



**US Army Corps
Of Engineers**
Wilmington District

PUBLIC NOTICE

Issue Date: September 12, 2022
Comment Deadline: October 12, 2022
Corps Action ID Number: SAW-2022-01747

The Wilmington District, Corps of Engineers (Corps) received an application from Vesta North Carolina, PBLLC seeking Department of the Army authorization to implement a pilot study in carbon capture by enhanced weathering of olivine sand within Atlantic Ocean adjacent to the Town of Duck, in Dare County, North Carolina.

Specific plans and location information are described below and shown on the attached plans. This Public Notice and all attached plans are also available on the Wilmington District Web Site at:

<https://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Public-Notices/>

Applicant: Vesta North Carolina, PBLLC
Attn: Mr. Doug Edwards
584 Castro Street, #2054
San Francisco, California, 94114

AGENT (if applicable): Mr. Brad Rosov
Coastal Protection Engineering
4038 Masonboro Loop Road
Wilmington, North Carolina 28409

Authority

The Corps evaluates this application and decides whether to issue, conditionally issue, or deny the proposed work pursuant to applicable procedures of the following Statutory Authorities:

- Section 404 of the Clean Water Act (33 U.S.C. 1344)
- Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)
- Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413)

Location



Location Description: The proposed project is located within the nearshore waters of the Atlantic Ocean off Duck, North Carolina. The Town of Duck is located in the Outer Banks within Dare County and is boarded by the Atlantic Ocean to the east and Currituck Sound to the west. The project area encompasses 76.4 acres along the -25 foot depth contour in the Atlantic Ocean approximately 2,000 linear feet from the northern limit of the Duck Field Research Facility (FRF).

Project Area (acres): 76.4 Nearest Town: Town of Duck
Nearest Waterway: Atlantic Ocean River Basin: Albemarle
Latitude and Longitude: 36.188134N, -75.74834W

Existing Site Conditions

The Town of Duck encompasses approximately 7 miles of ocean shoreline on a barrier island located at the northern end of North Carolina's Outer Banks. The width of the berm of the island's dune system varies considerably with location along the town's beach and with seasonal accretion and erosion events. The nearshore environment is

typical of a northern facing beach with more frequent erosion and storm events during the winter and calmer conditions during the summer.

Applicant's Stated Purpose

The purpose of the proposed action is to implement a pilot study that serves as a proof of concept and informs the development of a large-scale project designed to help curb the effects of climate change through the sequestration of carbon, the reduction of the rate of ocean acidification, and provides the added benefit of shoreline protection to help bolster coastal resiliency. The need for the project is to gather pertinent information that will help determine the efficacy of the pilot project and to identify any limitations or constraints which could be resolved to help facilitate a full-scale deployment of olivine sand within the coastal and marine environment. Once constructed, the only activity will be post-construction monitoring efforts.

Project Description

The applicant's proposed project includes the deployment of approximately 20,000 cubic yards (cy) of olivine sand sourced from an upland mine. The sand would be milled to the required grain size compatible with the native material. The material would be transported to a port and delivered to the project site via multiple barges or split hull scows. Each barge or scow will contain approximately 1,500 cy of material resulting in 13-14 loads. The material would be directly deployed within the defined project area and is anticipated to settle into its natural angle of repose with a final elevation of no more than 7 feet above the existing bottom depth. Once the material is placed within the nearshore waters, Vesta will implement a multi-faceted, multi-year monitoring program in partnership with the Corps Duck Field Research Facility (FRF) and the University of North Carolina at Greensboro (UNCG). The monitoring program will encompass a suite of geochemical, sedimentological, geomorphological, and ecological parameters observed both pre- and post- deployment. This would include the quantification of carbon dioxide sequestration and tracing the movement of the material within the coastal environment.

Avoidance and Minimization

The applicant provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment: In order to reduce potential risk to nesting sea turtles, the project was reduced in scope and location based on input following the first interagency scoping meeting. Initially, the applicant sought augment to forthcoming beach nourishment project at Duck with approximately 45,000 cy of olivine sand. Agency representatives expressed concerns about the sediment characteristics and color. Therefore, the applicant scaled down the proposed project to entail the deployment of up to 20,000 cy which would be placed between the outer bar and the depth of closure. As demonstrated by the Delft3D modeling efforts the material is not

expected to migrate onto the beach and therefore will not affect nesting sea turtles. Although olivine is one of the most abundant, naturally occurring minerals worldwide it is necessary to assess and understand any potential effects on organisms and/or ecosystems resulting from the placement of olivine in nearshore waters. Vesta commissioned independent ecotoxicology studies to verify that the introduction of olivine sand to the marine environment would not be harmful to biota. Finally, the construction methodology entailing the placement of individual loads of olivine sand within the deployment corridor will result in a matrix of disturbed bottom intermixed with undisturbed bottom areas. This methodology will help facilitate the recovery of benthic organisms within the disturbed area as recolonization occurs from the proximate undisturbed areas.

Compensatory Mitigation

The applicant offered the following compensatory mitigation plan to offset unavoidable functional loss to the aquatic environment: No compensatory mitigation is proposed, as no jurisdictional wetlands will be impacted as a part of this project.

Essential Fish Habitat

The Corps' determination is that the proposed project may adversely affect EFH or associated fisheries managed by the South Atlantic or Mid Atlantic Fishery Management Councils or the National Marine Fisheries Service.

- This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. Implementation of the proposed project estuarine substrate, water columns, submerged aquatic vegetation, utilized by various life stages of the following species: shrimp, snapper grouper, spiny lobster, Atlantic highly migratory species). Our initial determination is that the proposed action would not have a substantial individual or cumulative adverse impact on EFH or fisheries managed by Fishery Management Councils and the National Marine Fisheries Service (NMFS). Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.
- The Corps will consult under the Magnuson-Stevens Act and will not make a permit decision until the consultation process is complete.

Cultural Resources

Pursuant to Section 106 of the National Historic Preservation Act of 1966, Appendix C of 33 CFR Part 325, and the 2005 Revised Interim Guidance for Implementing Appendix C, the District Engineer consulted district files and records and the latest published version of the National Register of Historic Places and initially determines that:

- Should historic properties, or properties eligible for inclusion in the National Register, be present within the Corps' permit area; the proposed activity requiring the DA permit (the undertaking) is a type of activity that will have no potential to cause an effect to an historic properties.

The District Engineer's final eligibility and effect determination will be based upon coordination with the SHPO and/or THPO, as appropriate and required, and with full consideration given to the proposed undertaking's potential direct and indirect effects on historic properties within the Corps-identified permit area.

Endangered Species

Pursuant to the Endangered Species Act of 1973, the Corps reviewed the project area, examined all information provided by the applicant and consulted the latest North Carolina Natural Heritage Database. Based on available information:

- The Corps determines that the proposed project would not affect federally listed endangered or threatened species or their formally designated critical habitat.
- The Corps determines that the proposed project may affect, not likely to adversely affect federally listed endangered or threatened species or their formally designated critical habitat.
- By copy of this public notice, the Corps initiates consultation under Section 7 of the ESA and will not make a permit decision until the consultation process is complete.
- The Corps will consult under Section 7 of the ESA and will not make a permit decision until the consultation process is complete.
- The Corps has initiated consultation under Section 7 of the ESA and will not make a permit decision until the consultation process is complete.
- The Corps determines that the proposed project may affect federally listed endangered or threatened species or their formally designated critical habitat. Consultation has been completed for this type of activity and the effects of the proposed activity have been evaluated and/or authorized by the National Marine Fisheries Service (NMFS) in the South Atlantic Regional Biological Opinion or its associated documents, including 7(a)(2) & 7(d) analyses and Critical Habitat assessments. A copy of this public notice will be sent to the NMFS.
- The Corps is not aware of the presence of species listed as threatened or endangered or their critical habitat formally designated pursuant to the Endangered Species Act of 1973 (ESA) within the project area. The Corps will make a final determination on the effects of the proposed project upon additional review of the project and completion of any necessary biological assessment

and/or consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service.

Other Required Authorizations

The Corps forwards this notice and all applicable application materials to the appropriate State agencies for review.

North Carolina Division of Water Resources (NCDWR):

- The applicant did not provide or satisfy all the elements required for a complete 401 certification request. Therefore, the 401 Certification process has not started. The Corps will generally not make a final permit decision until the NCDWR issues, denies, or waives the state Certification as required by Section 401 of the Clean Water Act (PL 92-500).
- The Corps will generally not make a final permit decision until the NCDWR issues, denies, or waives the state Certification as required by Section 401 of the Clean Water Act (PL 92-500). The receipt of the application and this public notice, combined with the appropriate application fee, at the NCDWR Central Office in Raleigh constitutes initial receipt of an application for a 401 Certification. Unless NCDWR is granted a time review extension, a waiver will be deemed to occur if the NCDWR fails to act on this request for certification within 120 days of the date of this public notice. Additional information regarding the 401 Certification may be reviewed at the NCDWR Central Office, 401 and Buffer Permitting Unit, 512 North Salisbury Street, Raleigh, North Carolina 27604-2260. All persons desiring to make comments regarding the application for a 401 Certification should do so, in writing, by Jan 09, 2023, to:

NCDWR Central Office
Attention: Mr. Paul Wojowski, 401 and Buffer Permitting Unit
(USPS mailing address): 1617 Mail Service Center, Raleigh, NC 27699-1617

Or,

(physical address): 512 North Salisbury Street, Raleigh, North Carolina 27604

North Carolina Division of Coastal Management (NCDCM):

- The application did not include a certification that the proposed work complies with and would be conducted in a manner that is consistent with the approved North Carolina Coastal Zone Management Program. Pursuant to 33 CFR 325.2 (b)(2) the Corps cannot issue a Department of Army (DA) permit for the proposed work until the applicant submits such a certification to the Corps and the

NCDCM, and the NCDCM notifies the Corps that it concurs with the applicant's consistency certification. As the application did not include the consistency certification, the Corps will request, upon receipt, concurrence or objection from the NCDCM.

- Based upon all available information, the Corps determines that this application for a Department of Army (DA) permit does not involve an activity which would affect the coastal zone, which is defined by the Coastal Zone Management (CZM) Act (16 U.S.C. § 1453).

Evaluation

The decision whether to issue a permit will be based on an evaluation of the probable impacts including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values (in accordance with Executive Order 11988), land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving the discharge of dredged or fill materials in waters of the United States, the evaluation of the impact of the activity on the public interest will include application of the Environmental Protection Agency's 404(b)(1) guidelines.

Commenting Information

The Corps of Engineers is soliciting comments from the public; Federal, State and local agencies and officials, including any consolidated State Viewpoint or written position of the Governor; Indian Tribes and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment (EA) and/or an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a

public hearing will be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.

The Corps of Engineers, Wilmington District will receive written comments pertinent to the proposed work, as outlined above, until 5pm, October 12, 2022. Comments should be submitted to Mr. Josh Pelletier, Washington Regulatory Field Office, 2407 West Fifth Street , Washington, North Carolina 27889, at (910) 251-4605. Comments may also be submitted to WashingtonNCREG@usace.army.mil .