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August 28, 2019

Mr. Dwayne Johnson
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401 Coordinator
TCEQ, Mail Code 150
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Austin, Texas 78711-3087

Ms. Ashley Chang
USEPA, Region 6
1201 Elm Street
Dallas, TX 75270

Re: Permit Application Number SWG-2019-00067
Port of Corpus Christi Authority (PCCA)

Dear Mr. Johnson, 401 Coordinator and Ms. Chang:

Texas Parks and Wildlife Department (TPWD) has reviewed the Public Notice dated August 28, 2019 for permit application number SWG-2019-00067. The applicant proposes to deepen and expand the Corpus Christi Ship Channel (CCSC) near Port Aransas, Nueces County, Texas in order to construct a channel that can accommodate transit of fully laden Very Large Crude Carriers (VLCCs) from multiple locations on Harbor Island into the Gulf of Mexico. The Channel Deepening Project (CDP) would span approximately 13.8 miles from a location near the southeast side of Harbor Island to the -80-foot mean lower low water (MLLW) bathymetric contour in the Gulf of Mexico (GOM). The proposed CDP will cover approximately 1,778 acres, creating approximately 46 million cubic yards (MCY) of new work dredged material (17.1 MCY of clay and 29.2 MCY of sand). Although the proposed project does not explicitly include widening of the channel, minor incidental widening of the channel slope will result to meet the slope requirements and to maintain stability of the channel. Specifically, the applicant requests authorization to:

- deepen a portion of the CCSC from the currently authorized depth of -54 to -56 feet MLLW to final constructed depths ranging from -79 to -81 feet MLLW,
- extend the existing terminus of the authorized channel an additional 29,000 feet into the Gulf of Mexico to reach the -80-foot MLLW bathymetric contour,
- expand the existing Inner Basin at Harbor Island as necessary to accommodate VLCC turning, which includes the construction of a flare transition from the CCSC within Aransas Pass to meet the turning basin expansion,

- potential placement of new work dredged material into waters of the U.S. for beneficial use (BU) sites located in and around Corpus Christi and Redfish Bays,
- potential placement of dredged material on San Jose Island for dune restoration,
- potential placement of dredged material in feeder berms for beach restoration along San Jose and Mustang Islands, and
- transport of new work dredged material to the CCSC Improvement Project (CCSCIP) New Work (NW) Ocean Dredged Material Disposal Site (ODMDS).

Within the context of the geographic area, the PN describes numerous important resources that may be affected by the proposed project. The largest neighboring resource, located 20 miles south of the project site, is the Padre Island National Seashore, the largest stretch of undeveloped barrier island in the world and home to the National Park Service's Division of Sea Turtle Science and Recovery. Immediately to the north of the project site is San Jose Island, a privately-owned undeveloped barrier island known to be occupied by numerous federally-listed threatened and endangered sea turtle and bird species, including the Whooping Crane (*Grus americana*), Piping Plover (*Charadrius melanotos*), and Red Knot (*Calidris canutus*). In addition, the area includes the Mission-Aransas National Estuarine Research Reserve (MANERR), a state and federal partnership that conducts research, education, and stewardship programs funded by the National Oceanic and Atmospheric Administration (NOAA). The MANERR is the third largest National Estuarine Research Reserve (NERR) in the United States and the only NERR in Texas. TPWD has identified additional important resources within this geographic extent that include Padre Balli Park and Bob Hall Pier, Packery Flats, Mustang Island State Park, Francine Cohn Preserve, Shamrock Island, the Aransas Pass (Lydia Ann) Lighthouse, Lighthouse Lakes Paddling Trail, Lighthouse Lakes Park, I.B. Magee Beach Park and Horace Caldwell Pier, and the Port Aransas Nature Preserve.

Of particular concern to TPWD, is the 14,000-acre Redfish Bay State Scientific Area (RBSSA) located between San Jose Island and Live Oak Peninsula. Following a multi-agency effort and the resulting publication of the "Seagrass Conservation Plan for Texas" in 1999, the Texas Parks and Wildlife Commission established the RBSSA for the purpose of education, scientific research, and preservation of flora and fauna of scientific or educational value. Because of this designation, the RBSSA has special status, and the importance of seagrass habitat has since been specifically recognized by state law, not just within the RBSSA, but state-wide.

Redfish Bay provides a mosaic of tidal flats, tidal marsh, mangroves, unvegetated shallows, and extensive seagrass beds that provide nursery, forage, and cover habitats for many species of fish and wildlife. Outside the Laguna Madre, Redfish

Bay represents the most extensive area of pristine seagrass beds and is also the northern range limit for large beds of turtle grass and manatee grass (Pulich and Calnan, 1999). The importance of the shallow water resources of RBSSA to recreational fisheries in Redfish Bay is detailed in recent angler survey data collected from 2013 to 2017. Southern Redfish Bay represents only about 7% of the areal extent of the Corpus Christi Bay Ecosystem, yet survey data indicate that this small area accounted for 18% of the angling trips taken by boat and 21% of the angler hours (time anglers spent fishing) throughout the Corpus Christi Bay Ecosystem. These survey data also indicate that southern Redfish Bay accounted for 37% of spotted seatrout, 31% of red drum, 23% of southern flounder, and 12% of black drum landed throughout the Corpus Christi Bay Ecosystem.

Chapter 26 of Parks and Wildlife Code states that a department, agency, political subdivision, county, or municipality of this state may not approve any program or project that requires the use or taking of public land designated as a park, recreation area, scientific area, wildlife refuge, or historic site, unless it holds a public hearing and determines that there is “no feasible and prudent alternative to the use or taking of such land,” and the project “includes all reasonable planning to minimize harm to the land resulting from the use or taking.” TPWD considers the RBSSA to be public land designated as a scientific area that is subject to the procedural requirements of Chapter 26. This statute may also apply to other designated public lands that would be impacted by the proposed project.

The PN states that dredging activities will impact 0.11 acre of seagrass and that the placement of dredged material associated with the project will result in 185.9 acres of adverse impacts to special aquatic sites including wetlands and 58.5 acres of submerged aquatic vegetation (SAV). Based on the information provided, these impact estimates are based on desktop estimates which have not been validated by comprehensive habitat surveys. While TPWD appreciates the applicant’s desire to beneficially use the dredged material, the project information presented in the PN does not adequately demonstrate how the proposed impact sites will benefit from the proposed fill or how the impacts will be otherwise mitigated.

Recommendations: TPWD requests that the applicant:

- Identify and quantify the specific habitat that will be restored or created in order to accurately assess the impacts and the benefits of the project. This should be depicted on the dredge placement area and beneficial use site maps.
- Develop a more detailed mitigation plan that demonstrates functional lift for the types and quantities of the aquatic resources that will be impacted and if the proposed BU placement sites would be able to achieve or exceed the functions currently provided by established aquatic resources. The plan should include BU design details, mitigation success criteria, monitoring requirements and

adaptive management options that include temporal loss of aquatic resource functions.

The proposed placement area M4 is located within the RBSSA and contains vast acres of pristine seagrass beds of all five species of seagrass found in Texas. The applicant proposes to construct a levee Northward along the eastern side of Dagger Island that turns Northwest to follow the channel perpendicular to the shoreline of Ingleside. The applicant proposes to hydraulically place BU material to an elevation of 4 feet to restore marsh habitat within the 702-acre placement area.

Recommendation: TPWD would like clarification on use of fill behind the levee. Beneficial use of dredge material to cover existing functional seagrass beds at such a large scale is not recommended, especially within the RBSSA. The goal of the RBSSA is to protect and preserve the seagrass and serve as an educational source to promote the many ecological benefits of seagrass. With larger vessels (VLCC and Suezmax) using the CCSC the proposed geotextile would offer little protection from ship wakes and natural wave impact. The applicant should consider hard structure protection (rock, rip-rap, articulated mat) for the east side of the levee.

The applicant would like to place BU on the southern side of Pelican Island at site M3 to create marsh with the possibility of establishing elevations suitable for seagrass.

Recommendations: The TPWD seagrass viewer indicates that there is currently seagrass located in the middle of the proposed BU placement. The applicant should establish elevations suitable for seagrass adjacent to the existing seagrass to create a contiguous bed and create marsh on the eastern and western ends of the placement. This island is a bird rookery and BU placements should not be performed during nesting season if possible.

The CCSCIP currently is authorized to extend from Stations -210+00 to -330+00 out into the Gulf of Mexico. This stretch of the proposed project as well as the portion that extends into the Aransas Pass inside the jetties is classified as deep-water marine habitat. The Entrance Channel segment of the CCSC is currently maintained to a depth of -49 feet MLLW and the Lower Bay segment to a depth of -47 feet MLLW. The CCSC has been federally authorized to a depth of -56 feet MLLW from the Gulf of Mexico to the end of the jetties in the Entrance Channel segment, and to -54.0 feet MLLW in the Lower Bay segment. Dredging work to reach the authorized depths is currently starting out in the Gulf on the entrance channel.

The applicant proposes to create a flare transition at the confluence of the CCSC and the Aransas Channel to accommodate VLCC turning but the size of the turning basin diameter had not been determined. At the inner CCSC terminus of the

proposed dredging project, the dredge depth at station 110+00 would be to -75 feet MLLW and would immediately transition to a depth of -47 feet MLLW. The applicant provides no details of the transition design or what precautions will be taken to prevent the channel from sloughing off into the deeper channel.

Recommendation: The applicant should provide any new ship simulation modeling that provides information of the requirements for the turning basin diameter. The applicant should provide a description of the transition and design of the channel at station 110+00. This should detail how the channel will be stabilized to prevent sloughing. In addition, the applicant should provide any hydrological modeling conducted that the 28-foot transitional change in depth will have no physical, biological, chemical or ecological impacts to the surrounding area. This would include impacts to fish and invertebrate larvae transportation, salinity regimes, tidal velocities, nutrient and sediment exchange and potential stratification.

TPWD supports and encourages beneficial use of dredge material to restore and/or enhance functional ecosystems or create new rookery islands. The applicant has proposed six offshore feeder berms, one beach and one dune restoration site on San Jose Island as well as three offshore feeder berms and on beach restoration site on Mustang Island. In addition, the applicant proposes to use two offshore dredge material disposal sites to lengthen the jetty approach channel.

Recommendations: The applicant should coordinate with U.S. Fish and Wildlife Service to avoid impacts to endangered and threatened birds and conduct beach and dune work outside of bird nesting season. The applicant should also consult with the National Park Service in reference to sea turtles and avoidance during nesting season. The applicant should investigate the opportunity use BU to build a new rookery island in the vicinity.

The applicant proposes to beneficially use dredge material to perform shoreline stabilization activities on both the north and south side of the CCSC. Placement option SS1 is on the north side of the CCSC and has been slowly eroding mainly due to impacts from shipping. The north side has breached several times throughout history due to both shipping and environmental processes, but the breach is now affecting seagrass behind the channel shoreline. Placement option SS2 is on the south side of CCSC along the Port Aransas Nature Preserve/Charlies Pasture boundaries. Hurricane Harvey caused the breach of the CCSC shoreline and subsequent flooding of the critical salt flat habitat utilized by the endangered Piping Plover.

Recommendation: The applicant should consider the increase in frequency and size of the future shipping industry, weather impacts and sea level rise when designing and constructing the new shoreline protection features.

The applicant states that the 2003 CCSCIP feasibility report tested the material that is within the footprint of the proposed CDP and found the material was suitable for offshore disposal as well as BU. The proposed CDP dredge materials are not expected to be different than the sediment material currently authorized to be dredged.

Recommendations: The applicant should conduct a new dredge material feasibility test to confirm the material is still suitable for offshore disposal, beach and dune restoration and BU activities due to the 16-year lapse from the previous test. The applicant should provide the most recent toxicity and bioaccumulation assessment of the dredge material for the resource agencies to review. In addition, the grain size and composition of the BU material should be evaluated for each proposed placement site to ensure characteristics are similar.

Sea turtles and manatees are known to occur within the CCSC and in the surrounding area of the proposed project. The following guidance, which has been coordinated with U.S. Fish and Wildlife Service and the Texas Sea Turtle Stranding and Salvage Network:

Recommendations:

- If a sea turtle or manatee is observed within the project area during construction activities, the construction activities should be halted, and the animal be allowed to leave on its own volition before resuming construction activities.
- Both project construction and operations employees should:
 - 1) Be advised that sea turtles and/or manatees may approach the proposed project area,
 - 2) Be provided materials, such as a poster, to assist in identifying these animals,
 - 3) Be instructed not to feed or water the animal,
 - 4) Report all manatee sightings to U.S. Fish and Wildlife Service (USFWS) and the Texas Marine Mammal Stranding Network (TMMSN),
 - a) USFWS
 - i. Middle and lower Texas coast: 361-533-6047,
 - ii. Upper Texas coast: 713-542-1861,
 - b) TMMSN hotline: 800-962-6625, and
 - 5) Report only injured, cold stunned, or dead sea turtles to the Texas Sea Turtle Stranding and Salvage Network (STSS)
 - a) Padre Island National Seashore: 361-949-8173 ext. 226, or
 - b) STSSN hotline: 866-887-8535 (866-TURTLE5).

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TPWD is concerned that the CDP as described in Permit Application SWG-2019-00067 is not a whole and complete project. The proposed channel without the associated docking facilities and supply pipeline infrastructure to support those facilities does not justify the deepening of the channel. When comparing all of these projects there are some similarities but also some inconsistencies. TPWD is currently reviewing two public notices, Permit Application SWG-2018-00789 Axis Midstream Holdings, LLC and SWG-2019-00245 Port of Corpus Christi Authority for docking facilities on Harbor Island. Axis Midstream has proposed to utilize the same DMPA's as the CDP and their pipelines will be trenched in the bottom of Redfish Bay State Scientific Area, which contains 5 species of seagrass beds that the CDP PN states would be protected with dredge material placement. The PN for the POCCA does not provide information on the supply pipelines for this facility and thus the environmental impacts for the pipelines are unknown. The cumulative effects of the approval and construction of these projects, as well as other proposed projects such as the Bluewater Texas Deepwater Terminal Project, should be assessed.

The PN states that a previous review of the application concluded that an Environmental Impact Statement (EIS) is required for the proposed project. Due to the substantial amounts of proposed adverse impacts to many significant resource areas of the Coastal Bend, TPWD agrees that an EIS should be undertaken to fully assess all direct, indirect, and cumulative impacts of the proposed project and any connected actions. Questions can be directed to Paul Silva (361-825-3204) or Leslie Koza (361-825-2329) in Corpus Christi.

Sincerely,



Dakus Geeslin
Chief, Science and Policy Resources Branch
Coastal Fisheries Division

DG:LK:PS

References

Pulich, W. M., Jr. and T. Calnan (eds.). 1999. Seagrass Conservation Plan for Texas. Resource Protection Division. Austin, Texas: Texas Parks and Wildlife Department. 79 pp.