32. Description of the overall project and each activity in or affecting US waters or state critical areas

The proposed activity is a sand scraping and transfer project on Sullivans, SC to be constructed in conjunction with a beneficial use sand placement project planned to be built by the USACE in Spring/Summer 2024. The project is intended to supplement the project being built by the USACE by shifting sand from the intertidal beach zone to the dune and dry sand beach. This will restore losses to the dune and dry sand beach and bury portions of the exposed seawall to improve public access and storm protection. The project will also accelerate natural adjustment of the profile that will be produced from the USACE project and aid in retaining placed sand within the project area.

The supplemental project proposes to shift sand either by bulldozer as it is placed as part of the effort to confine material to the slope, or via truck several days after placement. The first method will depend on the quality of the material being pumped. Should the material be clean from mud and/or debris, the applicant will attempt to move sand to the dune as while the discharge is occurring at the site. Should the material or construction logistics prevent direct placement along the dune, the contractor will harvest sand from completed areas and truck the material to the needed location. The applicant will attempt to limit alongshore transfers of sand, and focus on shifting sand locally for dune restoration.

Dune restoration will be completed along up to 4,100 lf of beach between Station 28 1/2 and Thompson Park. Dunes will be constructed to an elevation of +14 ft NAVD, with a crest width of 15 ft. The seaward slope of the dune will be built to 1 on 4, per recommendations of USFWS. The applicant proposes to complete dune restoration and restoration of the dry sand berm between Station 29 and Station 31 to mitigate severe erosion and improve public access to the beach.

All work under this alternative will be performed by land-based equipment working between low water and high water along the intertidal beach. Work will be completed concurrently with the USACE project and use the same staging and access points (Thompson Park). The USACE project construction will involve night-time sand placement; however, the supplement work will be restricted to daylight operations. All work will be completed within the USACE project limits considered in their environmental review and Coastal Zone Consistency process.

The applicant also wishes to install sand fencing and dune vegetation along the project area following guidelines provided in OCRM's How to Build a Dune document. Sandfencing will be placed along the toe of the restored dune, and vegetation installed at 18-24" spacing along the crest and slope of the dune. Plantings will consist of sea oats and/or bitter panicum.

33. Overall project purpose and the basic purpose of each activity in or affecting US waters

The purpose of the project is to supplement the USACE placement activities to provide immediate dune restoration, improve public access, and bury exposed seawalls along the eastern end of Sullivan's Island. The USACE project will only place sand below the mean high tide line, which will increase the intertidal beach width and sand volume below the low-water line, but not result in an immediate increase in dry sand beach width, dune width, or storm protection. Over time, some of this sand would naturally move up the profile and restore the dunes, but this may take several months to complete and a significant amount of sand may be lost to the currents of Breach Inlet. The proposed project will accelerate the natural adjustment of the beach profile, improve storm protection, and improve public access along project area.

The project area is characterized by exposed riprap seawalls, groins, and little to no dry sand beach or dune (Figs 1 and 2). Erosion has impacted access around Thomson Park, and limited access at several public access points. The supplemental work would increase the dune with by ~15 ft at the crest, and include a gentle slope that will eliminate any "emergency" conditions along the project area. By utilizing sand as it is being placed by the USACE, the dune restoration will not result in a lowering of the beach profile like can occur with normal emergency sand scraping. Concurrent construction will also allow the dune to be restored without having to have a separate mobilization and beach closure, which will minimize impacts to the public's use of the beach.

Figure 1. Photo from January 2024 showing the beach condition at Station 31.

Figure 2. Photo from January 2024 showing the beach condition at Station 30 looking south. Dune restoration is proposed for this area.

39. Describe measures taken to avoid and minimize impacts to waters of the US

The USACE sand placement work will be accomplished via hydraulic dredge. The applicant's proposed project will use land-based equipment to shift a small quantity of this placed material along the existing escarpment to restore the primary dune. No work will be completed in the water, as any excavations will occur on the intertidal beach. Work will be done using land-based equipment, which reduces the potential for post-project sand compaction along the placement areas. Work will be completed at the same time as the USACE project, so there will not be an extension of the construction window for the proposed project. Should any portion of the project occur during sea turtle season, the applicant will coordinate with the USACE to ensure that all sea turtle protection measures are incorporated into the supplemental work. This includes daily morning turtle patrols to ensure that no nests have been laid within the project area. The applicant will work with the local turtle team to coordinate inspections, and the sea turtle permit holder for any required nest relocations.

Sand will be placed as shown in the drawings. The main goal of the applicant is to provide a restored dune profile to as much of the project area as possible. In addition, the applicant will attempt to bury portions of the seawalls and/or groins to improve access and aesthetics. Finally, the applicant wishes to create a dry sand beach along areas currently lacking any dry sand area. This will improve the recreation area and will move sand placed by the USACE higher in the profile, where it is less likely to be eroded by currents. To facilitate this, some of the sand may be shifted laterally along the project area from the placement areas. The USACE effort will place sand in three "stockpile" areas, rather than a design beach berm typical of most nourishment projects. Shifting of sand from stockpiles will create a more uniform beach and provide immediate dune restoration.

The applicant has included using up to 5,000 cy of sand to create a stockpile on the upland area for future nourishment needs along the island. This sand will be stored adjacent to Thomson Park to use at a later date under separate permits.

40. Provide a brief description of the proposed mitigation plan to compensate for impacts to aquatic resources or provide justification as to why mitigation should not be required

The proposed project is designed to mitigate beach erosion along the east end of Sullivans Island. The project will improve storm protection, restore the dry sand beach, and restore dune habitat for sea turtle nesting. The applicant believes that the restorative nature of the project offsets temporary impacts during construction and requests that no additional mitigation be required. To document the recovery of the system following construction, the applicant proposes the following monitoring plan:

- Annual orthophotography of the project area pre- and post-project and for three (3) years following the project. Photography will include coverage of all of the shoreline between the Breach Inlet Bridge and the Station 28. Photographs will document the beach and dune condition, and will also provide assessment of vegetative growth of the dunes in the project area. The applicant will provide digital files of the orthophotography to regulatory and resource agencies upon request.
- Annual topographic and bathymetric surveys of the beach to document beach volumes, shoreline positions, and changes in the dune volume. Profile spacing will be a minimum of 400 ft east of 28th Ave. Monitoring data will be also be used to provide annual summaries of the distance between the structure line and the normal high-tide swash line to evaluate the performance of the dune in maintaining a buffer between structures and the ocean.