ATKINS
Member of the SNC-Lavalin Group

Atkins North America, Inc.
200 Westlake Park Blvd, Suite 1100
Houston, Texas 77079
Telephone: 281.576.8500
www.atkinsglobal.com/northamerica

Introduction:

Sargent Beach has experienced some of the highest erosion rates along the Texas Gulf Coast, with a rate of up to 32 feet per year. This shoreline retreat, a result of erosion from hydrodynamic impacts by waves and storms, is increasing due to sea-level rise, shifting the effects of wave and current action farther landward. This erosion not only impedes recreational activities and degrades habitat, but also threatens the resiliency of the surrounding infrastructure, including the Gulf Intracoastal Waterway (GIWW), which is the third busiest inland waterway and is a vital component to the nation's transportation network. The project will create a more stable shoreline, a more resilient coast, and help prevent potential impacts to the adjacent public and private infrastructure and reestablish degraded habitat.

Matagorda County Precinct 2 Commissioner Kent Pollard, the applicant, proposes beach nourishment activities on the previously engineered and nourished "Historic Stretch" of Sargent Beach, in Matagorda County, Texas. The applicant is also requesting to combine the two expired authorizations SWG-2010-00866 (east) and SWG-2009-01133 (west) into a single authorization for the Historic Stretch of Sargent Beach (HSSB). Beach nourishment activities are proposed seaward of the existing federal revetment. The applicant proposes an approximate 250 ft wide beach template extending approximately 2.2 miles or 11,505 LF along Sargent gulf frontage. The template extends from the existing federal revetment (approximate +4.5 ft contour) at the north limit to the approximate -4ft contour seaward. It is an approximate 81.3-acre cumulative project area with 63.1-acres seaward of the mean high water (MHW) line. The proposed beach nourishment project will not impact wetlands, oysters, or submerged aquatic vegetation (SAV).

Measures that apply to beach quality sand placement during beach nourishment activities are as follows:

- Sand placed on the beach will be of beach quality sand, consistent in grain size, color, and composition as the existing beach and free of hazardous contaminants.
- Sand will be placed and maintained at a gradual slope to minimize scarping.
- After initial project construction, the site will be restored to historic slope or contours and ruts leveled.

Beach nourishment activities will be broken down and divided into multiple confined cells along the proposed work area. Work will begin in an individual cell and continue until that cell is completed. Beach quality sand will not be placed in multiple cells/areas at the same time. It is

anticipated that the beach quality sand will be obtained by hydraulic and/or mechanical dredge methodologies depending on site conditions present at the borrow areas and beach-quality sand available for nourishment. The methods used for removal of sand and subsequent transport and placement within the action area would include:

- Use of a hydraulic dredge to obtain the sand from approved upland Placement Areas (PA) or submerged borrow sites; placement of the dredged sand on a barge with waterborne delivery to the site; then the sand would be pumped through a temporary pipeline and placed directly on the beach.

OR

- Use of a backhoe or other excavation technique to obtain sand from upland borrow sites; use of trucks to haul the excavated sand to a barge that would travel to the site; then the sand would be pumped through a temporary pipeline and placed directly on the beach.

Once on site, the beach-quality sand is distributed to fill the appropriate area using other heavy equipment (e.g., bulldozers, backhoes, etc.). The temporary pipelines used to transport the sand could be either upland, submerged, or a combination of upland and submerged pipelines and temporary pipelines may be routed parallel, perpendicular, or a combination to the beach to the nourishment location taking extreme caution to avoid impacts to the federal revetment.

The beach building process typically involves the use of bulldozers and sometimes backhoes to distribute the sand as it falls out of suspension at the outflow end of the pipeline. The sand slurry is defused as it is released from the terminal pipe to reduce the flow velocity onto the beach. Dikes are constructed on one or two sides of the effluent area to allow for extended settlement time of suspended solids to reduce turbidity levels in the nearshore environment. The construction zone, which includes the active placement/nourishment area and associated heavy equipment used to redistribute sand, generally encompasses an area of approximately 500 ft to 1,000 ft on each side that is fenced off. The Contractor places stakes to mark station locations and elevational requirements for the project template. As sand falls out of suspension, bulldozers and backhoes are used to distribute sand and construct the desired beach template. As target elevations for a given station are achieved, the designated construction area moves down the beach to the next station. Upon completion of a given section (approximately 500-ft to 1,000-ft acceptance sections), stakes are removed from the beach.

Throughout the duration of the pumping process, the Contractor is required to inspect the pipeline route to check and fix pipe leaks. During all aspects of the construction operation, vehicles and heavy equipment, including pickup trucks, all-terrain vehicles (ATVs), bulldozers,

etc., may traverse the beach; however, no driving or construction activity is allowed within existing dune vegetation or other environmentally sensitive locations identified prior to construction.

The following measures apply to construction access and equipment usage and staging during beach nourishment activities:

- Equipment required for the project will be staged in upland areas and transported as needed to the proposed work sites.
- The number of vehicles traveling from upland areas to the project sites will be kept to a minimum, all vehicles will use the same pathways, and access will be confined to the closest access point to the immediate work area.
- Construction/nourishment activities will occur from the landward side of the beach nourishment area whenever possible. Use of night lights will be minimized, directed toward the construction activity area, and shielded from view outside of the construction activity area.

It is anticipated that harvesting beach-quality sand and/or beach nourishment activities could occur during shore bird and turtle nesting season. All work performed during turtle nesting season will be in accordance with the conservation measures outlined in the Biological Assessment. Additionally, as water in and around the surf zone (project area) regularly exceeds the total suspended solids (TSS) threshold under natural conditions, the applicant is submitting a Texas Commission on Environmental Quality (TCEQ) Tier II Water Quality Certification for areas where nourishment activities are to occur.

Sand Source Borrow Areas

Ten potential sand sources suitable for the HSSB beach nourishment project (9 upland and 1 submerged) were selected because they met the initial evaluation criteria and were identified for the adjacent project area associated with (SWG-2018-00678) (see plan sheet 8/8). The potential source areas will be investigated (geotechnical and material testing) individually on an “as needed” basis for future use to determine and confirm the material at a particular site is viable for beach nourishment, as well as if any additional environmental or regulatory process is required. Identifying these sites as placeholders for future nourishment cycles in this authorization eliminates the need to amend this permit in the future when one of the potential sand source sites is needed for nourishment. The Texas General Land Office (GLO) Coastal Division will be consulted and give final approval on the sand source that is selected for this and all other nourishment cycles for HSSB.

Sand sources the applicant is considering during this cycle are Federal PA No. 108 and 100 and the Weidman property (identified as sources 3, 11, and 1 on plan set sheet 8/8). A geotechnical and material investigation is currently in process on PA 100 and 108. A geotechnical and material testing investigation was performed on the Weidman property in January 2015. The report was provided to the GLO and the site has been approved for use on the beach.