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October 15, 2021

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS  
ON THE  
SINGLE ENVIRONMENTAL IMPACT REPORT

PROJECT NAME : Proposed Beach and Dune Nourishment for Towns of  
Marshfield and Duxbury  
PROJECT MUNICIPALITY : Marshfield and Duxbury  
PROJECT WATERSHED : South Coastal  
EEA NUMBER : 16283  
PROJECT PROPONENT : Towns of Marshfield and Duxbury  
DATE NOTICED IN MONITOR : September 8, 2021

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G.L. c. 30, ss. 61-62I) and Section 11.08 of the MEPA regulations (301 CMR 11.00), I have reviewed the Single Environmental Impact Report (SEIR) and hereby determine that it **adequately and properly** complies with MEPA and its implementing regulations.

Project Description

As described in the SEIR, this project involves a nature-based storm damage protection project that consists of large-scale beach and dune nourishment at four beaches along the Marshfield and Duxbury shorelines. A total of 14 different shoreline sites in the Towns of Duxbury and Marshfield (Towns) were evaluated as potential nourishment sites. The analysis excluded ten sites due to the presence of sensitive resources or other conditions that were not conducive to a nourishment approach. Four suitable locations for nourishment were identified: Rexhame Public Beach, Winslow Avenue Beach, and Fieldston and Sunrise Beaches in Marshfield, and Bay Avenue and Gurnet Road Beaches which are located along the barrier beach north and south of the Marshfield and Duxbury town line.

Specific nourishment activities at these locations include the following:

- Rexhame Public Beach – beach nourishment using 33,870 cubic yards (cy) of mixed sand

and gravel to enhance the resiliency of the adjacent dune and public beach including a 60-foot wide berm at elevation 10 feet NAVD88, sloping at 1V:15H (vertical to horizontal) to natural grades in the nearshore (provide protection of the existing dunes during storms up to the 50-year event)

- Winslow Avenue Beach – 17,850 cy of mixed sand and cobble nourishment to enhance the resiliency of an existing cobble dune. Nourishment would increase the dune crest to an elevation of 17 feet (NAVD88) and 40-foot width with 1V:7H slopes to meet natural beach grades (provide protection from flooding during storms up to the 10-year event)
- Fieldston and Sunrise Beaches – both beach and dune nourishment using 389,770 cy of mixed sand and gravel to minimize wave overtopping and provide protection for existing seawalls. Dune nourishment would create a 30-foot wide dune crest at elevation 13 feet NAVD88 and seaward facing slopes of 1V:5H. Beach nourishment would create a 90-foot wide berm set at an 9.5 foot (NAVD88) elevation with a 1V:12H slope to natural grades in the nearshore. Protection from wave overtopping is provided during a 10-year storm event and renourishment intervals are estimated to range from 3.5 to 7.0 years.
- Bay Avenue and Gurnet Road Beaches – both beach and dune nourishment using 480,640 cy of mixed sand and gravel to minimize wave overtopping and provide protection for the existing shore protection structures. Beach nourishment would create a 90-foot wide berm at elevation 11 foot (NAVD88) sloping at 1V:15H to natural grades in the nearshore. Dune restoration in the “Horseshoe area” of Duxbury includes a crest 40 to 60 ft wide at an elevation of 15.5 ft NAVD88, with a 1V:5H slope to the adjoining beach nourishment. Protection from wave overtopping is provided during a 10-year storm event and renourishment intervals are estimated to range from 2.5 to 5 years.

The project is being supported, in part, by funding through the Massachusetts Office of Coastal Zone Management’s (CZM) coastal resilience grant program. In addition to financial support, CZM has been actively involved in the development of the project through consultation and technical assistance provided to the project management team and the Towns.

The project will be constructed in phases, as additional funding and material (i.e., large volumes of sediment for nourishment) are obtained. Once the project is fully permitted, the Towns will be able to receive sediment dredged annually from Green Harbor by the U.S. Army Corps of Engineers (ACOE). Nourishment materials will be directed to permitted beach areas in need of improved resiliency, or in response to significant erosion following storms.

According to the SEIR, the project is intended as a restoration measure that will enhance storm damage protection, reduce costs associated with emergency response during storms, and minimize expenditures required for post storm recovery. The Towns contend that the project will offer increased protection of natural resources. Beaches along the shoreline of Marshfield and Duxbury have been experiencing ongoing and severe erosion, resulting in landward migration of the shoreline. By significantly increasing the amount of sediment and size of dunes and beaches, the project will help to maintain the existing beach and dune habitat. Marshfield beaches also serve as vital nesting habitat for threatened species, such as the piping plover. The proposed dune nourishment has been designed specifically to maintain dune slopes appropriate for shorebird nesting. Additionally, beach and dune nourishment resulting in decreased erosion will also protect existing salt marsh habitat, such as that around Green River, and preserve ecosystem services provided by salt marshes such as flood mitigation, increased water quality, and erosion prevention. The project will also improve public access to coastal

recreation areas, which serve as tourist attractions and thus, contribute to the local economy.

### Changes Since Filing the Expanded Environmental Notification Form (EENF)

The SEIR includes a detailed description of changes to the project since filing the Expanded Environmental Notification Form (EENF) which fall into five major categories:

1. Redesign Rexhame Public Beach nourishment to avoid impacts to state-listed shorebird habitat
2. New design for dune restoration in the “Horseshoe” area of Duxbury where there is a gap in the existing seawall
3. Modifications to the proposed nourishment footprint at Bay Avenue/Gurnet Road Beaches to minimize impacts on Green Harbor shoaling and selection of a new preferred alternative for this beach area
4. Updates to sediment texture mapping for project area beaches and pre-project sediment characterization protocols to ensure use of compatible sediment during nourishment
5. New plan for replication of rocky intertidal shore resources impacted by the proposed nourishment

### Project Site

The ±90.85-acre project site, comprised of the locations where nourishment activities will occur, includes numerous coastal wetland resources including barrier beach, coastal beach, salt marsh, coastal dune, land subject to coastal storm flowage (LSCSF), land containing shellfish (LCS), rocky tidal intershore and land under ocean (LUO). These areas include mapped *Estimated and Priority Habitat* of state-listed rare species.

Waters bordering the identified nourishment sites provide habitat for a variety of shellfish species. The nearshore waters contain mapped surf clam habitat while waters further offshore are mapped as both ocean quahog and sea scallop habitat. The Expanded Environmental Notification Form (EENF) described a shellfish survey performed in January 2020 using a hydraulic dredge in nearshore subtidal waters. The EENF noted that much of the survey area was too rocky to sample using a hydraulic dredge, but remaining surveyed areas contained surf clams as well as winter flounder (*Pseudopleuronectes americanus*) and rock crabs (*Cancer irroratus*). LCS is deemed significant to the interest of the Wetlands Protection Act (310 CMR 10.34) and the protection of marine fisheries.

The EENF also documented rocky intertidal shoreline in a November 2019 survey. Six discrete areas of rocky intertidal shoreline were identified within a November 2019 survey for a collective 28.5-acre area. In addition to providing shellfish habitat for blue mussels, rocky intertidal habitat also provides important nursery and foraging habitat for a variety of invertebrate and finfish species.

### Environmental Impacts and Mitigation

Potential environmental impacts associated with the project are identified for each resource area in Table B-1. With the placement of the nourishment, the project will alter 72.25 acres of land above mean low water (MLW), all of which is located within coastal wetland resource areas.

Table B-1. Summary of Preferred Alternatives with Direct Resource Area Impacts and Other Selection Criteria.

Beach Site	Area of Impact (acres)							
	Land Under the Ocean	Coastal Beaches	Coastal Dunes	Barrier Beaches	Land Containing Shellfish	Rocky Intertidal Shore	Land Subject to Coastal Storm Flowage	Estimated Habitats of Rare Wildlife
<b>Rexhame Public Beach</b>								
Rexhame Public - Alt 4	--	8.15	--	8.15	4.34	--	8.15	8.15
<b>Winslow Ave. Beach</b>								
Winslow – Alt 2	--	1.49	3.16	2.90	--	--	4.65	--
<b>Fieldston &amp; Sunrise Beaches</b>								
Fieldston/Sunrise – Alt 2	2.40	28.10	--	18.14	29.4	1.09	30.50	--
<b>Bay Ave. &amp; Gurnet Rd. Beaches</b>								
Bay Ave/Gurnet Rd – Alt 3	8.76	28.67	0.62	38.10	33.62	--	38.10	13.17

The project is designed to restore and enhance a degraded and eroding coastal beach and coastal dune and provide storm and flood resiliency. However, because the project will impact several wetland resource areas, the Towns intend to implement resource protection and construction mitigation measures to minimize adverse effects. These measures include accessing beach sites by existing access ways; clearly marking boundaries of beach and/or dune nourishment; sediment and erosion controls; adhering to time of year (TOY) restrictions for construction; pre-construction onsite meetings; using clean and compatible sediment for proposed nourishment; designing slopes of oceanside nourishment to meet habitat requirements for threatened and endangered nesting shorebirds; conducting shorebird inventory, mapping and monitoring in all areas currently mapped as estimated and priority habitat, along with surveillance surveys in nourished areas not currently mapped; installing protective fencing and signage to protect nesting shorebirds; implementing a semi-annual (twice a year) monitoring and maintenance plan following the project’s implementation; designing nourishment footprints to avoid direct impacts to rocky intertidal resources or replicating unavoidable impacts (1:1) within the nourishment footprint; shortening nourishment footprint for the Bay Avenue beach to minimize impacts caused by increased shoaling at Green Harbor; and using predominantly cobble and gravel as nourishment sediments at the northern end of Bay Avenue to minimize northerly transport towards the Harbor.

Jurisdiction and Permitting

The project is undergoing MEPA review and is subject to a mandatory EIR pursuant to 301 CMR 11.03(1)(a)(1) and 11.03(3)(a)(1)(b) because the beach and dune nourishment will alter more than 50 acres of land and ten or more acres of any other wetland with impacts to LUO, coastal beach, coastal dune, barrier beach, rocky intertidal shores, LCS, and LSCSF. The project requires a 401 Water Quality Certification (WQC) and Chapter 91 (c. 91) Permit from the Massachusetts Department of Environmental Protection (MassDEP), and review by the Massachusetts Natural Heritage and Endangered Species Program (NHESP). The project is receiving funding from the CZM’s Coastal Resilience Grant Program and will require Federal Consistency Review from CZM. It is subject to the MEPA Greenhouse Gas (GHG) Emissions Policy and Protocol (GHG Policy).

The project will require Orders of Conditions (OOC) from the Marshfield and Duxbury Conservation Commissions (or in the case of appeals, Superseding Orders of Condition from MassDEP), review by the Massachusetts Historical Commission (MHC) acting as the State Historic Preservation Officer (SHPO) pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), and an Individual Permit from the ACOE seeking authorization under the General Permits for Massachusetts in accordance with Section 404 of the federal Clean Water Act.

Because the project will receive Financial Assistance, MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

### Review of the SEIR

The SEIR was responsive to the Scope issued in the EENF Certificate, and includes a detailed project description, identifies existing conditions and potential environmental impacts, and contains photographs of existing site conditions and proposed areas of work as well as updated design plans that identify wetland resource areas, existing and proposed conditions, and erosion and sedimentation control measures. It identifies, describes, and assesses the environmental impacts of changes in the project that have occurred since the filing of the EENF. The SEIR includes extensive analysis including historical shoreline change modeling, hydrodynamic modeling, wave transformation modeling, and sediment transport modeling to support the project design. The SEIR includes a list of required State Permits, Financial Assistance, or other State approvals and provides an update on the status of each of these pending actions. It also includes an update on local, regional and federal permitting.

The FEIR includes additional analyses of project impacts as requested by comments on the EENF which fall into four main categories:

1. Evaluate equilibrium beach profiles for nourishment projects at Rexhame Public Beach, Sunrise/Fieldston Beaches and Bay Avenue/Gurnet Road Beaches
2. Evaluate impacts of nourishment projects on existing rocky intertidal shore resources
3. Evaluate potential conflicts in TOY restrictions between beach nourishment activities and possible dredging projects that could provide a source of sediment for the beaches
4. Provide update on coordination with private property owners within beach nourishment footprints regarding signing of easements for publicly funded nourishment on private beaches

The Proponent intends to construct beach/dune nourishment projects of differing sizes within the proposed project footprint in the future in response to specific storm damage, or proactively when funding and/or sediment sources become available. The SEIR provides information regarding levels of protection and design life for nourishment areas, impacts of climate change on frequency of renourishment, mitigation for impacts to rare and threatened species, sediment sampling and characterization, monitoring and maintenance, and proposed mitigation.

The Towns initiated the potential for beach nourishment to address issues of shoreline retreat, lowering of the beach elevation, and associated issues with coastal resilience and climate change, and the underlying structural stability for coastal protection structures. According to the Massachusetts Coastal Structures Inventory for many locations considered as part of this initiative, the beaches were

critically eroded to the point where the stability of the engineered structures was threatened, such that immediate actions would be necessary to recreate the beach. The sediment-starved condition of the beaches has resulted in undermining and collapse of seawalls and, as wave energy is not being dissipated by breaking on a fronting beach, the wave reflection off of, and over, the seawall is leading to scour of the fronting beach and wave overtopping of the seawall wave is resulting in battery of homes and infrastructure behind the seawall and backshore flooding. With forecasted sea level rise (SLR) these impacts will continue to increase.

Comments from Agencies are supportive of the project and commend the Towns for addressing coastal resiliency and climate change with a focus on nature-based solutions and recognize the enhanced resiliency the project will provide.

### *Wetlands and Waterways*

The project will permanently impact LUO, coastal beach, coastal dune, barrier beach, rocky intertidal shores, LCS, and LSCSF. With the placement of the nourishment, the project will alter 72.25 acres of land above MLW. The majority of impacts will be associated with coastal beach and dune nourishment. The Marshfield and Duxbury Conservation Commissions will review the project for consistency with the Wetlands Protection Act (WPA) and implementing regulations (310 CMR 10.00). MassDEP will review the project to determine its consistency with the c. 91 Waterways regulations (310 CMR 9.00) and the 401 WQC regulations (314 CMR 9.00). The project will be classified as a water-dependent use project in accordance with 310 CMR 9.12. MassDEP comments indicate that the SEIR adequately addresses its comments on the EENF.

The Towns expect to use a variety of sources for the material for beach/dune nourishment including both upland sources and hydraulically nearby dredging projects. The Towns are actively pursuing potential nearby sources of sand for the project and have begun the assessment and feasibility process for these potential sources. Compatible material dredged from Green Harbor is being considered for beneficial re-use as nourishment material. Whatever the source, nourishment materials must be clean sediments of a grain size compatible with that on the existing beach in accordance with 310 CMR 10.27(5) and MassDEP's Beach Nourishment Guide to Best Management Practices for Projects in Massachusetts. A Notice of Project Change (NPC) will be required to the extent the Towns intend to undertake dredging activity to support this project, and the Towns should consult with the MEPA Office to determine the need for additional review of any other activities proposed in conjunction with this project that may cause environmental impacts beyond those disclosed through this review. The SEIR indicates the likely source of nourishment material will come from either local dredge projects or an upland source. Because nourishment material obtained from a publicly-funded dredge project may be placed on privately owned beaches (namely, at Fieldston and Sunrise Beaches and at Bay Avenue and Gurnet Road Beaches), the c.91 Permit issued pursuant to 310 CMR 9.40(4)(a) will require the Towns to secure easements on the private beach for public access below the high water mark. MassDEP comments commend the Towns' initiative for coordinating with private property owners to maintain the right of public access for all beach areas below the existing high-water mark within the project area.

The SEIR describes the results of the sediment sampling presented in the EENF. It explains how this sediment analysis will be used to select the appropriate source material for nourishment and how the project will ensure that the source material will be clean, compatible, and will comply with the Best Management Procedures for Beach or Dune Nourishment, any procedures developed by CZM and related regulatory requirements (310 CMR 10.00; 310 CMR 9.00; and 302 CMR 5.00).

Sediment texture mapping surveys were conducted in February and August 2021 to further characterize the changing grain size distribution of sediment at the site. The mapping efforts were used to document areas of the beach that contain predominantly boulders, cobble, cobble mixed with gravel and/or sand, gravel, gravel mixed with sand, and sand. The boundaries of each sediment type were surveyed and sediment texture maps for each of the proposed beach nourishment sites were developed. Additional sediment texture mapping will be conducted as part of the preconstruction monitoring. Comparisons between surveys will be used to identify areas with consistent sediment textures and other areas where the sediment textures are variable. This information will be used during the pre-construction period to identify suitable sediment types for each beach nourishment project.

The Towns will implement a monitoring and maintenance plan once the project is implemented, which includes methodologies to track the profile of the oceanside beach and dune nourishment, and the cobble berm profiles, the performance of the natural stormwater management measures and the establishment of vegetation along the nature-based shorelines on the side slopes of the elevated sections of roadway. The plan will include recommended maintenance actions based on monitoring outcomes. The site will be monitored semi-annually during late summer for three years after project completion, in addition to episodic monitoring as necessary.

#### *Rare Species*

The project area is mapped as *Priority* and *Estimated Habitat* for state-listed species in the Natural Heritage Atlas (14th Edition) and requires review by NHESP for compliance with the Massachusetts Endangered Species Act and its accompanying regulations (MESA, 321 CMR 10.00). It includes habitat for the Piping Plover (*Charadrius melodus*) and Seabeach Needlegrass (*Aristida tuberculosa*); both species are state-listed as “Threatened”. These species and their habitats are protected pursuant to the MESA as well as the WPA (310 CMR 10.37, 10.58(4)(b) and 10.59)). The Piping Plover is federally protected pursuant to the U.S. Endangered Species Act (ESA, 50 CFR 17.11). The project will require a direct filing with NHESP pursuant to MESA and the rare species provisions of the WPA.

Proposed dune and beach reconstruction has the potential to result in impacts to the nesting and foraging habitat of the Piping Plover. Specifically, the Preferred Alternative for Rexhame Beach in the EENF was identified as dune nourishment with a 5H:1V seaward slope, which would occupy areas of coastal beach that provide suitable nesting habitat. In response to NHESP’s comments on the EENF, the Towns modified the Preferred Alternative for Rexhame Beach to consist of beach nourishment with a beach berm elevation set at 10 ft NAVD88 extending 60 ft seaward from the toe of the existing dune then sloping seaward at a slope of 1 vertical:15 horizontal. This design will continue to support nesting habitat for Piping Plover. In addition, the SEIR indicates that the project will not result in alterations to Seabeach Needlegrass habitat located within the landward side of the dune. NHESP comments indicate that a botanical survey is not anticipated to be required if the project does not propose impacts to Seabeach Needlegrass habitat. NHESP anticipates that the project will require conditions to avoid a prohibited Take of state-listed species. Protection measures for state-listed species are anticipated to include but are not limited to preventing disturbance to state-listed species during the nesting season, maintaining beach and dune slopes suitable for these coastal nesting species, as well as monitoring and protecting suitable nesting habitat for state-listed coastal nesting birds created or enhanced as a result of the nourishment projects.

The Towns should continue to work with the NHESP to develop a MESA permitting plan that

takes into account the benefits of beach nourishment in maintaining habitat while also adequately minimizing and mitigating any short or long-term impacts associated with the project. As indicated in NHESP's comments, as the MESA review process is ongoing, no alteration to soil, surface, or vegetation associated with the project shall occur on the property until the NHESP has made a final decision relative to the project.

### *Marine Fisheries*

Large scale beach nourishment activities could cause disruptions to shore-zone fish habitat. DMF comments indicate that the additional information provided in the SEIR adequately addresses the resource concerns and recommendations for impact avoidance or minimization included in its comments on the EENF. Specifically, work is proposed to occur outside of the May 1 to November 1 TOY restriction period to protect shore-zone fishes. The SEIR includes additional survey data from 2021 as well as modeling data that does not project any indirect impacts to neighboring rocky intertidal habitat one year post nourishment. Monitoring data collectively identified nine discrete rocky intertidal areas. The additional monitoring data indicates that five of these areas are ephemeral, including those anticipated to experience direct impacts from nourishment, therefore, current project plans include pre-construction surveys to determine updated rocky intertidal habitat distribution at the time of nourishment. This data will be used to determine if mitigation is required. If needed, a 1:1 mitigation separated across two regions of the nourishment footprint is proposed. DMF will work with the Towns further on the proposed monitoring and mitigation plans in the state and federal permitting process.

### *Climate Adaptation and Resiliency*

The project incorporates resilient, nature-based strategies for shore protection that will mitigate the effects of climate change, improve storm damage protection, reduce wave overtopping, restore sediment to the littoral system and provide protection for existing shore protection structures. The EENF included comprehensive engineering analyses of overtopping at the Marshfield and Duxbury shore protection structures and potential reductions in overtopping associated with increases to the crest elevations. Conclusions indicated that crest elevations of existing seawalls and revetments would have to be increased between 2 and 8 ft to reduce overtopping below levels needed to avoid structural damage to buildings. For the Fieldston/Sunrise and Bay Avenue/Gurnet Road beaches, analyses showed that proposed nourishment reduced overtopping rates below the critical threshold during the 10-yr and 10-yr plus 2 ft of SLR scenarios, thereby avoiding the need to raise the crest elevations of the structures.

Preliminary results from the Massachusetts Coast Flood Risk Model (MC-FRM) were used to identify areas where managed retreat should be considered as a planning tool to illustrate areas where high probabilities of flooding will occur in 2050, and where it should be considered as a long-term resiliency building measure. Beach nourishment is proposed as an interim measure in some of these high-risk areas as a way to minimize wave overtopping damages until such time as development is pulled back from the shoreline. Beach profiles for the beach restoration were designed with a 10-yr storm in mind and will reduce damaging wave overtopping to public and private properties under the 10-yr storm event. The design lifetimes vary for each project as follows: Fieldston/Sunrise alternatives range from 1.5 to 4.0 years before 70% to 80% of fill moves outside of the original footprint; this sediment is still within the littoral system and providing increased resiliency to climate change and SLR for the broader system. Bay Avenue/Gurnet Road alternatives range from 3 to 5.5 years before 70% to 80% of fill moves outside of the original footprint; again, sediment provides increased resiliency to climate change and SLR for the broader system. Design lifetimes are not typically calculated for dune



only projects. The two dune projects will provide protection during the 10-yr storm (Winslow Ave) and 50-yr storm events (Rexhame Public Beach).

Mitigation and Section 61 Findings

The SEIR includes a section that summarizes proposed mitigation measures and provides draft Section 61 Findings for each Agency Action. It contains commitments to implement these mitigation measures (including monitoring). Mitigation measures are provided in a tabular format and grouped by category (i.e. wetlands, water quality, rare species, fisheries resources, GHG emissions, historical and archaeological resources, construction period, etc.). The draft Section 61 Findings will serve as the primary template for State Agency Permit conditions.

Conclusion

Based on a review of the SEIR and consultation with State Agencies, I find that the SEIR adequately and properly complies with MEPA and its implementing regulations. The project may proceed to permitting. State Agencies should forward copies of the final Section 61 Findings to the MEPA Office for publication in accordance with 301 CMR 11.12.

*K. Theoharides*

October 15, 2021  
Date

\_\_\_\_\_  
Kathleen A. Theoharides

Comments received:

- 10/07/2021 Massachusetts Department of Environmental Protection (MassDEP) – Southeast Regional Office (SERO)
- 10/08/2021 Massachusetts Natural Heritage and Endangered Species Program (NHESP)
- 10/08/2021 Massachusetts Office of Coastal Zone Management (CZM)
- 10/12/2021 Massachusetts Division of Marine Fisheries (DMF)

KAT/PPP/ppp



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

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October 7, 2021

Kathleen A. Theoharides  
Secretary of Environment and Energy  
Executive Office of Energy and  
Environmental Affairs  
100 Cambridge Street, Suite 900  
ATTN: MEPA Office  
Boston, MA 02114

RE: SEIR Review. EOEEA 16283  
MARSHFIELD & DUXBURY. Beach and  
Dune Nourishment at various locations in  
both Marshfield and Duxbury

Dear Secretary Theoharides,

The Southeast Regional Office of the Department of Environmental Protection (MassDEP) has reviewed the Single Environmental Impact Report (SEIR) for the Proposed Beach and Dune Nourishment Project at various locations in both Marshfield and Duxbury, Marshfield and Duxbury, Massachusetts (EOEEA #16283). The Project Proponent provides the following information for the Project:

**The Towns of Marshfield and Duxbury applied for and received a CZM Grant in FY20 for \$175,842 to fund field data collection, an alternatives analysis, and initial permitting for beach and dune nourishment at suitable beaches. A previous CZM Grant (FY18) (\$36,000) funded an evaluation of beneficial reuse opportunities for material dredged annually from Green Harbor by the US Army Corps of Engineers.**

**The proposed project includes beach and dune nourishment at four (4) locations:**

- **Rexhame Public Beach (Marshfield)**
- **Winslow Ave Beach (Marshfield)**
- **Fieldston & Sunrise Beaches (Marshfield)**
- **Bay Ave (Marshfield) and Gurnet Rd (Duxbury) Beaches**

**The project triggers the requirement for an Environmental Impact Report (EIR) pursuant to**

- **301 CMR 11.03(1) (a)1 as it will directly alter more than 50 acres of land,**
- **301 CMR 11.03(3)(a)1.b as a state Permit is needed for the project and it will alter more than 10**
- **acres of wetland other than salt marsh or bordering vegetated wetland.**

**However, a waiver from the requirement for an EIR is being requested pursuant to 301 CMR 11.11. The Towns contend that preparation of an EIR would result in an undue hardship since the extra time Required to prepare an EIR would delay issuance of the permits that would result in lost opportunities for accepting sediment as beneficial reuse from nearby dredging projects. Additionally, the extra review time with an EIR could lead to missed funding and other cost share opportunities that would be used to offset costs associated with project construction and monitoring.**

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.

TTY# MassRelay Service 1-800-439-2370

MassDEP Website: [www.mass.gov/dep](http://www.mass.gov/dep)

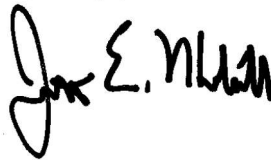
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The Department has reviewed the SEIR: EA No. 16283 and determined that the Proponent has adequately addressed the Programs' EENF comments.

The Waterways Program commends the Towns of Duxbury and Marshfield initiative to coordinate with private property owners to maintain the right of public access for all beach areas below the existing high-water mark within the project area.

The MassDEP Southeast Regional Office appreciates the opportunity to comment on this ENF. If you have any questions regarding these comments, please contact George Zoto at (508) 946-2820.

Very truly yours,



Jonathan E. Hobill,  
Regional Engineer,  
Bureau of Water Resources

JH/GZ

Cc: DEP/SERO

ATTN: Millie Garcia-Serrano, Regional Director  
Gerard Martin, Acting Deputy Regional Director, BWR  
John Handrahan, Acting Deputy Regional Director, BWSC  
Seth Pickering, Deputy Regional Director, BAW  
Jennifer Viveiros, Deputy Regional Director, ADMIN  
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MASSWILDLIFE

## DIVISION OF FISHERIES & WILDLIFE

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October 8, 2021

Kathleen A. Theoharides, Secretary  
Executive Office of Energy and Environmental Affairs  
Attention: MEPA Office  
Anne Canaday, EEA No. 16283  
100 Cambridge Street  
Boston, Massachusetts 02114

*Project Name:* Proposed Beach and Dune Nourishment for Towns of Marshfield & Duxbury, MA  
*Proponent:* Towns of Marshfield and Duxbury  
*Location:* Rexhame Public Beach, Winslow Ave Beach, Fieldston and Sunrise Beaches, Bay Ave and Gurnet Road Beaches  
*Project Description:* Beach and Dune Nourishment  
*Document Reviewed:* Single Environmental Impact Report  
*EEA File Number:* 16283  
*NHESP Tracking No.:* 20-29123

Dear Secretary Theoharides,

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the Division) reviewed the *Single Environmental Impact Report* (SEIR) for the proposed beach and dune nourishment projects designed to restore sediment to the eroded coastline and enhance resiliency located within the Towns of Marshfield and Duxbury and would like to offer the following comments.

As identified in our previous comments on the Expanded Environmental Notification Form (EENF), Rexhame Beach is delineated as *Priority and Estimated Habitat* for state-listed species as indicated in the *Massachusetts Natural Heritage Atlas* (14<sup>th</sup> Edition). Rexhame Beach provides habitat for Piping Plover (*Charadrius melodus*) and Seabeach Needlegrass (*Aristida tuberculosa*) both species are state-listed as "Threatened". These species and their habitats are protected pursuant to the Massachusetts Endangered Species Act (M.G.L c. 131A) and its implementing regulations (MESA, 321 CMR 10.00) as well as the Massachusetts Wetlands Protection Act and its implementing regulations (WPA, 310 CMR 10.37, 10.58(4)(b) and 10.59). The Piping Plover is also federally listed as Threatened and protected pursuant to the U.S. Endangered Species Act (ESA, 50 CFR 17.11). This Project will require a direct filing with the Division for compliance with the MESA and rare species provisions of the WPA.

In response to the Division's comments on the EENF, the Proponent has modified the preferred alternative for Rexhame Beach. The Rexhame Beach Preferred Alternative (Alt – 4) consists of beach nourishment with a beach berm elevation set at 10 ft NAVD88 extending 60 ft seaward from the toe of the existing dune then sloping seaward at a slope of 1 vertical: 15 horizontal. This design will continue to support nesting habitat for the state-listed Piping Plover. Additionally, the Proponent has identified in the SEIR that the project will not result in alterations to Seabeach Needlegrass habitat located within the landward

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side of the dune. If there are no impacts to Seabeach Needlegrass habitat, the Division does not anticipate that a botanical survey would be required.

Based upon the information provided within the SEIR and in advance of a formal MESA filing, the Division anticipates this project will require conditions to avoid a prohibited Take of state-listed species. Protection measures for state-listed species are anticipated to include but are not limited to preventing disturbance to state-listed species during the nesting season, maintaining beach and dune slopes suitable for these coastal nesting species, as well as monitoring and protecting suitable nesting habitat for state-listed coastal nesting birds created or enhanced as a result of the nourishment projects.

As our MESA review is not complete, no alteration to the soil, surface, or vegetation and no work associated with the proposed project shall occur on the property until the Division has made a final determination.

If you have any questions about this letter, please contact Amy Hoenig, Endangered Species Review Biologist, at (508) 389-6364 or [Amy.Hoenig@mass.gov](mailto:Amy.Hoenig@mass.gov). We appreciate the opportunity to comment on this project.

Sincerely,




Everose Schlüter, Ph.D.  
Assistant Director

cc: Leslie Fields, Woods Hole Group  
Robert Boeri, CZM  
John Logan, DMF  
Duxbury Board of Selectmen  
Duxbury Conservation Commission  
Duxbury Planning Department  
Marshfield Board of Selectmen  
Marshfield Conservation Commission  
Marshfield Planning Department  
DEP Southeast Regional Office, MEPA



## MEMORANDUM

TO: Kathleen Theoharides, Secretary, EEA  
ATTN: Purvi Patel, MEPA Office  
FROM: Lisa Berry Engler, Director, CZM   
DATE: October 8, 2021  
RE: EEA# 16283 – Towns of Marshfield and Duxbury Beach and Dune Nourishment;  
Marshfield and Duxbury

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The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Single Environmental Impact Report (SEIR), noticed in the *Environmental Monitor* dated September 8, 2021. Based on our review of the SEIR and our familiarity with the initiative as a Coastal Resiliency (CR) Grant funded project CZM provides the following comments.

### Project Description

This project, as proposed, entails beach and dune nourishment at four locations including Rexhame Public Beach, Winslow Ave Beach, and Fieldston & Sunrise Beaches in Marshfield and the Bay Ave/Gurnet Road Beach in the towns of Marshfield and Duxbury. As discussed below, the focus of this CR grant funded project was to identify areas within the two towns where beach and/or dune nourishment were feasible resiliency alternatives. As part of that feasibility analysis a significant amount of site characterization, resource area delineation, shoreline processes modeling and alternatives were taken into consideration. As discussed in the filing and the previously submitted EIR, resiliency alternatives were evaluated at fourteen different beaches along the shoreline of the two towns which included: status quo; enhance and or/enlarge existing seawalls and revetments; offshore breakwaters; beach nourishment; dune nourishment; intertidal boulder fields; offshore reefs; and managed retreat. For sites where beach nourishment was feasible from a coastal processes and engineering perspective, and where habitat impacts could be avoided or minimized, engineering designs were developed, and preferred alternatives identified for this filing.

The suite of project elements will require an Order of Conditions from the Duxbury and Marshfield Conservation Commissions, a Chapter 91 License and 401 Water Quality Certificate from the MA Department of Environmental Protection (MassDEP), U.S. Army Corps of Engineers authorization, and federal consistency decision from CZM.

### Project Comments

As described above, this project is being financially supported, in part, by funding through the CZM CR grant program. In addition to financial support, CZM has been actively involved in the development of this project through our participation in the Project Management Team (PMT) and through pro-active technical assistance to the Towns of Duxbury and Marshfield. As discussed in our comments to the ENF this participation has included, but not limited to review of feasibility considerations such as existing conditions; resource area delineation; coastal processes modeling; assessment of impacts; alternatives description; construction methodologies as they relate to potential



impacts to jurisdictional resource areas; associated performance standards; anticipated coastal resiliency benefits; assistance in convening and facilitating an interagency pre-application meeting to present the project and receive state and federal agency feedback to help informed development of the ENF; participation in a MEPA pre-application meeting; and review of the draft MEPA filings to help ensure that considerations identified throughout the environmental review process have been addressed. The current MEPA filing provides information regarding updated site plans for existing and proposed conditions, levels of protection and design life for nourishment areas, impacts of climate change on frequency of renourishment, mitigation for impacts to rare and threatened species, sediment sampling and characterization, monitoring and maintenance, and proposed mitigation.

In past MEPA review comments for seawall reconstruction projects in the towns of Marshfield and Duxbury, CZM recommended that the towns investigate the potential for beach nourishment initiatives to address issues of shoreline retreat, lowering of the beach elevation, associated issues with coastal resilience and climate change, and the underlying structural stability for coastal protection structures. These considerations have been reflected in previous Secretary's Certificates including the Duxbury Seawalls Phase 1 and Revetment footing Protection Project (EEA# 15957), the location of which is included in this project, referencing the need to add sediment to the beach to supplement the littoral system. CZM commends the Towns of Marshfield and Duxbury for pursuing these recommendations and for taking a comprehensive approach to addressing coastal resiliency and climate change with a focus on nature-based alternatives. CZM will provide continued assistance to ensure any issues identified during the MEPA process are addressed through the local, state, and federal permitting processes.

### **Federal Consistency**

The proposed project will be subject to CZM federal consistency review, in which case the project must be found to be consistent with CZM's enforceable program policies. For further information on this process, please contact, Robert Boeri, Project Review Coordinator, at [robert.boeri@mass.gov](mailto:robert.boeri@mass.gov) or visit the CZM web site at <https://www.mass.gov/federal-consistency-review-program>.

LBE/jb/rh

cc:

Dan Gilmore and Greg DeCesare, MassDEP

Christine Jacek, USACE NED

Katelyn Frew and John Logan, MA DMF

Amy Hoenig, MA DFW Natural Heritage & Endangered Species Program

Ed Reiner, US EPA

Kaitlyn Shaw, National Marine Fisheries Service

Greg Guimond, Marshfield Town Planner

Rod Procaccino, Marshfield Town Engineer

Valerie Massard, Duxbury Town Planner



# The Commonwealth of Massachusetts

## Division of Marine Fisheries

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CHARLES D. BAKER  
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KARYN E. POLITO  
Lt. Governor

KATHLEEN A. THEOHARIDES  
Secretary

RONALD S. AMIDON  
Commissioner

DANIEL J. MCKIERNAN  
Director

October 6, 2021

Secretary Kathleen Theoharides  
Executive Office of Energy and Environmental Affairs (EEA)  
Attn: MEPA Office  
Anne Canaday, EEA No. 16283  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Dear Secretary Theoharides:

The Division of Marine Fisheries (MA DMF) has reviewed the Single Environmental Impact Report (SEIR) by the Towns of Marshfield and Duxbury for the proposed Beach and Dune Nourishment Projects. Proposed beach and dune nourishment would occur at Rexhame Public Beach, Winslow Avenue Beach, Fieldston and Sunrise Beaches, and Bay Avenue and Gurnet Road Beaches. MA DMF provided comments previously to MEPA on November 3, 2020 for this project's Environmental Notification Form (ENF) submission.

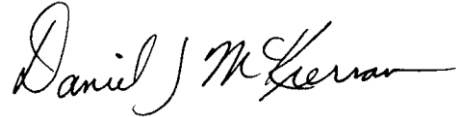
Overall, the additional information provided in the EIR adequately addresses the resource concerns and recommendations for impact avoidance or minimization included in our ENF comment letter. Specifically, the work is proposed to occur outside of the May 1 to November 1 time of year (TOY) restriction period recommended previously to protect shore-zone fishes. Remaining ENF comments related to rocky intertidal habitat. The EIR includes additional survey data from 2021 as well as modeling data that does not project any indirect impacts to neighboring rocky intertidal habitat one year post nourishment. Monitoring data collectively identified nine discrete rocky intertidal areas. The additional monitoring data indicate that five of these areas are ephemeral, including those anticipated to experience direct impacts from nourishment, so current project plans include pre-construction surveys to determine updated rocky intertidal habitat distribution at the time of nourishment. These data are proposed to be used to determine if mitigation is required. If needed, a 1:1 mitigation separated across two regions of the nourishment footprint is proposed.

MA DMF looks forward to working with the applicant further on the proposed monitoring and mitigation plans in the state and federal permitting process.



Questions regarding this review may be directed to John Logan in our New Bedford office at [john.logan@mass.gov](mailto:john.logan@mass.gov).

Sincerely,

A handwritten signature in black ink that reads "Daniel J. McKiernan". The signature is written in a cursive style with a long horizontal flourish at the end.

Daniel J. McKiernan

Director

cc: Duxbury Conservation Commission  
Marshfield Conservation Commission  
Leslie Fields, Woods Hole Group  
Kaitlyn Shaw, NMFS  
Robert Boeri, Rebecca Haney, CZM  
Amy Hoenig, Natural Heritage  
Ed Reiner, EPA  
Tori LaBate, DFG  
Emma Gallagher, Keri Goncalves, DMF

DM/JL/sd