FRENGINEERING GROUP

Fairbanks Engineering Corporation
Geotechnical & Marine Engineers

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CATEGORY "B" APPLICATION AMENDMENT/MODIFICATION FOR
CRMC ASSENT A2023-04-007 & APPLICATION 2023-10-015
STRUCTURAL SHORELINE PROTECTION & RESILIENCY AGAINST SEA LEVEL RISE

OWNER: *City of East Providence*
LOCATION: Crescent Park, 701 Bullocks Point Ave., East Providence, RI

CRMC APPLICATION – PROJECT NARRATIVE

Description of Work:

The City of East Providence (The Applicant) proposes to repair significant storm damage and construct a new revetment along an approximate 810 ft section of shoreline at Crescent Park. This narrative describes the construction proposed by the City of East Providence and serves as an amendment/modification to existing Assent 2023-04-007 and the pending Assent Application 2023-10-015, currently under review. As requested by CRMC, this also includes addressing the Special Exception criteria as a result of the proposed design changes outlined herein.

The slope supports land at Crescent Park, which has many pedestrian recreational uses on any given day. The majority of the slope was considered heavily vegetated and ranged in steepness from approximately 1.5H:1V to 1.7H:1V, but the December 23, 2022 storm caused significant damage to the existing slope. The damage from the 2022 storm included significant scour of the vegetated earth slope (up to 10 feet horizontally and 15 feet vertically), resulting in the loss of substantial vegetation ranging from small plantings to large/mature trees and the exposure of the highly erodible outwash sand located below the vegetation. Additional erosion of the exposed sand slope, up to several feet, occurred during the three large storms between December 18, 2023, and January 13, 2024. These storms caused additional failure of slope vegetation, including large trees that are now lying on the beach. Many of the trees remaining on the slope are situated such that they are likely to fall onto the beach in the near future. The beach area below the slope is used by pedestrians daily, and as a result, the current slope condition is considered a hazard. The property is located along CRMC Type 2 waters on the east shore of the Providence River/Narragansett Bay.

To protect the shoreline, park land, and persons using the park, the Applicant seeks to construct a shoreline protection system along the park's southern end which includes: re-grading the existing slope and relocating the toe approximately 30 ft landward from the location of the toe prior to recent storm damage, removal of existing slope vegetation as needed for safety during and after construction, and the construction of a stone revetment system along the shoreline with a vegetated slope incorporating an

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erosion control mat and coir logs above the revetment. The work includes reconstructing the existing wooden stairs at a new location to the north to maintain access to the beach at the park's southern end. A similar system was recently constructed along the northern portion of the park's shoreline. The relocation of the toe of the slope 30 ft landward is planned as a managed shoreline retreat while allowing the Applicant to expand the existing usable beach area in front of the slope. The Applicant is currently in discussions with the State of Rhode Island about making Crescent Beach a certified swimmable beach in the near future. To make the park a swimmable beach, the Applicant intends to construct a public bathroom facility. Construction of the new bathroom structure is to be submitted under a separate application cover in the future. This project will allow the Applicant to expand the usable beach area while protecting their heavily used park/green space above the slope. The revetment is designed for the FEMA 100-year (1%) storm wave and storm surge. Relocating the toe of the slope will result in the revetment being located several feet above the mean high water line, limiting how often the system will experience wave action. The intent of the shoreline protection system is to provide protection against significant storm/erosion events and not throughout the daily tide cycle. Ideally, this will limit the structure's impact on the beach and surrounding properties. The work will generate excess soils, which the Applicant plans to stockpile at one of their municipal yards to the extent feasible. The stockpiled sand will be used to replenish Crescent Beach after significant erosion events, as needed.

The repaired shoreline would provide better resiliency against sea level rise. Specifically, the proposed construction intends to move the toe of the slope approximately 30 feet inland of the toe previously approved by CRMC under Assent 2023-04-007 and as shown in the plans for Assent Application 2023-10-015, which is currently under review. Based upon projections of sea level rise as presented in CRMC's *STORMTOOLS* over the design life of the proposed shoreline protection system, the beach currently located at the site properties would be severely diminished under the one-foot sea level rise model and would be completely submerged under the three-foot seal level rise model. As such, the proposed slope relocation is an effort by the Applicant to maintain public access to and use of its park and the beach located therein under more severe sea level rise predictions. The landward relocation of the coastal bluff will also address the trends of shoreline change along the site, which have seen considerable landward movement of the high-water line over the period from 1939 to 2003 between approximate transects 1249 and 1251, as shown on the map *Narragansett Bay, Rhode Island: East Providence, Bullock Cove*.

The property is recorded as Assessor's Plat Map 414, Block 13, Lots 007, 008, and 008.1 in the Land Evidence records of East Providence, Rhode Island, at the City Hall. Photos of past and present conditions and use of the facility are included with the application.

The proposed activity is allowed per Table 1 of the CRMC Redbook as a Category B Application with a Special Exception. The work will be contained within the applicant's property.

Project Specifics:

Water Use Category:	Type 2
Shoreline Feature:	Headland Bluff
Water Use Map:	Cranston, Providence, and East Providence (Metro Bay – south)
Lot Size:	4.54 +- Acres
Setback (Section 1.1.9):	None
Alteration or Activity:	Construct a shoreline protection system to repair recent storm damage and prevent further slope destabilization
Project Footprint:	44,000 +- SF
Flood Zone:	VE (EL. +20) (along slope area), X upland of slope (FIS no. 44007CV001D, dated July 19, 2023)
Base Flood Elevation:	EL. +20 ft NAVD88 (Stillwater EL. +12.6 ft NAVD88)
Fill to be Deposited:	No fill will be deposited in the waterway
Estimated Design Life:	30-years

Section 1.1.8 – Special Exception:

A. *A special exception may be granted to prohibited activities to permit alterations and activities that do not conform to a Council goal for the areas affected or which would otherwise be prohibited by the requirements of this document only if and when the applicant has demonstrated that:*

1. *The proposed activity serves a compelling public purpose which provides benefits to the public as a whole as opposed to individual or private interests.*

Response: The assent sought under this application is intended to preserve and protect the public infrastructure (park green space, paths, parking, road, utilities, etc.) and sand beach area associated with Crescent Park. Crescent Park is a heavily used public park that provides access to many pedestrian recreational activities on any given day (walking, biking, sightseeing, fishing, sunbathing, kayaking, etc.). The park currently provides public waterfront access to the existing beach and the Providence River via two sets of timber stairs and a handicap ramp. Preservation of this access is of a compelling nature from the perspective of public safety and public convenience for general accessibility to recreational activities and the existing waterfront areas. In addition to the existing park uses, there are ongoing discussions with the State of Rhode Island concerning making the beach at Crescent Park a certified swimmable beach. At this time, the Providence River is considered an "impaired water body" by the Rhode Island Department of Environmental Management (RIDEM), and primary contact recreation (i.e., swimming) is not allowed. Based on the information provided in RIDEM's 'State of Rhode Island 2022 Impaired Waters Report', dated Final March 2022, the anticipated TMDL schedule for the Providence River is 2025. RIDEM's report indicates that 'Compliance with Consent Agreement for CSO abatement and TMDLs on major tributaries expected to negate the need for TMDL.' It is understood that Crescent Park Beach is not currently a swimmable beach, but the proposed design accounts for the future intended public use of the beach by relocating the toe of the existing bluff approximately 30 ft inland from the previous toe in order to widen the usable beach area and create areas of the sand beach that will maintain pedestrian access throughout the normal tide cycle (i.e., newly created beach space above the mean high water line). In order for the park to become a swimmable beach, the City

is required to provide public restroom facilities. The shoreline protection system will also serve as protection for the new bathroom structure in the future.

The activity must be one or more of the following:

a) *An activity associated with public infrastructure such as utility, energy, communications, transportation facilities, however, this exception shall not apply to activities proposed on all classes of barriers, barrier islands or spits except as provided in 1.2.2(C)(4)(i);*

Response: Not applicable.

b) *A water-dependent activity or use that generates substantial economic gain to the state; and/or,*

Response: While we do not consider the application to represent a water-dependent activity, this project will assist in preserving Crescent Park Beach. If Crescent Park Beach is certified as a swimmable beach, it is likely that the City and/or State can collect a beach access fee from visitors. It will also likely increase revenues seen by local businesses in the area due to the additional visitors expected. Allowing for the relocation of the toe of the existing bluff will create more usable beach space and increase the capacity of visitors that the beach/park can handle.

c) *An activity that provides access to the shore for broad segments of the public.*

Response: The proposed bluff relocation and shoreline protection system is intended to increase the usable space on the sand beach located along the Providence River at Crescent Park while simultaneously stabilizing the existing bluff and protecting the heavily used park area/green space above the bluff. The proposed design will help provide safe access to the shore for both park and beach users. The existing bluff is considered unstable and will likely continue to erode at the increased pace seen over the last two years, which is creating a slope stability concern and a potential danger to members of the public using the area above the slope and along the toe of the slope at the beach level. The proposed design will also remove the trees and vegetation on the existing failed slope that currently pose a safety risk to both beach and park users.

2. *All reasonable steps shall be taken to minimize environmental impacts and/or use conflicts.*

Response: The proposed bluff relocation and shoreline protection system is intended to be a form of shoreline retreat while simultaneously stabilizing the bluff to preserve safe public shoreline access. The system is intended to protect the park during large storms with considerable storm surges resulting in significant erosion. However, it will be located inland from the mean high water line; therefore, it will not experience daily wave action throughout the typical tide cycle, ideally minimizing any environmental impacts.

Relocating the toe of the existing bluff will widen the existing usable beach area, creating more recreational space for the public in front of the slope. Relocation of the bluff will eliminate some usable park space behind the bluff, but Crescent Park is a relatively large park, and we do not believe the loss of park space required to gain beach area will negatively impact the park or its users. Work on the project is proposed to occur during the late fall to early spring when public use of the park is at a minimum. Work will also be limited to the park's southern end, leaving full use of the northern half throughout construction.

Sediment and erosion control measures will be installed and maintained using best management practices to ensure no negative impacts occur during the construction phase of the project and thereafter, if applicable. All erosion controls and sediment containment measures will be removed when the construction phase has been completed, and any required site stabilization measures have been installed.

Additionally, the existing nature-based infrastructure system consisting of marsh sills at the site's southern end will be protected throughout construction. The City of East Providence also intends to expand this system to the north, approximately 140 linear feet. The permit application for the expansion will be submitted under a separate cover in conjunction with the Rhode Island Chapter of The Nature Conservancy (TNC). The original system was constructed for TNC, and for funding purposes, they plan to oversee the expansion of the system.

3. *There is no reasonable alternative means of, or location for, serving the compelling public purpose cited.*

Response: Public parks and shoreline access are limited throughout the state. Relocating the public shoreline access and park space is not feasible, and eliminating the public shoreline access and park space at Crescent Park would be a disservice to the public. The existing bluff was previously heavily vegetated, which provided a level of erosion protection. The majority of this vegetation was lost during the December 2022 storm, resulting in the existing highly erodible sand becoming exposed. Since the December 2022 storm, several additional feet of erosion has occurred on the exposed slope, specifically during the three winter storms that occurred between December 2023 and January 2024. In its current state, the existing bluff is considered a hazard to the public with unstable soil slopes and failing trees. The slope is eroding at a substantially faster rate than is currently predicted for the site via both wave action/storm surges and surface runoff from rain events. Due to the highly erodible nature of the slopes soils, we anticipate continued erosion at the high rate currently being observed. Leaving the slope unprotected will eventually result in the loss of the park, Bullocks Point Avenue, and the private residences to the south of the park.

B. *Special exceptions may be granted only after proper notice in accordance with R.I. Gen. Laws Chapter 42-35, the Administrative Procedures Act, a public hearing has been held. And the record of that hearing has been considered by the full Council. The Council shall issue a written decision including findings of fact and conclusions upon which the decision to issue a special exception is based.*

Response: Noted

C. *In granting a special exception, the Council shall apply conditions as necessary to promote the objectives of the Program. Such conditions may include, but are not limited to, provisions for:*

1. *Minimizing adverse impacts of the alteration upon other areas and activities by stipulating the type, intensity, and performance of activities, and the hours of use and operations;*
2. *Controlling the sequence of development, including when it must be commenced and completed;*
3. *Controlling the duration of use or development and the time within which any temporary structure must be removed;*
4. *Assuring satisfactory installation and maintenance of required public improvements;*
5. *Designating the exact location and nature of development; and,*
6. *Establishing detailed records by submission of drawings, maps, plots, or specifications.*

Response: The Applicant will provide the necessary drawings, maps, plots or specifications as required by the Council

Section 1.3.1(B) – Filling, Removing, or Grading of Shoreline Feature:

Section 2. Prohibitions:

a) *Filling, removing, or grading is prohibited on beaches, dunes, undeveloped barrier beaches, coastal wetlands, cliffs and banks, and rocky shores adjacent to Type 1 and 2 waters unless the primary purpose of the alteration is to preserve or enhance the feature as a conservation area or natural buffer against storms.*

Response: The existing shoreline is considered a headland bluff. Though bluffs are not specifically listed in the prohibitions for filling, removing, and/or grading, it is understood that relocating the toe of the existing bluff will create a significant change to the existing shoreline feature. The Applicant is requesting a special exception to remove a significant portion of the existing bluff and construct a shoreline protection system. Please refer to the above sections for additional information related to the special exception.

b) *Filling, removing, or grading on coastal wetlands is prohibited adjacent to Type 1 and 2 waters, and in coastal wetlands designated for preservation adjacent to Type 3, 4, 5 and 6 waters, unless a consequence of an approved mosquito control ditching project.*

Response: Not applicable. No filling, removal, or grading of wetlands is proposed.

c) *On site beach materials (cobbles, sand, etc.) may not be used as construction material.*

Response: No on-site beach materials will be used as construction materials. The Applicant intends to stockpile sand produced during construction at one of their municipal yards to replenish Crescent Beach after large storms/erosion events, as needed.

d) *Mining is prohibited on coastal features.*

Response: No mining activities are proposed.

Section 1.3.1(G) – Shoreline Protection:

Section 3. Prohibitions:

a) *The council shall prohibit new hybrid and structural shoreline protection on barriers classified by the CRMC as undeveloped, moderately developed, and developed as well as shorelines abutting Type 1 waters, unless the shoreline is determined by the CRMC to be a manmade shoreline as defined within 1.1.2 of this Part or is permissible under 00-3.1.12 of this chapter.*

Response: Not applicable. The site is not a barrier, and the adjacent water body is classified as Type 2 water.

b) *The council shall prohibit the use of hybrid or structural shoreline protection to protect undeveloped land or structures not integral to the primary structure.*

Response: The area behind the proposed structural shoreline protection is considered undeveloped at this time. It is the Applicant's intent to construct a public restroom structure in order to meet the State's requirements for a swimmable beach facility in the future. This structure would be submitted under a separate application cover. The Applicant is requesting a special exception to construct a shoreline protection system to protect the undeveloped public park in order to maintain and protect their heavily used park space and continue to provide public shoreline access. Please refer to the above sections for additional information related to the special exception.

c) *Filling on a coastal feature or tidal waters beyond that which is consistent with 1.3.1(G)(5)(a) of this Part is prohibited.*

Response: Not applicable. The proposed toe of the new shoreline protection system will be located approximately 30 ft inland of the toe of the previous slope where feasible. Where the new system ties into the adjacent systems to the north and south, the toe of the new shoreline protection system will be located as close as practicable to the slopes' existing toe and the toe of the adjacent systems (in accordance with Section 1.3.1(G)(5)(o).

d) *Shoreline protection is prohibited when proposed to be used to regain property lost through historic erosion or storm events, unless the project is a marsh sill designed for wave attenuation as part of a marsh creation, enhancement, or restoration project.*

Response: Not applicable. The proposed toe of the new shoreline protection system will be located approximately 30 ft inland of the toe of the previous slope where feasible. Where the new system ties into the adjacent systems to the north and south, the toe of the new shoreline protection system will

be located as close as practicable to the slope's existing toe and the toe of the adjacent systems (in accordance with Section 1.3.1(G)(5)(o).

e) *The construction of new seawalls and bulkheads is prohibited, except for shorelines bordering Type 3, 5 and 6 waters where the proposed seawall or bulkhead directly serves a water-dependent use of where an applicant demonstrates to the satisfaction of the CRMC that there is no technically feasible alternative.*

Response: Not applicable. The proposed shoreline protection system is a combination of a stone revetment and a vegetated slope. No seawalls or bulkheads are planned.

Section 1.2.2(D) – Coastal Headlands, Bluffs, and Cliffs:

Section 1. Policies:

a) Exposed bluffs of unconsolidated material, such as those along the Matunuck headland in South Kingstown, have been known to recede by as much as thirty (30) feet in a single severe hurricane. Portions of the Mohegan Bluffs on Block Island have eroded similar distances by undercutting of the toe resulting in bluff collapse in less severe storms. Human activities can greatly increase the susceptibility of headland bluffs to erosion. Structures close to the face of a bluff can make the feature unstable, and concentrated runoff and de-vegetation can cause a marked acceleration of erosion. Factors that affect the ability of a cliff or bluff to withstand erosion include its composition (rock or soil type), slope, stratigraphy, height, exposure, vegetative cover, and the amount of human disturbance to which it is subjected. Since headland bluffs are composed of unconsolidated glacial sediment, they are more susceptible to erosion than headland cliffs composed of bedrock. Eroding bluffs can be important sources of sediment to nearby beaches. The bluffs of Watch Hill headland in Westerly, for example, were probably an important source of sand to the South Shore barrier and headland beaches. Extensive reveting of this headland certainly had a detrimental effect on these apparently distant and unconnected beaches. Thus, it is the Council's policy to manage these systems as valuable sources of sediment for Rhode Island beaches.

Response: The proposed shoreline protection system is for a slope that was previously heavily vegetated with mature trees and shrubs from the top to the toe of the slope. Prior to the significant erosion that occurred in December 2022, none of the highly erodible sand within the slope was exposed; therefore, it was not acting as a source of sediment to nearby beaches. Crescent Beach is also located along a length of the Providence River that is considered heavily developed with structures and shoreline protection systems. There is not an abundance of beaches in the area for sediment deposition. The Applicant plans to stockpile the usable sand generated from relocating the slope to be used to periodically renourish Crescent Beach after erosion events, as needed.

b) The Council's goals are to:

1. *Protect coastal cliffs and bluffs from activities and alterations that may damage the value of these features as sources of sediment to beaches and as a buffer against storm waves and flooding;*

2. *Prevent any construction in contiguous areas that may weaken the feature and has the potential of creating a hazard; and*

3. *Preserve the scenic and ecological values of these features.*

Response: Noted. The intent of the project is to create an approximately 30-ft managed retreat of the existing bluff while simultaneously protecting the public park and expanding the usable beach area at the toe of the slope. The proposed shoreline protection system is for a slope that was previously heavily vegetated with mature trees and shrubs from the top to the toe of the slope. Prior to the significant erosion that occurred in December 2022, none of the highly erodible sand within the slope was exposed; therefore, it was not acting as a source of sediment to nearby beaches. Crescent beach is also located along a length of the Providence River that is considered heavily developed with structures and shoreline protection systems. The Applicant plans to stockpile the usable sand generated from relocating the slope to be used to periodically renourish Crescent Beach after erosion events, as needed. In addition, the existing slope vegetation will be removed for safety reasons which will result in new unobstructed scenic views across the Providence River to Pawtuxet Village and Gaspee neighborhoods in Warwick. The Applicant plans to construct new scenic walking paths behind the top of slope fencing for public use.

c) *Due to their well-recognized scenic value and their use as tourist attractions and low intensity recreation areas, the Council designates the following coastal cliffs and bluffs as Coastal Natural Areas: Bonnet Point, Hazard Rocks, Fort Wetherill, Ocean Drive, the Brenton Cove Cliffs, Cliff Walk, Purgatory Chasm, Sakonnet Point, and Mohegan Bluffs. A Council priority when considering proposed alterations on or adjacent to these features is the preservation and, where possible, the restoration of their scenic qualities.*

Response: Not applicable.

d) *On shorelines adjacent to Type 1 waters, the Council shall prohibit construction on or alteration of coastal cliffs and bluffs and contiguous areas where such construction or alteration has a reasonable probability of causing or accelerating erosion or degrading a generally recognized scenic vista. The Council shall require suitable unaltered buffer zones on cliffs and bluffs where erosion or substrate stability can be affected by facility construction or use.*

Response: Not applicable.

e) *In determining whether a reasonable probability exists that increased erosion or loss of scenic values will result from the proposed construction or alteration, the Council shall consider the following:*

1. *The exposure of the feature to the erosional forces of tidal currents, storm waves and storm-surge flooding, wind and surface runoff, and other such natural processes;*

2. *The composition of the feature involved as well as its slope, stratigraphy, height, exposure, and vegetative cover;*

3. *Existing types and levels of use and alteration;*

4. *Competent geological evidence to evaluate whether natural erosion of the feature in question is a significant source of sediments to nearby headland and barrier beaches and whether the proposed construction of alteration will substantially reduce that source of sediment; and*

5. *Inclusion of the feature on an accepted inventory of significant scenic or natural areas or evidence of public use and enjoyment as a scenic or natural area.*

Response: Noted.

f) *The Council shall encourage the use of nonstructural methods to diminish frontal erosion associated with coastal cliffs and bluffs adjacent to Type 1 and Type 2 waters.*

Response: Given the dynamic nature of the waves along this shoreline during 100-year (1%) storm events, only the rip rap revetment is adequate to protect the shoreline. The 100-year (1%) significant wave height is 7.6 ft at this site based on the 2015 FEMA FIS, and the existing slope is approximately 1.5H:1V to 1.7H:1V. The 2015 FEMA FIS was used in the design of this revetment to maintain consistency with the adjacent revetment system to the North. It is understood that the significant wave height for the site was reduced in the most recent FIS study completed in 2023. Based on visual observations made during the recent storms, we feel that the larger wave height from the 2015 FEMA FIS is more accurate for this site. The proposed revetment is designed per the requirements of the US Army Corps of Engineers, Shoreline Protection Manual to resist the 100-year (1%) significant wave. There is an existing experimental erosion control area (CRMC 2019-09-031) at the site consisting of a coir log and vegetation system with rip rap, which has not been fully successful. The storm(s) that occurred in December 2022 and between December 2023 and January 2024 equated to approximately a 10-percent annual chance (or 10-year) storm based on available tidal data from NOAA and visual observations made during the storms. After the recent storm(s), portions of the coir log and mat system have either failed or begun to fail. The vegetation has not fully taken to the coir logs, and the rip rap consisting of small stones has been displaced across the beach area. Typically, a hybrid shoreline protection system (coir logs & vegetation) can only withstand about a 2 ft wave, and a nonstructural shoreline protection system would be damaged by even smaller waves, which is why neither a hybrid nor nonstructural shoreline protection system is applicable to this site.

As part of the experimental erosion controls installed under CRMC 2019-09-031, a marsh sill system was installed at the southern limits of the property. This system is in good condition and has weathered the recent storms well. We believe the system is functioning as intended, with the exception that the vegetation growth is somewhat sparse. The marsh sill is not meant to provide protection against large storms, but it is designed to handle daily tide cycles and reduce energy from small waves to help with erosion. The existing system is to be protected during construction, and the Applicant intends to expand the system to approximately 140 feet to the north. The permit application for the expansion will be submitted under a separate cover in conjunction with The Rhode Island Chapter of The Nature

Conservancy (TNC). The original system was constructed for TNC, and for funding purposes, they plan to oversee the expansion of the system.

g) Construction or alterations to coastal cliff and bluffs contiguous to Type 2, 3, 4, 5 and 6 waters may be permitted if:

1. *The construction is undertaken to accommodate a designated priority use for the abutting water area;*

2. *The applicant has examined all reasonable alternatives and the Council has determined that the selected alternative is the most reasonable; and*

3. *Only the minimum alteration necessary to support the designated priority use is made.*

Response: The proposed bluff relocation and shoreline protection system is intended to increase the usable space on the sand beach located along the Providence River at Crescent Park while simultaneously stabilizing the existing bluff and protecting the heavily used park area/green space above the bluff. The proposed design will help provide safe access to the shore for both park users and beach users.

A "hybrid" shoreline protection system (CRMC 2019-09-031) was attempted at the site as part of an erosion control experiment. The system consists of a coir log and vegetation system with rip rap, and it has not been fully successful. The storm(s) that occurred in December 2022 and between December 2023 and January 2024 equated to approximately a 10-percent annual chance (or 10-year) storm based on available tidal data from NOAA and visual observations made during the storms. After the recent storm(s), portions of the coir log and mat system have either failed or begun to fail. The vegetation has not fully taken to the coir logs, and the rip rap consisting of small stones has been skewed across the beach area. Typically, a hybrid shoreline protection system (coir logs & vegetation) can only withstand about a 2 ft wave, and a nonstructural shoreline protection system would be damaged by even smaller waves, which is why neither a hybrid nor nonstructural shoreline protection system is applicable to this site.

The existing condition of the exposed sand slope is considered a hazard to the public. The slope is being eroded from the bottom, creating a slope stability concern for both soil and vegetation (including large trees) above, which is likely to fall onto the beach where pedestrians walk daily. The Applicant feels that relocating the toe of the existing slope 30 feet inland will allow for a managed shoreline retreat while still providing protection to the park. The 30 ft relocation will create more usable beach space, portions of which will be located above the mean high water line while maintaining ample park space. The proposed solution was designed with consideration of minimizing impacts on the surrounding area while simultaneously reinstating safe shoreline access.

h) In considering applications for permits for erosion control measures, the Council shall weigh the impact of the proposed structure on the supply of sediments to nearby beaches. Where the Council finds that a substantial reduction or elimination of sediment is likely to result, and that natural erosional processes affecting the nearby beach will thereby be accelerated, it shall deny an application for Assent.

Response: The proposed shoreline protection system is for a slope that was previously heavily vegetated with mature trees and shrubs from the top to the toe of the slope. Prior to the significant erosion that occurred in December 2022, none of the highly erodible sand within the slope was exposed; therefore, it was not acting as a source of sediment to nearby beaches. Crescent beach is also located along a length of the Providence River that is considered heavily developed with structures and shoreline protection systems. The Applicant plans to stockpile the usable sand generated from relocating the slope to be used to periodically renourish Crescent Beach after erosion events, as needed.

Additional Information Requested by CRMC:

A. Design Life of the Proposed Project

Response: In accordance with the previously submitted CRMC Coastal Hazard Application Worksheet for approved Assent 2023-04-007 and the pending Assent Application 2023-10-015 currently under review, the design life for the project is 30 years, which corresponds to a predicted sea level rise of 3.05 feet.

B. Maintenance Plans for Crescent Beach

Response: The project will generate excess soils as a result of the relocation of the bluff toe and reduction in the steepness of the slope. At this time, the Applicant plans to stockpile the excess sand generated during construction at one of their municipal yards to the extent feasible. If Crescent Beach is certified as a swimmable beach, the stockpiled sand will be used to replenish Crescent Beach after large erosion events, as needed. The Applicant will inspect the beach area after large erosion events to determine if a significant loss of beach sand has occurred. If replenishment is required, the Applicant will utilize stockpiled sand from this project to return the beach to the approximate previous grade. Should the Applicant choose, replenishment of the beach from winter storm cycles can occur in the Spring to repair damage from several storms at once instead of replenishing the beach after each storm cycle. Loss of sand after Spring and Summer storms will be replenished as soon as feasible. Replenishment of the beach will be at the City of East Providence's discretion.