MITIGATION PLAN
SWG-2015-00147
PORT OF CORPUS CHRISTI AUTHORITY

The Port of Corpus Christi Authority (Authority) proposes to impact a total of 0.037 acres of seagrass habitat for the purpose of constructing Oil Dock 17 and associated dredging located within the Port of Corpus Christi Inner Harbor Channel. The USACE Permit Number SWG-2015-00417 previously authorized tidal wetland mitigation and oyster reef mitigation, however, after an aquatic survey conducted by Lloyd Engineering Inc. in January 2018, 0.037-acres of seagrass habitat and no oyster habitat were identified within the project area. Side-scan sonar was used within the project area to determine if the presence of oyster reefs/beds, however none were identified (**Attachment A**). Therefore, the Authority will be substituting the originally proposed oyster habitat mitigation for seagrass mitigation. However, due to the complexity with site availability and success rate for a seagrass mitigation site, the Authority is proposing to create an additional tidal wetland area adjacent to the existing approved wetland mitigation plan for tidal wetland impacts from SWG-2015-00417.

1) Objectives

The objective of the mitigation plan is to provide appropriate and sufficient compensation for the unavoidable impacts to seagrass and seagrass habitat from the proposed dredging activities associated with the project SWG-2015-00417. The Authority is proposing a 3:1 creation to impact ratio, resulting in a total creation of 0.111-acre mitigation area for the 0.037-acre of seagrass habitat proposed to be impacted. This 0.111-acre of proposed mitigation will be in the form of tidal wetland habitat, instead of seagrass habitat due to the complexity of creating such a small and successful seagrass habitat area.

2) Site Selection

In order to comply with the Final Compensatory Mitigation Rule (2008) the Authority initially investigated the possibility to purchase the appropriate number of mitigation credits through an approved mitigation bank. However, there are no approved mitigation banks that serve the project area. In addition, there are no in-lieu fee programs available that service the project area. Therefore, the Authority has agreed to construct off-site permittee responsible mitigation by creating an additional 0.111-acre of tidal wetland habitat (**Attachment B**). The 0.111-acre of proposed additional tidal wetland habitat will be constructed directly adjacent to proposed enhanced and restored tidal wetlands associated with a separate USACE approved mitigation area (SWG-2015-00417), outside the Rincon Bayou, within Nueces River Delta, which is managed by the Coastal Bend Bays & Estuaries Program (CBBEP). The proposed additional tidal wetland mitigation area is within the same watershed as the proposed project site.

3) Site Protection Instrument

The mitigation site is located within the CCBEP's delta preserve area and is protected from residential, commercial, or industrial development. In cooperation with CCBEP, the Authority will implement a deed restriction, or similar protective instrument that limits uses of the mitigation site to those consistent with the mitigation plan.

CBBEP has agreed to design, construct, monitor and maintain the additional 0.111-acre of created tidal wetland mitigation area on behalf of the Authority.

2) Baseline Information

The proposed additional tidal wetland mitigation area is located within a 0.111-acre tract of land, near Rincon Bayou of the Nueces River Delta of CCBEP's managed delta preserve area. Specifically, the center of the proposed tidal wetland mitigation area is located approximately at UTM NAD 83 Zone 15 coordinates 27°53'20.99"N; 97°35'29.68"W (**Attachment B**). The proposed 0.111-acre area is currently dominated by upland vegetation species adjacent to tidal waters within the Nueces River Delta.

5) Determination of Credits

As no approved or available mitigation banks or in-lieu fee programs are available to the project area, the Authority has agreed to construct off-site permittee responsible tidal wetland mitigation. To ensure that the mitigation area appropriately compensates for the proposed impacts for the project area, specifically for Oil Dock 17, the Authority proposes to use a 3:1 creation to impact ratio to offset the seagrass impacts (0.037-acre). Due to the complexity and availability of successful sites for seagrass mitigation, the Authority is proposing to compensate the 0.037-acre of seagrass impacts in the form of creating at a 3:1 creation to impact ratio of tidal wetlands located directly adjacent to the approved tidal wetland mitigation from SWG-2015-00417.

6) Mitigation Work Plan

The construction of the off-site mitigation area of created 0.111-acre tidal wetland habitat will begin within twelve (12) months following the initiation of construction within permitted 0.037-acre seagrass habitat. The off-site created tidal wetland mitigation area will be completed, including planting, within twelve (12) months of the initiation of the construction in existing seagrass habitat within the project area. A post-construction survey of the wetland mitigation site will be conducted and submitted to the USACE within sixty (60) days of mitigation project completion.

The existing 0.111-acre area consists of upland vegetation habitat. The 0.111-acre area will be excavated and graded to reference elevations. Silt fencing and construction fencing will be placed around the boundary of the 0.111-acre area to prevent incidental spill over during the excavation. All work will be maintained within the already approved work corridor as noted in the mitigation plan map under the approved permit SWG-2015-00417.

The 0.111-acre mitigation area will be planted on three (3) to four (4) foot centers to maximize aerial coverage. The proposed tidal wetland mitigation area will be planted with a desirable mix of tidal wetland vegetation that naturally occurs within the lower Texas coastal region including, but not limited to: smooth cordgrass (*Spartina alterniflora*); marsh hay cordgrass (*Spartina patens*); or saltgrass (*Distichlis spicata*). The exact composition of planted species will be dependent upon the species availability at the time of planting.

7) Maintenance Plan

As the mitigation area will be directly adjacent to enhanced and restored tidal wetland areas, the potential threat of invasive vegetation species is low, however will be monitored for over the monitoring term. The proposed mitigation area will be tidally influenced from Rincon Bayou and self-sustaining once established. CCBEP has an agreement with the Authority to create, monitor and maintain the proposed 0.111-acre tidal wetland area and the already approved tidal wetland mitigation adjacent to this site as this area is within CCBEP's delta preserve.

8) Performance Standards

Monitoring of the created tidal wetland mitigation area will be performed in accordance with the USACE Regulatory Guidance Letter 08-03. Success of the created 0.111-acre tidal wetland mitigation will be evaluated using the following standards:

Year 1: Vegetative percent cover of target wetland vegetation within the 0.111-acre area shall be equal to or greater than twenty-five percent (25%) after one complete growing season or one (1) year after construction, whichever is longer.

Year 2: Vegetative percent cover of target wetland vegetation within the 0.111-acre area shall be equal to or greater than fifty percent (50%) after two complete growing seasons or two (2) years after construction, whichever is longer.

Year 3: Vegetative percent cover of target wetland vegetation within the 0.111-acre area shall be equal to or greater than seventy percent (70%) after three (3) complete growing seasons after construction or three (3) years after construction, whichever is longer. If the site meets minimum success criteria (MSC) after two (2) consecutive years, the Authority will request in writing to the USACE Corpus Christi Regulatory Field Office to make the final determination that no additional monitoring is require as the mitigation area has met MSC.

Year 4: Vegetative percent cover of target wetland vegetation within the 0.111-acre area shall be equal to or greater than seventy percent (70%) after four (4) complete growing seasons after construction or four (4) years after construction, whichever is longer. If the site meets minimum success criteria (MSC) after two (2) consecutive years, the Authority will request in writing to the USACE Corpus Christi Regulatory Field Office to make the final determination that no additional monitoring is required as the mitigation area has met MSC.

Year 5: Vegetative percent cover of target wetland vegetation within the 0.111-acre area shall be equal to or greater than seventy percent (70%) after five (5) complete growing seasons after construction of five (5) years after construction, whichever is longer. Monitoring will not exceed five (5) years if MSC has been met for two (2) consecutive years.

9) Monitoring Requirements

The mitigation area will be monitored on an annual basis for the first year following the completion of the constructed mitigation areas. Thereafter, the mitigation area will be monitored annually on the approximate construction anniversary for an additional four (4) years and a copy of the annual monitoring report will be submitted to the USACE Corpus Christi Regulatory Field Office until MSC has been met. Monitoring shall continue for a minimum of five (5) years and will be considered complete when the mitigation has met the MSC.

Mitigation monitoring reports will be submitted to the USACE Corpus Christi Regulatory Field Office and will include the following information: *A) a description of the monitoring methodology; B) results; and C) photo documentation of the mitigation area.*

8) Long Term Management Plan

The created tidal wetland mitigation site is located within the Nueces Delta Preserve, managed by the CCBEP. This site and the surrounding property will be managed in accordance within the conservation goals of the Nueces Delta Preserve.

Once the mitigation area is established, the 0.111-acre tidal wetland area will be self-sustaining.

Hydrology into and out of the mitigation area will be controlled by natural tidal flux from Rincon Bayou of the Nueces Delta. As the mitigation area will remain tidally influenced, the site will continue to serve the intended function. The Authority, in coordination with the CCBEP, is responsible for the long-term management of the mitigation area.

9) Adaptive Management Plan

The mitigation area will be re-planted if 70% aerial coverage of "desirable" vegetation species is not achieved within three (3) years following the completion of the construction. If the mitigation area does not meet MSC after the fifth (5^{th}) year of monitoring, the Authority will re-coordinate with the USACE Corpus Christi Regulatory Field Office to review the mitigation plan. At that time, appropriate changes to the mitigation plan will be made until the mitigation area meets the MSC.

In the event of Force Majeure that significantly impacts the success of the mitigation areas; the Authority will work with the USACE to develop a restoration plan for the mitigation areas. Force Majeure is defined as substantial damage caused by a natural or human-caused catastrophic event or a deliberate or unlawful act, that the USACE Corpus Christi Regulatory Field Office in consultation with the Authority, determined has had significant adverse impact on the quality of aquatic functions, native vegetation, soils, or wildlife of the mitigation areas and is beyond control of the Authority. A natural catastrophic event includes, but is not limited to, a flood of equal or greater magnitude than the 100-year flood event, as well as debilitating disease, wildfire, or regional pest infestation. A human-caused catastrophic event includes, but is not limited to war, insurrection, riot or other civil disorders, spill of a hazardous or toxic substance, or fire. A deliberate and unlawful act includes, but is not limited to, the dumping of a hazardous or toxic substance, as well as significant acts of vandalism or arson.

10) Financial Assurances

CBBEP has an agreement with the Authority to design and construct the 0.111-acre tidal wetland mitigation area. The Authority will be financially responsible for administering funds to CBBEP for the creation of the mitigation area and for any subsequent maintenance required to achieve the MSC.

11) Long Term Financing

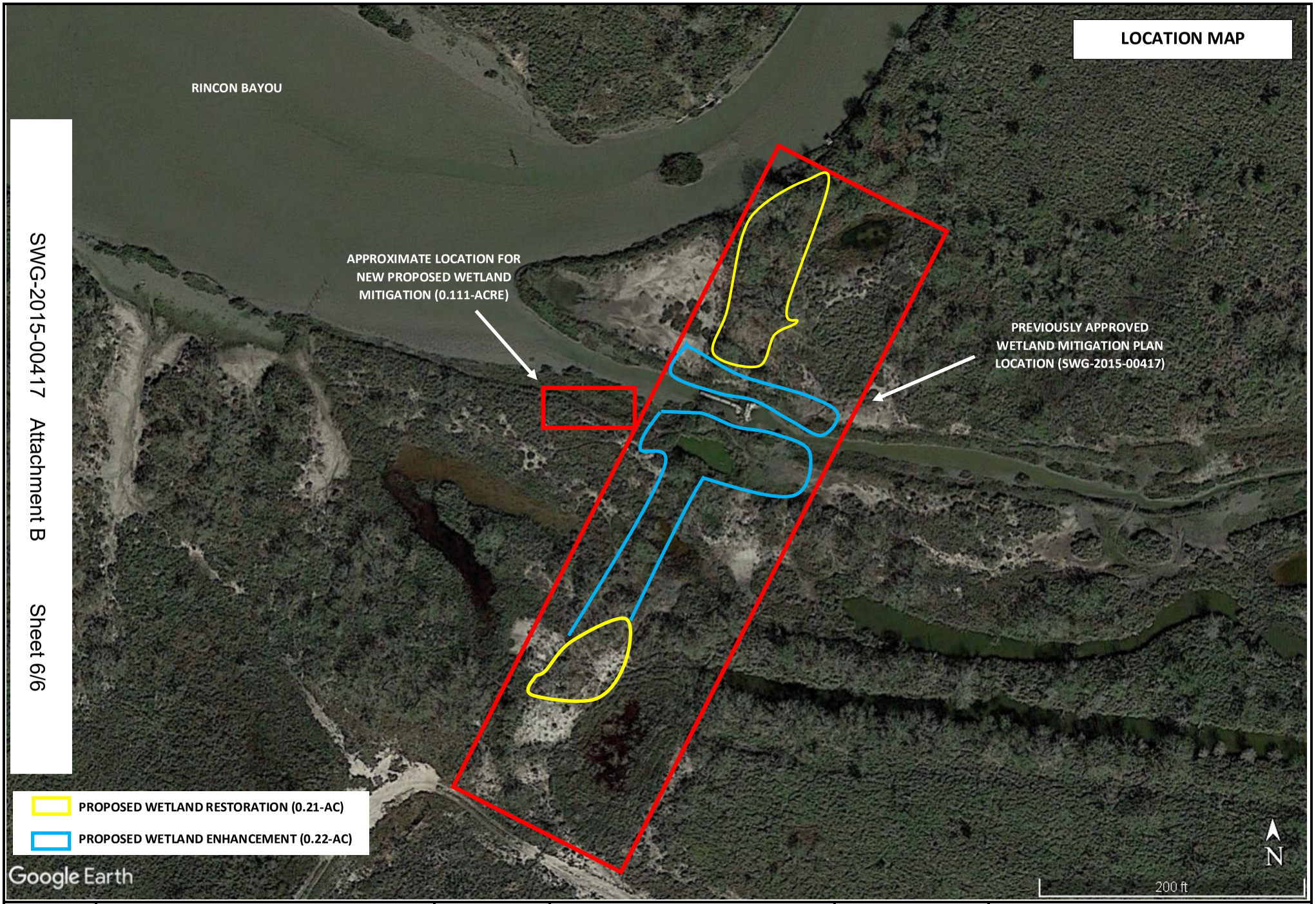
The Authority will be responsible for any long term financial responsibility of the mitigation area.

Attachments:

- *A- Lloyd Engineering Inc. Aquatic Survey January 2018*
- *B- Proposed Tidal Wetland Mitigation Area Location Maps*

SWG-2015-00417 Attachment B Sheet 5/6

I:	SWG-2015-00417	COUNTY	NUECES COUNTY, TEXAS	PORTCORPUSCHRISTI	DATE: 07/12/2018
		WATER BODY	NUECES BAY		SHEET NO. 1



LOCATION:	PROPOSED WETLAND MITIGATION LOCATION FOR SWG-2015-00417	COUNTY	NUECES COUNTY, TEXAS	PORTCORPUSCHRISTI	DATE: 07/12/2018
		WATER BODY	RINCON BAYOU/NUECES RIVER DELTA		SHEET NO. 1