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March 19, 2021
Project 1700835

VIA EMAIL: Laura.McLean@dos.ny.gov

Ms. Laura McLean
New York State Department of State
Coastal Management Program
One Commerce Plaza
99 Washington Avenue
Albany, NY 12231-0001

Dear Ms. McLean:

**Re: Village of Port Jefferson East Beach Bluff Restoration
NYSDOS # F-2020-1089**

GEI Consultants, Inc. P.C. has been retained by the Village of Port Jefferson to oversee the permit applications for restoration of the East Beach Bluff.

GEI received a Request for Additional Information from your Department dated February 19, 2021 for the above-referenced project. This letter provides an official response to that request to support your review of the project.

The Department of State (DOS) comments are presented below followed by GEI's responses.

DOS Comment #1. An updated project description that quantifies temporary and permanent impacts to tidal wetlands and identifies cut and fill below spring high water. This is necessary to demonstrate consistency with LIS CMP Policies 4.3 and 9.1.

GEI Response #1: GEI has calculated the quantities for cut and fill below spring high water (SHW), which is described in the first bullet below. These quantities have also been added to the previous project description, and provided in the subsequent bullets.

- Temporary impacts to wetlands on the project site will be limited to the operation of equipment on the beach during construction. The beach and bluff will be restored to the pre-existing condition prior to project installation. Permanent impacts below the plane of spring high water will consist of placing approximately 396 cubic yards of stone and beach compatible sand within approximately 2,360 square feet to extend the western end of the existing revetment and the vehicle access ramp. Approximately 243 cubic yards of sand will be excavated within the 2,360 square foot area to accommodate the installation of the revetment toe stones. The excavated sand will be reused on site for the construction of the revetment extension.
- The overall shoreline hardening has been reduced from approximately 750 linear feet to approximately 500 linear feet.

- The length of the steel sheet pile bulkhead has been reduced by approximately 180 linear feet. The revised plans show that the bulkhead and rip-rap now end on the eastern side of the tennis courts. In the previous design the bulkhead and rip-rap extended west of the tennis courts.
- Elevation at the top of the proposed bulkhead is 14 feet.
- The rip-rap revetment at the toe of the bluff has been reduced in overall length. In addition, the width has been reduced from a total of 28 feet wide to 6 feet wide. Stone size has been reduced from 4- to 5-ton stone to 2.5-ton stone.
- The height, width, and number of terraces has been reduced. The first timber terrace will be installed approximately 10 feet landward of the sheet pile bulkhead. The next terrace will be created 10 feet landward of the first terrace consisting of anchored triple coir logs. A series of five to six more shallow timber terraces will be created above the triple coir logs. Adapted maritime plantings will be installed between each terrace for permanent erosion control.
- The updated plans include a bulkhead return at the western end of the proposed revetment tied into the bluff face to ensure protection against scour along the flank of the toe structure.

DOS Comment #2: A draft monitoring and maintenance plan describing activities that would be undertaken by the Village of Port Jefferson to mitigate any long-term unavoidable interference with coastal processes and public access in accordance with LIS CMP Policies 4.1, 4.2, and 4.3. As stated in your policy analysis, “the bluff restoration will require routine monitoring and supplemental plantings if the hillside experiences additional erosion.” The plan should include:

- a) periodic inspections including after severe storm events,*
- b) specifications for normal maintenance of degradable materials like supplement plantings and replenishing sand within the proposed access ramp “bin”, and*
- c) replacement of removeable materials.*

GEI Response #2: Please see the attached “Draft Monitoring and Maintenance Plan for the East Beach Shoreline Stabilization Project” that addresses the DOS comments above.

DOS Comment #3: Identify other options evaluated to extend the beach access ramp and why they were eliminated from further consideration. The proposed extension to the concrete access ramp will only preserve beach access if this is area routinely maintained with sand fill. As designed, the access ramp extension would be inundated during mean high and spring high water elevations, which would change the volume of sand and the ramp’s slope over time and impact public access. This information is necessary to evaluate consistency with LIS CMP Policies 4.1, 4.2, and 4.3.

GEI Response #3: Following analysis of the various options to extend the beach access ramp, it was determined that the current proposed access ramp “bin” was the most environmentally sustainable option to preserve access to the beach at the site. One option that was evaluated entailed extending the existing ramp in-kind with concrete. This was determined to not be a preferable option as it would place non-native concrete fill below the plane of SHW. This option was also not chosen because there were concerns that due to the dynamic nature of the site the seaward terminus of the ramp could become undermined overtime due to erosion, which would damage the structure and make it unusable. Another potential alternative to limit undermining of the concrete ramp extension included plunging the end of the concrete ramp significantly below grade immediately seaward of the current proposed ramp end. This alternative was also

eliminated since it would increase impacts and fill below SHW beyond the current proposed design. Other options were also considered, such as interlocking concrete mats, but were rejected, because they were not preferable for the same reasons as described above using a concrete ramp extension.

The proposed access ramp “bin” is intended to preserve access to the beach by creating an area that contains beach compatible fill and limits the movement of material. The applicant is aware that episodic events may result in loss of sand fill material within the “bin”, and they are prepared to restore this material as necessary to maintain access to the beach. The Village has ready access to sand fill, whereas repair or replacement of a damaged hard structure at the ramp extension will be more costly and difficult to implement. The maintenance of the proposed “bin” ramp extension has been identified within the attached Draft Monitoring and Maintenance Plan. Please see further discussion regarding LIS CMP Policy 4.2 and 4.3 below.

Please also note that there is already a pedestrian access point for the public on the east side of the existing parking lot. The Village intends to use the proposed western ramp primarily for emergency and maintenance vehicle access.

DOS Comment #4: Discuss whether the location of the revetment could limit future beach nourishment activities aimed at restoring the recreational beachfront. Sand used for beach nourishment is typically placed above the high water mark to increase its longevity; however, there would be very little space for sand to be placed between the revetment and high water. This information is necessary to evaluate whether the proposal avoids losses or likely losses of public trust lands or use of these lands, including public access along the shore to be consistent with LIS CMP Policy 4.3.

GEI Response #4: The location of the revetment is not anticipated to limit future beach nourishment activities; in fact the current proposed project would enhance the ability to conduct future beach nourishments by creating a reliable and stable access to the shoreline for equipment necessary to execute a nourishment project.

Typical beach fill templates for nourishment projects that are constructed using hydraulic dredges include the placement of material both above and below the high-water mark. Placement of fill below high water is necessary on eroded shorelines to increase the width and elevation of the beach and to push the beach berm further offshore to restore the shoreline to pre-erosional deficit conditions. Placement of material below high water is also necessary due to the hydraulic dredge process. During hydraulic placement of dredge material from a cutterhead dredge, there is an approximate 1 on 15 uncontrolled slope that results from deposition of the sediment-laden and pressurized water/sand slurry, which also allows for dewatering and return flow to the adjacent waterway. Once hydraulic placement is complete, the sand is graded to a natural shoreline slope. Additionally, the dredge discharge pipe at this location would need to be placed away from the toe of the bluff where the revetment is proposed, because of scour concerns while pumping.

As a result, the proposed location of the revetment on the landward-most portion of the beach backshore is not expected to limit future beach nourishment, since beach nourishment would occur seaward of this region. Please see further discussion regarding LIS CMP Policy 4.3 below.

DOS Comment #5: Discuss whether surface runoff from the gazebo area and tennis courts located along the bluff's crest could be contributing to bluff failures. Could this be addressed by implementing landward measures (e.g., installing a drainage system that will intercept runoff, building a berm or ridge at the bluff crest)? This information is

necessary to evaluate whether the proposal maximizes the protective capabilities of natural protective features to be consistent with LIS CMP Policy 4.2.

GEI Response #5: GEI has visited the site on several occasions to inspect the bluff and has determined that the bluff destabilization is not a result of surface runoff over the bluff crest or bluff face seepage along the bluff face. Surface runoff generally manifests itself in the form of gullies or rivulets formed by channelized flow, which are not visually present along the bluff face at East Beach. The primary failure mechanism at this site is toe erosion at the base of the bluff due to inundation along the shoreline and direct wave action.

This toe erosion has caused over steepening of the bluff face, undermined the bluff crest, and resulted in the eventual failure and slumping of the bluff crest, which threatens upland development. In addition to GEI's observation, this is evident by the lack of vegetation that is present along the entire bluff face (except for rafts of upland that have calved-off and slid down the bluff face) resulting in continuing failure along the entire slope.

Further evidence of toe erosion can be seen in the previous photos taken in November 2020 and provided to your office in our last submittal. The photos show fractures that can be seen on the lower half of the bluff face spanning the lateral extent of the site. These fractures are created in response to bluff face slumping, collapsing down to fill the void that is left due to loss of the bluff toe from a storm. Please see further discussion regarding LIS CMP Policy 4.2 below.

DOS Comment #6: Provide written analyses of the project's consistency with the following LIS CMP Policies.

GEI Response #6: GEI has provided a narrative analysis following each of the DOS referenced coastal policies below:

a. Policy 4.2: Preserve and restore natural protective features.

The proposed project incorporates the use of natural and nature-based features to stabilize the bluff face. These features consist of biodegradable coir logs and native plantings to stabilize the slope in conjunction with the proposed bulkhead with toe armor. The use of these native plant materials stabilize the bluff face to restore the natural bluff. Therefore, the project is consistent with this policy.

b. Policy 4.3: Protect public lands and public trust lands and use of these lands when undertaking all erosion or flood control projects.

This project is being proposed to stabilize the East Beach bluff, since chronic erosion at the site is threatening upland development owned by the Village of Port Jefferson including the Village Country Club, Golf Course Clubhouse, adjacent tennis courts and accessory structures. These developed areas occupy public lands that are in threat of destruction resulting from continual erosion at the site. Therefore, this project is specifically being implemented to protect public lands. The project is also proposed to be placed as far landward as possible and will not impact the public's ability to pass along the Village owned shoreline beyond what already exists at the site. As a result, the project is consistent with this policy.

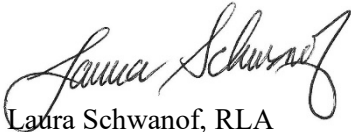
c. Policy 4.5: Ensure that expenditure of public funds for flooding and erosion control projects results in a public benefit.

As previously described, this project is being implemented to provide protection from erosion to upland public lands owned by the Village of Port Jefferson. The expenditure of public funds for this project will protect public lands and provide a public benefit as it allows for continued use of these public facilities. Accordingly, the project is consistent with this policy.

If you have any questions or require additional information, please do not hesitate to reach out to Laura Schwanof or Ben Spratford at the contact numbers provided below.

Sincerely,

GEI CONSULTANTS, INC., P.C.



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LS\BS:bdp

Attachment:

1. Draft Monitoring and Maintenance Plan for the East Beach Shoreline Stabilization Project

c: M. Garant, B. Sakovich, J. Palumbo, R. Kassay (VPJ)
M. Billerman, V. Hagopian (GEL)

Attachment 1

Draft Monitoring and Maintenance Plan for the East Beach Shoreline Stabilization Project

Monitoring and Maintenance Plan

Village of Port Jefferson

East Beach Shoreline Stabilization Project

1. Background

The Village of Port Jefferson's shoreline has suffered significant structural damage following multiple State of Emergency storm events. The Village has made major efforts to make the East Beach recreation area more resilient and safer for public enjoyment. The project will restore the severely eroding East Beach recreation area with a steel sheet pile bulkhead with a stone sill at the toe of the bluff and a series of timber terraces/coir logs vertically up the bluff face and planting between the terraces with native vegetation.

This monitoring and maintenance plan is intended to provide a framework to guide the monitoring and maintenance of the project following construction. Timelines for inspection, thresholds that will trigger maintenance actions and the proposed maintenance actions are provided below.

2. Monitoring Inspections

Inspections are proposed to be completed annually and following significant storm events. Monitoring inspections will include the following information:

- **Annual Monitoring Inspections**
 - Ground photos
 - Written inspection report
 - Beach profiles or aerial topographic survey to MLW
- **Post Storm Monitoring Inspections** (within one week of a significant storm event)
 - Ground photos
 - Written inspection report

The inspection reports should include but not be limited to the following information:

- Plant species establishment and cover.
- Conditions of all project components and any damages that have occurred.
- If damage/loss occurred to the bluff.
- If the inspection is following a storm event, then the report should include available storm information such as water levels and wave height information.

3. Maintenance Threshold Triggers

If damage or losses to the Project area are identified during monitoring inspections, and if the following established thresholds are exceeded, it will trigger the Village to undertake necessary maintenance described in Section 4.

- **Access Ramp**
 - If the elevation difference between the areas listed below exceed a threshold where safe vehicle/pedestrian access is impacted.
 - “bin” and the existing concrete ramp.
 - “bin” and the proposed seaward sheet pile of the “bin”.
 - seaward sheet pile of the “bin” and the native beach.

Monitoring and Maintenance Plan

Village of Port Jefferson

East Beach Shoreline Stabilization Project

- **Sheet Pile**
 - Noticeable damage or displacement of the structure.
- **Rock Toe Armor**
 - Noticeable damage or displacement of the armor stones.
- **Terracing**
 - Significant leaning or displacement of the terracing.
- **Coir Logs**
 - Lose/broken duckbill anchors and/or stakes.
 - Lose/broken fastening rope/twine.
 - Displaced coir logs.
 - Coir logs that are completely removed.
- **Plantings**
 - Plantings that have less than 85% survivability.
 - Plantings that have been completely removed.

4. Routine Maintenance/Restoration Actions

If inspections and monitoring of the Project area identify that there has been damage or losses beyond the identified Maintenance Triggers discussed in the previous section, the Village will undertake the following maintenance actions:

- **Access Ramp**
 - If the elevation difference between any of the below areas exceed a threshold where safe vehicle/pedestrian access cannot occur, the Village will place beach compatible sand to restore the elevation to the proposed design.
 - “bin” and the existing concrete ramp.
 - “bin” and the proposed seaward sheet pile of the “bin”.
 - seaward sheet pile of the “bin” and the native beach.
- **Sheet Pile**
 - If noticeable damage or displacement of the structure occurs, the Village will undertake measures to restore the component to the proposed design.
- **Rock Toe Armor**
 - If noticeable damage or displacement of the armor stones occurs, the Village will undertake measures to restore the component to the proposed design.
- **Terracing**
 - If significant leaning or displacement of the terracing, the Village will undertake measures to restore the component to the proposed design.
- **Coir Logs**
 - If lose/broken duckbill anchors and/or stakes, the Village will reset and/or replace.
 - If lose/broken fastening rope/twine, the Village will tighten and/or replace.
 - If displaced coir logs, the Village will restore the component to the proposed design.
 - If coir logs that are completely removed, the Village will replace the component to the proposed design.

Monitoring and Maintenance Plan Village of Port Jefferson East Beach Shoreline Stabilization Project

- **Plantings**

- Plantings that have less than 85% survivability, will be replaced by the Village.
- Plantings that have been completely removed, will be replaced by the Village.

5. Extensive Restoration Actions

If the damage or loss is greater than what can be rectified by routine maintenance, resulting from extreme events such as Nor'easters, hurricanes, wildfires, earthquakes or other acts of God, the Village Mayor and Administrator will be immediately contacted, and informed of the damages. Analysis of the causes of damages and extent of repairs needed will commence. The Village will determine the best course of action in consultation with design professionals. If necessary, contact will be made with the Suffolk County Office of Emergency Management to determine whether a state of emergency has been declared and what special documentation may be needed to support future damage claims.

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