South Carolina Department of
Natural Resources

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June 18, 2018

Ms. Courtney Stevens
U. S. Army Corps of Engineers
69-A Hagood Avenue
Charleston, SC 29403-5107

Re: P/N SAC-2015-00188, Horizon Project Foundation, Inc., Charleston County

Dear Ms. Stevens:

Personnel with the South Carolina Department of Natural Resources (DNR) have reviewed the above referenced project and offer the following for your consideration.

Project Description

The proposed work consists of the development of approximately 31.43 acres, which would include the placement of fill material in 2.866 acres of tidal wetlands and impacts to 0.969 acres of tidal wetlands for the construction of a tidal pond. The proposed impacts would allow for the construction of research facilities, housing, commercial areas, and structured parking. The applicant proposes to mitigate for impacts to wetlands and/or waters of the United States by implementing Permittee-Responsible Mitigation (PRM) at an off-site location identified as the Kings Grant Site. The proposed PRM plan includes the restoration/enhancement of approximately 20 acres of previously impacted wetlands. In the event that PRM is not approved by the Corps, the applicant proposes to purchase 46.0 saltwater mitigation credits from the Clydesdale Mitigation Bank. The stated project purpose is to provide housing, commercial areas, medical offices, and research facilities to serve and enhance existing functions of the Medical University of South Carolina, in the City of Charleston, to advance economic development and improve the quality of life in the City's neighborhoods.

Existing Site Conditions

The areas proposed for fill are located within a tidal drainage system known as Gadsden Creek. Specific areas of impact include open water channels, intertidal flats and vegetated salt marsh. These areas are subject to daily tidal flooding and are connected to the Ashley River by a series of open channels and culverts. The functions and values of small tidal creeks and associated intertidal habitats are well documented. Tidal creek systems provide critical feeding grounds, spawning areas, and nursery habitats for many species of fish, shellfish, birds, waterfowl, and mammals. Marsh areas provide the basis for the estuarine food chain through the production and transport of detrital material. Non-vegetated flats represent an important link in the estuarine food chain by providing sites for the production of microalgae and phytoplankton that is utilized by a variety of consumers and converted to benthic invertebrates. These benthic invertebrates provide a major food source for higher level consumers such as crabs, shrimp,

and bottom feeding fish. Most shorebirds are totally dependent on intertidal flats as a feeding ground. Intertidal marsh areas also provide water quality enhancement functions through the filtration and assimilation of upland runoff.

Impact Avoidance and Minimization

The environmental review for this project should include consideration for a reasonable range of potential alternatives, both on and off site, that meet the primary purpose of the project. The development of a clear and justifiable project purpose and need is essential in this process. The overall project purpose, as stated by the applicant, "is to advance economic development and improve the quality of life of the area, and to serve and enhance existing functions of the Medical University and the City's Medical District located in downtown Charleston, South Carolina." The stated need for the project "is to create a desirable live, work, play community in close proximity to the City's Medical District." No clear justification has been provided documenting why impacting all tidal resources on the site is necessary in meeting the project purpose. The applicant determined that based on the size of the property and surrounding development, that the majority of the property would need to be utilized and that the project site must be a minimum of 30 contiguous acres in order to support the proposed development. No basis or reasonable justification has been provided for this minimum acreage requirement or for the elimination of all on-site alternatives that involve fewer impacts. The proposed plan is conceptual/speculative in nature, making demonstration of impact avoidance and minimization difficult.

The applicant states that the development of the project site provides an opportunity to create infrastructure that will help address the flooding issues in the immediate vicinity of the site and that a permit to impact the tidal resources on the site is critical for implementing such improvements. A previously approved project for the City of Charleston (P/N 2007-00591-2IN) for construction of a stormwater pump system was permitted to address drainage issues in this area. This project also resulted in impacts to important tidal resources. The filling of natural marsh areas and replacing them with impervious surfaces will likely exacerbate drainage problems and should not be considered a viable option for solving drainage problems in this watershed. Stormwater management plans that incorporate natural drainage features such as Gadsen Creek should be given full consideration in the planning and design of this project.

The applicant proposes to create a tidal stormwater pond at the southwest corner of Fishburne Street and Hagood Avenue by excavating existing tidal marsh and installing a series of flow control devices. The applicant is describing the creation of this tidal pond as an improvement or restoration of the existing tidal wetland and as a demonstration of impact avoidance and minimization. No details have been provided regarding the maintenance of tidal flows to this proposed pond. Unobstructed flows to this area are essential in maintaining the ecological functions of this intertidal system. It will be difficult, if not impossible, to maintain viable functions in this area through the piping and pumping of tidal flows. The conversion of tidal marsh to an open water pond with limited tidal exchange would result in the loss of the majority of ecological functions associated with this area and should be considered an impact as opposed to a restoration/enhancement of existing tidal resources.

Mitigation

Compensatory mitigation should be considered only in cases where impacts have been avoided and minimized to the greatest extent possible and where impacts are truly unavoidable. We do not consider that to be the case in this situation and recommend impacts are further avoided and minimized by selecting an alternative site or alternative site design that minimizes wetland impacts.

Provided impacts to tidal resources are avoided and minimized to the greatest extent possible, the DNR is not opposed to the use of the proposed PRM in mitigating for unavoidable wetland impacts. We ask that the following be taken into consideration in finalizing the PRM plan for this site:

- The resources to be impacted for this project are high salinity, regularly flooded saltmarsh, dominated by smooth cordgrass (Spartina alterniflora). The marshes to be restored are located further up the watershed and are described as brackish, irregularly flooded marshes. Salinity and tidal regime will need to be carefully considered in the selection of plants used in restoration and should be similar to those established in the adjacent reference marsh. Use of this site for mitigating this project would be considered out of kind.

- Information regarding the fate of uplands surrounding restoration areas has not been provided. In an effort to maintain and protect restored marsh areas, upland buffers should be established adjacent to mitigation areas. Portions of uplands left undisturbed could serve as upland buffers and used in credit calculations. The use of a secondary easement that prohibits development on all uplands surrounding the mitigation site is strongly encouraged.

- The proposed mitigation work plan consists of breaching a perimeter berm in multiple locations to promote semi-diurnal tidal inundation. As acknowledged by the conceptual plan, further study and baseline data collection is needed on site hydrology. There is concern regarding the ability to provide adequate flows across the entire site with only partial dike removal and culvert elimination. Information regarding historical flow patterns on this site will need to be investigated. The removal of large portions of the existing berm and the construction of small tidal creeks may be necessary to distribute flows across the site.

The following Performance Standards (PS) are recommended

Vegetation

For areas involving vegetative restoration and planting the following PS apply:

- Average stem density, by species, over the entire restoration site will be > 75 % of the average stem density, by species, in the reference area at the end of three years.
- If planting, a minimum survival rate of 80% for plantings after the first growing season.
- All invasive species (e.g. Phragmites) will be removed within year 1; by year 5, the site will be naturally sustainable to resist invasive growth.

Hydrology

Hydrology is the dominant factor that determines the zonation of plant species and other biological and physical characteristics of tidal marsh systems. Appropriate PS for hydrology should be developed based on elevation, slope and tidal regime and should include the following:

- Elevations within the mitigation site will reflect design plans after grading is complete and be comparable to reference site.
- 100% of the low marsh will be inundated by a semi-diurnal tide.
- Ebbing and flooding flow rates (meters cubed per second) through breaches (inlet) are within 75% of reference marsh flow rates.

In summary, the project as currently proposed would result in significant impacts to important estuarine resources. Avoidance and minimization of impacts has not been adequately demonstrated and consideration for compensatory mitigation is not appropriate at this time. For these reasons, we recommend the project as currently proposed not be permitted and the applicant pursue less damaging alternatives that further avoid and minimize tidal wetland impacts.

Thank you for the opportunity to review this project and provide comments. Please feel free to contact me as you deem necessary regarding this project. I can be reached by email at rigginl@dnr.sc.gov or by phone at 803-734-4199. However, if you need further clarification regarding these comments, please contact Susan Davis at (843) 953-9003 or via email at daviss@dnr.sc.gov.

Sincerely,

Lorianne Riggin
Director, Office of Environmental Programs

Cc: SCDHEC/Hightower
OCRM/Trumbull
USEPA
USFWS
NMFS