



MEMORANDUM

TO: Rebecca L. Tepper, Secretary, EEA
ATTN: Eva Vaughn, MEPA Office
FROM: Alison Brizius, Director, CZM
DATE: September 12, 2024
RE: EEA# 16464 – Hingham Waterfront Resiliency Project; Hingham

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Environmental Notification Form (ENF), noticed in the *Environmental Monitor* dated August 23, 2024. Based on our review of that filing, participation in the MEPA Consultation Session held on September 6, 2024, and our familiarity with the project through our on-going participation in the Project Management Team (PMT) as a Coastal Resilience Grant Program funded initiative, CZM provides the following comments for consideration.

Project Description

As described in the ENF, the proposed project entails a suite of actions to improve the coastal resiliency of the Hingham Waterfront and back-shore areas including Hingham Bathing Beach, the boat ramp parking lot and boat ramp, Town Wharf, the Home Meadows Culvert, the POW/MIA Park and Barnes Wharf. As part of this initiative, a site-specific analysis of waterfront design water levels and wave conditions was developed, which was provided as Attachment 9 in the filing. The stated goal of the resiliency approach is to eliminate storm tide pathways, as depicted in the ENF, through 2050 with the ability to incrementally adapt to predicted 100-year flood conditions in 2070. Actions to achieve 2050 planning horizon goals include: construction of a Coastal Dune with a crest elevation of EL 11 North American Vertical Datum of 1988 (NAVD88) and crest width of 25 feet (ft) at Hingham Bathing Beach and the boat ramp parking lots; elevating and contouring turfed areas adjacent to Town Wharf to the EL 11 NAVD88 (to match adjacent proposed grades to avoid creating flood pathways), relocation of the existing Harbormaster office to a more landward location to the east of the existing boat ramp and out of the existing velocity zone, and increasing the elevation of the solid filled Town Wharf to elevation EL 12 NAVD88; installation of a new tide gate structure in an existing vault associated with a 60-inch culvert between Hingham Harbor and the Home Meadows Marsh; replacing a 200-ft section of dilapidated granite block seawall along POW/MIA Memorial Park sloped armor stone revetment with a 1:2 (vertical:horizontal) slope with a crest elevation of EL 13 NAVD88; and increasing the elevation of the solid filled Barnes Wharf to El 12 NAVD88. Temporary sheet pile cofferdams seaward of the proposed structures at Town Wharf, the POW/MIA Memorial Park, and Barnes Wharf will be required for the construction of the new footings and pile foundations. The temporary cofferdams will be constructed ~4 feet seaward of the existing seawall toe and will be removed at the end of construction. The proposed seawall will be no further seaward than the existing seawall. The proposed improvements to municipal infrastructure also take into consideration privately owned waterfront properties and planned MassDOT improvements to Route 3A (Otis Street) in the development of a comprehensive resiliency strategy.

As described in the ENF, the project will result in (cumulatively) 12,580 square feet (sf) of permanent and 4,300 sf of temporary impact to Coastal Beaches, 28,665 sf of permanent impact to Coastal Dune, 1,259 linear feet (lf) of permanent impact to Coastal Bank, 4,160 sf of permanent impact



to Land Containing Shellfish, and 174,907 sf of permanent impact to Land Subject to Coastal Storm Flowage (LSCSF). The above-listed impacts include augmentation of coastal areas such as Coastal Dune and reductions in LSCSF through actions that will reduce flooding to the waterfront and back-shore areas.

Project Comments

As identified above, project elements include installation of Coastal Dune fronting the Bathing Beach and Boat Ramp parking lots. The dunes should be vegetated in order to stabilize the underlying dune material and the dune material should be characterized and sourced to be compatible with the native material. A monitoring and maintenance plan should be developed, including shore parallel transects, to periodically assess the status of the dune and fronting beach. Transect measurements should be taken annually, at a minimum, and should include provisions for supplemental evaluation following significant storm events. The maintenance plan should identify maintenance thresholds that will trigger the addition of compatible material to restore the design profile in order to maintain the designed resiliency function and value of the dunes.

Wharf reconstruction and replacement of granite seawalls with a sloping revetment will require work to take place below mean high water. In order to avoid turbidity issues associated with (re)construction, a cofferdam will be utilized, offset from the structures by approximately 4 ft, to isolate the work area to allow activities to take place in the dry. The Massachusetts Division of Marine Fisheries (MA DMF) has identified Hingham Harbor as habitat for Winter Flounder (*Pseudopleuronectes americanus*). Therefore in-water work will require a Time of Year (TOY) restriction between February 15 and June 30 of any year, acknowledging that if the proposed cofferdam is installed prior to the beginning of the TOY then in-the-dry work landward of the cofferdam may proceed during the TOY. The proponent should consult with MA DMF regarding this consideration.

Project elements include the relocation of the Hingham Harbormaster facility at Town Wharf and the building and pavilion at Barnes Wharf. When reconstructed, the projects should be designed to conform to the appropriate building code. The American Society of Civil Engineers Flood Resistant Design and Construction publication indicates that buildings and structures that contain essential services necessary for emergency response and recovery fall within Flood Design Class 4 which should be built to a higher flood resiliency standard. The proponent should evaluate this document and ensure that the proposed structure meets the correct standard for its intended use. If relocation and reconstruction of the structures take place subsequent to the proposed resiliency actions, the town may wish to apply for a Letter of Map Revision as this may reduce the mapped flood zones and associated building code requirements for construction in flood prone areas.

The ENF also describes the installation of a new tide gate structure within an existing vault associated with a 60-inch culvert between Hingham Harbor and the Home Meadows Marsh in order to address the concern of flooding of the downtown area from the marsh from higher storm surge tides from projected sea level rise. The proponent should perform hydrodynamic modeling of the harbor-culvert-marsh system to determine at what sea level rise threshold flooding of the downtown area via the culvert will become an issue. This will help to prioritize the implementation of the sequence of the actions identified in the filing and inform the operation of the tide gate to avoid any negative impacts to the Home Meadow Marsh wetland system. As discussed during the MEPA consultation meeting, to develop and calibrate an accurate model, in-situ water levels in the harbor and marsh will need to be obtained to quantify the hydraulic capacity of the culvert. The duration of this data should include a full lunar tidal regime. In the past, armor stone from the adjacent wharves

has been entrained into the 60-inch culvert thereby reducing its hydraulic capacity. The proponent should inspect the culvert prior to collection of in-situ water level data to confirm that no obstructions are present to accurately characterize the hydraulics of the system. As part of the environmental review and permitting of this project element a Tide Gate Operation and Maintenance plan should be developed which articulates the specifics of how the tide gate will be operated to achieve flood prevention goals without negatively impacting the sensitive and ecologically valuable Home Meadows salt marsh ecosystem. This plan should be made enforceable by including it as a Special Condition of the relevant local, state, and federal permits for the project.

As previously indicated, the development of this project was funded, in part, through a CZM Coastal Resiliency grant and CZM continues to participate in the ongoing PMT for this initiative. CZM would like to use this opportunity to offer our continuing support to help address and resolve any issues identified during the MEPA review as the project continues to the permitting process.

Federal Consistency Review

This project may be subject to CZM federal consistency review, which requires that the project be found to be consistent with CZM's enforceable program policies. For further information on this process, please contact Sean Duffey, Project Review Coordinator, at sean.duffey@mass.gov or visit the CZM website at <https://www.mass.gov/federal-consistency-review-program>.

TS/jb/im

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