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Introduction

This application for Category B Assent is submitted by the Town of Portsmouth, Department of Public Works (Applicant), for review by the RI Coastal Resources Management Council (CRMC) to seek authorization for the construction of a stone revetment to stabilize a severely eroded Coastal Bluff on Prudence Island in Portsmouth, RI. Work is proposed along the seaward side of an approximate 600-foot segment of Narragansett Avenue, between its intersection with Alice Avenue (1010 Narragansett Avenue) and its intersection with Edda Avenue (1070 Narragansett Avenue). The construction of the revetment will comprise the “Project” (see general locus map, **Figure 1** in **Appendix A**). This narrative serves as the technical document to accompany the CRMC Category B Assent Application and describes the proposed Project activities, environmental effects, and compliance with the RI Coastal Resources Management Program (CRMP) at 650-RICR-20-00-1.

1.1 Project Purpose, Need, and Overview

Narragansett Avenue serves as the primary thoroughfare on the most densely populated coastline of Prudence Island. Wave damage has eroded the Coastal Bluff (CRMP § 1.2.2(D)) along Narragansett Avenue, between Alice and Edda Avenues, creating unstable, exposed soil escarpments that now limit the bluff’s ability to protect Narragansett Avenue from wave energy associated with future storms (See **Photos 1** and **2** in **Appendix B**). Under current conditions, this segment of Narragansett Avenue is at a risk of failing if construction of structural shoreline protection does not occur.

The Applicant proposes to construct a riprap revetment composed of native stone along the entire face of the subject segment of Coastal Bluff. Work will be accomplished by removing the existing scattered stones and debris, placing large toe stones, and installing large stone from the slope toe to the embankment crest. Riprap selected for the construction will typically be native R-8 (15 – 42 inch range). The completed wall will maintain the same seaward projection, such that expansion of the existing rudimentary revetment toe is not proposed.

In summary, Project activities will involve the following:

- Removal and re-organization of existing stone.
- Installation of geotextile fabric and stone bedding.
- Installation of large (R-8) riprap.
- Installation of smaller stone to be chinked in voids between larger stones.

Construction equipment will consist of one or more excavators used to remove and place stone, in addition to dump trucks that will both deliver materials used to construct the revetment and



temporarily store excavated material prior to reuse. The seaward limit of disturbance will be confined to the existing Coastal Bluff (see **Figure 2** in **Appendix A** and Project Work Plan presented as **Figure 9** in **Appendix A**).

The Project was initially submitted to CRMC as a Maintenance Certification Request on January 18, 2024, under the assumption that the Coastal Bluff was an existing stone revetment comprising Manmade Shoreline (CRMP § 1.2.2(F)). CRMC noted that proposed work would instead represent new structural shoreline protection on Coastal Bluff along Type 2 Waters, which would require a Category B Assent Application, and that the existing rudimentary stone protection was never authorized by CRMC. Given the need to conduct the work immediately to prevent the potential loss of portions of Narragansett Avenue, CRMC ultimately granted a Maintenance Assent on April 15, 2024 under CRMC File No. M2024-01-097 (**Appendix C**). The Assent stipulated that the Town must file a Category B Assent application and receive a Category B Assent within one calendar year of the date of issuance of the Maintenance Certification Assent. Work was completed on July 16, 2024, and a plan prepared by East Coast Construction, dated August 9, 2024 and included as **Appendix D**, reflects the as-built condition.

1.2 Property Ownership

Access and staging for the proposed revetment work will occur within the Town roadway right-of-way (ROW), and work will occur on three contiguous land parcels identified as Town of Portsmouth Plat 75, Lots 69 and 70, and Plat 77, Lot 109. Lots 69 and 109 are owned by the Homestead Plat Improvement Association, and Lot 70 is owned by the Prudence Conservancy. Proof of property ownership provided by the Town of Portsmouth's Assessor's Office for each parcel accompanies the application form at the front of this document. Letters of Support from representatives of the Homestead Plat Improvement Association and the Prudence Conservancy authorizing work on the parcels are included directly after the proof of ownership letters.

1.3 List of Adjacent Property Owners (Relative to Category B Work Activities)

Although the Applicant understands that property owners on the opposite side of abutting streets typically are not included in the list of abutters, properties on the west side of Narragansett Avenue have been included in case CRMC staff decide to include them in any forthcoming notice, given the proximity of proposed work and the use of Narragansett Avenue for equipment access and temporary staging. A complete list of adjoining property owners is presented in **Appendix E**, subheaded by "Direct Abutters" and "Landowners West of Narragansett Avenue." Owner identification and contact information are provided for each parcel, as are map insets. Parcel and landowner information was obtained from the Town of Portsmouth Tax Assessors' on-line mapping database through the Axis GIS web portal.





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Permitting Requirements, History, and Overview

As noted in the preceding section, the Project was initially submitted as a Maintenance Certification Request, but a stipulation of the Maintenance Certification Assent issued on April 15, 2024 required the subsequent submission of a Category B application, based largely on CRMC's determination that the shoreline feature was a Coastal Bluff and that the existing, rudimentary shoreline protection was never authorized. A summary of the permitting timeline to date is as follows:

- › January 18, 2024 - Initial application submission to CRMC as a Maintenance Certification Request
- › February 28, 2024 – CRMC issuance of a "Notice of Deficient Application" based on the coastal feature classification and regulatory status of existing shoreline protection.
- › April 15, 2024 – CRMC issuance of a Maintenance Assent, with the stipulation that a Category B Assent application be filed and that a Category B Assent be obtained within one year of the Maintenance Assent issuance.
- › May 1, 2024 – Field meeting between CRMC permitting staff and Applicant to review existing conditions and establish project limits prior to construction commencement.

2.1 Specific Permit Requirements

The Project is subject to the CRMP, and this CRMC Category B Assent Application is being filed for Project activities proposed on a coastal feature and within CRMC's regulated "200-foot Area Contiguous to Shoreline Features" (200-foot Contiguous Area). The Table 1 Activity Matrix at CRMP § 1.1.5(A) indicates that stabilization of Coastal Bluffs adjacent to Type 2 Waters may be reviewable as a Category B application. The Project additionally lies within the jurisdictions of CRMC's Narragansett Bay Special Area Management Plan (Bay SAMP) and the Shoreline Change SAMP (Beach SAMP). The requirements and guidance provided in these SAMPs are discussed in Section 2.2.2.1 below.

The complete Category B Assent Application comprises a cover letter, the CRMC Assent Application Form, Proof of Property Ownership, Landowner Letters of Support, Building Official and Zoning Officer Form, and this application narrative containing mapping, site photographs, the original maintenance assent, list of abutters, and a separately bound as-built site plan.

All work will occur landward of the Mean High Water (MHW) Line and federal High Tide Line, such that applications to RIDEM for State Water Quality Certification and the US Army Corps of Engineers for



authorization under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act will not be required.

2.2 Other Authorities and Jurisdictions

2.2.1 Local Regulatory Requirements

In compliance with CRMP SS 1.3.1(C)(6)(a), the Applicant has included the completed and signed CRMC Building Official and Zoning Officer form as an integral component of this Category B application. The signed form and submission of an application to CRMC, inclusive of the CRMC form, is presumed to satisfy requirements of the Town of Portsmouth Zoning Ordinance. The Project does not include activities that require local approvals, as defined under CRMP § 1.3.1.

2.2.2 State Regulatory Requirements

2.2.2.1 CRMC Special Area Management Plans

The Project Area falls within the boundaries of CRMC's Bay SAMP. However, the Project is not expected to propose any elements that would be considered contrary to the current goals of the Bay SAMP.

The Beach SAMP requires applicants to address the coastal hazards associated with climate change. In accordance with CRMP § 1.1.6(l), certain new projects subject to CRMC jurisdiction require a coastal hazard analysis to be performed and included with the Category B Assent Application using guidance provided in the Beach SAMP. However, based on a May 8, 2024 conversation between the Applicant and CRMC permitting staff, a coastal hazards analysis will not be required for the Project.

2.2.2.2 Rhode Island Pollution Discharge Elimination System (RIPDES) Program

Construction activities will cumulatively disturb less than one acre of soil, such that permitting under the RIPDES General Permit for Stormwater Discharges Associated with Construction Activities (CGP) will not be required.

2.2.2.3 Rhode Island Natural Heritage Program

A review of RIDEM's Environmental Resource Map indicated that a Natural Heritage polygon for special-status species was present west of, but not within, the Project Area (see **Figure 3** in **Appendix A**). An information request with RIDEM on May 30, 2024, revealed that the polygon was associated with Bayonet-grass (*Bolboschoenus maritimus* ssp. *paludosus*). This species is listed as "State Concern" and grows in saltmarshes and in loose sand of coastal strands. These habitat features are not present within the work area and were not observed near the Project site. The species was recorded in 2016 in a saltmarsh ±0.30 miles northwest of the Project site.





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3

Project Setting and Existing Environmental Conditions

3.1 Project Area

The general Project Area abuts Narragansett Avenue and its eastern shoulder, from its intersection with Alice Avenue northward to its intersection with Edda Avenue (see **Figure 2** in **Appendix A**). The Limit of Disturbance will be restricted to the existing Coastal Bluff and road shoulder, with construction access and staging confined to Narragansett Avenue within the 200-foot Contiguous Area. No work is proposed seaward of the Coastal Bluff toe, and all work will occur landward of the MHW line.

3.2 CRMC Water Type Classifications

CRMC designates the waters of Narragansett Bay along the proposed work area as Type 2 Low Intensity Use Waters (CRMP § 1.2.1.C), which include “waters in areas with high scenic value that support low intensity recreational and residential uses” including “seasonal mooring areas where good water quality and fish and wildlife habitat are maintained.” **Figure 4** in **Appendix A** shows the CRMC Water Types, as depicted on CRMC’s Map of Water Type Classifications for Prudence Island in Portsmouth.

3.3 Surface Waters

The work area abuts a section of Narragansett Bay identified as the East Passage (Waterbody ID RI0007029E-01A) and is considered an estuary according to the RI Water Quality Regulations (250 RICR 150-05-01). Its water quality classification is listed as being suitable for primary and secondary contact recreation, fish and wildlife habitat, and fish and shellfish consumption (Water Classification SA (**Figure 5** in **Appendix A**)). The East Passage is assigned Impairment Category 2, meaning that some uses are fully supported, but more data are needed for other designated uses. East Passage is not listed in § 1.28 of the RI Water Quality Regulations as a Special Resource Protection Water (SRPWs).



3.4 Groundwater

The RI Groundwater Quality Rules (250-RICR-150-05-3) and RIDEM Environmental Resource Map identify groundwater underlying areas within the Project Area as Groundwater Classification GAA (**Figure 6 in Appendix A**). The GAA designation indicates that groundwater has been “designated to be suitable for public drinking water use without treatment and which are located within... groundwater reservoirs... wellhead protection areas...” or “...groundwater dependent areas that are physically isolated from reasonable alternative supplies and where the existing groundwater supply warrants the highest level of protection” (250-RICR-150-05-3 § 3.9.A.1).

3.5 Soils

The Natural Resources Conservation Service (NRCS) web soil survey identifies three soil types within, or adjacent to, Project limits (see **Figure 7 in Appendix A**). Soil units for the work area are mapped as Canton and Charlton fine sandy loams (CeC), Newport silt loam (NeB), and Beaches/cobble (Baz). The Canton and Charlton soil units and Newport soil unit are classified as well drained with low runoff potential, and the Beaches unit is identified as having negligible runoff potential.

3.6 Special Flood Hazard Area Zones

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 44005C0081J, effective September 9, 2013, depicts Special Flood Hazard Area (SFHA) zones for nearly all of the Project Area (see **Figure 8 in Appendix A**). The portion of Narragansett Bay adjacent to the Project area is mapped as being associated with a coastal SFHA Zone with a velocity hazard from wave action (Zone VE) having a base flood elevation (BFE) of 17 feet NAVD88. A small section of the Project Area at the intersection of Narragansett and Alice Avenues is mapped as being associated with a Non-Special Flood Hazard Area (NSFHA) zone (Zone X).

3.7 CRMC Regulated Shoreline Features

Coastal features and the 200-foot Contiguous Area are regulated by CRMC. Coastal Bluff (as defined in CRMP § 1.1.2(A)(27)) characterizes the shoreline within the Project Area. Coastal Beach (as defined by CRMP § 1.1.2(A)(25)) abuts the Coastal Bluff to the seaward side of the Project but is not within the Project Area. The inland edge of the coastal feature is the crest of the Coastal Bluff.

3.7.1 Coastal Headlands, Bluffs, and Cliffs (CRMP § 1.2.2.D)

The Coastal Bluff runs parallel with Narragansett Avenue and is the primary coastal feature associated with the revetment construction. It is present immediately adjacent to the east shoulder of Narragansett Avenue. The Bluff is heavily eroded due to storm and wave action, and scattered stone and yard trimmings have been dumped on and along the Bluff (see photos in **Appendix B**). The erosion caused by severe wave action has significantly scoured and incised the Bluff and appears to be in imminent danger of migrating landward to Narragansett Avenue and potentially jeopardizing its substructure or collapsing the road surface. Vegetation along the eastern shoulder of Narragansett Avenue and the top of the Bluff is predominantly composed of mown grass, Japanese knotweed



(*Reynoutria japonica*), early goldenrod (*Solidago juncea*), common mugwort (*Artemisia vulgaris*), wild carrot (*Daucus carota*), Japanese honeysuckle (*Lonicera japonica*), Asiatic bittersweet (*Celastrus orbiculatus*), and multiflora rose (*Rosa multiflora*), with a light interspersed of staghorn sumac (*Rhus typhina*). Five wooden staircases were present over the Bluff within Project limits, evidently constructed without CRMC coastal assents (CRMC staff, *pers. comm.*) to allow access to the shoreline from Narragansett Avenue (see **Photos 3** and **4** in **Appendix B**).

3.7.2 Coastal Beaches (CRMP § 1.2.2.A)

Coastal Beach is not located within the Project limits, but it abuts the toe of the Coastal Bluff for the length of the Project area. It extends from the Bluff toe, or existing stone revetment, seaward through the intertidal zone. The beach was observed to typically comprise coarse sands, gravelly/pebbly substrates, and ramps of slipper shells (see **Photo 5** in **Appendix B**). The entirety of the beach appeared to be unvegetated at the time of observation in May and July 2024 (see **Photos 4** and **6** in **Appendix B**).





4

Proposed Project Activities and Environmental Effects

The Project components discussed below will occur on shoreline features and within the 200-foot Contiguous Area and, therefore, will occur within CRMC's jurisdiction as regulated under the CRMP. For reference, the limits of Project activities described below are reflected in **Figures 2 and 9 of Appendix A**. CRMP regulatory aspects of the proposed Project are discussed in Chapter 5.

4.1 Project Access

As indicated previously, vehicle and equipment access to the Project work area will occur via Narragansett Avenue. Narragansett Avenue and its easterly grassed shoulder will be used for staging and positioning heavy construction equipment. Depending upon excavator reach to gather loose stones currently comprising the rudimentary revetment, short-term access may need to occur on uppermost portions of the beach along the toe. Any such access would be with tracked machinery, would be above the MHW line, and would occur along a beach segment where vegetation was observed to be absent.

4.2 Revetment Construction

The need for early site preparation is not anticipated for work on the stone revetment, aside from removal of the existing timber stairs that currently provide access to the Coastal Beach from Narragansett Avenue. The existing scattered stone along the Coastal Bluff will be gathered, re-organized, and/or removed and retained for re-use, as appropriate. A shallow (12-inch) pocket will be excavated to accommodate bedding under the revetment. Geotextile filter fabric will be installed within the excavation, and FS-3 bedding will be laid over the fabric at a 12-inch depth. Once the bedding and fabric are installed, R-8 riprap stone (15 to 42-inch diameter) will be placed to form the revetment proper (see cross-section detail as **Figure 10 in Appendix A**). Smaller stones will then be used to fill in the voids between the large stones. Representative views of the partially constructed revetment as of July 2, 2024 are shown in **Photos 6, 7, and 8 in Appendix B**. Any existing stone within the footprint of the authorized revetment and not re-used as part of the Project will be lawfully removed from the Project site. Unanticipated disturbance to the adjacent Beach and Bluff beyond the authorized revetment limits will be restored to pre-disturbance conditions.



In compliance with CRMC guidance, stone will be placed, not dumped, to form a low-profile armoring effect (see **Photo 9** in **Appendix B**). The crest of the completed revetment will not exceed the elevation of the top of the existing Coastal Bank, and the seaward projection of the revetment toe will remain no further seaward than the toe of the existing Bluff and rudimentary revetment. The revetment slope will not exceed a steepness of 1H(Horizontal):1V(Vertical) but is expected to exhibit a minimum slope of 2H:1V. Unlike the former Bluff and rudimentary revetment, the completed revetment will provide a relatively uniform slope. The completed revetment will be low in height and profile and is expected to accommodate foot access to the shoreline from Narragansett Avenue. The Applicant considered incorporating stone steps into the revetment but ultimately dismissed this alternative due to the inability to comply fully with building codes.

Adverse effects to the coastal shoreline are expected to be insignificant. All work will occur landward of the Mean High Water line and is to remain within approved project limits. Any vegetation present along upper portions the Bluff will be removed where intermittently present, but it largely comprises low growing, invasive, nonnative vines and shrubs and is believed to offer limited screening or wildlife habitat value. Construction of the revetment will eliminate the soil gullyng and sloughing that characterize the Bluff presently, and the completed revetment will prevent future erosion and slope failure due to wave action in storm events.

