A

Notice of Intent Narrative

Town-maintained Pedestrian Paths, North Nantasket Beach (Phipps through X Streets) February 2024

1. Introduction

This narrative is part of the Notice of Intent submitted to the Conservation Commission by the Town of Hull to continue to maintain pedestrian access to N. Nantasket Beach. This NOI continues much of the practices incorporated in Wetlands Protection Act (WPA) Permit to the Town (#SE35-1380, Aug 2017 and subsequent extensions) to now include *Town-access path north of L Street to X Streets* adjacent to N. Nantasket Beach. This application is to allow the Town's Department of Public Works to adjust orientations to some of the current paths in selected areas (detailed below in Specific Actions), to perform seasonal repairs and typical maintenance for public access points onto N. Nantasket Beach.

2. Project Location

This project is proposed for work which will occur largely within the primary frontal dune that separates Beach Ave (both paved and paper layout) from Nantasket Beach beginning with access paths adjacent to Phipps St north to X Street (Fig. 1). The primary frontal dune spans much of the length of the approximately 2 miles of N. Nantasket Beach, is part of the beach-dune system that abuts a densely populated residential area, and includes Protected and Priority Habitats - most notably for Piping Plover (*Charadrius melodus*). The primary frontal dune system has been recognized as one of the most significant interest of storm damage protection and flood control for residents in the adjacent flood plain[1]. Town-maintained pedestrian (and emergency response) access is necessary to maximize dune protection and ensure the interests of flood control and storm damage protection are best met.

[1] Municpal Vulnerability Study, 2019 (MVP Vulnerability Study 2019 | Hull MA); Coastal Climate Change Vulnerability Assessment and Adaptation Study, 2016 (Final Report (hull.ma.us)

Figure 1. Locus Map. Location of proposed path maintenance area, primary dune, N. Nantasket Beach. From Phipps St. to X Street.

3. Project Background & Resource Areas

This project is located within a state designated Barrier Beach which includes the majority of the low-lying Hull peninsula between the shorelines of Massachusetts Bay and Hull Bay in Boston Harbor. The project site is the primary coastal dune that is part of a barrier beach consisting of well sort sorted fine grain sand and cobbles. Much of the dune is vegetated with beach grass, beach plum, beach rose, seaside golden rod, and other typical coastal dune vegetation. In recent years, some areas of this dune system is experiencing increased invasive plant growth, especially of Black Swallow-wort and Japanese knotweed. The Town had recently received a negative determination to conduct dune knotweed control in 2022 and 2023. No invasive species control is proposed here.

Barrier Beach:

A barrier beach is defined as: "*a narrow low-lying strip of land generally consisting of coastal beaches and coastal dunes extending roughly parallel to the trend of the coast. It is separated from the mainland by a narrow body of fresh, brackish, or saline water, or a marsh system. A barrier beach may be joined to the mainland at one or both ends (310 CMR 10.29(2))*

This barrier beach is comprised, in part, of a Coastal Beach and Coastal Dunes – the Coastal Beach is mapped between Mean Low Water and the seaward toe of the primary dune. The primary dune is within the project area and protected by the Wetlands Protection Act 310 CMR 10.28. This area meets the definition of for a coastal dune in that it is (i) naturally occurring mound of sediment that is part of a larger natural ridge shaped landform, (ii) landward of the coastal beach, and (iii) composed of fine-grained sediment deposited by wind action.

Coastal Dunes:

The project area consists of a primary frontal dune has been altered and degraded (private as well as public-maintained-permitted paths) but still provides critical public functions of storm damage protection, flood control, providing habitat, and source of sediment to coastal beaches. The level of storm damage protection estimated for the primary frontal dune and the effects of paths on the level of protection afforded by the dune is shown in **Appendix A**: North Nantasket Dune Vulnerability. The project locus that includes this dune is also designated as a Primary Frontal Dune as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panels #25023C-0017J, #25023C-0036J, and #25023C-0038J (effective 01/24/2018).

Landward of the primary dune exists an altered and degraded secondary dune system that extends to the west to the shores of Hull Bay and is developed as dense residential neighborhoods. The function of the dune in these areas is highly altered and essentially non-existing with respect to providing storm damage protection, flood control, habitat, and source material for beaches because of developed roads, buildings, and other infrastructure. In terms of dune function the following items should be considered:

- The WPA indicates that all coastal dunes on barrier beaches, and the coastal dune closest to the beach – also known as the primary frontal dune or primary dune - are per se significant to storm damage protection, flood control, providing habitat, and sources of beach material.
- Because dunes on barrier beaches and the coastal dune closest to the beach are singled out as intrinsically important to storm damage protection and flood control, they warrant greater scrutiny (finding in the matter of Stephen D. Peabody Trustee, Docket No. 2002-053, Final

Decision, January 25, 2006; affirmed by Essex Superior Court sub nom Peabody v. Department of Environmental Protection, ESCV 2006-00299. September 21, 2007; and affirmed in Massachusetts Appeals Court, November 8, 2012).

- The primary coastal dune all along the project site has been altered and therefore some of the typical functions of a coastal dune that allow it to serve in the interests of storm damage prevention and flood control have been diminished.
- Despite the altered nature of the primary dune, it continues to provide some function that requires protection and allows it to serve the interests of the WPA.
- Controlled access for pedestrians to the beach is critical to minimizing impacts to an already altered dune.

Priority and Estimated Habitats of Rare Wildlife

According to the Massachusetts Natural Heritage & Endangered Species Program (NHESP), the project locus is mostly located within priority and estimated habitats of rare wildlife and rare species. Two protected species, Piping Plover and Common Tern (*Sterna hirundo*), have been found within the project area. The Piping Plover is listed as "Threatened" on both the State and Federal level pursuant to U.S. Endangered Species Act (ESA, 50 CFR 17.11). The Common Tern is listed as a species of "Special Concern" in Massachusetts. Both species are protected under the Massachusetts Endangered Species Act and its implementing regulation (310 CMR 10.37).

The coastal beach east of the altered primary dune has been used historically by shorebirds for nesting. Piping plovers returned with a nesting pair in 2014 and since nesting pairs have increased to a maximum of 13 observed in 2022. The Town has traditionally contracted with Mass Audubon to monitor shorebird habitat along the entire beach and follows recommended protection protocols for these habitats. Figure 2 shows the proposed project footprint and the extent of NHESP mapped habitat (green-blue hatching). Delineation of estimated and priority habitat is detailed on individual proposed path plans (Appendix C).

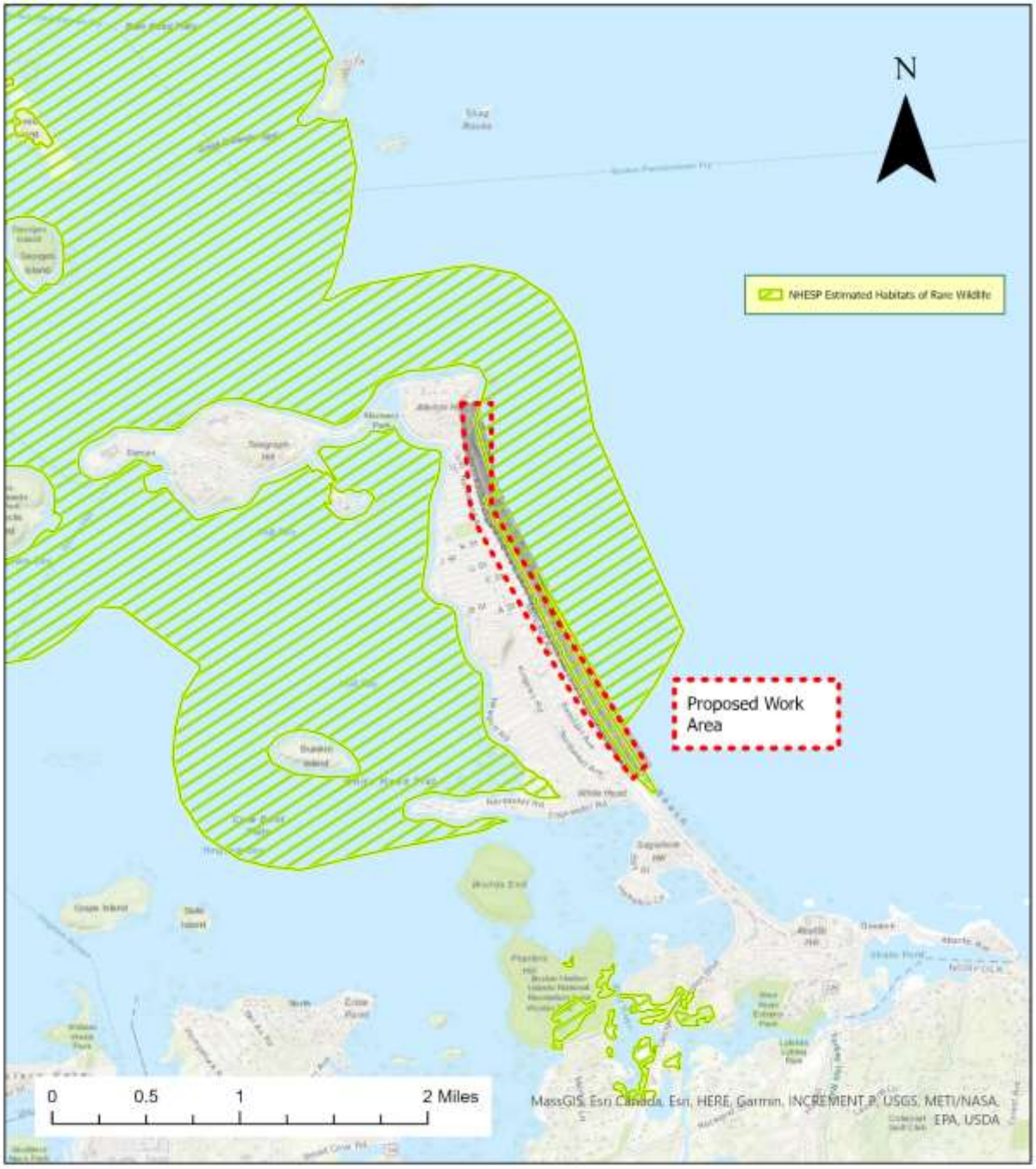

Figure 2. Extent of priority and estimated habitats of rare wildlife and rare species as delineated by Massachusetts Natural Heritage & Endangered Species Program (NHESP). Map effective August 1, 2021.

Land Subject to Coastal Storm Flowage

Land Subject to Coastal Storm Flowage (LSCSF) is land subject to any inundation caused by coastal storms up to and including that caused by the 100-year model storm, surge of record, or storm of record, whichever is greater, and can be found from the FEMA FIRM Panels #25023C0017J, #25023C0036J, and #25023C0038J (effective 01/24/2018). These FIRM panels indicate that the project area is mapped in a "VE Zone" where the VE designation indicates an area that is flooded and experiences additional wave velocity with wave heights of at least 3 feet during the 100-year storm event. The number after the VE designation on the Path Maps (Appendix B) refers to Base Flood Elevation (BFE) in feet above the NAVD88 elevation datum and represents the water elevation expected during the 100-year storm event including impacts from storm surge, wave setup, and wave run-up. The entire project is classified within the LSCSF resource. There are no performance standards for LSCSF at this time. It should be noted that new LSCSF standards have been developed and most likely will be adopted during the proposed permit period (3 years). These new standards, which also consider activities in the Minimum Wave Action Zone in LSCSF will require special consideration for fences, sheds, pruning, plantings, and conversions of impervious surfaces to pervious surfaces, and conversion of lawns. This project proposes no structures, other than sand fencing and seasonal mats, and occasional planting. Proposed plantings associated with this project will only utilize native species (e.g., beach grass, beach plum, and those recommended by CZM's coastal planting guide: StormSmart Coasts - Coastal Landscaping in Massachusetts | Mass.gov).

Bureau of Resource Protection – Waterways Chapter 91 Jurisdiction

The activities and location of this project are located outside of the jurisdiction of the Public Water Front Act except for the seaward portion of three (3) consecutive pedestrian paths beginning at the end of Alden Street north including the path adjacent to 99 Beach Ave to Warren Street (see Fig. 3 below and proposed plans for "Alden & 99 Beach Ave." *and* "Warren Street" in Appendix C). No activity above or beyond "Typical maintenance" (detailed below) is proposed for these three paths.

Chapter 91 jurisdiction boundaries (dashed magenta line) along Beach Ave. near Alden and Warren Streets.

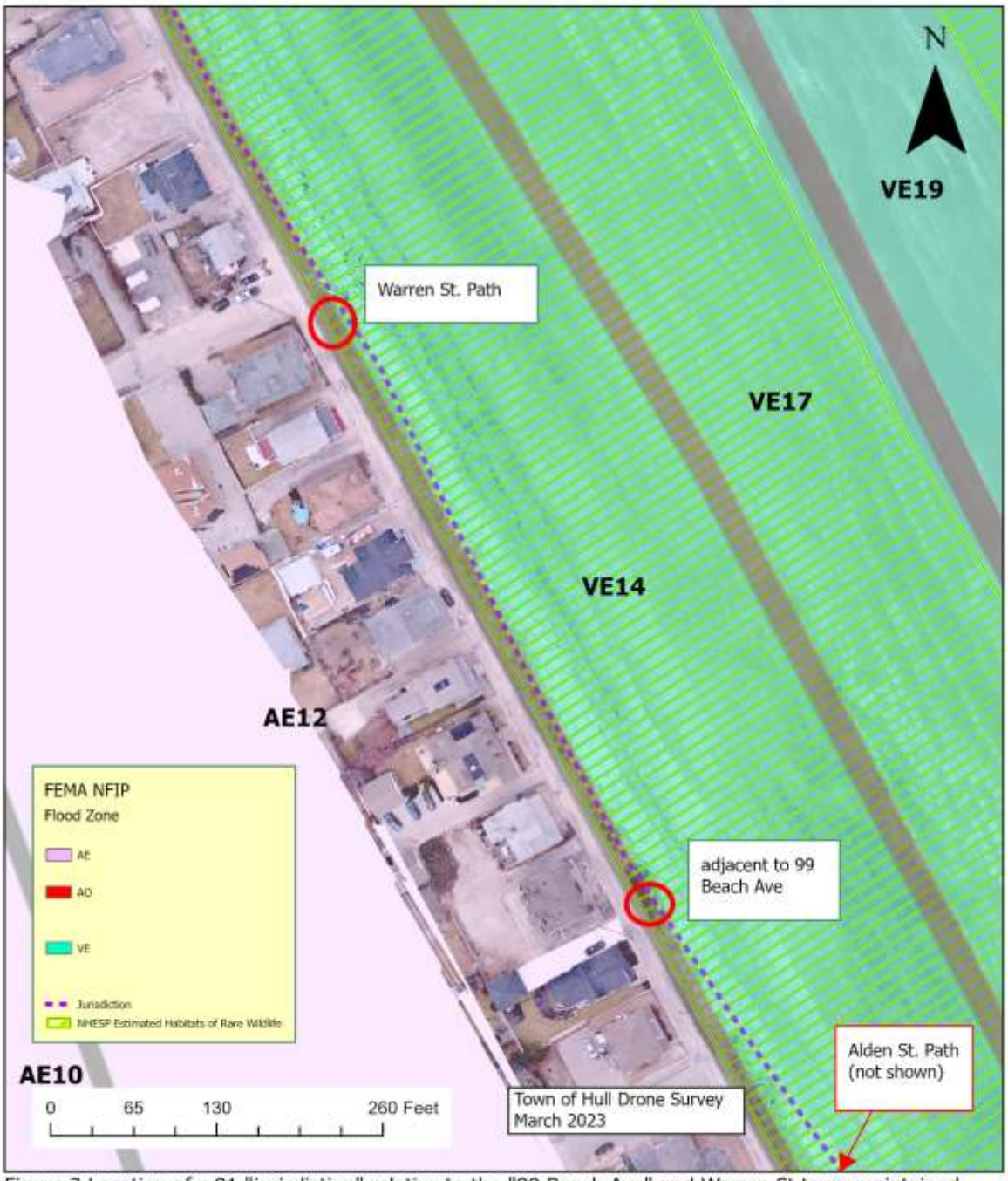

Figure 3 Location of c.91 "jurisdiction" relative to the "99 Beach Ave" and Warren St town-maintained access paths

Existing Conditions

The Town conducted field investigations to establish existing conditions on March 17, 2023 through an aerial survey by GEI Consultants. Resultant topographic maps are shown as Beach Ave Existing Conditions in **Appendix B**.

Proposed Project

This project proposes continued maintenance of 33 existing town-owned pedestrian paths through the primary dune area and onto the adjacent coastal beach. As part of this Notice, the six (6) existing paths located at the ends of N to O Streets are proposed to be partially re-oriented to the SE (ocean facing) in order to minimize the impact these path pose to the storm damage protection and flood control interests of the WPA and to be consistent with best path management practice as detailed in the Town's Beach Management Plan (bmp_final_with_select_board_signatures.pdf (hull.ma.us)). Proposed Plans detailing each path are shown in **Appendix C**. The proposed activities are classified below in two categories: "*Typical Maintenance*" and "*Specific actions*":

Typical Maintenance (based on traditional practices under SE35-1380 and detailed here):

a. Maintain pedestrian access in the preferred SE (ocean ward) orientation, including regrading and filling to pre-storm condition. Fill to be used is from stockpiled or new dune-appropriate sand material similar in source as used in A-St ramp and Dune construction projects along Beach Ave (e.g., see Order of Conditions for SE35-1549, -1485, and -1521).
b. Maintain "Snow" fencing, including posts, - as needed to protect vegetated portion of dune by prohibiting pedestrian straying outside of path boundaries.
c. Install seasonal signage, as coordinated with the Conservation Administrator
d. Storm protection and "winterizing", which requires stockpiled or new dune-appropriate sand material similar in source as used in A-St ramp and Dune construction projects along Beach Ave (e.g., see Order of Conditions for SE35-1549, -1485, and -1521, available at Climate Adaptation & Conservation Dept.).
e. Install two (2) pedestrian beach mats (e.g., MOBI) *each* (100' long) at Revere St. and L St.
f. Storm debris clean-up is coordinated through the Conservation Administrator
g. Dune repair due to storm damage is to be only to the area immediately adjacent to the Town-maintained paths permitted herein. The same sand material to be used is to be consistent with source material specified in *b.* above.
h. Beach grass planting as coordinated through the Conservation Administrator
i. All activities described above shall occur prior to April 1st or after September 30th. Any activity necessary to occur within or adjacent to protected habitat during the time-of-year restriction requires prior coordination with the Conservation Administrator. Adherence to other appropriate Time-Of-Year restrictions including, but not restricted to, those associated with Town bylaws and to Order of Conditions specifically protective of piping plover habitat.
j. Deploy available Mobi-mat® s. Deployment locations may vary seasonally and are at the discretion of the DPW Director and coordinated with the Conservation Administrator.

Specific actions are proposed for:

1. Phipps St.: Typical maintenance
2. Malta St.: Typical maintenance
3. Revere St.: Typical maintenance
4. Kenberma St.: Typical maintenance
5. Alden St. & adjacent to 99 Beach Ave.: Typical maintenance. Seaward portion of both access paths lays within c.91 jurisdiction
6. Warren St.: Typical maintenance thereafter. Seaward portion of Warren St. access lies within c.91 jurisdiction.
7. Beach Ave near Coburn: Remove concrete wall section that exists across the Coburn St access, re-grade, conduct beach grass planting, and add new snow fencing as needed. Possible installation of Mobi-mat®. Typical maintenance thereafter. Typical maintenance proposed for the town-maintained path adjacent to 133 Beach Ave (constructed in 2020 under WPA Permit # SE35-1521).
8. Adams St.: typical maintenance
9. Lewis St.: widen path, Typical maintenance
10. A St. Path: - deploy Mobi-mat®s: one (1) for Emergency Response (8' x 50'); Two (2) for pedestrian access through dune (5'x 100')
11. B & C St.: Typical maintenance
12. D & E St.: Typical maintenance
13. F & G St.: Typical maintenance
14. H & J St.: Typical maintenance
15. K & L St.: Typical maintenance
16. M St.: Install fencing on M St. to direct pedestrians to newly-oriented section of path; typical maintenance thereafter. Typical maintenance proposed for M St.
17. N & O St.: minimally re-orient paths to be consistent with recommended SE (ocean ward direction) orientation. Beach grass planting and new snow fencing as needed as needed. Typical maintenance thereafter. Possible installation of Mobi-mat®
18. P & Q St.: minimally re-orient both paths to be consistent with recommended SE (ocean ward direction) orientation. Beach grass planting and new snow fencing as needed. Typical maintenance thereafter.
19. R St.: re-orient path to be consistent with recommended SE (ocean ward direction) orientation. Beach grass planting and new snow fencing as needed as needed. Typical maintenance thereafter.
20. S & T St.: re-orient S St. path to be consistent with recommended SE (ocean ward direction) orientation. Beach grass planting and new snow fencing as needed. Typical maintenance thereafter.
21. U & V St.: Return storm overwash material to beach. Re-grade path area as needed after consultation with Conservation Administrator (e.g., re-grade path through large winter cobble berm as needed). Typical maintenance thereafter.
22. W & X St.: Return storm overwash material to beach. Re-grade path area as needed after consultation with Conservation Administrator (e.g., re-grade path through large winter cobble berm as needed). Typical maintenance thereafter. Jersey flood barriers installed at X St access entrance as part of path "winterizing" and removed prior to "beach season". These barriers

may need to be installed prior to pending storm events and will be coordinated with the Conservation Administrator as part of the Town's storm preparation.