaucoma surveys, and passive acoustic monitoring for large whales in the WDA will be extended for an additional two (2) years from construction. Acoustic surveys will use standard Northern Right Whale (NRPW) Acoustic Monitoring (NRPWAMP) protocol. Additionally, Vineyard Wind 1 will be required to collect biological parameters on a subset of the tows, including weight, age, length, condition, consistency with the species-specific measurement type (e.g., total vertebrae identification in the Northern Observer Program Biological Sampling Guide), age through age-length keys, anatomical data, and sex and sex ratio condition (e.g., sperm, type, type and number, etc.) consistent with Northern Fisheries Science Center sex ratio study codes. These measures were designed to evaluate the impact of the Vineyard Wind 1 development on specific components of the marine ecosystem, not as mitigation to NDAAs scientific surveys, which will be addressed through a programmatic solution. These measures will provide data to use standardized protocols to collect and analyze biological and environmental data that can be integrated with existing data and other ongoing research to allow for a better understanding of the "new status" (e.g., modified baseline) of the wind energy project structures. See Appendix A for additional details on the survey plans and protocols.

Several cooperating agencies and interested stakeholders submitted comments after publication of the FEIS. The following comments regarding the NAWW Report (COP) of 2020 and corresponding recommendations to increase NAWW mitigation measures. While there is no legal requirement to disclose comments received after publication of a FEIS, an intent of all these comments was previously addressed in responses to comments in the supplement to the DEIS and the FEIS. BOEM cooperates with NMFS to ensure that the assessment and mitigation measures were based on the best available science. BOEM decreased the finchans in the 2020

NARW Report Card with NOAA, and the two agencies determined that the information did not appreciably change the analyses and the existing assessments were sufficient. It should be noted that NOAA publishes marine mammal stock assessment reports that are generally accepted by Federal agencies as authoritative sources for use in consultations under the MMPA, ESA, or other Federal statutes (*see* section 4 and Appendix A).

In addition, engineering and technical terms and conditions that will be a requirement for the COP approval are included as part of Appendix B of this ROD.⁹ Vineyard Wind is required to certify annually that it is in compliance with the terms and conditions of its approved COP (30 C.F.R. § 585.633(b). Vineyard Wind must also comply with all applicable requirements of 30 C.F.R. § 585, including, but not limited to, the submission of a Facility Design Report and a Fabrication and Installation Report, before beginning construction activities.

Today's decision balances the orderly development of OCS renewable energy with the prevention of interference with other uses of the OCS and the protection of the human, marine, and coastal environments. A decision that balances these goals and does not hold one as controlling over all others is consistent with the duties required under subsection 8(p)(4) of OCSLA, which requires the Secretary to strike a rational balance between Congress's enumerated goals.¹⁰

My approval of this decision constitutes the final decision of the Department of the Interior.

LAURA DANIEL-DAVIS
Digitally signed by LAURA DANIEL-DAVIS
Date: 2021.05.10 17:15:01 -0400

Laura Daniel-Davis
Principal Deputy Assistant Secretary,
Land and Minerals Management

Date

⁹ All mitigation measures and terms and conditions adopted by BOEM as part of this ROD will be included in the COP authorization letter to be issued to Vineyard Wind.

¹⁰ M-37067, pg. 2.

6.2 USACE DECISION

This section documents USACE's decision to issue a Department of the Army (DA) permit pursuant to section 401 of the CWA (33 U.S.C. § 1341) and section 10 of the RHA of 1895 (33 U.S.C. § 1032) to Eric Stephens representing Vineyard Wind LLC. The DA permit authorizes the construction, installation, and use of an 800 MW wind energy facility, two ESPs, solar protection around the bases of the WTGs and ESPs, protective cables between intake and several 33 kV and two export cables within a 20.3 mile long corridor.

Due to the project's location, some activities are subject to section 10 of the RHA of 1895 as they are located beyond the 3-mile limit. All project components within the DHS-A 0501 and some portions of the 73.1 mile transmission line subject to section 10. Portions of the 25.5 mile transmission line within the 3-mile limit and its associated solar protection are subject to section 10 of the CWA of 1972 and section 404 of the CWA.

The activities located within the 75,514-acre core impact area are within 1/2 mile and avian platform installation and solar protection within the lease site are anticipated to total 15 acres (section 10 installation) and cause an adverse impact to fish and wildlife as anticipated to total 33 acres (section 10). Transmission cable pre-dredging is anticipated to result in 28 acres of impacts (section 10 & section 404 within a 3-mile limit) along the 25.5 mile transmission route. Transmission cable solar protection (solar) is anticipated to total no more than 2 acres (section 10 within a 3-mile limit). Section 10 solar protection is anticipated to total no more than 15 acres. The DA permit authorizes the combination of Alternatives C, D2, and E as listed in the Vineyard Wind FEIS. This alternative incorporates all practicable avoidance and mitigation (e.g., etc).

The USACE is approving the project RCM as follows:

Response to Comments on USACE Public Notice NAE-2017-01206

The USACE did not receive comments from the public during the 30-day public comment period, December 26, 2016 to January 26, 2017. In addition, no public comments were received after the public comment period closed. The USACE received no requests for public meetings or additional information. Comments received by BOEM as well as USACE comments were considered as part of the USACE review. See Appendix K of the FEIS for public comments.

USACE Alternatives Analysis

Determination of USACE scope of analysis for NEPA

The scope of analysis includes the specific activity requiring a DA permit. Other portions of the project are not analyzed because USACE does not have jurisdiction and responsibility for current Federal review. Final description of scope of analysis. The USACE scope of analysis under NEPA includes the areas within the 75,514-acre lease, OCS-A 901 and 010111- impacted by turbine and transmission cable installation, the 20.3 mile offshore transmission cable mainline (approximately 36 miles), the two export transmission cables and the 3.4-acre substation site where generated electricity will be delivered. In addition, under NEPA reasonably

feasible activities within the larger riverine/estuarine area were considered to account for potential cumulative effects.

Determination of the USACE action area is defined by the ESA. The ESA action area includes all areas included in the NEPA scope of analysis. The USACE action area has been reviewed within the larger ESA action area defined by BOEM.

Determination of permit area for Section 106 of the National Historic Preservation Act (NHPPA). The permit area includes those areas containing waters of the United States and navigable waters of the United States that will be directly affected by the proposed work or structures, as well as wetlands, adjacent waters, adjacent shorelands, and adjacent flood plains (40 CFR 11.133, Appendix C, (c)(1)) have been met. The USACE permit area has been addressed within the larger area of potential effect defined by BOEM.

The EIS will be prepared in accordance with the US-EPA's Section 404 (b)(1) Guidelines (40 CFR part 200). The EIS includes appropriate analysis of all factors within the US-EPA's guidelines, as well as supplementary information specifically needed to comply with the 404(b)(1) Guidelines.

An evaluation of alternatives is required under NEPA for regulatory activities. An evaluation of alternatives is required under the Section 404(b)(1) Guidelines for projects that include a discharge of dredged or fill material into waters of the United States. NEPA requires discussion of a reasonable range of alternatives, including the no action alternative, and the analysis of these alternatives. Under 404(b)(1) Guidelines, practicality of alternatives is taken into consideration, and an alternative may be permitted if there is a less environmentally damaging practicable alternative.

Project Purpose and Need

The purpose and need for the project as provided by the applicant and reviewed by USACE is to provide a commercial scale, utility scale project to provide clean energy to meet New England's need for clean energy. The project will deliver 500 MW of power at the New England energy plant. USACE finds that the overall project purpose, as well as need for the project. Further, USACE finds that the overall project purpose, as determined by USACE is the construction and operation of a commercial scale wind energy project and associated transmission lines to renewable energy generation and distribution to the Massachusetts energy grid.

This activity does not require a discharge of pollutants into a special aquatic system for the basic project purpose. Therefore, this is not water dependent. Under the 404(b)(1) Guidelines, 40 CFR 200.133(a)(3), the proposed activity is not water dependent, practicable alternatives not involving special aquatic uses are presumed to be available unless the applicant can demonstrate otherwise. Here, as discussed in the 404(b)(1) Guidelines section above, the preferred alternative for this EIS Alternatives C, D2, and E1 does not involve a discharge into a special aquatic system.

Criteria for evaluating alternatives as evaluated and determined by the USACE USACE has determined that the following criteria apply to any proposed alternative.

1. Type of energy: Any proposed alternative must be renewable energy. Vineyard Wind's contract is an agreement with the Commonwealth of Massachusetts to deliver renewable energy to the Massachusetts power grid.
2. The production of renewable energy must be from the use of wind in a USACE designated offshore development areas specifically for renewable wind energy, therefore to evaluate alternatives alternatives must consider only renewable wind energy and no other renewable energy producing sources such as solar or hydrovolta.
3. Vineyard Wind's contractual obligation with the Commonwealth of Massachusetts to deliver the generated energy to the Massachusetts power grid was used as criteria for the evaluation of alternatives on the ability to deliver to the power grid limits where the project is to be developed.
4. In addition to supplying power in Massachusetts, the project must also deliver a minimum of 800 MW to the Massachusetts power grid in order to establish a firm contract.

USACE identified one on-site alternative and two off-site alternatives. Seven on-site alternatives as identified by BOLDM within the US were also evaluated.

The on-site alternative would result in the construction of an offshore wind generated energy field in Due to various proposed project limitations, AOC and D, any of proposed work would need some form of USACE approval. This likely is due to the scale of the project. USACE approval would also be needed if the project were proposed in a non-designated location.

Off-site alternative 1 consists of the construction of a 500 MW wind energy facility. The area not consisting solely of waters of the United States (i.e., a majority upland area). Due to energy supply agreements made prior to a USACE application being submitted, the upland area would have to be able to deliver energy to the Massachusetts power grid.

Off-site alternative 2 consists of the relocation of the proposed project to a different offshore lease site. BOEM has designated seven offshore wind energy development sites off the coast of Massachusetts. Vineyard Wind's lease site is located in the middle of these seven sites. The proposed project could be located at any of these available sites.

The seven on-site alternative was identified by BOEM and utilized as part of the USACE alternatives analysis are detailed within Table 1 in Section 3.1 of this document. It could be noted that Alternative A is the USACE preferred alternative for the purposes of the USACE alternatives review.

In order to be practicable, an alternative must be available to achieve the overall project purpose (as defined by USACE) and be feasible when considering environmental, existing technology. The USACE determined that the on-site alternative and off-site alternative 1 were not practicable and not feasible. USACE evaluation of a final EIS and every alternative will be carried further for additional analysis by USACE.

Off-site alternative 2 would not result in a reduction of impacts if the full proposed project was constructed in accordance with the subject's proposed 1,100,000 lbs. of 100 turbo-cumulus on-line, and landfill at Cowell's Beach on New Hampshire Avenue¹. Resources to be impacted are similar across all lease sites with the exception of wetlands that may be affected. Relocation of the project to a different lease site may also result in greater impacts, as the transmission cable route would differ in location and the landfill site may be more directly impacted. USACE has identified several suitable sites.

On-site alternatives A – C were determined to be practicable and meet the project feasibility criteria.

The USACE determined that the least environmentally damaging practicable alternative consists of a complete off-site alternative C (due to turbine capacity within the weather window of the lease site) or site alternative D2 (East West turbine orientation and 100m turbine spacing) or on-site alternative F (pneumatic transport) project.

On-site alternative A is not the least environmentally damaging practicable alternative. Other alternatives meet the project feasibility criteria while also reducing the overall environmental impacts of the project. See Table 2.4-1 within the Vineyard Wind EIS for a comparison of anticipated environmental impacts associated with on-site alternative A compared to USACE determined least environmentally damaging practicable alternative.

On-site alternatives C, D – D2, E, and F are not the least environmentally damaging practicable alternative as they are considered as alternatives to existing community activities, meet the project feasibility criteria while also further reducing the overall impacts of the project. On-site alternative E further reduces the impact associated with the project while still meeting feasibility criteria when compared to standard on-site alternative C, D1, D2, and F. See Table 2.4-1 within the Vineyard Wind EIS for a comparison of anticipated environmental impacts associated with on-site alternative C, D1, D2, E and F compared to USACE determined least environmentally damaging practicable alternative.

Evaluation of the Discharge of Dredge and Fill Material in accordance with the 404(D)(1) Guidelines (40 C.F.R. § 230, Subparts B through H)

The following analysis of evaluation is consistent with 40 C.F.R. § 230.5. It has been determined that there are no practicable alternatives to the proposed discharge that would be less environmentally damaging. 40 C.F.R. § 230.10(a) – the proposed discharge is the least practicable alternative with the least adverse impacts on the aquatic ecosystem, and it does not have other significant environmental consequences.

Candidate disposal site defined in 40 C.F.R. § 230.11(f) Each disposal site shall be specified through the application of hazard guidelines. The disposal site areas six of the transmission cable route from the WDA to the Cowell's Beach landfill site, when the

¹ Vineyard Wind is no longer considering the New Hampshire onshore landfill location and it has been removed from the EIS.

transmission cable route is within the 200-mile Outer Continental Shelf jurisdiction is present. The proposed subsea pipeline route is 17.7 miles in size. The disposal site consists of sand waves nearshore areas with depths no greater than 66.4 feet. Water temperature within the disposal site is expected to be 54.6 degrees Fahrenheit with a salinity of 34.95 practical salinity units. Dissolved oxygen levels average 7.5 milligrams per liter. Turbidity averages 0.7 nephelometric turbidity units. Sand waves with a cable transmission route are typical medium to coarse grain sand bottom with limited features make up a majority of the route. Portions of the cable transmission route consist of sand waves consisting of mounds of wind-blown sand across the ocean bottom that look like sand dunes. Other features within the cable transmission corridor consist of sand bottom complex seafloor consisting of corals or exposed rock. There are no USACE defined special aquatic uses as defined by 33 C.F.R. part 320 subpart F (wetlands, reefs, vegetated wetlands, sanctuaries and refuges, coral reefs, sensitive and special complexity features within the cable transmission corridor).

By annual important physical and chemical characteristics of the transmission system (Subpart F, 33 C.F.R. § 320.39):

- Substrate: It is anticipated that a maximum of 2 acres of medium to coarse grain sand substrate will be modified as part of cable protection, approximately 55 acres of substrate will be temporarily impacted as part of cable installation and a maximum of 45 acres of bottom substrate will be impacted as a result of side cast, up-cast material associated with cable installation and edging. The proposed cable protection action will result in a conversion of sand substrate to sand bottom habitat. It should also be noted that once on the bottom, substrate impacts will result in a loss of values of the United States. While these impacts seem slight, they are not taking into consideration the overall size of Nantucket Sound (approx. 180,000 acres) the total impact of 100 acres only represents impacts to 0.02% of the total Nantucket Sound area. When taking into consideration the total area of the waterbody, the proposed project impacts are minor.
- Suspended particulates in turbidity: It is anticipated that short term turbidity will be experienced in areas where side cast and up-cast material associated with installation is deposited as part of cable installation. It is noted that areas to be dredged as part of installation may contain "sand waves" or mounds of sand that move across the bottom much like waves on a shore. It is anticipated that the dredging of these sand waves will result in turbidity in areas up to 7,400 feet from the dredging site (400 x 10⁶ lbs of suspended solids) (AECOM, 2015). Dredging and Dredged Material Disposal, U.S. Dept. Army Engineer Manual 111-0-2 (2007). It is anticipated that any turbidity as a result of dredging will rapidly dissipate as the dredged material consists of heavy grain sands that have a tendency to fall out of the water column and res-set rapidly. It is anticipated that turbidity as a result of cable installation will be minimal due to method of installation (jet survey or horizontal directional drilling (HDD)) information provided by Upstate NY Power Project for an unrelated project, located at an index for jet survey logs from 74-75 hours post completion of HSS Group, Inc. 2008. Upstate NY Power Corp. Upstate NY Power Transmission Line EIS/IL-1-5-11, a program and Construction Submittal (NYSD-01). Therefore, turbidity impacts from the project are anticipated to be minor and temporary.

- Water Turbidity: It is anticipated that the discharge of fill material will result in effects to water that would result in changes to the water's clarity, color, odor, or taste. It is also not anticipated that the discharge of fill will result in additional contaminants that will result in changes to the water that reduces or eliminates the suitability of the water only to pipe or pump inputs (groundwater) or to consumption (drinking water) or aesthetics.
- Current waterways and water circulation: It is not anticipated that the discharge of fill will result in modification to current patterns and water circulation. The fill to be discharged will be the minimum necessary to install and protect the transmission cable and is not anticipated to obstruct, block, change the direction or velocity of flow, water circulation, or otherwise change the dimensions of the waterbody.
- Normal water fluctuations: The proposed discharge of fill will not result in changes to the existing tidal fluctuations in the project area. Therefore, the project as proposed will have no effect on normal water fluctuations.
- Salinity gradients: The project site is located entirely in a saline environment with no project impacts proposed by areas of low salinity adjacent to it. The project will not maintain or increase salinity. As such, the project as proposed will have no effect on salinity gradients.

Potential impacts on the biological characteristics of the marine ecosystem (Subpart 140-CFR § 200.20):

- Threatened and endangered species: The fill to be discharged is anticipated to have a minor long-term effect on threatened and endangered species. Direct effects as a result of fill covering or directly filling a listed, threatened or endangered species are not anticipated. It is not anticipated that the proposed fill will result in significant adverse impacts that would result in adverse effects to ESA listed species. The modification of bottom habitat through the discharge of fill and associated impacts are not anticipated to have any long term effects to habitats that are utilized for foraging by sea turtles and dolphins. It is not anticipated that any modification of habitat will be associated with the project habitat as a result of silt or siltation placement. When considering the overall size of Nantucket Sound (480,000 acres), the area proposed that the final construction will result in a modification to 0.0041% of the total Nantucket Sound area. Due to these factors, the proposed discharge of fill will have negligible effects on threatened and endangered species. Sea turtles, dolphins, and whales of the Bay State will be analyzed in impacts to threatened and endangered species.
- Fish, crustaceans, mollusk and other invertebrates: Impacts associated with the discharge of fill material associated with the project will result in minor impacts to mollusks, fish, and crustaceans in the project area. The discharge of fill as a result of silt or siltation placement and the turbidity associated with dredging, silt raising and cable placement will result in the smothering of any invertebrate species present in the areas where work is taking place. The placement of fill material has the potential to have

adverse effects to egg and larval stages of fish and crustaceans that may be present in the area, but it is unable to predict such impacts on fish and crustaceans of 100 to 1000 days and 100 egg stages' ability to relocate. Certain fish and crustacean species may benefit from the placement of fill material to protect the estuary as rocky habitats create a niche preferred by certain fish and crustacean species. It is anticipated that the project will adhere to time of year restrictions in Nantuxet Sound to reduce impacts to fish and crustaceans and mollusks that could be present in the area. See sections 4.1.4 and 4.1.5 of the EIS for additional analysis of impacts to fish, crustaceans, mollusks, and other aquatic organisms.

- **Gravel wildlife:** It is anticipated that the proposed discharge of fill will have minor impacts on other wildlife that may not be considered above. It is anticipated that the project will have minor secondary effects on seals and sea birds, as impacts to fish, crustaceans, and mollusks result in a decrease in available forage for these species. It is not anticipated that any additional species will be directly impacted by the proposed fill, as the location of the proposed fill is in the immediate vicinity of species that may be present.

By annual impacts on special areas (30 CFR 401.15 (FR) § 730.40)

- **Specialties and refuges, wetlands, mudflats, vegetated shallows, coral reefs, dune and sand complexes:** The project will have no effect on specialties and refuges, wetlands, mudflats, vegetated shallows, coral reefs, dune and sand complexes. The project has also been designed and sited to provide appropriate buffers from special aquatic sites to prevent any secondary impacts to special aquatic sites, such as turbidity.

By annual impacts on human use (30 CFR 401.15 (FR) § 730.50)

- **Municipal and private water supplies:** The project as proposed will have no effect on water supplies as the project is located in the Atlantic Ocean. There is no water supply being sourced from the Atlantic Ocean in this area.
- **Recreation and commercial fisheries:** The proposed discharge of fill will likely have minor, long-term effects on recreational and commercial fisheries. Local fish stocks will likely be negatively affected by the discharge of fill and turbidity, as non-viable larvae and eggs cannot capture or avoid smothering. However, it is anticipated that the project will adhere to time of year restrictions in Nantuxet Sound to lessen impacts to fisheries. In that regard, impacts will be minimized where the fill is placed. The proposed discharge of fill in winter, the table could pose a navigation hazard to bottom trawling fishing vessels. It is anticipated to be table protection to be primarily confined to recreational fisheries, as additional structure on that vessel becomes used to serve as an artificial reef that can host a high concentration of fish.
- **Water-based recreation:** Impacts to the primary water-based recreation that would occur within the project area are addressed above in the commercial and recreational fisheries section. It is anticipated that the proposed discharge of fill will have minor, long-term effects to recreational fishing. Current present recreation that may occur in this area are

or vertical heating related, but the placement of fill on the waterline will have no effect on the ability of waves to cool the water below the fill.

- As a result it is anticipated that the placement of fill will have minimal effects on aesthetics. Although it is anticipated to be minimal sheet piling on C3 if the fill has been placed, it will be limited at depths where it is not visible from the water surface. The proposed discharge of fill will have a footprint on the waterline of no more than 100 ft.
- Priority, national and historic monuments, national seashores, wilderness areas, research sites, and similar preserves: The proposed discharge of fill will have no effect on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves as all proposed discharges of fill will occur in areas outside of the area listed.

Pre-testing evaluation (Subpart G, 40 C.F.R. § 230.6)

Physical characteristics of the dredged material were considered as part of pre-testing evaluation. The proposed material to be discharged consists of medium to coarse grain sands that are at 60% present at the site, 10% of coarse sand fractions. All of these materials have minimal ability to carry contaminants. It has been determined that testing is not required for the rock fill and aggregate materials as the proposed material is not likely to be a carrier of contaminants because they are comprised of naturally occurring inert materials such as sand, rock, or gravel. Testing is not required for the silt that will be co-deposited to the extent that the discharge and extraction sites are adjacent and subject to the same currents and have substantially similar hydrodynamics. Even if the sand material were to carry contaminants, it is unlikely to degrade the disposal site due to adhesion.

Actions to minimize adverse impacts (Subpart H, 40 C.F.R. §§ 230.7) – 230.77)

Actions concerning the location of the discharge and actions affecting public and animal populations have been taken to minimize adverse impacts associated with the proposed discharge. The proposed discharge of fill will occur in a limited area and only as long as is necessary to properly place and protect the transmission cable. The use of dredging to remove sand wastes is intended to reduce the need to take sand from the disposal pile will be to place the cable at sufficient depths with the sand wastes removed. Preliminary reviews have indicated that one or two 3' areas of silt will need to be removed to a depth of 3' that can be buried deep enough due to subsidence rock formations. The applicant will be addressing the time of year restrictions to reduce secondary impacts to benthic communities as a result of turbidity.

Findings of compliance or non-compliance with the restrictions on discharges (40 C.F.R. § 230.10(a), and 230.12)

Based on the location of the area, including the factual circumstances, the proposed discharge has been evaluated to determine whether any of the restrictions on discharge would occur.

Compliance with Restrictions on Discharge

1. Is there a practical alternative to the proposed discharge that would be less damaging to the city of Boston (e.g. alternatives with less aquatic resource effects, or alternatives with more aquatic resource effects that avoids other significant adverse environmental consequences?)

No, there is no practical alternative that would be less damaging to the environment.

2. Will the discharge cause or contribute to violations of any applicable water quality standards?

The proposed discharge will not cause or contribute to violations of any applicable water quality standards. The Massachusetts Department of Environmental Protection issued an approved individual 401 water quality certification for the project on 7 July 2019.

3. Will the discharge violate any toxic chemical standards (under section 307 of the Act)?

The proposed discharge will not violate any toxic chemical standards (under section 307 of the CWA).

4. Will the discharge jeopardize the continued existence of endangered or threatened species or its critical habitat?

It has been determined through consultation with U.S. Fish and Wildlife Service and with the NMFS that the proposed discharge will not jeopardize the continued existence of endangered or threatened species or destroy or adversely modify the critical habitat. See the administrative record for documents concerning ESA consultations performed by BODMA as the lead Federal agency.

5. Will the discharge violate standards set by the Department of Commerce to protect fish and shellfish?

The proposed discharge will not cause or contribute to any fish and shellfish standards set by the Department of Commerce.

6. Will the discharge cause or contribute to significant degradation of waters of the United States?

The proposed discharge is not anticipated to cause or contribute to significant degradation of waters of the United States.

7. Have all appropriate administrative actions (under 40 CFR 401.15 - 401.23) been taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?

All appropriate and practicable steps, including avoidance and minimization of impacts, are being taken to minimize potential adverse impacts of the proposed cable project on aquatic ecosystem.

General Public Interest Review (33 C.F.R. § 320.4 and R.G.L. 84-09)

Conservation

Broadly defined, conservation is the planned management of natural resources in order to prevent or minimize exploitation, deterioration, or neglect. The proposed project will not result in an alteration of and to preserve, or minimize, avoid, or destruction of any wetland with the project impact area currently conserved land. The project as proposed will have no effect on conservation. See Appendix B for a description of existing conditions within the project area.

Economics

It is anticipated that the systemwide system for an essential economic engine of the world energy industry will provide job opportunities for local businesses. It is estimated that the project will result in employment for workers from the northeast Massachusetts area. It is also anticipated that local ports will benefit as they will be able to efficiently run the proposed offshore wind facilities. Vineyard Wind is currently under an 18 month lease with the New Bedford Marine Commercial Terminal that has a 20% discount on dockage to be returned upon New Bedford. Additional issues in other ports similar to that seen in New Bedford are anticipated as a result of an increase in port activity. For example, Martha's Vineyard on Martha's Vineyard is planning upgrades in hopes that Vineyard Wind will utilize their terminal for offshore wind maintenance operations. Where studies of construction materials and other supplies are being sourced from within the region. It is estimated that the project will generate \$14.7 to \$17 million in state and local taxes. Additional tax and local community development payments are also anticipated. While Vineyard Wind will have beneficial impacts to the local economy, it is anticipated that there will be negative economic impacts to commercial fishing. While Vineyard Wind is located along a large area of the entire wind development area, due to the placement of the turbines it is likely that the entire 75,611 acre area will be abandoned by commercial fisheries due to the disturbance to the grounds. The extent of impact to commercial fisheries and loss of economic income is estimated to total \$7.7 million over an expected 30-year lifetime of the Project. Vineyard Wind has established a Conservation Fund for Massachusetts and Rhode Island Fisheries to mitigate for the potential loss in economic revenue that may result from potential loss of fishing grounds. When considering these factors, the project as proposed is anticipated to have a net beneficial effect to local economies. Additional information on impacts to economics can be found in section 3.0 of the FIS.

Aesthetics

The system as proposed will result in changes in aesthetics for vessels along the coast line of Martha's Vineyard and Nantucket. The increased turbines will not be visible from nautical Cape Cod. No markers of the cable will be visible and will have no impact on aesthetics. It is

anticipated that a viewer located greater than 14 miles from the wind farm development area will not be able to see the turbines. However, the project may have some effects on the landscape from the vegetation and lawn, and the weather conditions (fog, haze, rain, specific time of day, etc.) will be able to identify a few turbines or the farm. Overall, the project may have some effects on the area, but visibility would vary depending on a variety of factors including viewing distance, weather, and atmospheric conditions. Vineyard Wind has selected a utility wind turbine that meets the most frequent color of the horizon light, and will use a matte finish to prevent sunlight from reflecting off the turbines. Vineyard Wind has also committed to installing an Aircraft Detection and Lighting System (ADLS) to reduce nighttime lighting visibility. The system would enable aviation warning lights only when an aircraft is in the vicinity of the WDA, reducing nighttime visibility of the project. From a visually affected bird population perspective, the estimated loss for four (4) years amount to 0.15% of annual nighttime hours. This in combination with no nesting occupancy within the next 100 feet to the base of the turbine, the high visibility of the turbines. It is anticipated that the proposed project will have neutral effects on aesthetics due to mitigation measures that will be implemented. Additional information on aesthetics can be found in section 7.2 of the EIS.

Greenhouse Environmental Concerns

The proposed 100-turbine, 110-tower-tall Vineyard Wind will produce 900 MW of clean, renewable energy for the Massachusetts power grid. This will fulfill approximately 10% of Massachusetts' energy needs. The addition of renewable energy is the most cost-effective way to increase energy production in Massachusetts and contribute towards Massachusetts' goal of reducing total greenhouse gas emissions. It is estimated that the construction of Vineyard Wind will result in avoided annual emissions of 1,630,000 tons of carbon dioxide, which is equivalent to taking 320,000 cars off the road. Over the lifetime of the project (30 years), it is anticipated that avoided emissions will total 8,881,670 tons. A reduction in carbon emissions and other greenhouse gas emissions has the potential to contribute towards the slowing of climate change and sea level rise. Overall, the proposed Vineyard Wind Project is anticipated to have beneficial effects on general environmental concerns not addressed in other portions of the EA/CE analysis.

Wetlands

The proposed projects located wholly in subtidal waters, intertidal waters, and uplands. There are no tidal or non-tidal wetlands located within the project area. Appropriate erosion controls will be utilized in upland project areas to be impacted as a result of the Damsstable subtidal area mitigation program to prevent potential secondary effects to adjacent wetlands and waterways. Best management practices will be implemented on construction sites. The project does not propose impacts to wetlands and therefore, the project will have no effect on wetlands.

Historic Properties

DOEM has made a Finding of Adverse Effect for the proposed project on the Gyp Head Light tower, the Nantucket Island National Historic Landmark (NHL), sub-tidal groyne and landforms features that may be contributing elements to the Nantucket Sound Traditional Cultural Property (TCP) or a larger traditional cultural landscape, the Chappaquiddick TCP and the

Vineyard Sound-Mashup's Bridge TCP Vanguard Wind has redesigned elements of the proposed project to avoid or reduce physical impacts to the number of structures, significant site features and to minimize visual impacts to the Nantucket NTH, the Clay Head Lighthouse, the Chappaquiddick Island TCP, and the Vineyard Sound-Mashup's Bridge TCP to the extent feasible (Tuttle, Doran, and Scholl 2018; Tuttle et al. 2019; Epsilon Associates 2018, 2019; Strategic Associates 2018).

To avoid, minimize, and mitigate adverse visual effects to historic properties, Vineyard Wind will:

1. Install no more than 84 WPGs.
2. Install towers with the tallest tower placement, even ones closest to the Nantucket NTH.
3. Install an ADSS TH system that activate as at an sunset only when the tower is in the vicinity of the WDG, resulting in nighttime visibility of the project from adversely affected historic properties to an extent of less than one (-) hour on only 0.01 percent of annual nighttime hours.
4. Paint tower and hubcaps an off-white grey color (the lightest RAL 9009 Pure White and so darker than RAL 9005 Light Grey) to reduce visual contrast during daylight hours of historic properties. The paint color will be painted in a manner of a commencing construction operation.
5. Fund a restoration and stabilization project for the Clay Head Light to address the substantial deterioration of the construction of all Vanguard Wind towers and commence the restoration and stabilization project prior to initiation of construction of any offshore project elements included as part of the proposed permit. All of the restoration and stabilization project will be developed consistent with the Secretary of the Interior's Standards and Guidelines for Rehabilitation (54 CFR 67). Proposed scope of work, draft text, design specifications, and cost will be submitted to the Clay Head Lighthouse Advisory Board and Massachusetts Historic Commission (MHC) for review and comment, as they are developed. All final project plans, as reviewed, as approved by MHC under the terms of the Preservation Restriction (PR) (MGL chapter 181, section 11-13).
6. Fund an ethnographic study and prepare a National Register of Historic Place (NRHP) nomination package for the Chappaquiddick Island TCP Vanguard Wind will be to commence the study prior to initiation of construction of any offshore project elements included as part of this proposed action. The NRHP nomination will describe the relationship of the TCP and other appropriate TCPs, including the Nantucket Sound TCP, within the Wampanoag homeland, and how by the Chappaquiddick Island TCP NRHP nomination will be prepared by qualified historic preservation organizations working with the Chappaquiddick Tribe of the Wampanoag Nation and other local interested entities, including, but not limited to the Bureau of Ocean Energy Management.
7. Fund an ethnographic study and prepare a NRHP nomination package for the Vineyard Sound and Mashup's Bridge TCP Vanguard Wind towers and commence the study prior to initiation of construction of any offshore project elements included as part of this proposed action. The NRHP nomination will describe the relationship of the TCP and other appropriate TCPs, including the Nantucket Sound TCP, within the Wampanoag homeland. The Vineyard Sound and Mashup's Bridge TCP NRHP

Nominations will be prepared by qualified historic preservation professionals working with the Winemakers, Tribe of Gray Head (Aquinnon) and the Virginia Winemakers Tribe.

To avoid, minimize, and mitigate adverse physical effects, Vineyard Wind will:

1. Avoid in situ or shipwreck, substantially significant historic fields, and as many as possible of the submerged ancient landform features identified during marine archaeological surveys of the WDA and OUEC by a distance of no less than 500 meters;
2. Place additional investigations of the US submerged ancient landforms identified during marine archaeological surveys of the WDA and OUEC that remain in the project footprint and area to be avoided due to proposed action's design constraints;
3. Avoid or fund additional investigations of any new submerged archaeological resources or submerged ancient landform features identified as a result of future marine archaeological resource identification surveys that will be performed in portions of the area proposed to be OUEC (A-4F) and proposed surveys.

The Secretary's coordination process was concluded with the assistance of the WDA through BOEEM, the State Historic Preservation Officer, the Advisory Council on Historic Preservation, and the Virginia Tribe on May 1, 2021. SACU will also sign the MOA as a reviewing agency. The MOA will be publicly open to *Vineyard Wind*, and the stipulations will be made a condition of BOEEM's approval of the COP and the SACU authorization. As a result of avoidance, minimization, and mitigation requirements established by the BOA, the project as proposed will have a neutral effect on historic properties. See section 3.8 of the EIS for additional information on historic resources.

Effect on Wildlife Values

The proposed project is anticipated to have neutral effects on fish and wildlife due to the incorporation of mitigation. Construction impacts during construction, vessel traffic, construction noise, and the placement of structure fill that result in habitat conversion or loss will adversely impact fish and wildlife. Operation of the fixed facility also may impact fish and wildlife. *Vineyard Wind* has mitigated for potential impacts to fish and wildlife species by voluntarily adopting best management practices for construction to include limits such as wake-stay-in-pulsed-noise, maximum vessel speeds, no vessel operation under certain light-weather conditions, etc. *Vineyard Wind* also has mitigated for potential impacts to fish and wildlife by agreeing to enforce limits on vessel wake restrictions that will reduce potential impacts to sensitive life stages of fisheries resources that may be present in the work areas. It is anticipated that the placement of rock and rubble on featureless ocean bottom will exert little or no effect and will provide additional habitat to certain fishery species. See section 3.7 in the EIS for additional information regarding mitigation regarding fish and wildlife resources as stated.

Effect on Hazards

The proposed project does not have any components or associated construction activities that would result in modification of ambient conditions. Therefore, the project as proposed will have no effect on fire hazards (see 3.3.1.3, § 320.4(k)).

Floodplain Values

The proposed project is not located within a floodplain and is not anticipated to have effect on floodplains or their values.

Land Use

The proposed project is anticipated to have minimal impacts to existing land use and will not result in significant changes to land use over the lifetime of the project. Therefore, it has been determined that the project will have negligible effects on land use.

Navigation

It is anticipated that the Vineyard Wind project will have neutral impacts to navigation during construction and operation with the incorporation of mitigation. Main impacts to navigation are anticipated to consist of increased vessel traffic near the WDA, increased traffic between various ports providing services to the project and the WDA, increased possibility of fishing gear conflicts with the wind turbines, increased risk of collision occurring between project vessels and other vessels during transmission cable laying, and increased risk of collision with structures placed as part of the overall wind energy project. These impacts have been reduced to the greatest extent practicable with the selection of alternative D2. In addition, Vineyard Wind has proposed multiple mitigation measures to reduce impacts to navigation:

- Vineyard Wind will hire a marine coordinator to manage all construction vessel logistics and act as a liaison with other navigation agencies (USCG, port authorities, etc.) to ensure safe navigation by all area users.
- Vineyard Wind will establish a mariner communications plan and keep all affected parties notified of the status of the project.
- A temporary safety zone will be established in active construction areas to reduce the risk of unplanned vessel interactions. This will also allow other ocean users to access portions of the WDA not under active construction.
- Private aids to navigation (PATONs) will be installed as part of construction to ensure that all structures (turbines and service platforms) are clearly marked for mariners. Additional aids to navigation will be added pending consultation with the USCG.
- Coordination with the Northeast Marine Pilots Association and scheduling of vessel traffic to reduce navigational impacts to other area user groups.

Additional information on navigation and vessel traffic can be found in section 3.11 of the final EIS.

Shoreline Erosion and Accretion

The proposed project will not alter hydrodynamics so as to affect shoreline erosion or accretion. The proposed project will have no effects on shoreline erosion and accretion.

Recreation

The proposed project is anticipated to have negligible short-term impacts to recreation. There will be no access restrictions placed on the water or shoreline resources. The recreational public will be allowed to access the 75.67 acres of lease area where the wind energy facility will be sited. The proposed project is smaller than the horizontal extent of existing easements. Installation of the transmission cable in nearshore areas may cause temporary access conflicts for the recreational public, but the cable installation is expected to be limited to a very short window of time. Vineyard Wind will be operating under a construction schedule that limits work during summer months to avoid impacts and user conditions that would result from the higher seasonal use of the Cape Cod and Islands area. Recreational fishing activities both within the WDA and at the landfill site may be temporarily disrupted, but times of exclusion are anticipated to be minimal. Once construction is completed, it is anticipated that the wind turbines will be attractive to recreational fishing as the turbines serve as artificial structures/reefs that attract fish. It is anticipated that the project will have minimal impacts to recreation such as view sheds of recreational areas such as beaches, and will not negatively impact shoreline recreation activities in adjacent communities. Additional information on impacts to recreation can be found in section 3.9 of the EIS.

Water Quality and Conservation

The proposed project will not have significant impacts. Therefore, the proposed project will have no effect on water quality and conservation.

Water Quality

It is anticipated that pile-driving, cable installation, horizontal directional drilling, installation of cable securement, and anchoring may temporarily impact water quality through the suspension and dispersion of sediment. These impacts are anticipated to be short duration and extremely localized. No permanent effects to water quality from these activities is anticipated to occur. Vessel fuel spills and oil spills are not anticipated, however there will be a spill response plan in place to minimize impacts to water quality should a spill event occur. It is anticipated that the project as proposed will have no significant impacts on water quality and all impacts are anticipated to be temporary in nature.

Energy Needs

Vineyard Wind will provide 900 MW of renewable energy to the Massachusetts energy grid when operational. The addition of Vineyard Wind to the Massachusetts energy grid will result in increased power reliability and diversity of the state energy supply. It is anticipated that in full operation, Vineyard Wind will be able to meet 9% of Massachusetts' power needs. The addition of clean, renewable energy to the Massachusetts energy grid is anticipated to have minimal effects on energy needs.

Safety

Safety of impoundment structures does not apply to this project. See 33 C.F.R. § 320.4(k).

Food and Fiber Production

The project as proposed will not affect food or fiber production.

Mineral Needs

The proposed project will have no effect on mineral needs. The project area is not located within any federal sand or mineral lease areas. BOEM authorizes offshore mineral lease areas, BOEM is also the agency that designated the wind lease areas. A portion of BOEM's wind energy lease area designation determination took into account the presence or potential for offshore sand or mineral extraction.

Consideration of Property Ownership

Vineyard Wind has obtained a lease for area OCS-A 0501 that grants Vineyard Wind exclusive rights to survey and develop the lease site for offshore wind energy production. The lease does not allow Vineyard Wind to close the area to other ocean users and the area will remain accessible to the general public once operations commence. There may be periods where safety zones are established to exclude the public during construction, but these are temporary in nature. Vineyard Wind has signed a host agreement with the Town of Barnstable for use of the Covell's Beach landfall site. This authorizes Vineyard Wind to utilize the town owned property for the landfall, subject to certain conditions. Due to these factors it is anticipated that the project will have negligible effects on property ownership.

Needs and Welfare of the People

The project has received approval from all required local Conservation Commissions, Massachusetts Department of Environmental Protection, MA CZM, and RI CRMC. It is anticipated that the project will be in the interest of the people as the authorization of the project, with required mitigation, will result in increased energy reliability, local economic benefits, and environmental benefits. A total of 341 unique submissions (public comments) were received from the public, agencies, interested groups, and stakeholders in response to BOEM's ten public meetings and request for comments on the Vineyard Wind Project. A total of 223 of these comments were submitted by members of the general public. There were 185 submissions (54% of total submissions) generally in favor of the project, 37 submissions (11% of total submissions) generally opposed to the project, and 119 submissions (35% of total submissions) that had no distinct disposition or disposition could not be clearly determined. Based on public response to the project, it appears that the general public is supportive of the project, is in favor of the project being approved, and that the project is addressing the needs and welfare of the people.

Mitigation

The applicant's preferred alternative consisted of 10 wind turbines and either landfill at French Beach or Barnstable, MA or New Harrison Beach or Cliff Bay or Yarmouth, MA. Discussions with the applicant resulted in the elimination of the New Hampshire Avenue landfill option. The reduction of the turbines by 10 is correlated with the selection of the preferred alternative and the elimination of impacts on Little Bay associated with cable laying drastically reduced impacts associated with the project, completely avoiding USACE defined special aquatic sites, eliminated potential impacts to a USACE Federal Navigation Channel, and significantly reduces fisheries impacts. These modifications will allow the project to meet its goal of 300 MW of renewable energy generation. The proposed project will not result in permanent losses to waters of the US. Fish impacts are anticipated to be no greater than 2 acres and will affect future use subtidal bottom. While the placement of fill will cover 3 acres of bottom, the sand to hard substrate, the placement of the hard rock may provide benefits to fisheries as the hard structure acts as an artificial reef. The avoidance has been minimized and excluded insofar as is practicable. It is found that the project has unanticipated impacts beyond those considered by USACE and this line of mitigation measures may be required.

Compliance with Other Laws, Policies, and Requirements

Section 4(a)(2) of the Endangered Species Act

DOFM has been identified as the lead agency for complying with section 7 of the ESA with USACE. Designated critical action agency consultation has been completed. USACE concurs with NMFS, DOI, including its ITS, which states that the proposed action is not likely to jeopardize listed species or destroy or adversely modify critical habitat under NMFS' jurisdiction. The terms and conditions of the ITS relevant to USACE action are included as binding conditions of USACE authorization. The consultation has been found to be sufficient to ensure the activity requiring DA authorization is in compliance with section 7 of the ESA.

Magnuson-Stevens Act, Congressional and Management Agreements, State Act, Essential Fish Habitat (EFH)

DOEM has been identified as the lead agency for complying with the EFH provisions of the Magnuson-Stevens Act with USACE designated as a cooperating agency. Consultation has been completed and has been found to be sufficient to ensure the activity requiring DA authorization is in compliance with the EFH provisions.

Section 106 of the National Historic Preservation Act (Section 106)

DOFM has been identified as the lead Federal agency for complying with Section 106 of the National Historic Preservation Act with USACE designated as a cooperating agency. Consultation has been completed and has been found to be sufficient to ensure Section 106 compliance for this permit to be authorized and additional consultation is not necessary.

Tribal Trust Responsibilities

BOEM has been identified as the lead Federal agency for Government-to-Government consultation with federally-recognized Tribes. Government-to-Government consultation was conducted by BOEM with federally-recognized Tribes including the Mashpee Wampanoag Tribe, the Wampanoag Tribe of Gay Head (Aquinnah), and the Narragansett Indian Tribe. Consultation has been completed and found to be sufficient by USACE. Additional consultation by USACE is not necessary.

Section 401 of the Clean Water Act – Water Quality Certification (WQC)

An individual Massachusetts WQC is required and has been issued by Massachusetts Department of Environmental Protection.

Coastal Zone Management Act (CZMA)

An individual Massachusetts Coastal Zone Management consistency statement is required and has been issued by MA CZM.

An individual Rhode Island Coastal Zone Management consistency statement is required and has been issued by RICRMC.

Wild and Scenic Rivers Act

The project is not located in a component of the National Wild and Scenic River System or in a river officially designated by Congress as a “study river” for possible inclusion in the National Wild and Scenic River System. USACE has determined that it has fulfilled its responsibilities under the Wild and Scenic Rivers Act.

Effects on USACE Civil Works Projects (33 U.S.C. 408)

No, there are no USACE Civil Works projects in or near the vicinity of the proposal. The project does not require review under section 14 of the RHA (33 U.S.C. 408).

USACE Wetland Policy (33 C.F.R. § 320.4(b))

The proposed project does not impact wetlands. USACE Wetland Policy does not apply.

Section 176(c) of the Clean Air Act General Conformity Rule

The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct or indirect emissions of a criteria pollutant or its precursors and are exempted by 40 C.F.R. § 93.153. Any later indirect emissions are generally not within USACE continuing program responsibility and

governed by cannot be practically controlled by USACE or these reasons a conformity determination is not required for this project.

Presidential Executive Orders

E.O. 13175 Consultation with Indian Tribes, Alaska Natives, and Native Hawaiian Governments in Government action was conducted by DOE/NE as the lead Federal agency with Federally-recognized Tribes including the Massachusetts Wampanoag Tribe, the Wampanoag Tribe of Gay Head (Aquinnah) and the Narragansett Indian Tribe. Consultation with Indian Tribes is addressed in the Vineyard Wind 1 Offshore Wind Energy Project EIS section 3.8 and NEPA Consultation with the Tribes has been completed and found to be sufficient by USACE. Additional consultation by USACE is not necessary. E.O. 11988, Tribalism Management: This category of federal land development E.O. 11988 is not applicable.

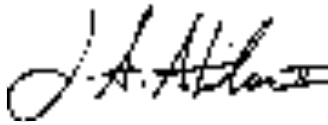
E.O. 12898 Environmental Justice Section 306 of the Vineyard Wind 1 Offshore Wind Energy Project EIS considered environmental justice and the potential impacts of the Vineyard Wind project on environmental justice. In accordance with E.O. 12898, following its list with respect to environmental justice were considered. The potential economic consequences affected communities that are more likely to be disproportionately or low-income, elderly, and public participation and input in the NEPA process. Affected communities considered include Barnstable, Dukes, and Nantucket counties within Massachusetts. The Barnstable and West Tisbury communities within Dukes Island. It was determined that a preferred alternative's impact reducing features in combination with anticipated beneficial effects will result in net environmental justice community.

E.O. 13112 Invasive Species – have no invasive species issues involved in this project. E.O. 13112 is not applicable.

E.O. 13213 and E.O. 13702, Energy Security and Availability – The review was advisory. After other actions were taken to the extent permitted by law and regulation to accelerate completion of this project related to safety, security, reliability, and other health and environmental protections.

U.S. Army Corps of Engineers Approval

I find that the issuance of the U.S. Army Corps of Engineers' permit, as described by regulations published in 33 C.F.R. Parts 320 through 332, with the scope of work described in the document, is wise and a thorough analysis and evaluation of a District set forth in this Final ROD. There are no less restrictive, by comparison, practicable alternatives available to construct the Vineyard Wind Project than that under Alternatives C, D2, and E. The issuance of this permit is consistent with National Policy, statutes, regulations, and other state directives, and an balanced issuance of a USACE permit to construct the Vineyard Wind Project.



Digitally signed by
John A. Atlane II, DN: cn=John A. Atlane II, o=State of Hawaii, email=jatlane@hawaii.gov, c=US
2010.05.10 17:00:50 -1000

Date

John A. Atlane II
Colonel, Corps of Engineers
District Engineer

6.3. NMFS' DECISION

This section documents NMFS' ultimate determination to issue an IHA to Vineyard Wind pursuant to its authorities under the MMPA. It also references NMFS' decision to adopt the BOEM EIS to support NMFS' final permit decision pursuant to IHA. NMFS prepared and signed a separate memorandum independently evaluating the sufficiency and adequacy of the BOEM EIS. That memorandum provides NMFS' rationale to adapt the EIS to satisfy independent NEPA obligations related to the IHA. In that memorandum NMFS concluded: (i) the action addressed in the adapted permit is substantially the same as that being considered or proposed by NMFS and meets all NEPA requirements under 40 C.F.R. § 1502.7 (adopting on 1/3/13 and 48 Fed. Reg. 84263 (July 29, 1983)), (ii) the analysis includes the appropriate scope, depth, and level of environmental impact evaluation for NMFS' proposed action and alternatives, and (iii) NMFS' comments and suggestions, submitted in its role as a cooperating agency, have been satisfied.

On September 2, 2013, NMFS received a request from Vineyard Wind pursuant to MMPA section 101(g)(2)(D) for an authorization to take small numbers of marine mammals by harassment, incidental to the construction of an offshore wind energy project within Massachusetts (CCS A 0501), for a period of no longer than one year. Once NMFS determined the authorization was adequate and complete it had a corresponding duty to determine whether (i) how to authorize take of marine mammals incidental to construction activities described in the application in accordance with standards and determinations set forth in the statute and its implementing regulations. Thus, the purpose of NMFS' action—which was a direct outcome of Vineyard Wind's request for authorization to take marine mammals by harassment, incidental to their proposed project—was to determine whether Vineyard Wind's application pursuant to the MMPA and 50 C.F.R. § 216 and issued an IHA, if appropriate. The need for NMFS' action was to consider the impacts of its construction permit on marine mammals and then to ensure the public was involved in the process through its opportunity to comment on NMFS' proposed EIA which was published in the *Federal Register* (44 Fed. Reg. 18346, Vol. 30, 2025) and also had the opportunity to provide comments on BOEM's DEIS and Supplement to the DEIS. NMFS' final action takes into account those comments, as well as the results of a corresponding consultation process under section 7 of the ESA.

6.3.1. NMFS' Decision (40 C.F.R. § 1505.2(a))

Pending completion of all statutory processes, NMFS plans to issue an IHA to Vineyard Wind authorizing take of marine mammals incidental to construction activities associated with the proposed Project, specifically pile driving, for one year. NMFS' final decision to issue the requested IHA will be documented in a separate Decision Memorandum prepared in accordance with internal NMFS policy and procedures. That IHA will authorize incidental take of marine mammals while prescribing the amount and means of incidental take, as well as mitigation, monitoring and reporting requirements including those mandated by the BOEM to complete the formal section 7 consultation process under the ESA. A Notice of Issuance of the IHA will be published in the *Federal Register*. The *Federal Register* notice will describe how NMFS would describe the requirements set forth in the MMPA and its implementing regulations were met. The issuance of an IHA was not void.

5.3.2. Alternatives NMFS Considered (40 C.F.R. § 1606.2(b))

NMFS is required to consider a range of alternatives to a proposed action in accordance with NEPA and 40 C.F.R. 1502.10(a) and 1502.11. NMFS considered two alternatives, the no action alternative in which NMFS would deny Vineyard Wind's request for an authorization and an action alternative in which it would issue an ITA to Vineyard Wind with mitigation, monitoring, and reporting requirements.

Consistent with BOEM's Alternative B, under the No Action Alternative, NMFS would not issue the requested authorization to Vineyard Wind, in which case NMFS assumes Vineyard Wind would not proceed with their proposed project as described in the application and a need to take measures to ensure the protection of migratory animals is not a component of the MMPA (unless modification to the project was undertaken that would negate the need for the authorization). Since NMFS is not required by 40 C.F.R. 1502.10(a) and 1502.11 to issue an environmentally preferable alternative, NMFS considers the No Action Alternative to be the environmentally preferable alternative in this case, but notes that some impacts to migratory animals would be incurred since no construction activities resulting in disturbance would occur.

The other alternative NMFS considered was its Proposed Action, issuance of the ITA to Vineyard Wind, which would authorize the requested project subject to specified mitigation, monitoring and reporting measures. As part of that alternative, an IIR, including the public and agency review process, NMFS considered a range of mitigation measures to carry out its duty to identify and avoid, minimize, offsetting, and restore action effects to the greatest extent possible. These measures were initially identified in the proposed ITA (84 FR 18316) and modified in the final IIR in response to public comment, agency review, and BOEM action process. In the Proposed Action Alternative evaluated by NMFS is consistent with the Preferred Alternative authorized by BOEM in the FEA and identified in this ROD as it would provide the authorization necessary to address the activities identified in that alternative.

5.3.3. Primary Factors NMFS Considers Favoring Selection of the Proposed Action (40 C.F.R. § 1505.2(b))

As noted earlier, NMFS intends to issue an ITA to Vineyard Wind in response to their request for an ITA, to complete their regulatory and regulatory processes. NMFS' Proposed Action to issue an ITA for BOEM's Preferred Alternative effectively meets NMFS' stated purpose of identifying NMFS' as an obligor in a manner as respects IHA. Even if no statutory and regulatory determinations are made after providing for proper public review and comment, the issuance of the ITA, as described under the No Action Alternative, would be contrary to NMFS' responsibilities, given the results of the analysis conducted under the MMPA demonstrate the authorized take would meet statutory and regulatory requirements and would thus not require NMFS' as it is to meet that purpose and need for action.

5.3.4 Mitigation, Monitoring and Reporting Considered by NMFS (40 C.F.R. § 1505.2(c))

NMFS has a statutory and regulatory process to prescribe the permissible methods of take and other means of effecting the least practicable adverse impact on the species or stocks of marine mammals and their habitat, paying particular attention to rookeries, mating grounds, and other areas of similar significance. All incidental take authorizations include additional requirements or conditions pertaining to monitoring and reporting. Mitigation, monitoring, and reporting requirements related to marine mammals were preliminarily identified in the proposed IHA (84 FR 18346). Those measures were modified in the final IHA. When it issues its IHA to the applicant, NMFS will therefore require all necessary mitigation, monitoring and reporting requirements to be implemented by Vineyard Wind. Appendix A includes a listing of final mitigation and monitoring measures.

MARZIN.CATHERINE.G.1365836082²
Digitally signed by
MARZIN.CATHERINE.G.136583608
Date: 2021.05.10 15:44:44 -04'00'

Catherine Marzin
Acting Director
NMFS Office of Protected Resources

Date

6. REFERENCES

- Army Corps of Engineers (ACOE). 2015. Dredging and Dredged Material Disposal. U.S. Dept. Army Engineer Manual 111 0-2-5025.
- BOEM (Bureau of Ocean Energy Management, Office of Renewable Energy Programs). 2014. Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts: Revised Environmental Assessment. OCS EIS/EA BOEM 2014-603. Accessed June 2019. Retrieved from: <https://www.boem.gov/Revised-MA-EA-2014/>.
- Epsilon Associates, Inc. 2018. Draft Construction and Operations Plan. Volumes IIa and IIb. Vineyard Wind Project. October 2018. Accessed: November 4, 2018. Retrieved from: <https://www.boem.gov/Vineyard-Wind/>.
- Epsilon Associates, Inc. 2019. Draft Construction and Operations Plan, Addendum to Volumes I, II, and II. Vineyard Wind Project. May 2019. Accessed: June 20, 2019. Retrieved from: <https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/Vineyard-Wind-COP-Addendum.pdf>.
- Epsilon Associates, Inc. 2020a. Draft Construction and Operations Plan: Volume I. Vineyard Wind Project. September 2020. Accessed: October 21, 2020. Retrieved from: <https://www.boem.gov/renewable-energy/state-activities/vineyard-wind-construction-and-operations-plan-cop-volume-i>.
- Epsilon Associates, Inc. 2020b. Draft Construction and Operations Plan: Volume III. Vineyard Wind Project. June 2020. Accessed: October 14, 2020. Retrieved from: <https://www.boem.gov/renewable-energy/state-activities/vineyard-wind-construction-and-operations-plan-volume-iii>.
- NMFS (National Marine Fisheries Service). 2020. Endangered Species Act Section 7 Consultation Biological Opinion: Construction, Operation, Maintenance, and Decommissioning of the Vineyard Wind Offshore Energy Project (Lease OCS-A 0501). GARFO-2019-00343. 326 pp.
- Saratoga Associates. 2018. Vineyard Wind Project Visual Impact Assessment. March 9, 2018. Prepared for Vineyard Wind, LLC.
- Tuttle, Michael C., Christopher Donta, and Nathan Scholl. 2018. Marine Archaeological Services in Support of the Vineyard Wind Construction and Operations Plan OCS-A 0501 Lease Area and Offshore Export Cable Corridor. Prepared by Gray & Pape, Inc., for Vineyard Wind, LLC.
- Tuttle, Michael C., Sara E. Holland, Nathan Scholl, and Kimberly Smith. 2019. Marine Archaeological Services in Support of the Vineyard Wind Offshore Wind Energy Project Construction and Operations Plan for Lease Area OCS-A 0501 and Offshore Export Cable Corridor Offshore Massachusetts. Prepared by Gray & Pape, Inc., for Vineyard Wind, LLC (Revised May 24, 2019).
- USCG (U.S. Coast Guard). 2020. The Areas Offshore of Massachusetts and Rhode Island Port Access Route Study. Final Report. Docket Number USCG-2019-0131. May 14, 2020. Accessed: October 29, 2020. Retrieved from: <https://downloads.regulations.gov/U.SCG-2019-0131-0101/content.pdf>.

Measure Number	Measure	Description	Resource Area Affected and FLEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		of the aforementioned birds), the Montrose Natural Heritage and Biological Resources Program (NH-BRP), USFWS, and BOEM) must be notified with the reason, anticipated duration of the work, and any potential disturbance anticipated by NH-BRP/USFWS (see 50 CFR 161).					
4	Pre-construction monitoring	<p>CHD areas were established between April 1 and August 31, or if work is initiated after a 15-hour work stoppage during the stop-work nesting season (from June 1 through August 31), follow the same schedule in the CHD. As depicted in the PPTP, a qualified biologist will perform surveys to determine the presence/absence of any nesting piping plovers within 200 yards (182.9 meters) of the work zone.</p> <p>If nests, eggs, or other birds' products are identified within 200 yards (182.9 meters) of the work zone, the scheduled activity will determine the findings report to NH-BRP and Vireos and Wind and Vireos and Wind will be placed in the measure into the area within 8 hours, with no further monitoring activities required.</p> <p>If nests, eggs, or other birds' products are observed within 200 yards (182.9 meters) of the work zone, nesters will be recorded and the following monitoring will be required based on distance from black-poll to the work zone:</p> <ul style="list-style-type: none"> • > 200 yards (182.9 meters) from work zone – nest monitored once per day at dawn before 0600 hours during appropriate weather conditions; • 50 – 200 yards (45.7 – 182.9 meters) from work zone – nest monitored once per day at dawn and dusk between 0600 hours and 1800 hours during appropriate weather conditions; and • < 50 yards (45.7 meters) to the work zone – no monitoring activity is required by the Vireos and Wind personnel unless specifically requested by the NH-BRP. 	Area (A.8.3)	Construction	Monitoring	This monitoring measure will not reduce the expected negligible temporary impacts on nesting Piping Plovers but will limit or prevent potential impacts on eggs, young, Plovers and/or other state listed species, if any, as a result of CHD operations.	NH-BRP
5	Construction disturbance	In the unlikely event that disturbance associated with CHD operations is noted by the crew, a public biologist will survey the site to determine what equipment, being brought to the beach, and will ensure no minimal activities take place in soliciting Piping Plovers or other state-listed species.	Area (A.8.3)	Construction	Monitoring	While no impacts of negligible temporary construction, young, Plovers will not change, this monitoring measure will limit or prevent construction impacts on nesting Piping Plovers and/or other state-listed species, if any, as a result of CHD operations.	NH-BRP
6	Personnel training	The HRP will be provided to cover trainee personnel prior to CHD operations so that proper implementation of the plan can be achieved.	Area (A.8.3)	Construction	Mitigation	This mitigation measure will not reduce the expected negligible temporary impacts on nesting Piping Plovers, but will promote accurate identification of Piping Plovers in or near the CHD work zone.	NH-BRP
7	ADLs	Require use of FAA-approved ADLs, which will only activate the FAA hazard lighting when an aircraft is in the vicinity of the work facility, to reduce the intensity of nighttime lighting and thus reduce nighttime visual impacts.	Area (A.8.3), Cultural Resources (3.8), Recreation and Tourism (3.9)	Operation and Maintenance	Subsequent	Use of ADLs will further reduce the expected minor long-term impacts on birds by reducing the potential for attraction to operating WTBs and the minor long-term impacts on cultural and scenic resources by reducing the amount of time WTBs will have been lit at night. See Appendix B of the EIS for additional details.	Mitigation by Vireos and Wind NH-BRP Section 103

Measure Number	Measure	Description	Resource Area Blighted and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
						referred to FMA a review of AD's for the proposed Project.	
8.	Aerial and hot-pool construction mitigation program.	<p>A Contractwork for installation and hot-pool construction monitoring program will be developed and implemented in coordination with applicable federal and state resource agencies (see Appendix F for details). The measures will include, at a minimum:</p> <ul style="list-style-type: none"> Acoustic monitoring for birds and bats; Installation of Micus Wildlife Tracking System (Mitus) receivers on WTDs in the WDA and support with upgrades to the site's current two Micus Mitus receivers; Deployment of up to 150 Micus tags per year for up to 3 years to track Roseate Terns, Common Terns, and for potential potential migrants; Pre- and post-construction local surveys; Aerial behavior and count surveys on individual WTDs, and Aerial monitoring program that will be used to assess the need for reasonable restrictions based on subject matter experts analysis of the monitoring plan and may include new technologies as they become available for use in offshore environments. <p>Vineyard Wind will work with BODM to ensure the monitoring program is fully implemented.</p>	Site (A.8.3) and Site (A.8.4)	Operational Maintenance	Monitoring	This monitoring measure will not reduce the expected negligible to minor long-term impacts on birds, but the data gathered will be used to evaluate impacts and potentially lead to additional mitigation measures, if required (50 C.F.R. § 585.63(c)).	USFWS
9.	Small birds only fly speering	Require a manual report of any dead bird (regardless of disease) on Project vessels or equipment. Report will contain the following information: species, photos to confirm species, location, date, and other relevant information. Consult with federal or research biologist to be approved by the U.S. Geological Survey (live band, if necessary, BWPV, and USFWS).	Site (A.8.5)	Construction, Operations, Maintenance, and Decommissioning	Monitoring/Notification	This monitoring measure will not reduce the expected negligible to minor long-term impacts on birds, but the data gathered could be used to evaluate impacts and potentially lead to additional mitigation measures, if required (50 C.F.R. § 585.63(c)).	BWPV
10.	Prevalence times of gear deployment	Require that logs greater than 5 inches (13 cm) in diameter or twice length, not be chased from June 1 to July 31. If presence probable as per surveys are conducted pursuant to current USFWS protocols and no northern long-eared bats are documented, this measure may not be necessary for BPA. See plan and title to this agency (Mar. Appendix 5, Consultation Code: 09E-8400-0008-0A-C-724) in Vineyard Wind I Offshore Wind Energy Project Biological Assessment Plan, September 2020 for the U.S. Fish and Wildlife Service.	Site (A.8.4)	Construction	Mitigation	This measure, if implemented, may not reduce the expected negligible temporary impacts on bats, if present, by limiting exposure on the time of year when both adults and young of the year are still vulnerable to a severe winter from chasing events.	USFWS
11.	Dredging and cable installation methods and timing	Require dredging and cable installation activities to use the least environmentally impactful methods that will be effective in reducing and/or eradicating sediment emissions (Measure #15) to avoid minimize impacts on benthic habitat to the maximum extent practicable. Require all vessels deploying anchors to use, whenever feasible and safe, mud-free anchor types to reduce the amount of anchor chain or line that reaches the seabed. Require vessel or barge activities to avoid high concentrations of fishing activities and natural	Coastal Habitat (3.1); Southern Benthos (3.2); Striped, Longfin Eels, and Resilient Fish (3.3)	Construction	Mitigation	The use of the least environmentally harmful cable laying method will further reduce the expected minor to moderate temporary impacts on coastal habitats and moderate impacts on benthic resources and fish diversity, and BODM by minimizing the degree of disturbance. Limiting the cable lay time to a total of less than 100 days will further reduce the expected moderate impacts on	MassDEP 101 Water Quality Certification SBL-13-RHE

Measure Number	Measure	Description	Resource Area Affected and FDES Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		resource events (spawning and egg laying). The need for this study is dependent on the location of the offshore export cables near Nantuxet. Sound waters will occur outside of April to June. Should egg laying be required in a southern portion of the cable route within Nantuxet Sound in April to June due to environmental or technical reasons, Vineyard Wind must notify DODM, Mass DEP, Massachusetts Division of Marine Fisheries, and NMFS with the justification for why the exception is needed.				Driftnet, trawl, and other gear by avoiding high concentrations of fishing, retention of natural resource events. Vineyard Wind has indicated that their planned schedule for cable installation work will meet the requirement.	
12	Anchoring plan	Require an anchoring plan for all areas where anchoring is being used to avoid construction impacts on sensitive habitats, including hard bottom and structurally complex habitats. Require that Vineyard Wind consider any new data on benthic habitat (biomass of N. fluviatilis and other species on local in situ habitat) to inform an updated plan for the anchoring plan that includes the planned location of anchoring activities, sensitive biological locations, and features, potential impacts, and any release facility installation activities such as cables, WTGs and OSPs, as appropriate. Require a vessel displaying a red flag to use whenever feasible to mark line area to flag to reduce the amount of anchor chain or line that comes to the surface. The anchoring plan must be provided to EOPW and NOAA review and comment, which consultation begins. Activities may continue once DODM has approved their comments on the anchoring plan, and have subsequently addressed.	Coastal Habitat (3.1); Benthic Resources (3.2); Finfish, Invertebrates, and Essential Fish Habitat (3.3)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	This measure will further reduce the expected minor to moderate impacts on sensitive habitats and benthic resources and the expected minor impacts on finfish, invertebrates, and EHL by reducing operational adverse impacts.	DODM NMFS EOPW
13	Benthic monitoring plan	Require that Vineyard Wind consider any new data on benthic habitat when updating the plan. Any updates to the updated benthic monitoring plan require that Vineyard Wind consult with NMFS and the Mass DEP and the Massachusetts Division of Marine Fisheries and address any agency comments before finalizing and implementing revisions to the monitoring plan. If resource impacts observed within Nantuxet, Vineyard Wind, EOPW, and NMFS will evaluate potential additional monitoring. The monitoring plan must evaluate the table protection (including other types of cable protection) used to minimize negative impacts on juvenile cod larvae. In addition, per the Nantuxet Code of Conditions Nantuxet Conservation Commission (NCC) for the period of the proposed work in Town of Nantuxet waters: (1) Vineyard Wind must provide an approval of Mass DEP for the benthic monitoring plan; (2) Vineyard Wind must provide an annual report to the Nantuxet Conservation Commission or demonstrate the absence of the need for a review of the cable installation to clearly demonstrate any impacts; and (3) if a report shows any adverse impact, Vineyard Wind must provide detailed impact information to the Conservation Commission. While these measures are related to the condition DODM is adopting in the ROD, measures resulting from the Nantuxet Code of Conditions is not.	Coastal Habitat (3.1); Benthic Resources (3.2); Finfish, Invertebrates, and Essential Fish Habitat (3.3)	Construction	Monitoring	This monitoring measure will not reduce the expected moderate to major potential impacts on finfish, invertebrates, and EHL, or the negligible to moderate impacts on benthic resources, but the data gathered will be used to evaluate impacts and lead to additional mitigation measures, if required (300 CFR § 38.635(d)), and may be used to inform Vineyard Wind's decommissioning procedures, as well as to help other planning similar future projects to select the least impacted methods.	Vineyard Wind Quality Collaborative DODM NMFS EOPW Review, Eventual Order of Conditions

Measure Number	Measure	Description	Resource Area Impacted and FDES Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		being adopted by BOEM in this ROP because the Narragansett Generation IV permit will contain compliance, monitoring, and enforcement of such measures. In addition, Vineyard Wind must provide an annual report to Visual HBP, the Massachusetts Department of Marine Fisheries, NADFS, and BOEM discussing the types and scale(s) of any impacts identified.					
24	Hard-bottom protection and habitat	ESU protection measures will include a hard-bottom habitat as defined in the COE EHA Assessment (BOEM 2019, 2023), and additional data from Measure #15 will consist of natural or artificial, no other uses (i.e. fiber-optic cable) present and provide three-dimensional complexity, both in height and in interstitial spaces. Vineyard Wind will also be required to create an artificial structure design for optimal habitat structure (Heimann et al. 2022). Additionally per the Narragansett order of conditions (Narragansett Order of Conditions 2019), and protection, where necessary, in Town of Narragansett waters, must consist of natural or artificial habitat in the surrounding seafloor. While these measures are related to the BOEM ROP being adopted in this ROP, measures resulting from the Narragansett order of conditions are not being adopted by BOEM in this ROP. Therefore, the Narragansett Generation Commission will oversee the implementation and enforcement of such measures. Require that Vineyard Wind submit an NREIS and BOEM permit the implementation of hard-bottom habitat protection measures. BOEM will make recommendations regarding the final selection of engineering solutions in consultation with NADFS. The artificial structure of a hard and structured stone as a mitigation measure to minimize erosion or removal of HAP will be considered in order as a component of a finalized benefit monitoring plan (Measure # 3).	Visual Resources (5.1), Seafloor Resources (5.2), Fishes, Invertebrates, and Essential Fish Habitat (5.3)	Construction	Mitigation	This measure will further assist with respect to moderate impacts and, to the possible minor beneficial impacts on coastal habitats, will further reduce the overall impact to moderate impacts and improve the possible minor beneficial impacts on benthic resources; and will further reduce the impacts negligible to moderate impacts on fish, invertebrates, and E-H by increasing the availability of suitable nursery, spawning, and overwintering habitats, relative to habitat. This measure could also improve possible moderate beneficial impacts in scenarios related to fish and invertebrates.	Visual HBP BOEM NADFS Town of Narragansett Order of Conditions
25	Evaluation of additional seafloor habitat protection	As a minimum, Vineyard Wind will assess 20 seafloor geology over the entire length of the COE EHA (approximately 42 miles across the entire length of the COE EHA) with 25 cameras in the eastern 20-kilometer section. This information will be used to update habitat maps to describe and delineate seafloor habitats consistent with NOAA's Recommendations for Mapping Fish Habitat (NOAA March 2011). Based on this review, Vineyard Wind will use the additional data to avoid only use, limit habitat use, or adjust to improve habitat quality to avoid and HAP; or the maximum extent practicable while also warming a feasible route.	Visual Resources (5.1), Seafloor Resources (5.2), Fishes, Invertebrates, and Essential Fish Habitat (5.3)	Construction	Mitigation	This measure will allow for impacts on seafloor habitat. To the extent HAP is avoided and minimized to the maximum extent practicable, however, it is not anticipated to change the overall level of impacts on resources.	NADFS
26	Dredge disposal sites	Where dredging is necessary, Vineyard Wind will clearly identify a limited number of appropriate disposal sites within approved ways across, due to the maximum extent practicable, a site that these sites do not contain resources that will be damaged by sediment deposition. To do this, Vineyard Wind will use the additional habitat data collected under Measure #15. In addition, Vineyard Wind shall report	Benthic Resources (5.2), Fishes, Invertebrates, and Essential Fish Habitat (5.3)	Construction	Mitigation and Monitoring	Ensuring the proper disposal of dredged materials could minimize the expected minor impacts on benthic resources and fish and invertebrates and E-H. In addition, identifying the location of appropriate disposal sites will allow for a better understanding and management of important resources and for the	USACE Visual HBP Massachusetts COE NADFS

Measure Number	Measure	Description	Resource Area Affected and FERC Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		the locations of dredge disposal sites to FERC, NOAA, Visual QEP and Massachusetts CDM with a 30 days of disposal of materials. These locations must be reported in kilometers and to grade degrees to the nearest 10th decimal of a degree (e.g., 42.12345678901234567890), as is possible, as practicable.				Verification of potential to red algal effera if it is deemed to be a material source to the area.	
17	Bottom profiling	For the Manhattan Order of Conditions (Numbered: 01) in section 4.000 (01) prior to cable installation in Town of Massachusetts Vineyard Wind shall provide tracked bottom profiling detailing the concentration bottom composition, and in certain areas, assess ocean risk, and morphology of the area to be disturbed during cable installation, and shall include at a minimum high resolution risk mapping. While these measures are related to the condition FERC's order in Title 302, measures outlined for the 8 statute Code of Federal Regulations and being adopted by BOEM in the RDO because the Manhattan Order of Conditions will oversee the implementation and enforcement of all measures.	Benthic Resources (3.2), Fish, Invertebrates, and Essential Fish Habitat (3.3)	Construction	Monitoring	This monitoring measure will not reduce the expected negligible to moderate impacts on benthic resources and moderate impacts on fish, invertebrates, and EPH, but the data gathered could be used to evaluate impacts and potentially lead to additional mitigation measures, if required (30 C.F.R. § 385.63300).	Terms of Commitment (Title of Condition) NREIS EIR
18	Passive acoustics monitoring	Vineyard Wind shall provide BOEM and NOAA with a cable monitoring system within 45 calendar days following each final array and export cable inspection to determine cable location, location of the ship, and other conditions. An inspection of the array-cable and export cable is expected to include HES methods, such as multi-beam echosounders, equipment and technology such as hydroacoustic and man-made sounds, and site conditions along federal sections of the cable routing. In addition, the final array and export cable inspection will be carried out within 6 months of commissioning and subsequent repairs will be carried out at years 1 and 2, and every 3 years thereafter, and after a major storm event. Post-storm surveys will be focused on areas of concern following an analysis of the Distributed Temperature Sensing (DTS) System logs. If a critical warning adjustment to the frequency of inspections following the year 2 survey, a new and monitoring plan may be provided to BOEM, if necessary. In addition to inspection, the export cable will be monitored continuously with a system DTS System. If DTS data indicate the final array or cable has deteriorated or damaged significantly and remedial actions are warranted, the DTS data used to establish a baseline report of an array or cable status shall be scheduled to be presented to BOEM within 45 calendar days of the observation. The 1-3 day cable monitoring survey data and analysis conclusions analysis for each year must be provided to BOEM as part of the Annual Compliance Report, required by 30 C.F.R. § 385.63300.	Benthic Resources (3.2) Commercial Fisheries and Turf Harvesting (3.3)	Operation and Maintenance	Monitoring	This monitoring measure will not reduce the expected minor to moderate impacts on benthic resources, but the data gathered could be used to evaluate impacts and potentially lead to additional mitigation measures, if required (30 C.F.R. § 385.63300). In addition, monitoring of critical EPH units and cable protection, where applicable, will further reduce the expected minor to major impacts on critical EPH units and cable protection in areas, thereby reducing the potential for marine life snagging.	FERM NREIS EIR
19	Optical surveys of the array elements and their st	Require Vineyard Wind to provide an array survey for a minimum of 1 year post-construction, 1 year during construction, and a year post-construction. Stakes will be	Benthic Resources (3.2) Fish, Invertebrates,	Construction, Operations, and Maintenance	Monitoring	This monitoring measure will not reduce the expected minor to moderate impacts on benthic resources or the negligible to	Volume 1 by Vineyard Wind

Measure Number	Measure	Description	Resource Area Affected and FIMS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		placed on a 0.9-mile (1.4-kilometer) grid with four samples (3 km or 1.9 miles) between adjacent plots. The deep-sea surveys estimate the deep-sea survey conducted in the lease area in 2012 and 2013 to support a BSAO study design (SMAMT 2012). The survey method may vary based on the results obtained and feedback from various stakeholders. Require that Vineyard Wind, in concert with NOAA and BOEM, meet to conduct the surveys and address any agency comments in the survey plan.	and Essential Fish Habitat (5.3)			moderate impacts on fish, invertebrates, and EPH, but the data gathered could be used to reduce current knowledge of regional fish, invertebrate, and EPH resources and potentially lead to additional mitigation measures, if required (30 C.F.R. § 585.633(c)).	
20	Monitoring and minimizing foundation scour (precaution)	Vineyard Wind will conduct post-construction monitoring to document foundation scour and necessary on/offshore wind turbine foundations per the facility design monitoring plan (FIS). Additionally, Vineyard Wind will report scour protection implementation (FIS) to BOEM every 5 years starting Year 5. Require that Vineyard Wind consult with NOAA and BOEM prior to any scouring operations or other necessary agency comments prior to implementation. As appropriate, based on Project design and engineering, Vineyard Wind will apply foundation scour protection to only the minimum areas needed for foundation protection.	Benthic Resources (5.2), Fish, Invertebrates, and Essential Fish Habitat (5.3)	Construction, Operations	Mitigation	This mitigation measure will monitor impacts and further reduce the expected negligible to minor impacts and possibly minor beneficial impacts of habitat construction on benthic resources and be moderate impacts of habitat construction on fish, invertebrates, and EPH by reducing the areas affected by scour practices. This measure could also prevent possible moderate beneficial impacts on structures or vital fish and invertebrates.	Voluntary by Vineyard Wind, BOEM, NMFS IIII
21	Adaptive refinement of avoidance and shutdown zones and disturbance protocols	Reduce anticipated impacts on marine mammal resources by refining pile-driving avoidance protocols based on sound avoidance and/or widely monitoring results, in coordination with BOEM and NMFS. In NMFS BOI (BMP) 2020 and draft BOI (BMP) 2019 identify minimum sizes of avoidance and shutdown zones.	Marine Mammals (5.4), Benthos (5.5)	Construction	Mitigation	This mitigation measure will further reduce the expected negligible to moderate impacts on marine mammals due to the potential application of additional mitigation measures. Additionally, monitoring in response to ongoing pre- and post-construction monitoring. This mitigation measure will further reduce the expected negligible to moderate temporary impacts on sea turtles due to the potential application of additional mitigation measures, if applicable, developed in response to ongoing pre- and post-construction monitoring.	NMFS BOI T&C 33 (precaution) NOAA IHA Section 5
22	Plankton surveys	Plankton surveys will be conducted to estimate the relative abundance and distribution of planktonic species such as larval fish using a towed instrument to allow for comparison with 2019 baseline survey (SMAMT 2020). Conduct a minimum of 1 year pre-construction, 1 year during construction, and 3 years post-construction plankton surveys to estimate the relative abundance and distribution of planktonic species. These surveys may be conducted in conjunction with other surveys (e.g., vessel trip surveys, water quality surveys). The survey methodology may be adapted over time based on the results obtained and feedback from various stakeholders.	Fish, Invertebrates, and Essential Fish Habitat (5.3)	Construction, Operations, and Maintenance	Monitoring	This monitoring measure will not reduce the expected negligible to moderate impacts on fish, invertebrates, and EPH, but the data gathered could be used to refine and potentially lead to additional mitigation measures, if required (30 C.F.R. § 585.633(d)).	Voluntary by Vineyard Wind
23	PAM	Use PAM arrays to monitor sea level rise (SLR) relative to natural and constructed sea level (mean annual high water) in the lease area before, during, and after construction (at least 3 years of operation), to monitor impacts. The array will be located to have a maximum capability of detecting and logging wave data on vessel traffic, pile-driving, WTG	Fish, Invertebrates, and Essential Fish Habitat (5.3), Marine Mammals (5.4)	Construction, Operations, Maintenance, and Decommissioning	Monitoring	This monitoring measure will not reduce the expected minor impacts on fish, invertebrates, and EPH but the negligible to moderate impacts on marine mammals, but the data gathered could be used to refine mitigation measures and potentially lead to additional	BOEM

Measure Number	Measure	Description	Resource Area Mitigated and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		operation, and marine mammal vocalizations in the lease area. No later than 30 days prior to buoy deployment, the Lessee must submit to BOEM and BSEE (renewable_reporting@boem.gov and protectedspecies@bsee.gov) the PAM plan and receive written concurrence from BOEM and BSEE. Results must be provided within 90 days of buoy collection and again within 90 days of the 1-year and 2-year anniversary of collection. The underwater acoustic monitoring must follow standardized measurement and processing methods and visualization metrics developed by the Atlantic Deepwater Ecosystem Observatory Network (ADEON) for the U.S. Mid- and South Atlantic Outer Continental Shelf (see https://adeon.unh.edu/) and NMFS requirements for marine mammal detections. At least two devices must be independently deployed within the lease area or one or more buoys must be deployed in coordination with other acoustic monitoring efforts in the RI and MA Lease Areas.				mitigation measures, if required (30 C.F.R. § 585.633(b)).	
24.	Periodic underwater surveys, reporting, and monofilament and other fishing gear cleanup around WTG foundations	Monitor indirect impacts associated with charter and recreational gear lost from expected increases in fishing around WTG foundations by surveying at least 10 of the WTGs in the lease area annually. Surveys by remotely operated vehicles, divers, or other means will inform frequency and locations of debris removal to decrease ingestion by and entanglement of marine species. The results of the surveys will be reported to BOEM and BSEE (renewable_reporting@boem.gov and marine_debris@bsee.gov) in an annual report submitted by April 30 for the preceding calendar year in which the survey is performed. Reports must be submitted in Word format. Photographic and videographic materials will be provided on a drive in a lossless format such as TIFF or Motion JPEG 2000. Reports must include daily survey reports that include the survey date, contact information of the operator, location and pile identification number, photographic and/or video documentation of the survey and debris encountered, any animals sighted, and the disposition of any located debris (i.e., removed or left in place). Required data and reports may be archived, analyzed, published, and disseminated by BOEM.	Finfish, Invertebrates, and Essential Fish Habitat (3.3); Marine Mammals (3.4), Sea Turtles (3.5); Birds (A.8.3)	Operations and Maintenance	Mitigation	The removal of fishing gear will further reduce the expected negligible long-term impacts on finfish, invertebrates, and EFH, marine mammals, and birds, as well as the expected minor long-term impacts on sea turtles by reducing the potential for habitat modification as well as hooking, entrapment, injury, and death from lost fishing gear.	Voluntary by Vineyard Wind
25.	Trawl survey for finfish and squid	To support a BACI analysis, sampling must occur a minimum of 1 year before, 1 year during, and 3 years after construction. Before, during, and 1 year after construction survey stations must be both within the Project footprint as well as at control sites. A total of 40 tows, 20 in the Project area, and 20 in control areas, must be conducted four times per year. Specific post-construction protocols for the trawl survey must include: Year 1: Vineyard must conduct one year of post-construction trawl surveys consisting of 40 tows, 20 in the Project area, and 20 in control areas, four times during the year with one survey conducted each season. A minimum subset of three (3) tows in the spring and fall tows in both the Project area and control sites must be sampled for biological parameters.	Finfish, Invertebrates, and Essential Fish Habitat (3.3); Commercial Fisheries and For-Hire Recreational Fishing (3.10); Other Uses (3.12)	Construction, Operations, and Maintenance	Monitoring	This monitoring measure will not reduce the expected negligible to moderate impacts on finfish, invertebrates, and EFH or the minor to major impacts on commercial or for-hire recreational fisheries, but data gathered could be used to refine the current knowledge of regional finfish and invertebrate resources and to evaluate proposed-Project impacts and potentially lead to additional mitigation measures, if required (30 C.F.R. § 585.633(b)).	Voluntary by Vineyard Wind

Measure Number	Measure	Description	Resource Area Mitigated and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		gross egg stage. For crabs: sample 2 traps (1 vented, 1 ventless) selected randomly for sampling of all Jonah crabs (<i>Cancer borealis</i>) and record the following: enumeration, carapace width, sex, ovigerous status, incidence of shell disease, cull status, mortality, for all non-sampled traps enumerate individuals of each species. Vineyard Wind must record station number, start latitude and longitude, end latitude and longitude, start time/date, end time/date, bait type, trap type, and water depth. Vineyard Wind must discuss these data in survey reports. The survey methodology may be adapted over time based on the results obtained and feedback from various stakeholders.					
27.	Soft start for pile-driving	Vineyard Wind must implement soft-start techniques for impact pile-driving. The soft start must include an initial set of three strikes from the impact hammer at reduced energy, followed by a 1-minute waiting period. This process must be repeated a total of three times prior to initiation of pile-driving. Soft start is required for any impact pile-driving, including at the beginning of the day, and at any time following a cessation of impact pile-driving of 30 minutes or longer. Vineyard Wind must confirm the use of a soft-start technique for pile-driving and document the timing of each application in PSC reports and in pile-driving reports submitted with the fabrication and installation report.	Finfish, Invertebrates, and Essential Fish Habitat (3.3); Marine Mammals (3.4); Sea Turtles (3.5)	Construction	Mitigation	The establishment of soft-start protocols will reduce the expected minor temporary impacts on finfish, invertebrates, and EFH, the expected minor to moderate temporary impacts on marine mammals, and the expected moderate temporary impacts on sea turtles by allowing time for mobile animals to leave the affected area before hammer energy is gradually increased to potentially injurious levels, ensuring that no marine mammals ???	NOAA IHA Section 4 NMFS EFH
28.	Pile-driving sound source verification plan	Field verification during pile-driving must be conducted. A Sound Source Verification Plan will be submitted to the USACE, BOEM at renewable_reporting@boem.gov , and NMFS at incidental_take@noaa.gov for review and written approval by the agencies 90 days prior to the commencement of field activities for pile-driving. Sound source verification must be carried out for the first monopile and first jacket foundation to be installed. Should larger diameter piles be installed, or greater hammer size or energy used, additional field measurements must be conducted. The plan must describe how Vineyard Wind will ensure that the location selected is representative of the rest of the piles of that type to be installed and, in the case that it is not, how additional sites will be selected for sound source verification or how the results from the first pile can be used to predict actual installation noise propagation for subsequent piles. The plan must describe how the effectiveness of the sound attenuation methodology will be evaluated based on the results. The plan must be sufficient to document sound propagation from the pile and distances to isopleths for potential injury and harassment. The measurements must be compared to the Level A and Level B harassment zones for marine mammals (and the injury and behavioral disturbance zones for sea turtles and Atlantic sturgeon).	Finfish, Invertebrates, and Essential Fish Habitat (3.3); Marine Mammals (3.4); Sea Turtles (3.5)	Construction	Monitoring	This monitoring measure will not reduce the expected minor temporary impacts on finfish, invertebrates, and EFH, the minor to moderate temporary impacts on marine mammals, or the moderate temporary impacts on sea turtles as a result of pile-driving activities but will ensure that the deployed noise reduction technologies are effective.	NMFS BO T&C 6a, 6b, 6c NOAA IHA Section 5 NMFS EFH
29.	Pile-driving time-of-year restriction	No pile-driving activities may occur from December 1 to April 30 of any year. On an exceptional basis, pile-driving may occur in December if unanticipated delays due to weather or technical problems arise that necessitate extending	Marine Mammals (3.4)	Construction	Mitigation	Time of year restrictions on pile-driving activities will further reduce the expected minor to moderate temporary impacts on marine mammals by avoiding the time of year	NOAA IHA Section 4

Measure Number	Measure	Description	Resource Area Mitigated and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		pile-driving through December and the pile-driving is approved by BOEM in accordance with the following procedures. The Lessee must notify BOEM in writing by November 1 that the Lessee believes circumstances require piling in December. The Lessee must submit to BOEM (renewable_reporting@boem.gov) an enhanced survey plan for December 1 through December 31 to minimize risk of exposure of NARWs to pile-driving noise including daily pre-construction surveys. BOEM must approve the plan in writing before any pile-driving occurs. If approved, the Lessee must follow the time-of-year enhanced mitigation measures specified in the Biological Opinion. The Lessee must confirm adherence to this time-of-year restriction on pile-driving in pile-driving reports submitted with the fabrication and installation report.				when NARW may be present in the proposed Project area.	
30.	Pile-driving weather and time restrictions	PSOs must have effective visual monitoring in all cardinal directions and must not commence pile-driving until at least 1 hour after (civil) sunrise to minimize the effects of sun glare on visibility. To minimize the effects of sun glare on visibility and to minimize the potential for pile-driving to continue after sunset when visibility will be impaired, no pile-driving may begin within 1.5 hours of (civil) sunset. Pile-driving may commence only when all clearance zones are fully visible (i.e., are not obscured by darkness, rain, fog, etc.) for at least 30 minutes. If conditions (e.g., darkness, rain, fog, etc.) prevent the visual detection of marine mammals in the clearance zones, construction activities must not be initiated until the full extent of all clearance zones are fully visible. The lead PSO will make a determination as to when there is sufficient light to ensure effective visual monitoring can be accomplished in all directions. Vineyard Wind must develop and implement measures for enhanced monitoring in the event that poor visibility conditions unexpectedly arise and pile-driving cannot be stopped due to safety or operational feasibility. Vineyard Wind must prepare and submit an Alternative Monitoring Plan to NMFS and BOEM for NMFS' review and approval at least 90 days prior to the planned start of pile-driving. This plan may include deploying additional observers, alternative monitoring technologies such as night vision, thermal, and infrared technologies, or use of PAM with the goal of ensuring the ability to maintain all clearance and shutdown zones for all ESA-listed species in the event of unexpected poor visibility conditions.	Marine Mammals (3.4); Sea Turtles (3.5)	Construction	Monitoring	Time of day visibility and weather restrictions will further reduce the expected minor to moderate temporary impacts by allowing PSO observers to visually establish required clearance and shutdown zones.	NMFS BO T&C 4a, 4b, 4c NOAA IHA Section 4
31.	Pile-driving monitoring plan and PSO requirements	A pile-driving monitoring plan (PDM Plan) must be submitted to BOEM (at renewable_reporting@boem.gov), BSEE (at protectedspecies@bsee.gov), and NMFS for review and approval by lead agency in writing a minimum of 90 days prior to the commencement of pile-driving activities. The PDM Plan must: <ul style="list-style-type: none"> Contain information on the visual and PAM components of the monitoring describing all equipment, procedures, and protocols; 	Marine Mammals (3.4)	Construction	Mitigation	This monitoring measure will not reduce the expected minor to moderate impacts on marine mammals, but will increase the effectiveness of the required mitigation and monitoring measures for pile-driving.	NMFS BO T&C 7 NHPA Section 106

Measure Number	Measure	Description	Resource Area Mitigated and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<ul style="list-style-type: none"> The PAM system must demonstrate a near-real-time capability of detection capability to 6.21 miles (10 kilometers) from the pile-driving location; The PAM plan must include a detection confidence that a vocalization originated from within the clearance and shutdown zones to determine that a possible NARW has been detected. Any PAM detection of a NARW within the clearance/shutdown zone surrounding a pile must be treated the same as a visual observation and trigger any required delays in pile installation. Ensure that the full extent of the harassment distances from piles are monitored for marine mammals and sea turtles to document all potential take; Include number of PSCs or Native American monitors, or both, that will be used, the platforms or vessels upon which they will be deployed, and contact information for the PSO providers; and Include measures for enhanced monitoring capabilities in the event that poor visibility conditions unexpectedly arise, and pile-driving cannot be stopped. Include an Alternative Monitoring Plan that provides for enhanced monitoring capabilities in the event that poor visibility conditions unexpectedly arise, and pile-driving cannot be stopped. The Alternative Monitoring Plan must also include measures for deploying additional observers, using night vision goggles, or using PAM with the goal of ensuring the ability to maintain all clearance and shutdown zones in the event of unexpected poor visibility conditions. Describe a communication plan detailing the chain of command, mode of communication, and decision authority must be described. PSOs as determined by NMFS and BOEM must be used to monitor the area of the clearance and shutdown zones. Seasonal and species-specific clearance and shutdown zones must also be described in the PDM Plan including time-of-year requirements for NARWs. A copy of the approved PDM Plan must be in the possession of the lessee representative, the PSOs, impact-hammer operators, and any other relevant designees operating under the authority of the approved COP and carrying out the requirements on site. 					
32.	Pile-driving monitoring plan and PSO reporting requirements for sea turtles	Vineyard Wind will submit a Sea Turtle Pile-Driving Monitoring Plan (STPDM Plan) to BOEM (renewable_reporting@boem.gov) and NMFS for review and approval in writing a minimum of 90 days prior to the commencement of pile-driving activities. The STPDM Plan must:	Finfish, Invertebrates, and Essential Fish Habitat (3.3); Sea Turtles (3.5)	Construction	Mitigation and Monitoring	The use of visual surveys prior to the initiation of daily pile-driving activities will further reduce the moderate temporary impacts on sea turtles by identifying individuals that may be adversely affected by acoustic impacts from pile-driving. This measure will not reduce the expected minor impacts on finfish, invertebrates, and	NMFS BO T&C 7 NOAA IHA Sections 4 and 5

Measure Number	Measure	Description	Resource Area Mitigated and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<ul style="list-style-type: none"> Ensure that the full extent of the harassment distances (175 dB RMS) from piles are monitored for sea turtles to document all potential take; Include (1,640 feet [500 meters]) clearance and shutdown zones and any adaptive modification protocols and approvals required; Include number of PSOs or Native American monitors that will be used, the platforms or vessels upon which they will be deployed, and contact information for the PSO provider(s); Include measures for enhanced monitoring capabilities in the event that poor visibility conditions unexpectedly arise, and pile-driving cannot be stopped; Include deploying additional observers, use of night vision goggles with the goal of ensuring the ability to maintain all clearance and shutdown zones in the event of unexpected poor visibility conditions; Describe a communication plan detailing the chain of command, mode of communication, and decision authority; and A copy of the approved STPDM Plan must be in the possession of the lessee representative, the PSOs, impact-hammer operators, and/or any other relevant designees operating under the authority of the approved COP and carrying out the requirements on site. 				EFH or moderate impacts on sea turtles, but the data gathered could be used to evaluate impacts and potentially lead to additional mitigation measures, if required (30 C.F.R. § 585.633(b)).	
33.	Pile-driving noise reporting and clearance or shutdown zone adjustment.	Before driving any additional piles following underwater noise measurements, Vineyard Wind must review the initial field measurement results of at least three (3) monopile foundations and (1) jacket foundation. The Lessee may request modification of the clearance and shutdown zones based on the field measurements of three foundations but must meet or exceed minimum seasonal distances for threatened and endangered species specified in the Biological Opinion. If the initial field measurements indicate that the isopleths of concern are larger than those considered in the Proposed Action, in coordination with BOEM, NMFS, and USACE, Vineyard Wind must implement additional sound attenuation measures and/or enhanced clearance and/or shutdown zones before driving any additional piles. Vineyard Wind must submit the initial results of the field measurements to NMFS, USACE, and BOEM (renewable_reporting@boem.gov) as soon as they are available; NMFS, USACE, and BOEM will discuss these as soon as feasible with a target for that discussion within two business days of receiving the results. BOEM and NMFS will provide direction to Vineyard Wind on whether any additional modifications to the sound attenuation system or changes to the clearance and shutdown zones are required. BOEM must also discuss with NMFS the potential need for reinitiation of consultation if appropriate.	Sea Turtles (3.5)	Construction	Monitoring	This monitoring measure will not reduce the expected moderate temporary impacts on sea turtles as a result of pile-driving activities but will ensure that the deployed noise reduction technologies are effective.	NMFS BO T&C 6d NOAA IHA Section 5

Measure Number	Measure	Description	Resource Area Affected and FIDS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
51.	Pile-driving clearance and shutdown zones (to-go) for sea turtles	To ensure that pile-driving operations do not result in a way that may increase the exposure of fish to noise that may result in injury or behavioral disturbance, PSC will establish a 500m (1,640 feet) 200m (656 feet) shutdown zone for all pile-driving activities. Additionally, 1,500m (5,000 feet / 500 meter) clearance and shutdown zones must be reflected in the FSO reports. Any event detection of sea turtles in 500m clearance and shutdown zone must trigger the required delay or shutdown (in pile installation, 15 minutes and detection of a sea turtle or a tag or will in the closed area or in a shutdown zone during pile driving, Vineyard Wind must either clear the area or shutdown the pile-driving summer (a) associated area as assessed for human safety or for concerns of catastrophic structural failure from when the PSC observes, until: 1) the lead PSC verifies that the animal(s) voluntarily left and headed away from the clearance zone; or 2) 30 minutes have elapsed without re-detection of the sea turtle(s) by the lead PSC. The shutdown of pile-driving equipment is required due to the presence of sea turtles within the required shutdown zone, and to human life and safety, as a result of the lead engineer determining the case for catastrophic structural failure exists, Vineyard Wind must document the detection and associated conditions in the PSC weekly report and must use reduced summer energy. Vineyard Wind must report the detection not associated with pile-driving equipment to BOEM and NMFS within 24 hours of the detection, and the detailed explanation of the form non-risk personnel and the sea turtles impacted.	Sea Turtles (3.5)	Construction	Mitigation	The use of PSC visual monitoring will further reduce these water negligible to moderate temporary impacts on sea turtles by establishing clearance and shutdown zones that can be enforced and for pile-driving activities to commence.	NMFS BTO T&C 2
55.	Pile-driving clearance zones for marine mammals (to-go for NARW)	If a marine mammal is observed within the relevant clearance zone prior to the initiation of pile-driving activity, pile-driving activity may be delayed for less activity is not possible for human safety or for concerns of catastrophic structural failure event. <ul style="list-style-type: none"> The PSC verifies that the animal(s) voluntarily left the clearance zone, and the animal(s) headed away from the clearance zone – (1) the PSC must use a minimum (until of the animal(s)) during the entire event, or 30 minutes have elapsed after the PSC last look of eye (for mysticetes, sperm whales, Risso's dolphins and pilot whales) or their re-detection; or A 15-minute clearance time has elapsed, with no re-detection of other marine mammals. 	Marine Mammals (5.4)	Construction	Mitigation	The establishment and enforcement of marine mammal clearance zones will further reduce the impacts (minor to moderate) temporary impacts by limiting marine mammal exposure to pile-driving.	NOAA IHA Section 4
56.	Pre-start pile-driving clearance zones for NARW	At all times of year, any large whale sighted by a PSC within 1,000 m of the pile-driving area of the wind farm must be notified if two or more North Atlantic right whales. If the PSC operator has a detection would cause that a notification originated from a NARW located within 10 km of the pile-driving location, and a notice will be issued to NARW detection. The following enhanced seasonal clearance zones must be established:					NOAA IHA Section 4

Measure Number	Measure	Description	Resource Area Blighted and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<p>(May 1 to May 14) Establish PAV visual clearance zone of 6.21 mile (10 kilometers) for NARWs for all foundation types. The Licensee may choose to use other marks or vessel-based surveys from May 1 to May 14.</p> <p>(May 15 to May 31) Establish a 3.2-mile (5 kilometers) PAM detection distance to ease avoidance of NARW presence in the area.</p> <p>(June 1 to October 31) Establish PAV clearance zones of 5.11 miles (8 kilometers) for monopiles and a PAM clearance zone of 1.99 miles (3.2 kilometers) for jacket piles. Establish visual clearance zone of 1.2 miles (2 kilometers) for monopiles, and a visual clearance zone of 1 mile (1.6 kilometers) for jacket piles for NARWs, etc.</p> <p>(November 1 to December 31) (if pile driving occurs in December) Establish a 6.2-mile (10 kilometers) PAM clearance (and location, if available) for all foundation types. Establish a visual clearance zone of 1.24 miles (2 kilometers) for monopiles, and a visual clearance zone of 1-mile (1.6 kilometers) for jacket piles for NARWs.</p>					
57	NARW enhanced time-of-year pile-driving avoidance zones, shutdown zones, and other provisions for NARWs (May 1 to May 14; May 15 to October 31; and November 1 to December 31)	<p>For all pile-driving activities, any large whale (as cannot be identified to species by a P8) must be treated as a NARW. If a vessel is sighted within 1,000 m of the pile, for clearance and shutdown purposes any time of the year. If the PAM operator has detection confidence that a vessel location equated to a NARW has to be within the avoidance clearance zone from the pile-driving location, the detection will be treated as a NARW encounter.</p> <p>If a NARW is observed or detected arising or within the avoidance zone during the time periods as specified below, all pile-driving activities and shut-down and pile-driving must not resume except as specified unless activities must proceed for human safety or avoidance of lost equipment or injury to life.</p> <p>(May 1 to 14) shutdowns occur if 5.2-mile (8.4 kilometers) with other avoidance PAM detection, if the 6.21-mile (10-kilometer) clearance zone as a NARW detection while driving must be completed, and not resume until the following day or a follow-up survey or vessel-based survey confirms all NARWs have departed the 6.2-mile (10 kilometers) extended PAV or visual clearance zones as determined by the lead DPO.</p> <p>(May 15 to October 31) Shutdowns occur if 3.2 km will elude a visual or PAM detection and no resume until any NARW has left the 3 km acoustic and 2 km visual clearance zones for 30 minutes. Vessel and Wind must continue to deploy the PAM system last in place from May 1, May 14 through May 31 and implement an</p>	Science Monitors (5-7)	Construction	Mitigation	The establishment of enhanced time-of-year requirements for NARWs will further reduce the expected minor to moderate temporary impacts by limiting marine mammal exposure to pile-driving.	NOAA IHA Section 4

Measure Number	Measure	Description	Resource Area Mitigated and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<p>extended NARW PAM monitoring zone of 6.21 miles (10 kilometers) around any pile to be driven with all detectors of NARWs provided to the visual PSO to increase situational awareness.</p> <p>(November 1 to December 31 (if pile-driving authorized in December)) Shutdown zone of 3.2 km with either a visual or PAM detection. If the 6.21 mile (10-kilometer) clearance zone has a NARW detection pile driving must be postponed and not resume until the following day or a follow-up aerial or vessel-based survey confirms all NARWs have departed the 6.2-mile (10-kilometer) extended PAM and visual clearance zones (as determined by the lead PSO).</p>					
38.	Submittal of raw field data collection of marine mammals and sea turtles in the pile-driving shutdown zone	<p>If a marine mammal and/or sea turtle in the shutdown zone results in a shutdown or a power-down, it should be reported to BOEM within 24 hours at renewable_reporting@boem.gov. In addition, the PSO provider must submit the data report, which is the raw data collected in the field, and must include the daily form, with the date, time, species, pile identification number, GPS coordinates, time and distance of the animal when sighted, time the shutdown or power-down occurred, behavior of the animal, direction of travel, time the animal left the shutdown zone, time the pile driver was restarted or powered back up, and any photographs that may have been taken. This data report must be submitted to BOEM at renewable_reporting@boem.gov monthly on the 15th day of each month for the previous calendar month of activities.</p>	Marine Mammals (3.4); Sea Turtles (3.5)	Construction	Monitoring	<p>This monitoring measure will not reduce the expected minor to moderate impacts on marine mammals, but the data gathered could be used to evaluate impacts and potentially lead to additional mitigation measures, if required (30 C.F.R. § 585.633(b)).</p> <p>This monitoring measure will not reduce the expected moderate impacts on sea turtles, but the data gathered could be used to evaluate impacts and potentially lead to additional mitigation measures, if required (30 C.F.R. § 585.633(b)).</p>	BOEM
39.	Injured/protected species reporting	<p>Any potential takes, strikes, or dead/injured protected species regardless of the cause, should be reported immediately to NMFS Protected Resources Division, incidental.take@noaa.gov; NOAA Fisheries 24-hour Stranding Hotline number (866-755-6622); BOEM at renewable_reporting@boem.gov; and BSEE at protectedspecies@tsee.gov.</p> <p>In the event that an injured or dead marine mammal or sea turtle is sighted, Vineyard Wind must report the incident to NMFS Protected Resources Division, incidental.take@noaa.gov; NOAA Fisheries 24-hour Stranding Hotline number (866-755-6622); BOEM at renewable_reporting@boem.gov, and to BSEE at protectedspecies.gov as soon as practicable (for crew and vessel safety), but no later than 24 hours from the sighting. The report must include the following information: (1) time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable); (2) species identification (if known) or description of the animal(s) involved; (3) condition of the animal(s) (including carcass condition if the animal is dead); (4) observed</p>	Finfish, Invertebrates, and Essential Fish Habitat (3.3), Marine Mammals (3.4); Sea Turtles (3.5)	Construction, Operations, Maintenance, and Decommissioning	Monitoring	<p>This monitoring measure will not reduce the expected minor to moderate temporary impacts on marine mammals or sea turtles, nor the expected minor temporary impacts on finfish, invertebrates, and EFH as a result of pile-driving activities or vessel operations but will ensure that the amount of take that potentially occurs does not exceed the exempted take under the ESA and MMPA. The data gathered could be used to evaluate impacts and potentially lead to additional mitigation measures, if required (30 C.F.R. § 585.633(b)).</p>	NMFS EFH NMFS BO T&C 8b, 8c NOAA IHA Section 5

Measure Number	Measure	Description	Resource Area Mitigated and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<p>behaviors of the animal(s), if alive; (5) if available, photographs or video footage of the animal(s), and (6) general circumstances under which the animal was discovered. Staff responding to the hotline call will provide any instructions for handling or disposing of any injured or dead animals by individuals authorized to collect, possess, and transport sea turtles.</p> <p>In the event of a suspected or confirmed vessel strike of a sea turtle by any Project vessel, Vineyard Wind must report the incident to NMFS Protected Resources Division, incidental.take@noaa.gov, to NOAA Fisheries 24-hour Stranding Hotline (866-755-6622), to BOEM at renewable_reporting@boem.gov; and to BSEE at protectedspecies@bsee.gov as soon as practicable (for crew and vessel safety), but no later than 24 hours after the suspected or confirmed strike. The report must include the following information: (1) time, date, and location (latitude/longitude) of the incident; (2) species identification (if known) or description of the animal(s) involved; (c) vessel's speed during and leading up to the incident; (4) vessel's course/heading and what operations were being conducted (if applicable); (5) status of all sound sources in use; (6) description of avoidance measures/ requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike; (7) environmental conditions (e.g., wind speed and direction, Beaufort scale, cloud cover, visibility) immediately preceding the strike; (8) estimated size and length of animal that was struck; (9) description of the behavior of the animal immediately preceding and following the strike; (11) estimated fate of the animal (e.g., dead, injured but alive, injured and moving, blood or tissue observed in the water, status unknown, disappeared); and (12) to the extent practicable, photographs or video footage of the animal(s). In addition, any occurrence of dead non-ESA-listed fish of 10 or more individual fish within established clearance, shutdown, and/or monitoring zones must also be reported to BOEM at renewable_reporting@boem.gov as soon as feasible.</p>					
40.	AIS on all Project construction and operations vessels, turbines, and ESPs	Install operational AIS on all vessels associated with the construction and operation of the Project. Use AIS to mark the location of each WTG and ESP as required by the USCG. AIS will be required to monitor the number of vessels and traffic patterns for analysis and compliance with vessel speed requirements. This will also make identification of infrastructure easier for non-Project vessels.	Marine Mammals (3.4); Sea Turtles (3.5); Commercial Fisheries and For-Hire Recreational Fishing (3.10); Navigation and Vessel Traffic (3.11); Other Uses (3.12)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	The use of AIS will further reduce the expected minor impacts on commercial fisheries by monitoring the number of vessels and traffic patterns during the course of proposed-Project construction, operations and maintenance, and decommissioning as well as make the identification and avoidance of proposed-Project infrastructure easier, and reduce the expected minor impacts on marine mammals and sea turtles due to vessel strike by ensuring that proposed-Project vessels comply with speed restrictions.	BOEM USCG

Measure Number	Measure	Description	Resource Area Blighted and FIMS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
21.	Marine debris awareness and elimination	<p>"Marine trash and debris" is defined as any object or fragment of wood, metal, glass, rubber, plastic, cloth, paper or any other solid man-made item or material that is lost or discarded in the marine environment by the Lessee or an authorized representative of the Lessee for exclusively the purpose of conducting activities on the Outer Continental Shelf (OCS) in connection with a lease, grant, or approval issued by the Department of the Interior (DOI). To understand the type and amount of marine debris generated, and to minimize the risk of a spillage in and/or vicinity of marine debris by a leak, rupture, release, and spill, and to follow up Best Management Practices (BMP's):</p> <p>1. Training: All vessel operators, employees, and subcontractors performing OCS survey activities on behalf of the Lessee (collectively "Lessee representatives") must complete marine trash and debris awareness training annually. The training consists of two parts: (1) viewing a marine trash and debris training video and slide show (see below) and (2) receive an explanation from management personnel that emphasizes their commitment to the requirements. The marine trash and debris training video, training slide show, and other marine debris related educational material may be obtained at http://www.boem.gov/debris. The training video, slides, and other material may be downloaded directly from the website. Lessee Representatives engaged in OCS survey activities must continue to develop and use a marine trash and debris awareness training and/or other appropriate measures that reasonably assure that they, or their, or their respective employees, contractors, and subcontractors, are in full compliance. The training process must include the following elements:</p> <p>a. viewing of either a video or slide show by the personnel seen in (b) above;</p> <p>b. an explanation from management personnel that emphasizes their commitment to the requirements;</p> <p>c. attendance measures (initial and annual); and</p> <p>d. recordkeeping and availability of records for inspection by DOI.</p> <p>By January 31 of each year, the Lessee must submit to DOI an annual report signed by the Lessee that describes its marine trash and debris awareness training process and certifies that the training process has been followed for the previous calendar year. You must submit this report to renewable_resource@boem.gov and to maridebris@boem.gov.</p> <p>2. Marking: Markers, equipment, tools, instruments, and other items used in OCS activities which are of such shape or construction that they are likely to snag or damage fishing devices, and could be lost or discarded or strayed, must be clearly marked with the word or line by which identification is</p>	Marine Mammals (3.4); Sea Turtles (3.5)	Construction, Operations, and Maintenance	Mitigation	Training of crew and personnel will further reduce if avoid and mitigate impacts on marine mammals and sea turtles through education and training materials.	DOE/BI BSEE NMFS

Measure Number	Measure	Description	Resource Area Blighted and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<p>properly secured to prevent loss overboard. All mailings must clearly identify the area and time at risk and be clearly marked. The address of the environmental conditions to which they may be exposed.</p> <p>5. Recovery: Lessees must recover marine trash and debris that is lost or discarded in the marine environment while performing DCS activities which are considered likely to (a) cause undue harm or damage to natural resources, including their physical, or aesthetic, and biological components, with an undue attention to those that are likely to (1) the entanglement or ingestion by marine protected species, or (2) be gradually released into the MCE area (e.g., are likely to sink or damage fishing equipment, or become hazards to navigation). Lessees must notify DCC when recovery activities are difficult or impossible because the marine trash and debris released is not likely to result in any of the conditions listed in (b) or (c) above. The recovery plan must include a list of all debris lost or discarded. DCC does not agree with the reasons provided by the Lessees to be relieved from the obligation to recover the marine trash and debris. If the marine trash and debris is located within the boundaries of a potential archaeological resource site (e.g., a sensitive archeological site), the recovery plan must be submitted for approval prior to conducting any recovery efforts.</p> <p>Recovery of the marine trash and debris should be completed immediately, but no later than 30 days from the date in which the loss occurred. If the Lessee is not able to recover the marine trash and debris within 48 hours (see 43 CFR 401.16), the Lessee must submit a recovery plan to DCC explaining the recovery activities to recover the marine trash and debris (Recovery Plan). The Recovery Plan must be submitted no later than 10 calendar days from the date in which the incident occurred. Unless otherwise required by DCC within 48 hours of the filing of the Recovery Plan, the Lessee can recover with the activities described in the Recovery Plan. The Lessee must report and keep a record of a time stamp of all recovery activities and submit a report within 30 days from the date in which the incident occurred. The Lessee must enter steps to prevent similar incidents and must submit a description of these actions to DCC and BSEE within 30 days from the date in which the incident occurred.</p> <p>6. Reporting: The Lessee must report all marine trash and debris lost or discarded to DCC (using the email address listed on DCC's most recent incident reporting guidance).</p> <p>This report applies to all marine trash and debris lost or discarded and must be made monthly, no later than the 15th day of the following month. The report must include the following:</p>					

Measure Number	Measure	Description	Resource Area Blighted and FIMS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<p>a. project identification and/or address information for the lease, operation, or for a mooring;</p> <p>b. the date and time of the incident;</p> <p>c. the lease number, OCS lease and block, and coordinates of the incident location (latitude and longitude in decimal degrees);</p> <p>d. a detailed description of the dropped objects, including dimensions (approximate length, width, and/or area, weight) and composition (e.g., plastic, aluminum, steel, wood, paper, various materials, or defined polymers);</p> <p>e. pictures, sketches, or photographs, or a schematic illustration of the object, if available;</p> <p>f. location of, or whether the loss or drop has been used to estimate a study of greater than 50 miles (80 km) radius, or a search target of greater than 0.5 miles (0.8 km) radius, or an area of greater than 100 acres (40 hectares) in size, or a sub-bottom or mud-bottom, sea-bottom, or sub-bottom profile in accordance with DWT's applicable guidance;</p> <p>g. any determination that the lost sea vessel is a</p> <p>h. a description of immediate recovery efforts and results, including photos.</p> <p>In addition to the foregoing, the Lessee must submit a report within 48 hours of the incident ("48-hour Report") if the incident has a risk to public health or safety, or to navigation, or to natural resources, including their physical, atmospheric, and biological components, with particular attention to those that could result in the appearance, or subsequent use, of some protected species, or (b) significantly interfere with OCS uses (e.g., are likely to snag a dragger fishing equipment, or increase the risk to navigation). The information in the 48-hour Report would be the same as that listed above, but just for the incident triggered the 48-hour Report. The Lessee is not required to submit a report for those incidents if, as applicable, any substantial variation in the activities described in the Recovery Plan that were required during the recovery efforts. Information on recovery and marine mammal deaths must be included and addressed in the description of the site clearance activities provided in the decommissioning application (application number 30-0716-0000-000). The Lessee is not required to submit a report for those incidents in which no marine mammals and debris were lost or discovered.</p>					
42	Clearance and shut-down areas (to be used) for marine mammals other than NARWs.	Reduce impact from pile-driving through the use of continuous PAM visual monitoring by BSC or other NARW. Approve on mooring during pile-driving activities following standard protocols and data collection requirements specified in NARW and BOEM. BSC will conduct visual monitoring clearance areas at marine mammals from 60 minutes prior to pile-driving activities through 30 minutes post-completion of pile-driving activity.	Marine Mammals (PSO and NARW) NARW visually observed at any distance from the pile-driving vessel, marine mammals that impede the approved pre-construction delay or shut-down during pile installation regardless of	Construction	Mitigation	The use of PAM and BSC visual monitoring will further reduce the potential impact to marine mammals by establishing clearance and shut-down areas that increase the use of marine mammals for pile-driving activities at common	NMFS BO T&C 34, 36, 37 and 41 NOAA HFA Section 4

Measure Number	Measure	Description	Resource Area Affected and FIMS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<p>For all pile driving, guidelines for the least restrictive zone for all marine mammals and document impacts and any potential take. The least restrictive zone is a circular and shutdown zones for marine mammals (other than NARWs) with radial distances as follows:</p> <ul style="list-style-type: none"> All other mysticete whales (including humpback, fin, sei, and minke whales and sperm whales): 1,650-foot (500-meter) clearance and shutdown zones at all times. Other cetaceans: 824-foot (250-meter) clearance and shutdown zones at all times; and Marine mammals other than cetaceans (including dolphins and porpoises): 181-foot (50-meter) clearance and shutdown zones at all times. 	the minimum distance of the clearance or shutdown zones as follows: marine mammals 1.4.				
43	NARW PAM monitoring requirements during pile driving near DDA's	Between June 1 and October 31, 15 or greater DDA overlaps within 2.38 miles (4.12 kilometers) for narwhales and 2.0 miles (3.22 kilometers) for other odontocetes (the total of used PAM segments) for PAM system detection must extend to the largest practicable detection zone. Additionally, a third PSC will be deployed at the pile driving pile area and 3 PSCs will be on duty 24 hours for NARWs. The PSC must be using PAM detection of NARWs to be ensure shutdown zones the same as a vessel at sea and to trigger the required delays or shutdowns in pile installation.	Marine Mammals (3.4)	Construction	Mitigation	The use of PAM and PSCs will further reduce the expected minor to moderate temporary impacts on marine mammals by establishing clearance and shutdown zones that meet or exceed the minimums for pile-driving activities to occur near.	NM-FH-CIAE; 3b; portions of 3a, 3c; NOAA IHA Section 4
44	Protocols for shutdown and power down when marine mammals are sighted during pile driving	Any PAM or visual detection of marine mammals within the shutdown zones during pile-driving activities must trigger the required shutdown or power down. Upon a PAM or PSC, mysticete or under an alternative monitoring plan for all marine mammals, a visual detection of any marine mammal ending or within the closest shutdown zone during pile-driving, Vessel and Wind must shut down the pile-driving summer pile driving activities as assessed for human safety or for concerns of safety plus standard 10-minute when the PSC observes, and: <ol style="list-style-type: none"> The lead PSC verifies that the animal(s) is/are clearly killed and dead and a formal shutdown area, or 10 minutes have elapsed without re-detection of animal(s) by the lead PSC (for mysticete, sperm whales, killer whales, dolphins, and pilot whales); or 10 minutes have elapsed without re-detection of other marine mammals by the lead PSC; or The scheduled time of post-DARW protocols approved by NHTS and BODs are followed. <p>The shutdown of pile-driving equipment is required due to the presence of marine mammals within the required shutdown zones, but to avoid a catastrophic risk or if a lead engineer determines the risk for catastrophic structural failure exists, the vessel master determines the decision and the</p>	Marine Mammals (3.4)	Construction	Mitigation	The establishment and shutdown and power down protocols will further reduce the expected minor to moderate temporary impacts by ensuring that no marine mammals are present during pile-driving.	NOAA IHA Section 4; NM-FH-CIAE 3b

Measure Number	Measure	Description	Resource Area Mitigated and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		conditions in the PSO weekly report and must use reduced hammer energy. Vineyard Wind must report the decision not to shut down pile-driving equipment to BOEM and NMFS within 24-hours of the decision with a detailed explanation of the imminent risk presented and the marine mammals impacted.					
45.	Weekly, monthly, and final pile-driving reports	<p>During the pile-driving/construction period, Vineyard Wind must compile and submit weekly reports that document start and stop of all pile-driving daily, the start and stop of associated observation periods by the PSCs, details on the deployment of PSOs, and a record of all observations of marine mammals and sea turtles. These weekly reports must be submitted by the PSO providers to BOEM at renewable_reporting@boem.gov and NMFS at incidental_take@noaa.gov and can consist of raw data. Weekly reports are due on Wednesday for the previous week (Sunday–Saturday). Required data and reports may be archived, analyzed, published, and disseminated by BOEM.</p> <p>PSO data must be reported weekly (Sunday through Saturday) from the start of visual and/or PAM effort during construction activities, and every week thereafter until the final reporting period. Weekly reports are due on Wednesday for the previous week. Any editing, review, and quality assurance checks must only be completed by the PSO provider prior to submission. Monthly summary reports must be submitted by the Vineyard Wind in coordination with PSO providers as needed and in accordance with the final reporting requirements of the IHA. Qualified PSOs must monitor watch and clearance and shutdown zones when using geological and geophysical equipment that may adversely affect protected species.</p> <p>Reporting Instructions</p> <p>Vineyard Wind must submit a monthly summary report of construction activities on the 15th of each month including summaries of pile-driving, vessel operations (including port departures, number, type of vessel, and route), protected species sightings, vessel strike-avoidance measures taken, and any shutdowns or takes that may have potentially occurred.</p> <ul style="list-style-type: none"> • Vineyard Wind must require PSO providers to submit PSO data in Excel format every 7 days. • Data must be collected in accordance with standard reporting forms, software tools, or electronic data forms approved by BOEM for the particular activity. • Forms must be filled out for each vessel with PSOs aboard. • Do not use NA for unfilled cells; leave them empty. • Submit report in Word and Excel formats (do not submit a pdf). • All dates must be entered as YYYY-MM-DD. • All times must be entered in 24 Hour UTC as HH:MM. 	Marine Mammals (3.4); Sea Turtles (3.5)	Construction	Monitoring	This monitoring measure will not reduce the expected minor to moderate impacts on marine mammals and moderate impacts on sea turtles, but the data gathered could be used to evaluate impacts and potentially lead to additional mitigation measures, if required (30 C.F.R. § 585.633(b)).	NMFS BO T&C 8d, 8e NOAA IHA Section 5

Measure Number	Measure	Description	Resource Area Mitigated and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<ul style="list-style-type: none"> • Please note that new entries should be made on the Effort form each time a pile segment or weather conditions change, and at least once an hour as a minimum. • Both weekly and monthly reports must be submitted to BOEM to renewable_reporting@boem.gov and NMFS at incidental_take@noaa.gov. Always check forms for completeness and resolve any problems before submittal. Name the file: Lease#_ProjectName_PSOData_YearMonthDay to YearMonthDay.xls <p>The following Project, Operations, Detection, and Effort data fields are required to be reported in Excel format as weekly reports during construction. These data may be generated through software applications or otherwise recorded electronically by PSOs. Applications developed to record PSO data are encouraged as long as the data fields listed below can be recorded and exported to Excel. Alternatively, BOEM has developed an Excel spreadsheet with all the necessary data fields that is available upon request.</p> <p><u>Project Information for Pile-Driving</u></p> <ul style="list-style-type: none"> • Project Name • Lease Number • State Coastal Zones • PSO Contractor(s) • Vessel Name(s) • Reporting dates • Sound sources including hammer type(s) and power levels used • Visual monitoring equipment used (e.g., binoculars, magnification, IR cameras, etc.) • Distance finding method used • PSO names and training • Observation height above sea surface • Location of PSO <p><u>Operations Information for Pile-Driving</u></p> <ul style="list-style-type: none"> • Date • Hammer type (make and model) • Greatest hammer power used for each pile • Pile identifier and pile number for the day (e.g., pile 2 of 3 for the day) • Pile diameters • Pile length • Pile locations (latitude and longitude) • Time pre-clearance visual monitoring began in UTC (HH:MM) • Time pre-clearance monitoring ended in UTC (HH:MM) • Time pre-clearance PAM monitoring began in UTC (HH:MM) • Time PAM monitoring ended in UTC (HH:MM) 					

Measure Number	Measure	Description	Resource Area Designated and FDEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<ul style="list-style-type: none"> • Duration of pre-departure and TAM visual monitoring • Time vessel is hoisted up/hoisted • Time equipment lift system was raised • Duration of power up/down (UTC) • Time vessel is being hoisted/undereisted • Time vessel is being actively hoisted (from start to) • Duration of activity • Before vessel is hoisted, what is status? Why? • Time shutdown was called for (UTC) • Time equipment was shut down (UTC) • Record any habitat or prey observations • Record any marine debris sighted <p>Detection Information for Protected Species</p> <ul style="list-style-type: none"> • Date (YYYY-MM-DD) • Sighting ID (VSL, VGL, or sequential sighting number for the day) (multiple sightings of same animal or group should use the same ID) • Date and time of first detection in UTC (YY-MM-DDT HH:MM:SS) • Time of rise direct on in UTC (YY-MM-DDT HH:MM:SS) • PSC name(s) (Last, First) • Effort (Core source or Off-source effort) • Latitude (decimal degrees dd.dddd), longitude (dec. incl. degrees dd.dddd) • Compass heading of vessel (degrees) • Vessel activity • Wave depth (meters) • Swell height (meters) • Draft of vessel • Precipitation • Visibility (km) • Cloud coverage (%) • Glass • Substrate (including sediment name, source, or name, or density) • Colority of identification • Number of adults • Number of juveniles, if any • Total number of animals • Range from (m) to (m) when first detected (ship using – check facts) • Range from vessel to site (distance in meters) • Distance method • Description (include features such as overall size, shape of head, color and pattern, size, shape, and position of eyes and fins, height, direction, and shape of blow, etc.) • Detection relative to vessel behavior, spatially changing in relation to vessel activity and distance from source vessel • Direction of travel/first approach (relative to vessel) 					

Measure Number	Measure	Description	Resource Area Designated and FIMS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<ul style="list-style-type: none"> Behaviors observed; indicates hesitancy and behavioral changes observed in sequential order (use behavioral codes) Entry time/entry time or classes of animals into excavation during detection (HLE: MB4) Time of heading of animals; (degrees); Time of heading of animals; (degrees) Source activity at initial detection Source activity at final detection (on or off) Shutdown zone size during detection (meters) Was the animal inside the shutdown zone? Closest distance to vessel (trickle distance in meters) Time of closest approach (FC: HLE: MB4) Time of start of vessel shutdown zone (FC: HLE: MB4) Time of vessel left and down zone (FC: HLE: MB4) Follow-up Alarms (e.g., pump on/pump off, fire, distance (trickle distance in meters), closest distance (trickle distance in meters), last distance (trickle distance in meters), distance at final detection) Shutdown or power-down operation Detection with FIM <p>Monitoring Effort Information for Pile-Driving</p> <ul style="list-style-type: none"> Date RTM (24-hour on), (24-hour on/off) Percent time on duty (PSO) or watch of individual Location of PSO PSO (last Pile) Start time of observations End time of observations Duration of visual observation Wind speed (knots), from direction Swell (meters) Water depth (meters) Visibility (km) Cloud severity Other notes or remarks Observer, latitude and longitude 					
40	Monthly O&D survey reporting for protected species.	<p>The following data fields for geospatial and geographic surveys are required to be reported in Excel format. Monthly reporting of survey series must be submitted by the PSO provider on the 15th of each month for each vessel, until the last reporting period for a survey. Any editing, review, and quality assurance checks must only be available by the PSO provider prior to submission. These data may be generated through software applications or otherwise recorded electronically by PSOs. Applications developed to record PSO data are encouraged as long as the data fields listed below can be recorded and exported to Excel. At a minimum, BOEM has developed a template spreadsheet with all the necessary data fields that is available upon request. Final reports should be submitted by Vineyard Wind in</p>	Source Monitors (3-1); See Table 3.3.5	Construction, Operations, and Maintenance	Monitoring	This mitigation measure will not reduce the exposure of marine mammals, but the data gathered will be used to assist in such a way potentially lead to additional mitigation measures, if required (3-1.1.6, 3-3.5.5-3.3.5.6)	BOEM

Measure Number	Measure	Description	Resource Area Designated and FIMS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<p>coordination with FSO Free Area 90 days following completion of survey. This report must contain: equipment and beam parts, FSO name and towing certificate(s), the FSO provider contact information, date of the survey, a vessel track, a summary of all FSO sightings, conditions that occurred, vessel safety avoidance measures taken, takes that occurred, and any injured or dead protected species that were observed.</p> <p>FSOs must be conducted, planned, and prepared by NMFS. The FSOs must be conducted in accordance with conducting the observations, collecting the data, and communicating with stakeholders. The status of field birds and crew with the regards to the presence of the subject species and other mitigation requirements. The FSOs must be provided with all of the assessment and monitoring equipment evaluated under the approved monitoring plan. An adequate number of FSOs, as determined by NMFS and BOPM, and licensed to conduct survey activities in the electromagnetic shutdown areas. FSOs must be approved by NMFS prior to the start of a survey. Application requirements to become a FSO or a FSO provider are as follows:</p> <p>geographical survey can be obtained by sending an inquiry to andyp@noaa.gov. FSO names and training must be provided and reported. Vessel and Winch must provide to BOEM, upon request, documentation of NMFS approval for individual FSOs.</p> <p>The FSO provider must submit to BOEM a retrievable reporting system.gov to BSEE or a data system (e.g., a portable data logger) to contain the daily FSO forms including electronic effort, survey, and sighting forms, must be submitted to BOEM at the end of reporting period. The data must be submitted to BOEM by the end of each month for the previous calendar month of activities. Required data and reports may be arch, used, analyzed, retained, and disseminated by BOEM.</p> <p>Project Information for Surveys</p> <ul style="list-style-type: none"> • Project Name • Lease Number • State Coastal Zones • Survey Contractor • Vessel Name • Survey Type (typically TRGS) • Reporting start and end dates • Sound sources including equipment type, power level, and frequency use. • Greatest RMS source level • Visual monitoring equipment used (e.g., binoculars, night vision, etc.) • Date of fielding, vessel used 					

Measure Number	Measure	Description	Resource Area Blighted and FIMS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<ul style="list-style-type: none"> • PSC names and listing • Observer, length of line, no. of lines • Operations information for surveys • Date • Time of observation, start of monitoring, begin in UTC (HH:MM:SS) • Time pre-presence monitoring ended in UTC (HH:MM:SS) • Duration of pre-presence visual monitoring • Was pre-presence conducted during day or night? • Time power up/ramp up began • Time eq. power full power was reached • Duration of power up/ramp up • Time survey started (signal equipment on) • Time survey ended (signal equipment off) • Duration of activity • Did a shutdown/power down occur? • Time when power was called for (UTC) • Time eq. power was shutdown (UTC) • Visual post-flicks must be logged every 30 seconds • Record any habitat or prey observations • Record any marine debris sightings • Detection information for protected species • Date (YYYY-MM-DD) • Sighting ID (CVL, VGL, or sequential sighting number for the day; multiple sightings of same animal or group should use the same ID) • Date and Time at Last detection in UTC (YY-MM-DDT HH:MM:SS) • Time at last detection in UTC (YY-MM-DDT HH:MM:SS) • PSC Name(s) (Last, First) • ELEM (Cur-coast or Off-source ID) • Latitude (decimal degree dd.ddddd), Longitude (decimal degree dd.MMMMM) • Compass heading of vessel (degrees) • Water depth (meters) • Swell height (meters) • Sea conditions (P-mph/ft/s) • Visibility (km) Cloud cover (PS) • State • Belongs to (e.g., vessel name, state, home port, or fleet) • Category of identification • Number of IDs • Number of juveniles • Total number of animals • Counting from 1 to (X) where X is discarded (ship) or ship clock face) • Range from vessel (nautical distance in miles) 					

Measure Number	Measure	Description	Resource Area Blighted and FIDS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<ul style="list-style-type: none"> Description (such as date or such as overall class, shape of base, color and pattern, size, shape, and position of vessel in a single direction, and shape of flow line) Detection criteria (such as vessel response, gear angle, in relation to survey activity and distance from survey vessel) Direction of travel/first approach (relative to vessel) Behavior Observed (Isolate behaviors and behavioral changes observed in sequential order) First sighting (time or observed, water table, number of sightings (HH:MM)) Initial bearing of animals (degrees) Final bearing of animals (degrees) Source activity at initial detection Source activity at final detection (aircraft) Shutdown sequence (e.g., kinetic kill order) Was the animal inside the shutdown zone? Closest distance to vessel traffic avoidance in meters Time of closest approach (UTC HH:MM) Time animal entered shutdown zone (UTC HH:MM) Time animal left shutdown zone (UTC HH:MM) If observed/detected during ramp up phase (e.g., distance (e.g., distance in meters), closest distance from vessel in meters, bearing distance (e.g., distance in meters), behavior at final detection) Shutdown or pattern used? Detection with IFF/FID? Acoustic tag data information for surveys Date UTM (24 or 30 or 60 or 120 or 180 or 240) UTM zone (e.g., 18Q or 18R or 18S or 18T or 18U or 18V or 18W or 18X or 18Y or 18Z) Block (air, first) Block (air, second) Block (air, third) Block (air, fourth) Block (air, fifth) Block (air, sixth) Block (air, seventh) Block (air, eighth) Block (air, ninth) Block (air, tenth) Block (air, eleventh) Block (air, twelfth) Block (air, thirteenth) Block (air, fourteenth) Block (air, fifteenth) Block (air, sixteenth) Block (air, seventeenth) Block (air, eighteenth) Block (air, nineteenth) Block (air, twentieth) Block (air, twenty-first) Block (air, twenty-second) Block (air, twenty-third) Block (air, twenty-fourth) Block (air, twenty-fifth) Block (air, twenty-sixth) Block (air, twenty-seventh) Block (air, twenty-eighth) Block (air, twenty-ninth) Block (air, thirtieth) Block (air, thirty-first) Block (air, thirty-second) Block (air, thirty-third) Block (air, thirty-fourth) Block (air, thirty-fifth) Block (air, thirty-sixth) Block (air, thirty-seventh) Block (air, thirty-eighth) Block (air, thirty-ninth) Block (air, fortieth) Block (air, forty-first) Block (air, forty-second) Block (air, forty-third) Block (air, forty-fourth) Block (air, forty-fifth) Block (air, forty-sixth) Block (air, forty-seventh) Block (air, forty-eighth) Block (air, forty-ninth) Block (air, fiftieth) Block (air, fifty-first) Block (air, fifty-second) Block (air, fifty-third) Block (air, fifty-fourth) Block (air, fifty-fifth) Block (air, fifty-sixth) Block (air, fifty-seventh) Block (air, fifty-eighth) Block (air, fifty-ninth) Block (air, sixtieth) Block (air, sixty-first) Block (air, sixty-second) Block (air, sixty-third) Block (air, sixty-fourth) Block (air, sixty-fifth) Block (air, sixty-sixth) Block (air, sixty-seventh) Block (air, sixty-eighth) Block (air, sixty-ninth) Block (air, seventieth) Block (air, seventy-first) Block (air, seventy-second) Block (air, seventy-third) Block (air, seventy-fourth) Block (air, seventy-fifth) Block (air, seventy-sixth) Block (air, seventy-seventh) Block (air, seventy-eighth) Block (air, seventy-ninth) Block (air, eightieth) Block (air, eighty-first) Block (air, eighty-second) Block (air, eighty-third) Block (air, eighty-fourth) Block (air, eighty-fifth) Block (air, eighty-sixth) Block (air, eighty-seventh) Block (air, eighty-eighth) Block (air, eighty-ninth) Block (air, ninetieth) Block (air, ninety-first) Block (air, ninety-second) Block (air, ninety-third) Block (air, ninety-fourth) Block (air, ninety-fifth) Block (air, ninety-sixth) Block (air, ninety-seventh) Block (air, ninety-eighth) Block (air, ninety-ninth) Block (air, one hundredth) 					
42	PSC requirements	<p>PSCs must be provided by a time-space potential. PSCs must have no truly other than to control operational effort, collect and report data, and communicate with our aircraft relative vessel, crew traffic, regard to the presence of marine mammals or other riparian organisms (including all of above regarding time-space).</p> <p>PSCs and/or FAN operators must have completed a minimum PSC training program for the A-100 with an</p>	Source Manuals (5-6)	Construction, Operations, and Maintenance, and Decommissioning	Mitigation	The mitigation measure will further reduce the expected impact to moderate impacts on the species and species, and the expected negligible to minor impacts on all other marine mammals species resulting from vessel operations and activities.	B, D, E, I, N, O, A, III, V, Section 5

Measure Number	Measure	Description	Resource Area Blighted and FLEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<p>overall coordination with the State Engineer (Labor et al. 2013). Training opportunities for individual PSCs must be provided to BOEM's agency staff.</p> <p>PSCs are "Wildlife protection and surveillance by NMFS." Application requirements to become a NMFS approved PSC can be found at https://www.fisheries.noaa.gov/new-england-and-its-territories-and-apprentice-ship-observer-observer-observers-or-geological-and-geophysical-surveys by sending an inquiry to pesc@noaa.gov. A request for approval to become a PSC applicant, a request for NMFS approval for individual PSCs.</p> <p>For the following activities, lead PSCs must be deployed as part of the minimum number of PSCs as follows: at least one lead PSC must be on duty at any given time as the lead PSC or PSC monitoring coordinator during pile-driving; at least one lead PSC must be present on each ITRC survey vessel; PSCs on small vessels (as determined in a field manual) be sufficient as a lead PSC. Any required lead PSC must have prior approval from NMFS to be a lead or secondarily approved PSC.</p> <p>PSCs' credibility must be clearly stated on every data log for each shift.</p> <p>A sufficient number of PSCs, consistent with the NMFS BO (NMFS DGC) and as prescribed in the final TEA, must be deployed to record data on each activity effectively conducted in the affected area for the Project, including visual surveys and detections around a pile. PSCs are to monitor monitoring of approved NAWAs in accordance with the number of PSCs required for enhanced seasonal monitoring requirements. PSCs must observe a vessel for more than 4 consecutive hours, with a lead PSC on board at a minimum watch. PSCs must not work for more than 12 hours in any 24-hour period (NMFS DGC) unless an alternative schedule is approved by BOEM.</p> <p>Visual monitoring must come from the most appropriate vantage point for the vessel or equipment deployment that allows for 360-degree visual coverage around a vessel. Vanguard Wind must ensure that suitable equipment is available to PSCs including binoculars, range-finding equipment, digital camera, and electronic data recording devices (e.g., tablet), to adequately measure the distance of the distance and shuttlewater species, to determine the distance to protected species during surveys, to record sightings and verify species identification, and to record data.</p> <p>Observations must be conducted while the vessel discharges and in consistent, systematic, and clear manner.</p>					
8.	Vessel crew training requirements	Project specific training must be conducted for all vessel crew prior to the start of in-water construction activities. Confirmation of the training and understanding of the	Marine Mammals (3.4); Sea Turtles (3.5)	Construction, Operations, and	Mitigation	Training of crew and personnel will further reduce the overall moderate temporary impacts on sea turtles by increasing the	NMFS BO T&C 30 NOAA IIIA Sections 3 and 5

Measure Number	Measure	Description	Resource Area Designated and FIMS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
29	Daily pre-construction surveys	<p>requirements must be documented on a daily log (see log sheet). The log of entries must be provided to BOEM upon request. All vessel crew members must be briefed in the identification of sea turtles and marine mammals and in any other critical hot spots for sensitivity, vessel limitations. Reference materials must be available aboard all Project vessels for identification of sea turtles and marine mammals. The expedition site process for reporting of sea turtles and marine mammals (including live, entangled, and dead individuals) must be clearly communicated and posted in a highly visible location on all Project vessels, so that there is an expectation for reporting to the designated vessel contact (per the handbook) if the vessel operator or watch team communication, electrical and process for crew members and/or SO.</p> <p>FVA and visual surveys must be conducted each day before underway begins to establish the number, sex, basic occurrence, behavior, and size of locations of selected species in the area. These surveys will follow standard procedures and data collection specified by the FVA Handbook and standard daily surveys. Vessels/WOT must submit an enhanced survey plan for November, December and May to May 11 to BOEM and task 12 components of the WOT includes a printed list and also daily pre-construction surveys.</p>	Marine Mammals (3-4); Sea Turtles (3-5)	Construction	Monitoring	<p>effectiveness of mitigation and monitoring measures through reduction of bycatching materials. The mitigation measure will further reduce the expected minor to moderate impacts of the large whale species, and the expected negligible to minor impacts of all other marine mammal species resulting from vessel interactions.</p> <p>The use of FVA and visual surveys prior to the start of or only underway activities will further reduce the expected minor to moderate impacts on marine mammals and turtles by identifying individuals that may be adversely affected by routine impacts from sails-flying rig.</p>	DOEM BSPR
30	Vessel strike avoidance of marine mammals (except bycatch survey vessels)	<p>Vessel operators and crews must maintain a vigilant watch for all marine mammals and slow down when necessary in all circumstances as appropriate and regardless of vessel size, to avoid striking any marine mammal as long as it is safe to do so. Vessel operators must reduce all 10 knots or less when mechanical parts, pods, or large assemblies of structures are close and within the path of the vessel.</p> <p>Large whales: Avoidance measures must occur for whales sighted within a 180 degree direction of the forward path of the vessel (90 degrees port to 90 degrees starboard) at a distance of 1,640 feet (500 meters) or less from survey vessel. Trained crew or ISOs must notify the vessel's captain of any whales within 1,640 feet (500 meters) of vessel within this area. The vessel operator must immediately implement strike-avoidance procedures to maintain a separation distance of 1,640 feet (500 meters) from all listed species of whales including changing vessel direction or slowing vessel speed to allow the animal to travel away from the vessel. Any time a whale is within 990 feet (300 meters) of a survey vessel, a full stop is required (ability remains) (a vessel as observed) but cannot be so firm as a species other than a NARW, the vessel operator must assume that it is a NARW and take appropriate actions to avoid the animal.</p> <p>Small cetaceans and seals: For small cetaceans and seals, all vessels must maintain a minimum separation distance of 164 feet (50 meters) to the maximum extent practicable with an exception made for those animals that approach the vessel or vessel underway, gear or equipment on a small vessel.</p>	Marine Mammals (3-4)	Construction, Operations, Maintenance, and Decommissioning	Mitigation and Monitoring	<p>The mitigation and monitoring measure will further reduce the expected minor to moderate impacts on large whale species, and the expected negligible to minor impacts of all other marine mammal species resulting from vessel interactions.</p>	DOEM NOAA IHA Section 4

Measure Number	Measure	Description	Resource Area Affected and FLEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		When marine mammals are sighted while a vessel is underway, the vessel must take action as necessary to avoid violating the relevant separation distance, e.g., attempt to remain parallel to the animal's course, reduce vessel speed, or slow or stop vessel and maintain distance as left the area. If marine mammals are sighted within the relevant separation distance, the vessel must reduce speed and shift the engine to neutral, and stopping the engine until animals are clear of the area.					
11	Vessel strike avoidance of sea turtles (non-geophysical survey vessels)	During all phases of the Project, vessel operators and crew must maintain a vigilant watch for all sea turtles and slow down, stop their vessel, or alter course, as appropriate and regardless of vessel size, to avoid hitting any sea turtles as they pass closely by. All vessels must maintain a minimum separation distance of 328 feet (100 meters) from sea turtles whenever possible. The vessel crew is responsible for the vessel's ability to get underway and proceed to avoid hitting a marine mammal. Observations of sea turtles in the vicinity of the planned route to all vessel operators/crews are to be recorded on day or night. If a sea turtle is sighted within 328 feet (100 meters) of the operating vessel's forward path, the vessel operator must slow down to 4 knots unless safe to do so and, if possible, maneuver to avoid contact with the vessel. Has sighted the sea turtle. If a sea turtle is sighted within 100 feet (30 meters) of the forward path of the operating vessel, the vessel operator must either maneuver to avoid contact and then proceed away from the turtle at a speed of 4 knots or less until there is a separation distance of at least 328 feet (100 meters) or the vessel must stop vessel operations if by remaining through or so close to rocky jellyfish aggregations or floating vegetation lines or mats, in the event that operational safety systems are in place of such areas, vessels must slow to 4 knots when transiting through such areas.	Sea Turtles (3.5)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	This mitigation measure will reduce the expected moderate impacts on sea turtles, but no population-level impacts are expected.	NMFS BO T&C 3, 5a, 5b, 5c
12	Vessel observation requirements	Voyager Wind must ensure the vessel operators at all times maintain a vigilant watch for marine mammals or sea turtles by slowing down, altering course, or stopping the vessel to avoid striking marine mammals or sea turtles. Vessel personnel must be provided an Atlantic reference guide that includes and identifies marine mammals and sea turtles that may be encountered in the Project area and vessel personnel must also be provided BOEM approved material regarding NAKW NAKW, and legal information and protocols. What information is collected, by whom, and for what purpose must comply with NAKW reporting systems for the protection of NAKW in the Project area. A vessel observer aboard the vessel must monitor a vessel strike avoidance zone around the vessel. All vessels transiting around the White World have a permit 12 monitor and have a vessel observer on duty at all times. Voyager Wind must also have a trained lookout on all vessels during all phases of the Project between June 1 and November 30 to observe for sea turtles.	Marine Mammals (3.4); Sea Turtles (3.5)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	This mitigation and monitoring measure will further reduce the expected moderate impacts on the large whale species, the expected negligible to minor impacts on all other marine mammal species, and minor impacts on sea turtle species resulting from vessel transits.	NMFS BO T&C 3a, NOAA IIIA Sections 4 and 5

Measure Number	Measure	Description	Resource Area Designated and FIMS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		and communicate with the captain to take required avoidance actions as soon as possible if one is spotted. The vessel is carrying a trained lookout for the purposes of maintaining watch for NARWs, an additional lookout is not required. The search is to be conducted for 30 minutes before sunset. If the trained lookout is a vessel crewmember, this may be their designated role and primary responsibility while the vessel is operating. Any designation of crew members shall be trained in the identification of bottlenose and manatee habitats and best practices for avoiding vessel collisions. The trained lookout must monitor the watch during every port and starboard and report any observations of bottlenose in the vicinity of the planned transit to the vessel operator/captain in real time on duty that day.					
53	Vessel speed requirements from October 1 through May 14	From November 1 through May 14, all vessels must travel at 10 knots or less when transiting to, from, or within the NARW season in the Manatee and Alafia rivers where DWA is in place and exceed crew transfer vessels as described below. From November 1 through May 14, crew transfer vessels may travel at more than 10 knots if there is at least one visual observer on duty at all times aboard the vessel to visually observe for large whales and simultaneously maintain PAMs and detect, approach, observe, and avoid potential collisions. Vessel-based observer protocol for transiting vessels and FAD required between November 1 and May 14. If a NARW is observed via visual observation or PAM within or near a vessel's transit route, all crew transfer vessels must travel at 10 knots or less for the remainder of that day.	Water Mammals (5-4)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	The mitigation and monitoring measures will further reduce the expected moderate impacts on the large whale species, and are expected to be negligible to minor impacts on all other marine mammal species resulting from vessel operations.	BOEM NOAA IHA Section 4
54	Vessel speed requirements in DWA	All vessels, regardless of length, must travel at 10 knots or less within any NHTS designated DWA, unless the following exception for crew transfer vessels applies. Vinyard Wind may submit a NARW safe management plan to BOEM and NHTS for crew transfer vessels to travel greater than 10 knots between May 14 and October 31 for periods when DWA is in existence. The plan must be submitted at least 30 days before implementation, if approved by BOEM and NHTS. The plan must contain details on how the required vessel or speed limit is being met. FAD will be required to clear the transit corridor of NARW presence during a DWA. The lead PSC for crew transfer vessels must comply with NARW avoidance and transit route and DWA for two consecutive days of vessel-based surveys conducted during daylight hours, no PAM detection or byson or other vessel-based visual observer determines visibility is adequate to conduct the survey. If the vessel transit route is confirmed clear of NARW by one of these measures, a crew transfer vessel transiting within a DWA in excess of 10 knots must employ at least two visual observers on duty to monitor for NARWs. If a NARW is observed while transiting, a crew transfer vessel must operate at 10 knots or less until clearance of the transit route for two consecutive days is repeated and confirmed by the project as described above.	Water Mammals (5-4)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	The mitigation and monitoring measures will further reduce the expected moderate impacts on the large whale species, and are expected to be negligible to minor impacts on all other marine mammal species resulting from vessel operations.	NOAA IHA Section 4

Measure Number	Measure	Description	Resource Area Mitigated and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
55.	Vessel speed requirements in SMAs	All vessels greater than or equal to 65 feet (19.8 meter) in overall length must comply with the 10-knot speed restriction in any SMA (see https://www.fisheries.noaa.gov/national/ending-ered-species-conservation/reducing-ship-strikes-north-atlantic-right-whales)	Marine Mammals (3.4)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	The mitigation and monitoring measure will further reduce the expected moderate impacts on the large whale species and the expected negligible to minor impacts on all other marine mammal species resulting from vessel interactions.	NOAA IHA Section 4
56.	Reporting of all NARW sightings	If a NARW is observed at any time by PSCs or personnel on any Project vessels, during any Project-related activity or during vessel transit, Vineyard Wind must immediately report the sighting information to NMFS and BOEM (the time, location, and number of animals) to the NOAA Fisheries 24-hour Stranding Hotline number (866-755-6622), the USCG via channel 16, and through the WhaleAlert app (http://www.whalealert.org/). The report must include the time, location, and number of animals	Marine Mammals (3.4)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	This monitoring measure will not reduce the expected minor to moderate temporary impacts on marine mammals as a result of pile-driving activities or vessel operations but will ensure that the amount of take that potentially occurs does not exceed the exempted take under the ESA and MMPA.	NMFS BO T&C 8a NOAA IHA Section 4
57.	Vessel communication of threatened and endangered species sightings	Whenever multiple Project vessels are operating, any visual observations of listed species (marine mammals and sea turtles) must be communicated to a PSO and/or vessel captains associated with other Project vessels.	Marine Mammals (3.4); Sea Turtles (3.5)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	Communication between project vessels will further reduce the expected minor to moderate temporary impacts by alerting vessels to the presence of marine mammals in the area, potentially minimizing the vessel interactions.	BOEM
58.	Marine mammal and sea turtle geophysical survey clearance and shutdown zones	For sparkers and similar sub-bottom profiler equipment operating below 180 kilohertz (kHz) or within the hearing ranges of each hearing group (excluding the Innomar), minimum clearance and shutdown zone distances for ESA-listed species of marine mammals and sea turtles must be monitored at all times and be demarcated within the watch zone with effective distance-finding methods (e.g., reticle binoculars, range finding sticks, monitoring system software). A 1,640-foot (500-meter) watch zone will be established in every direction around each survey vessel. All threatened and endangered species within this distance will be monitored by third-party PSCs. A 656-foot (200-meter) clearance and shutdown zone must be established around each survey vessel for endangered and threatened marine mammals and sea turtles, with a 500-m clearance and shutdown zone required for NARW. clearance and shutdown zones for non-ESA-listed marine mammals must be followed as required by NMFS through Project-specific mitigation and monitoring requirements of ITAs. If an ITA is not required, Vineyard Wind must monitor default clearance and shutdown zones of 328 feet (100 meters) for all non-listed marine mammals. The clearance and shutdown zones must be established within the watch zone with accurate distance finding methods (e.g., reticle binoculars, range finding sticks, calibrated video cameras, and software). If the clearance and shutdown zones cannot be adequately monitored for animal presence (i.e., a PSO determines conditions are such that ESA listed species cannot be reliably sighted within the clearance and shutdown zones), the survey must be stopped until such time that the clearance and shutdown zones can be reliably monitored. This monitoring must be carried out by approved PSCs (see	Marine Mammals (3.4); Sea Turtles (3.5)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	The use of PSO visual monitoring will further reduce the expected minor to moderate temporary impacts on marine mammals by establishing clearance and shutdown zones that must be free of marine mammals or sea turtles for geophysical surveys to commence, ensuring that no marine mammals or sea turtles are close enough to geophysical surveys to suffer injury.	BOEM

Measure Number	Measure	Description	Resource Area Blighted and FIEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		also file details on PSC requirements below) for marine mammals. These requirements are for small vessels that are operating within the hearing range of marine mammals (below 180 MHz).					
59.	Geophysical survey off-effort PSC monitoring	During good daylight conditions during periods when survey equipment is not operating (e.g., daylight hours between sunrise and sunset 5 or less), and between acquisition periods, the vessel must report periodic visual PSC observations and observations for comparison of sightings, times and bearings, with and without use of the acoustic source.	Marine Mammals (3.4); Sea Turtles (3.5)	Construction, Operations, Maintenance, and Decommissioning	Monitoring	This monitoring measure will not reduce the exposure of marine mammals and sea turtles, but the data gathered will be used to establish impact and potentially lead to additional mitigation measures, if required (30 C.F.R. § 585.61.65).	BOEM
60.	Geophysical survey vessel shutdown avoidance and equipment shutdown protocols	avoidance measures must be taken for listed whales during other unattended while underway within a 180-degree distance of the forward path of the vessel (90-degree port to 90-degree starboard) (distance of 1,640 feet/500 meters or less from a starboard vessel, PSC must notify the vessel captain of any whale within 1,640 feet (500 meters) of vessel with a radius. The vessel captain must immediately implement avoidance procedures to maintain a separation distance of 1,500 feet (500 meters) from listed whales including: changing vessel track or accelerating vessel speed to allow the animal to pass safely from the vessel. Any time a listed species (sea turtles, whales, and manatees) is within a 656-foot (200 meter) avoidance zone in any direction around a survey vessel, PSC must notify the vessel captain that a full stop is required if safety permits. The PSC must also notify the vessel captain of a shutdown if a listed active sparker sources below 180 kHz is immediately required. The vessel operator and crew must comply immediately with any shutdown orders by the PSC. Any discontinuation or discussion must occur only after shutdown.	Marine Mammals (3.4); Sea Turtles (3.5)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	The mitigation and monitoring measures will further reduce the expected moderate impacts on listed whale species and the associated negligible to minor impacts on all other marine mammal species resulting from vessel operations. The shutdown and power-down protocols will further reduce the expected negligible temporary impacts by ensuring that no marine mammals are impacted.	BOEM
61.	Geophysical survey clearance of shutdown zone and equipment shutdown protocols	At the beginning of each survey, active sparker and other sub-sea equipment (e.g., magnetometer) must be shut down. The required clearance and shutdown zones, must not be activated until a PSC has verified the (855-foot/260-meter) clearance and shutdown zone is clear of all whales, manatee, whales, seals, and beaked whales by a full 30 minutes and a 528-foot (160 meter) clearance and shutdown zone is clear of all marine mammals for a full 15 minutes. Any listed marine mammal is added within the clearance and shutdown zone, the PSC will require the vessel operator or other authorized personnel to cease survey operations, the survey equipment, Geophysical survey equipment may be allowed to continue operating if marine mammals do not directly approach the vessel (e.g., to tow it) when the sound sources are at full operating power. The vessel operator must comply immediately with any call for a shutdown by the PSC. Any the same to any other sub-sea equipment may only after shutdown. Following a shutdown, recovery of the equipment may begin immediately only if visual monitoring of the clearance and shutdown zones continues. Throughout the shutdown, the animals causing the shutdown were visually followed and confirmed by PSC to be outside	Marine Mammals (3.4)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	The use of PSC visual monitoring will further reduce the exposure of marine mammals to moderate temporary impacts on marine mammals by establishing clearance and shutdown zones that must be free of marine mammals or sea turtles for geophysical surveys to commence, ensuring that no marine mammals or sea turtles are close enough to geophysical survey vessels for injury.	BOEM

Measure Number	Measure	Description	Resource Area Blighted and FLEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		of the clearance and shutdown zone and heading away from the vessel, and the vessel is a distance of one mile or less of all protected species. All shutdown of geophysical survey equipment shall be protected species sightings that occur during the period of the following minutes (up to one hour) after ramp up procedures: 15 minutes for small cetaceans and seals, and 30 minutes for ESA-listed whales, humpback whales, killer whales, and beaked whales. Geophysical clearance and shutdown, survey power-up, and vessel shutdown protocols must be followed for all ESA-listed species, including survey fish, ITA requirements under the MMPA for marine mammals. For non-ESA listed marine mammals, requirements must be followed as required by the NCEP through the permit conditions, including monitoring requirements of ITA. If an ITA is not obtained, Vinyard Ward must follow the requirements for non-listed species.					
62	Reduce the risk of vessel strikes and shutdowns to gears during geophysical surveys	Vessel operators shall slow and maintain a log book entry for all marine protected species and slow down, stop, the vessel, or alter course, as appropriate, regardless of vessel size, to avoid striking any ESA-listed species. The presence of a single species on the surface may indicate the presence of other gelatinous animals in the vicinity, therefore, precautionary slow and stop procedures shall be used. A visual observer aboard the vessel must monitor vessel strikes and observe species-specific distances (and/or below ground) to vessels underway in the presence of other vessels to minimize the potential for strikes. A minimum 100 meter clearance and shutdown zone distance for ESA-listed sea turtles must be maintained (100 meter clearance within 100 meter zones with selective distance finding methods (e.g., turtle avoidance equipment), and 500 meter system software). A 1,500 foot (500 meter) watch zone will be established in every direction around each survey vessel. All vessel and end gear sightings within this distance will be recorded by the primary vessel survey operators and the following shall be recorded: A 658 foot (200 meter) clearance and shutdown zone must be established around any entanglement vessel for entangled and distressed sea turtles. The clearance and shutdown zone is the distance within which vessel operators maintain a distance of 600 feet (200 meters) or greater is not possible, and a species or species group must be shutdown. The clearance and shutdown zone requires that surface avoidance device is used within the 100 meter radius of sea turtles. Survey vessel crew members responsible for sighting, distance measurement, and specific training on ESA-listed species sighting reporting and vessel strike avoidance measures. Visual observers monitoring the vessel strikes remain on duty. Identical this by 180° in circumstances, but someone is responsible for each vessel. Must be provided sufficient training to distinguish ESA-listed species or avoid involvement groups and have no other responsibilities during the time of observation. If the clearance and shutdown zones cannot be adequately monitored for	Reg Title 16 (16.5)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	The use of USCGE watch zone log will further reduce the occurrence of shutdowns on sea turtles by establishing clearances and shutdowns zones that must be followed by vessels for all survey activities to commence.	60064

Measure Number	Measure	Description	Resource Area Affected and FWS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
63	Geophysical survey clearance and shutdown zone, power-up, and restart procedures	<p>animal presence (i.e., a PSO) determines conditions are such that PSM-issued permits cannot be reliably applied within the clearance and shutdown zones; the survey must be stopped until such time that the clearance and shutdown zones can be reliably monitored. This monitoring must be conducted by NOAA approved PSOs.</p> <p>At the beginning of each survey, active acoustic sound sources operating at less than 250 kHz must not be activated until a PSO has verified the 656 foot (200 meter) pre-survey clearance and shutdown zones to be clear of all sea turtles for a full 30 minutes. Any time a sea turtle is sighted within the clearance and shutdown zone, the PSO will require the resident engineer or other authorized individual to shut down the survey equipment if power-up procedures have started. The vessel operator must comply immediately with any call for a shutdown by the PSO. Any disagreement should be discussed only after shutdown.</p> <p>At full power, a shutdown of marine equipment must occur any time a sea turtle is sighted within 50 meters of the vessel. Following a shutdown for any reason or when sea turtles are sighted within 50 meters of the survey vessel, ramp up of the equipment may begin immediately only if visual monitoring of the clearance and shutdown zones continues throughout the shutdown and all animals are confirmed by PSOs to be outside of the clearance and shutdown zones throughout the shutdown. All shutdowns of geophysical survey equipment</p>	Sea Turtles (3.5)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	The use of PSO visual monitoring will further reduce the expected cumulative impacts on sea turtles by establishing clearance and shutdown zones that may be free of sea turtles for PSO survey activities to commence or resume.	DDMM

Measure Number	Measure	Description	Resource Area Affected and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		due to protected species sightings that are not registered in the 90-day construction period before ramp-up procedures.					
64	Local hiring plan	Require preparation and implementation of a local hiring plan to maximize Vineyard Wind's direct hiring of seafarers from Massachusetts residents. Components of the plan shall include coordination with unions, training facilities, and schools.	Demographics, Employment, and Economics (5.6); Environmental Justice (1.7)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	The development of a local hiring plan will further increase the expected minor beneficial impact on management, employment, and economics due to the direct hiring of seafarers based on locality.	Voluntary by Vineyard Wind
65	Removal of navigation channel placement locations	Require Vineyard Wind to not place tubulars within the area defined by the navigation channel within locations in the proposed layout to reduce visual impacts on the Nantucket NEL.	Cultural Resources (3.8); Commercial Fisheries and Fisheries Restoration, Estuarine (3.10); Recreational and Vessel Traffic (3.11); Other Uses (3.12)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	Although the impact significance level will not be changed, not using tubular placement options will marginally reduce the proposed Project's overall visual impacts, including the impacts on the Nantucket NEL, will slightly increase the area of open ocean available for navigation in the northern portion of the WDA and marginally reduce the proposed Project's overall visual impacts on non-project vessels and will slightly increase the area of open ocean available for navigation by military, national security, scientific research, and will slightly increase and decrease adverse within the northern portion of the WDA.	NEPA; NEPA Section 105
66	Apply no lighter than 5A, 9010 Pure White and no darker than RAL 7035 Light Gray to all structures on turbines	Require Vineyard Wind to paint the WDA off-white, light gray (e.g., RAL 9010 Pure White) or light gray (e.g., RAL 7035 Light Gray) to reduce visual impacts during daylight hours on tower properties. Vineyard Wind has already committed to this measure as part of the NEPA Section 105 process.	Cultural Resources (3.8); Recreation and Tourism (3.2)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	Although the impact significance level will not be changed, painting the WDA light gray will reduce the proposed Project's overall visual impacts during daylight hours, including the impacts on historic and scenic properties.	Voluntary by Vineyard Wind; NEPA Section 105
67	Fund a restoration and stabilization project at Gay Head Light	Vineyard Wind will contribute \$37,500 to fund a mitigation plan to reduce impacts on the Gay Head Lighthouse, pursuant to a NEPA Section 105 MOA. The Gay Head Light Advisory Board has requested that, to mitigate the adverse visual effect of the light tower, Vineyard Wind provide funding to address the adverse state of preservation of the historic tower wall. The mitigation plan will investigate the degree of deterioration of the tower temporarily stabilize the tower so that wall so that further damage is prevented, and fully repair any existing cracks as much as possible of the tower to allow for the repair project. The mitigation will be used to allow for future preservation, restoration work on the Gay Head Light.	Cultural Resources (3.8)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	An uninterrupted sea view line of modern y and old masts is a contributing element to NRHP eligibility of the Gay Head Light, and even with the implementation of a mitigation plan to reduce adverse effects of the presence of visible WTCs from the Proposed Action, structures will have long-term, continuous, low-intensity, moderate-to-high adverse impacts on this resource.	NEPA Section 105
68	Fund a ethnographic study and prepare a NHP nomination package for the Cape Cod Light TOWER	Require Vineyard Wind to fund a mitigation plan to resolve impacts on the Cape Cod Light Tower, pursuant to a NEPA Section 105 MOA. To mitigate the adverse visual effect of the TOWER, Vineyard Wind will perform a limited ethnographic study to determine the TOWER and prepare a nomination package to nominate the TOWER for the NRHP. Such a study will be limited to ethnographic and historical information only, and will not include any and be required to be a	Cultural Resources (3.8)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	With the implementation of a mitigation plan to reduce adverse effects of the presence of visible WTCs from the Proposed Action, structures will have long-term, continuous, low-intensity, moderate-to-high adverse impacts on this resource.	NEPA Section 105

Measure Number	Measure	Description	Resource Area Affected and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
69	Final a site geographic study and prepare an ERHP comment package for the Vineyard Sound and Moschip's Bridge TCP	Require Vineyard Wind to final a mitigation plan to resolve impacts on the Vineyard Sound and Moschip's Bridge TCP in accordance with a NEPA Section 106 MOA. To mitigate the adverse visual effect to the 129 Vineyard Wind will prepare a final completion study to determine the TCP and prepare a documentation package to minimize the TCP for the NEPA. Such a study will be limited to photographs and historical information only and will not include any archaeological fieldwork.	Cultural Resources (3.8)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	In line with the implementation of a mitigation plan to resolve adverse effects on cultural resources, the visual effect of modern visual elements is also including a camera to NEPA eligibility of the Vineyard Sound and Moschip's Bridge TCP. As a result, the presence of visible WPA's from the Proposed Action structures will have long-term, continuous, widespread, moderate impacts on this resource.	NEPA Section 106
70	Avoid identify shipwreck debris fields, and submerged landform features that can be avoided	Require Vineyard Wind to avoid, to the greatest extent possible, potentially significant debris fields, and to ensure as possible of the submerged landform features identified during marine archaeological surveys of the WMA and CBOC. While avoidance of shipwrecks and debris fields is typically simple avoidance of all submerged features that are suspected to occur due to their size and orientation.	Cultural Resources (3.8)	Construction	Mitigation	Avoiding these sensitive resources will result in avoiding impacts on the two submerged, five potentially significant debris fields, and 12 submerged landform features identified during marine archaeological surveys.	Volume by Vineyard Wind NEPA Section 106
71	Conduct additional investigations of any previously identified submerged landform features that cannot be avoided	Require Vineyard Wind to final a mitigation plan to resolve impacts on the avoidable submerged landform features identified during marine and biological surveys of the WMA and CBOC that remain in the APE. This mitigation plan will include collection of up to two additional vibracores in each of the two or more submerged and shallow features, bore logs and cores of samples collected from the water where terrestrial soils were identified (Carbon 14 dating, bulk geochemical analysis of nitrogen, phosphorus, and microdebtage analysis), and a professional report of results suitable for technical audiences. This report will include the opportunity to represent for all stages of work, including core collection, core opening, and core sub-sampling. The mitigation plan will take into into the development of education and documentary materials, including Technical presentations prepared for a non-technical audience, digital guidelines in ArcGIS, data on the location of features and the study area, and the known boundaries of landforms, core locations, assistance to tribes in conducting their own GIS software and their own computers, and an on-site presentation on the study prepared for a non-technical audience.	Cultural Resources (3.8)	Construction	Edition	Although impacts on 12 submerged landform features will be avoided (see row above), impacts on the remaining 19 submerged landform features will result in major impacts on marine archaeological resources. Development of a specific cost and plan to mitigate impacts on the 19 submerged landform features will reduce the expected impacts from major to moderate.	NEPA Section 106
72	Avoid or investigate submerged potential historic sites that have the potential of containing archaeological resources or other historic resources	Require Vineyard Wind to avoid or investigate potential submerged archaeological resources identified as a result of future marine archaeological resources identification surveys that will be performed in any portion of the APE not in a study survey. <ul style="list-style-type: none"> Any potential archaeological and resources that are more moderate survey anomalies or targets with the potential to be archaeological resources will be avoided. If avoidance is not possible, the anomaly or target will be assessed by DCEM's satisfaction using industry standard ground truthing techniques to determine whether it contains or is a multiple archaeological resource. 	Cultural Resources (3.8)	Construction	Mitigation	Avoidance of archaeological resources will reduce any impacts on these resources to negligible by not increasing the resource. If resources cannot be avoided additional investigations of submerged archaeological resources and submerged landform features will reduce the expected major impacts to moderate impacts by applying a cultural mitigation measures developed during the course of NEPA Section 106 consultation.	NEPA Section 106

Measure Number	Measure	Description	Resource Area Impacted and FDES Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<ul style="list-style-type: none"> Any identified archaeological resources will, if possible, be avoided. If avoidance is not possible, additional investigations will be performed to determine eligibility for listing in the NRHP. Any subsurface landform features that may be contributing elements to the Narragansett Beach TCEP, or that are on the boundaries of the Narragansett Beach TCEP and are considered contributing elements to a cultural landscape, will be avoided or additional mitigation will be required. An inventory of subsurface features pursuant to 36 C.F.R. § 800.6. If avoidance is not possible, then each identifiable landform feature will be investigated to the same mitigation plan as will be used to resolve effects of the known unavoidable submerged landform features, to conduct additional investigations and development of a historical and documentary materials, as discussed above. Any archaeological resources determined eligible for listing on the NRHP that, in the proper risk will be avoided or subject to the Phase III-1b's mitigation plan, pursuant to 36 C.F.R. § 800.6. 					
23	Daily two-way communication during construction	Vineyard Wind shall establish a daily two-way communication channel between fishermen and the Project during construction. Vineyard Wind is responsible for ensuring this applies to contractors and sub-contractors.	Commercial Fisheries and Fisheries Alternatives, Fishing (3.10)	Construction	Mitigation	The project and daily communication between Vineyard Wind and fishermen and fishery representatives will increase fishery harvest and minor to moderate impacts on commercial fisheries by allowing fishermen to know where commercial fisheries are occurring and Vineyard Wind contractors to know where fishing is occurring.	Voluntarily by Vineyard Wind
24	Providing education and training for the Project and the culture	Vineyard Wind will provide community education and information, during the siting, location of Project, Infrastructure including burial, cable, cable protection measures, cable foundations including secure protection, etc.), and O&M.	Commercial Fisheries and Fisheries Alternatives, Fishing (3.10)	Operations	Mitigation	The educational and training of project stakeholders and the culture will allow the fishing industry to make informed decisions regarding transportation, fishing within the WDA and O&M.	Voluntarily by Vineyard Wind
25	Rhode Island compensation fund ¹⁷	A \$4.2 million direct compensation fund to be held in escrow to compensate for any claims of direct impacts on Rhode Island vessels or Rhode Island fisheries interests ¹⁸ in the Project area.	Commercial Fisheries and Fisheries Alternatives, Fishing (3.10), Other Uses (3.12)	Construction, Operations and Maintenance and Decommissioning	Mitigation	The establishment of a direct compensation fund will reduce the overall moderate to major impacts on commercial fisheries to minor to moderate by allowing for financial compensation for any impacts on Rhode Island vessels and fishing interests. Further details regarding the beneficial effects of this fund for the state of Rhode Island are provided in FDES Section 3.10.	Voluntarily by Vineyard Wind Rhode Island O&M

¹⁷ The \$25.4 million is calculated as follows: Rhode Island economic exposure was valued at \$6,190,281 over 20 years using a 2.5 percent annual escalator to the initial 1-year exposure value. When the Rhode Island Fisheries Advisory Board asked to limit total the annual payment, this amount in nominal dollars was reduced to \$4.2 million (but the value in real terms is still \$6.1 million). For Massachusetts, the economic exposure plus upstream and downstream multipliers is \$3,185,016. For Rhode Island, \$6,190,281 plus the Massachusetts \$3,185,016 is \$9,375,297. The \$25.4 million compensation fund amount is twice that. Fishing vessel Trip Reports, Deck Reports and Vessel Monitoring System data (King and Associates, 2019) and the MoU between Vineyard Wind and the Massachusetts Board of Office of Energy and Environmental Affairs, for detailed methodology (CE202020).

¹⁸ Fishing interests are broadly defined to include owners and operators of vessels, vessel crews, shoreside processors, vessel supplier and support services, and other entities that can demonstrate losses directly related to the Vineyard Wind Project.

Measure Number	Measure	Description	Resource Area Affected and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
76	Massachusetts Compensation Fund	A \$19,880,000 in-lieu direct compensation fund to be held in escrow to compensate for any claims of direct, downstream, and cumulative (upstream) impacts on Massachusetts vessels or fishermen and fisheries interests in the Project area.	Commercial Fisheries and Fisheries Recreational Fishing (3.10); Other Use (3.12)	Construction, Operations and Maintenance, and Decommissioning	Mitigation	The establishment of a direct compensation fund will reduce the expected moderate to major impacts on commercial fisheries to minor to moderate by allowing for financial compensation for direct impacts on Massachusetts vessels and fishing interests. Further details regarding the beneficial effects of the mitigation measure on commercial fisheries is provided in FEIS Section 3.10.	Voluntarily by Vineyard Wind Massachusetts CZM
77	Other states' compensation fund	A \$15 million in-lieu direct compensation fund to be held in escrow to compensate for any claims of direct, downstream, and cumulative (upstream) impacts from other adjacent states including Connecticut, New Jersey, and New York versus off-shore interests in the Project area for the 30-year life of the Project. ¹⁹	Commercial Fisheries and Fisheries Recreational Fishing (3.10); Other Use (3.12)	Construction, Operations and Maintenance, and Decommissioning	Mitigation	The establishment of a direct compensation fund will reduce the expected moderate to major impacts on commercial fisheries to minor to moderate by allowing for financial compensation for direct impacts on the State's vessels and fishing interests. Further details regarding the beneficial effects of this mitigation measure on commercial fisheries is provided in FEIS Section 3.10.	Voluntarily by Vineyard Wind
78	Rhode Island Fishermen's Future Viability Trust	Vineyard Wind entered into an agreement with the Rhode Island Department of Environmental Management (DEM) regarding the establishment and funding of the Rhode Island Fishermen's Future Viability Trust (the "Trust"). The purpose of the \$12.5 million Trust is to further the policies of the Great State's Asset Management Plan and respond to the continued viability and success of Rhode Island's fishing industry and to support and promote the compatibility of offshore wind and commercial fishing interests within Rhode Island's Geographic Location Description. The Trust will provide funds to address economic and safety and health concerns and around the Trust area and wind energy facilities generally. Examples of how the funds may be used include investments in fishing vessels, fishing methods and gear, supporting widespread deployment of navigational equipment, financial support of individual fishermen, investments in vessel safety equipment (e.g., GPS, GPS survival suits, life rafts, etc.), and payment for increased insurance costs related to fishing around wind farms.	Commercial Fisheries and Fisheries Recreational Fishing (3.10)	Construction, Operations and Maintenance, and Decommissioning	Mitigation	The establishment of the Rhode Island Fishermen's Future Viability Trust will reduce the expected moderate to major impacts on commercial fisheries to minor to moderate by providing funds to allow for improving fishing vessels, gear, and other equipment, as well as a fund to address concerns about safety and effective fishing around the Project area specifically and wind energy facilities in general. Further details regarding the beneficial effects of the mitigation measure on commercial fisheries is provided in FEIS Section 3.10.	Voluntarily by Vineyard Wind Rhode Island CZM
79	Massachusetts Fisheries Innovation Fund	On May 11, 2019, the Massachusetts Secretary of the Office of Energy and Environmental Affairs and Vineyard Wind entered into MOA for a \$1.75 million Fisheries Innovation Fund (CZM 2022). The purpose of the fund is to support programs and projects that ensure safe and profitable fishing continues as Vineyard Wind and other offshore wind projects are developed in northern Atlantic waters. The fund will provide support to programs and projects through grants or contract studies on the impacts of offshore wind development on the key resource, the recreational and commercial fishing industries as well as provide grants for technology and innovation approaches for fishery, marine and vessels) safety for a project within a wind energy area. These programs	Commercial Fisheries and Fisheries Recreational Fishing (3.10)	Construction, Operations and Maintenance, and Decommissioning	Mitigation	The establishment of the Massachusetts Fisheries Innovation Fund will reduce the expected moderate to major impacts on commercial fisheries to minor to moderate by providing funds to allow for technology and innovation approaches for fishery, participants and vessels to safely fishing within a wind energy area. It will also fund studies on the impacts of offshore wind development on fishery resources and the recreational and commercial fishing interests. Further details regarding the beneficial effects of this	Voluntarily by Vineyard Wind Massachusetts CZM

¹⁹ The value is based on communication from Vineyard Wind (Ceri Adams, Pers. Comm., October 11, 2022) and includes Connecticut, New Jersey, and New York. Payment structure and frequency determination would be similar to other established funds.

Measure Number	Measure	Description	Resource Area Affected and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		and projects may include, but are not limited to, such as a wide range of APNs, on- or off-shore, that on fishery resources and the recreational and commercial fishing industries. Improvements in fishing vessels and gear, development of new technology for equipment, development of additional vessel farm areas, the development of alternative gear and fishing methods, optimization of vessel systems, technology and navigation systems, or safety (autonomous and vessels) actively fishing within a wind energy area, and general fishing vessel safety improvements.				mitigate or measure on commercial fisheries as provided in FEIS Section 5.10.	
30.	Submarine cable system berthing plan	A copy of the submarine cable system berthing plan shall be submitted by Vineyard Wind as part of their EIR and Fabrication and Installation Report that depicts precise planned location and depth of the submarine cable system. This plan shall be reviewed by the USCG and BOEM.	Navigation and Vessel Traffic (3.11)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	USCG review and approval of the submarine cable system berthing plan will provide an added layer of coordination to aid in reducing impacts of construction and vessel traffic. Although BOEM does not anticipate any adverse effects on fisheries as a result of the proposed project, review and approval of the plan will aid in evaluating any determinants.	USCG Recommended Mitigation 1c
31.	Boat construction reporting	The location of any boathouse will be marked on a chart or nautical chart on the sea floor) relevant during cable installation activities must be reported to DOTM, MassDOT, Massachusetts CGM, USCG, NOAA, and the local air commander within 30 days of installation. These locations must be reported in latitude and longitude degrees to the nearest 10th of a minute and depth (if applicable) to the nearest meter, or as precisely as practicable.	Shipping and Vessel Traffic (3.11)	Construction	Mitigation and Monitoring	Boathouses, if used, will allow for an understanding of the berthing elements potentially affected and the potential impacts to the operation of vessel traffic.	BOEM
32.	Vessel safety practices	All Project vessels involved in construction, operations, maintenance, and decommissioning activities will comply with USCG SOLAS standards as applicable with respect to vessel construction, vessel safety equipment, and crewing practices.	Navigation and Vessel Traffic (3.11)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	Compliance with USCG and SOLAS standards will further reduce the overall number of incidents in the sector and by ensuring that all vessels are trained sufficiently to operate safely and are equipped with appropriate safety equipment.	USCG (additional mitigation measure developed during review of FEIS)
33.	WTG and ESP marking	Each WTG and ESP will be marked with BATFOLs, subject to the approval of the Commander (duty), Port Captain/ Guard (duty), or Vessel Guard (duty). <ul style="list-style-type: none"> • Provide BOEM and USCG with a proposed lighting, marking, and signaling plan, which must be approved by BOEM after consultation with the USCG. The plan should conform to the International Association of Marine Aids to Navigation and Lighthouse Authorities Recommendation G-139, The Marking of Man-Made Obsolete Structures. Should any part of the recommendation conflict with Federal law or regulation, or if Vineyard Wind seeks an alternative to the recommendation, Visions of Wind must consult with the USCG. • Mark each ungraded WTG and ESP with easily visible, unique alpha numeric identification characters. • Light each WTG and ESP in a manner that is visible by navigation in a 360-degree arc around the WTG and ESP. 	Navigation and Vessel Traffic (3.11)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	The added elements to Vineyard Wind's self-imposed plans will further mitigate potential construction impacts and will help to ensure additional coordination with USCG and making proposed Project elements more clearly identifiable to users.	USCG Recommended Mitigation 1c

Measure Number	Measure	Description	Resource Area Impacted and FIBS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		<ul style="list-style-type: none"> Apply to the First Coast Grand District to establish VADPs for the facility. Approval for all VADPs must be obtained before installation of Vineyard Wind turbines begins. Ensure each WTG is lit up with red obstruction lighting consistent with the FAA Advisory Circular 705-465-11 (http://www.faa.gov/air_traffic/requirements) does not preclude the use of an ADS-B. Proctor signage and tower 380-footers of the wind turbine structures warning vessels of the air draft of the turbine blades as determined at higher astronomical tides. Coordinate with USCG and NOAA to ensure that tide gauges and wind turbines are depicted on appropriate government products and commercially available nautical charts. Provide current information about the Vineyard Wind facility with details on the location of the turbines and quantities and locations of vessels and tides. 					
84	WTG shutdown and notice	<p>Approved WTG shutdown procedures and notification mechanisms (available from the Vineyard Wind control centers) available 24 hours a day, 7 days a week. The control center must shut off turbines in an emergency and shut down requested WTGs within an agreed upon time of notification between the USCG and Vineyard Wind. A formal shutdown procedure will be used. The shutdown opening procedures and periodically tested. Normally, USCG ordered shutdowns will be limited to one WTG in the immediate vicinity of an emergency and the shutdown will be as quickly as possible under the circumstances, as determined by the USCG.</p>	Navigation and Vessel Traffic (3.1.1)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	Approval of procedures may aid in USCG's ability to respond if an emergency situation were to occur during construction.	USCG (Additional Mitigation 16)
85	USCG training and exercises	Vineyard Wind will provide opportunities for USCG exercises, training, and exercises to test and refine notification and shutdown procedures and to provide SAR training opportunities for USCG vessels and crew.	Navigation and Vessel Traffic (3.1.1)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	Refinement of procedures may aid in USCG's ability to respond if an emergency situation were to occur.	USCG (Additional Mitigation 5)
86	WTG-based cameras	Installation of public emergency placed web-based cameras that the USCG could potentially access to support a SAR effort.	Navigation and Vessel Traffic (3.1.1)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	The addition of web-based cameras may aid in USCG's ability to respond if an emergency situation were to occur.	Vineyard Wind
87	Moorings attachments, and access ladders	Moorings attachments (for securing vessels) and access ladders for use in emergencies shall be placed on each WTG. Plans for the design, construction and access to moorings shall be submitted for USCG review and ECEM approval.	Navigation and Vessel Traffic (3.1.1)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	Moorings attachments and access ladders may aid in USCG's ability to respond if an emergency situation were to occur.	USCG (Additional mitigation measures developed during course of EIS)
88	Marine communications analysis and coordination	Vineyard Wind will conduct a marine radio study to evaluate potential radio impacts and identify potential marine radio frequencies, the results of which will be discussed with ECEM and USCG. BOEM and USCG may later work with Vineyard Wind to implement any identified mitigation.	Navigation and Vessel Traffic (3.1.1)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	Although the OCP and TES address some elements of potential marine communications interference associated with the proposed project, recognizing a potential marine communications analysis and coordination with USCG will allow for the development of site specific mitigation plans to be	USCG (Additional mitigation measures developed during course of EIS)

Measure Number	Measure	Description	Resource Area Affected and FIDS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
80	Operations and Maintenance Plan	<p>Before construction of the Eastern Vinyard Wind shall submit a written plan for operations and maintenance, which includes control center plan for review by BOEM and the USCG. The plan must demonstrate that the control center(s) will be adequately staffed to perform standard operating procedures, communications capabilities and monitoring especially for the above-stated risks and be limited to the following types, which may be modified through ongoing discussion with the USCG:</p> <ul style="list-style-type: none"> • Standard Operating Procedures: Methods for establishing and testing WTC control center, methods of lighting control; method(s) for notifying the USCG of malfunctions of critical control SAE networks; method(s) for notifying the USCG of any events or malfunctions that may impact marine safety or security; and methods for providing the USCG with emergency data, maps, imagery, communications and other information pertinent to SAR or emergency response. • Staffing: Number of personnel intended to staff the control center(s) to ensure continuous monitoring of WTC operations, communications, and surveillance systems. • Communication Capability: This to be maintained by the control center(s) to communicate with the USCG and mariners within and in the vicinity of the Project area. Communications especially shall at a minimum include VHF marine radio and landline and satellite for voice and data. • Monitoring: The control center(s) should maintain the capability to monitor the Vinyard Wind installation and operations in real time (including night and periods of poor visibility) for determining the status of all VABNS, assessing for any health or safety issues, and detection of a survivor who has climbed to the saw work platform, if installed, on any WTC or SAE. 	Navigation and Vessel Traffic (3.11)	Construction, Operations, Maintenance and Decommissioning	Mitigation and Monitoring	Development and implementation of the control center plan will establish a mechanism to ensure clear lines of communication with USCG, which will improve impacts on navigation and vessel traffic in the event of an emergency.	USCG Recommended Mitigation 2b
81	WTC/SSE Installation	No WTC/SSE installation work shall commence on the Project site (i.e., on or under the water) without prior review by BOEM and USCG of a plan submitted by Vinyard Wind that describes the schedule and process for erecting each WTC, including all phase activities to be implemented to minimize any adverse impacts on navigation while installation is ongoing. An appropriate Notice to Mariners subscription will accompany the plan.	Navigation and Vessel Traffic (3.11)	Construction, Operations, Maintenance and Decommissioning	Mitigation	Allows BOEM and USCG to provide feedback throughout the construction process to help ensure that all appropriate measures are considered or to reduce impacts.	USCG Recommended Mitigation 2a
82	USCG Reporting	Complaints: Once monthly issue during installation, Vinyard Wind shall provide USCG with a description of any complaints received (either written or oral) by visitors. If a marine mammal vessel operator, or other sources	Navigation and Vessel Traffic (3.11)	Construction, Operations, Maintenance and Decommissioning	Mitigation	The USCG reporting requirement will allow for continued correspondence between Vinyard Wind and USCG to aid in conflict	USCG Recommended Mitigation 3a, 3b, 3c

Measure Number	Measure	Description	Resource Area Affected and FEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		regarding impacts on navigation safety, legally caused by construction vessels, or other vessels, barges, or other equipment. Describe any remedial action taken in response to complaints received. Correspondence: Vineyard Wind shall provide to USCG copies of any correspondence received by Vineyard Wind from other federal, state, or local agencies that mention or address navigational safety issues. Maintenance Schedule: Vineyard Wind will provide the USCG with its proposed W-10 maintenance schedule. Records of all vessel inspections. A separate Marine to Mariners submission will accompany each maintenance schedule.				measures to reduce scientific effects to navigation are related to this	
92	Public participation	There must be sufficient opportunity for the public to voice their opinion, submitted directly from the owner/developer of the wind energy facility. Vineyard Wind will attend periodic meetings of the Wind Watch. There are also local, state, and Port Safety forums to provide input on the status of construction and operations and, as any public notices are encountered, will respect to navigation safety.	Navigation and Vessel Traffic (3.11)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	Vineyard Wind's public-facing portals will provide a central forum to communicate updates on the status of construction and operations, which will help to address any potential impacts on navigation and vessel traffic.	USCG Review under Mitigation 4
93	Disruptive landing platforms	If Vineyard Wind's DSCN includes helicopter landing platforms, these platforms will be graded and built to accommodate the USCG HHB or other aircraft.	Navigation and Vessel Traffic (3.11)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	Allowing for USCG helicopters, island or TBPs could allow for more efficient response to potential emergency situations when they occur within the WEA or mo.	USCG
94	Add conditions of COP approval	Require the following conditions of COP approval to be part of potential impacts on working area W-106A, Nantuxet, ASB-2, and Fabricalls ASB-8 cable systems, and to address potential impacts of DAS: <ul style="list-style-type: none"> Acknowledge that structures can withstand the daily cyclic overpressures (from storms) and potential falling debris from construction (see Table 3.10-10). Confirm that the USAF will use the standard fire rating (damage to property or personnel) Cold and Safe (unless otherwise stated). Notify NORAD prior to Project completion for RAM scheduling. Contribute funding for RAM evaluation. Confirmation of operations for national security or defense purposes as described in a licensing agreement and. Coordinate with the Department of Defense and the Navy in any measures to use DAS as part of the Project or assistance, training or activities. 	Other Users (3.12)	Construction, Operations, Maintenance, and Decommissioning	Mitigation	The Military Aviation and Installation Assurance Siting Clearinghouse (2020) identified these conditions of COP approval as necessary to develop the consent issued by the USAF for working area W-106A, and Fabricalls cable systems and USCG NORAD.	Department of Defense
95	Scientific survey mitigation collaboration	Vineyard Wind must participate in good faith with the establishment of the Federal Survey Integration Program. Participants must include all trust or other open or engaged in scientific studies needed to understand the impact of wind energy development on the marine ecosystem and the fisheries community, for sea, these include: ecosystems; and (ii) the following surveys: (a) NOAA Spring and Autumn bottom trawl surveys; (b)	Other Users (3.12)	EA	Mitigation	This mitigation program may not significantly reduce the expected major impacts on NOAA and fisheries from the proposed Project to the short term but may lessen long-term impacts. The mitigation program could be applied to other wind energy facility projects to minimize or avoid similar impacts.	NOAA

Measure Number	Measure	Description	Resource Area Designated and FDEIS Section Number	Project Phase	Measure Type	Expected Effect on Impacts from Action Alternatives	Measure Related to Consultation
		tribes that are interested and eligible, based on geographic location, to participate in the total program, including the Wampanoag Tribe, the Wampanoag of Gay Head (Separately, the Mashpee and Aquinnon Tribes, the Metepenset, the Aquinnon, the Aquinnon, the Mashpee, the Indian Nation, and the Narragansett Indian Tribe.				improving fishing vessels, gear, and other equipment, to address concerns about safety and selective fishing around the Tribes, area specifically and wind energy facilities in general, and to address the impacts of offshore wind development on fishery resources and the recreational and commercial fishing industries.	described in measures 55 to 79

* While these mitigation measures apply specifically to NREWA, all tribal benefits from the development of offshore wind resources and fish are expected to occur.

APPENDIX B. COMPLIANCE REVIEW OF THE CONSTRUCTION AND OPERATIONS PLAN FOR
THE VINEYARD WIND 1 OFFSHORE WIND ENERGY PROJECT