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Mitigation Plan

Part I: Project Information

Project Name: Copano Bay Mitigation Area
Applicant: Port of Corpus Christi Authority
Project Location: Bayside, TX
County: Refugio

Port of Corpus Christi Authority (POCCA) is proposing to develop Public Oil Docks 20, 21, and 22 (the Project) located in the Port of Corpus Christi industrial area near Corpus Christi, Texas in San Patricio County. Lloyd Engineering, INC (LEI) prepared a *Wetland Delineation Report* and *Functional Wetland Assessment Report* on behalf of POCCA for use in the preliminary determination of the jurisdictional status of wetlands and other non-wetland waters of the U.S. for the Project. During this review, LEI estimated that the construction of the Project would result in the permanent conversion of approximately 5.9 acres of potentially jurisdictional estuarine wetland habitat to non-wetland habitat and impacts to approximately 6.5 acres of non-wetland waters of the U.S. (impact areas).

LEI conducted a functional analysis of the wetlands using the U.S. Army Corps of Engineers (USACE) Galveston District (SWG) approved Tidal Fringe functional assessment for water of the United States (iHGM). The total estimated functional loss (reported in Functional Capacity Units (FCUs)) associated with construction of the Project is as follows:

Functional Category	Total
Biota:	5.6
Botanical:	5.8
Physical:	3.9
Chemical:	5.8

Advanced Ecology, Ltd. (AEL) has prepared this Compensatory Mitigation Plan (MP) on behalf of POCCA to provide compensatory mitigation for the proposed impacts to jurisdictional waters of the U.S., including wetlands resulting from construction of the proposed Project. This MP has been developed to meet the standards outlined in 33 CFR 332.4 (c).

Part II: Compensatory Mitigation Plan

1. Objectives

The goal of the Off-Site Mitigation Area (MA) is to provide a source of off-site compensatory mitigation for adverse impacts to waters of the U.S., including wetlands, resulting from implementation of the Project. The ecological objective of the MA is to preserve approximately 65.5 acres of high quality, coastal habitat within the boundaries of the Copano Bay Tract (Tract) (Appendix A).

2. Site Selection

Currently, no approved mitigation banks or in-lieu fee projects have credits available to service the impacts associated with the Project. Therefore, POCCA proposes to develop a suitable permittee-responsible off-site mitigation area.

The MA represents an ecologically suitable compensatory mitigation site with a high probability for success, under a watershed approach. The data used to aid in selection of this site are as follows:

1. Both the Project and MA are located with the same Level IV Ecoregion (Mid-Coast Barrier Island Habitat and Coastal Marshes)
2. Both the Project and MA are categorized as Marsh Barrier Island habitat, by Texas Parks and Wildlife in the "Vegetation Types of Texas, Including Cropland, McMahan et. al, 1984".
3. The MA is highly functioning and contains habitat that is beneficial to saltwater finfish, whooping cranes, piping plovers, red knots, and black rails.
4. The MA occurs within areas identified and ranked as "High" priority protection habitat areas for wetlands by Texas General Land Office (GLO) and Texas Parks and Wildlife (TPWD).
5. The MA is located in the Copano Bay system which was classified by the 2017 Texas Coastal Resiliency Plan's Technical Advisory Committee (TAC) as being of "Most Concern" when compared with all other Issues of Concern (IOC), except Abandoned or Derelict Vessels, Structures and Debris.
6. The addition of the MA into a conserved land base will provide additional buffering for Copano Bay.
7. The MA is located within close proximity to documented whooping crane observations (2013), Fennessey Ranch, Egery Flats, Mission River Delta, Important whooping crane wintering habitat, and the Aransas National Wildlife Refuge (Appendix A).

In general, the MA is conducive to fulfilling local watershed needs, achieving long-term sustainability and site integrity, providing potential for aquatic habitat diversity, habitat connectivity, protection of

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communities described by the GLO and TPWD as of "most concern", and consolidation of wetland conservation projects. Due to the location of the MA in relation to the impact site, the ecological suitability warrants its use as compensatory mitigation for unavoidable losses of aquatic resources resulting from implementation of the Project.

3. Site Protection Instrument

POCCA or POCCA's designee, shall dedicate the MA as an aquatic ecosystem preserve in perpetuity with a conservation easement held by a third party upon issuance of the permit. The conservation easement holder will be an accredited land conservancy, preferably a non-governmental, non-profit organization dedicated to the protection of land. The MA shall not be disturbed, except by those USACE-approved activities that would not adversely affect the intended extent, condition, and function of the MA, or those activities specifically provided for in this MP. POCCA or POCCA's, shall record the USACE-approved conservation easement with the Refugio County Clerk and provide a copy of the recorded conservation easement to the Regulatory Branch, USACE, Galveston District within 180 days of impact to a jurisdictional area at the Project site. The conservation easement shall not be removed or modified without written approval of the USACE. The conservation easement will contain a clause requiring 60 days' notice to the USACE before any change in the recorded document can be allowed. Conveyance of any interest in the property shall be subject to the recorded conservation easement.

4. Baseline Information

The Tract is located near the San Patricio and Refugio County line, in Refugio County, approximately one mile southwest of the Bayside community (28°04'53"N, 97°13'25"W), see Appendix A. The Tract contains an estimated 247 acres of high quality coastal habitat.

Vegetation commonly encountered on the Tract included *Lycium carolinianum*, *Borrchia frutescens*, *Monanthochloe littoralis*, and *Salicornina*. Four soil series are mapped on the Tract by the NRCS, Barrada clay, Narta fine sandy loam, Aransas clay, and Monteola clay (Appendix A).

5. Determination of Credits

The MA is designated as a preservation area and meets the criteria regarding preservation standards as outlined in 33 CFR 332.3(h)(1). To ensure that the MA appropriately compensates for the proposed impacts at the Project site, POCCA proposes to use a 10:1 ratio to offset wetland impacts (5.9 acres) and a 1:1 ratio for impacts to non-wetland waters of the U.S. (6.5 acres). Therefore, based upon the current estimated impact footprint, POCCA proposes to perpetually protect approximately 65.5 acres of high quality coastal wetland habitat.

6. Mitigation Work Plan

Due to the unique site characteristics in relation to the location of the MA which incorporate high quality wetlands possessing high variable subindex values, preservation is the prescribed management regime.

7. Maintenance Plan

Management practices such as mechanical vegetation control, selective herbicide treatments, prescribed burning, temporary plantings intended to suppress invasive or weed species, erosion control, selective tree removal, and water regime management can be valuable management tools available to POCCA in order to maintain a highly functioning system within the MA. These activities may be conducted within the MA provided the activity will enhance aquatic ecosystem functions and not interfere with the long-term ecological objectives of the MA.

8. Performance Standards

1. Execution and filing of the conservation easement
2. Establishment of financial assurances

9. Monitoring Requirements

Monitoring and reporting requirements are to be in accordance with USACE Regulatory Guidance Letter 08-03 *Minimum Monitoring Requirements for Compensatory Mitigation Projects Involving the Restoration, Establishment, and/or Enhancement of Aquatic Resources* (RGL 08-03). Annual reports presenting documentation of monitoring findings will be submitted to the USACE by October 1st of each year, for the first 5 years following implementation of this MP. POCCA or POCCA's designee, will conduct annual pedestrian surveys of the MA to evaluate the performance of the MP in accomplishing the goals and objectives of the MA.

10. Long-term Management Plan

The MA will be managed in perpetuity as a wetland preserve. Any mitigation area is vulnerable to acts of nature such as wildfires, climatic instability, and disease that are beyond the control of POCCA. The occurrence of such events may necessitate changes to the MA, including revision of the MP, or activation of adaptive management activities or other pertinent management plans, to allow for actions that would offset and counteract the negative environmental impacts of the events. Depending upon the circumstances, however, allowing nature to take its course may be appropriate, particularly when acceptable environmental conditions are expected to reestablish without intervention. Any change to the MA necessitated by an act of nature beyond the control of POCCA shall be specified in a revised MP or other appropriate document and require the approval of both POCCA and the USACE. The long term financial assurances funding amount will represent the absolute aggregate limit for any and all long term management activities. The third party CE holder will be responsible for monitoring the encumbered area to ensure that the conservation values discussed in the CE are maintained in perpetuity.

Valuable mineral resources may exist under the land in this MA. Other parties may own subsurface rights to such mineral resources in whole or in part. Recognizing that surface landowners in the State of Texas cannot wholly control a mineral owner's access to those minerals the landowner shall take all reasonable steps to develop a Mineral Management Plan (MMP) with the mineral owner(s) prior to the initiation of any mineral exploration, production, or transportation activities. The MMP shall include a list of known surface and subsurface ownership interests, a description of anticipated activities and resulting short and long-term

impacts on aquatic ecosystem functions and values, and a set of guidelines and best management practices to minimize the adverse impacts. It is important to note that exploration and development of mineral resources within the MA may require a USACE permit. The landowner shall, whenever practicable, work with the subsurface mineral owner(s) to develop leases, easements, and other surface use agreements that are consistent with the MMP.

The exploration for, and production and transportation of, subsurface mineral resources beneath this MA is acceptable provided that the ground-disturbing activities and surface alterations are minimized to the maximum extent practicable; activities are conducted in a manner that minimizes adverse environmental impacts; impacted areas are restored to pre-existing conditions as soon as practicable; reasonable and appropriate compensatory mitigation is achieved, and the entity conducting these activities complies with all applicable regulatory requirements, including those under Section 404 of the Clean Water Act.

11. Adaptive Management Plan

The adaptive management framework for the MA is based upon the performance standards that serve to indicate the success of the management activities (Section 8), and regular monitoring (Section 9). Implementation of any adaptive management plan(s) will be based upon the following analysis adapted from the article *Conceptualizing Mitigation Performance Standards* (Martin et al. 2005):

1. Compare the analysis of the monitoring data to the performance standards
2. Evaluate whether the site is progressing toward the desired outcome(s)
3. Determine whether any corrective measures are necessary, and, if so, what type
4. Implement any prescribed corrective measures
5. Continue monitoring site progression toward the desired outcome(s)

In the event that monitoring or other information indicates that the MA is not meeting the performance standards as anticipated, POCCA shall notify the USACE as soon as possible. POCCA will submit to the USACE an adaptive management plan identifying the adaptive management considerations, proposed measures, and an appropriate schedule for implementation of any measures (Items 1-3, above). The permittee will recommend any changes needed and submit them to the USACE. An additional three year monitoring period will be required in order to evaluate the success of any adaptive management activity.

12. Financial Assurances

Long term financial assurances (LTFA) will be provided via the endowment paid to the third party CE holder. The endowment will provide funding for long-term monitoring activities, legal defense, and minerals damage restoration.

Short term financial assurances (STFA) can be in the form of a letter of credit (LOC), performance bond (PB), or other appropriate mechanism. Once the five-year monitoring period is complete, any monies tied to the STFA requirement will be released. The financial assurances, both long and short term, will be fully funded within 180 days of impact to a jurisdictional area at the Project site.

Part III: Supplemental Information

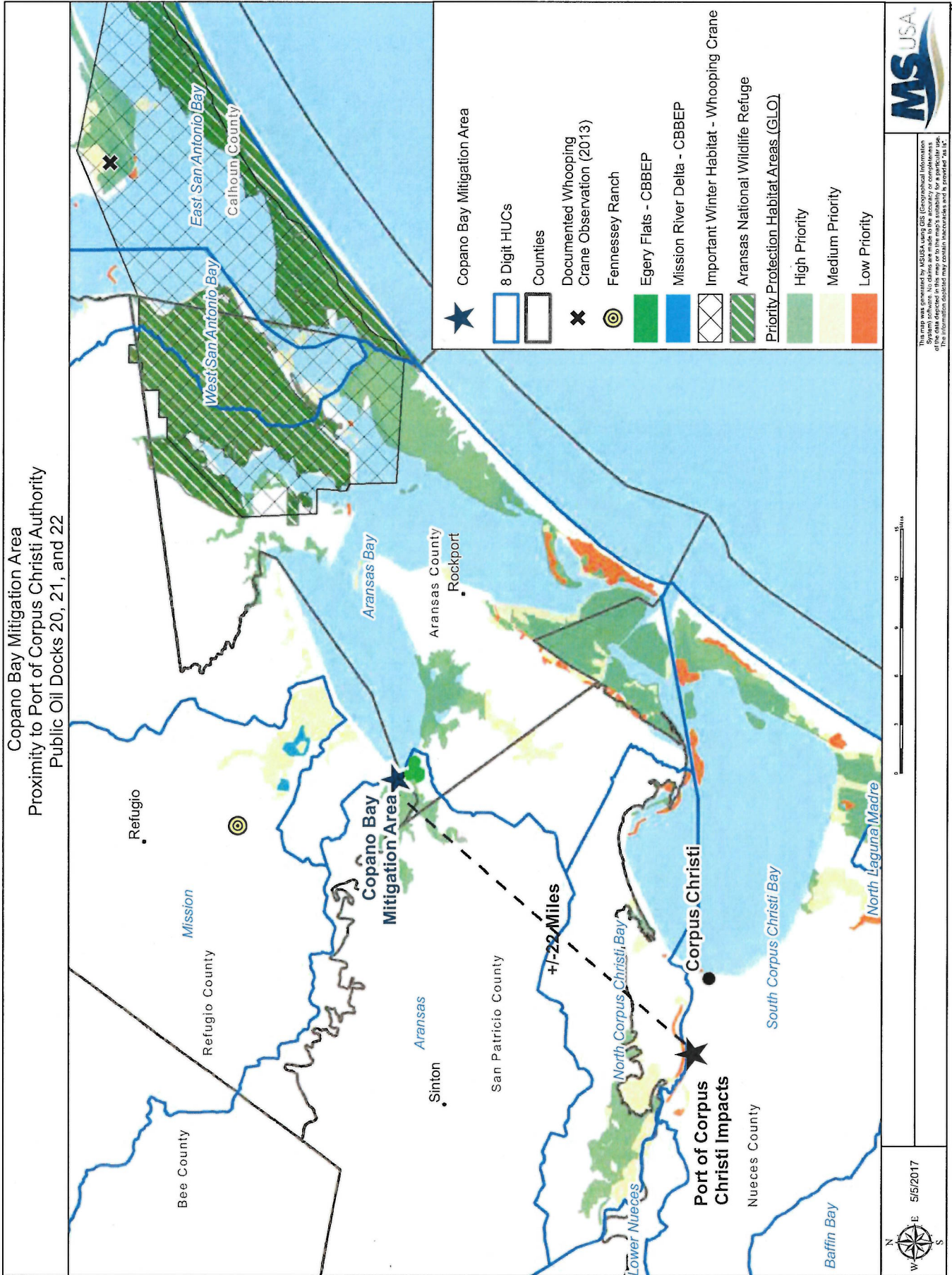
Appendices

A. MA Project Figures



Appendix A

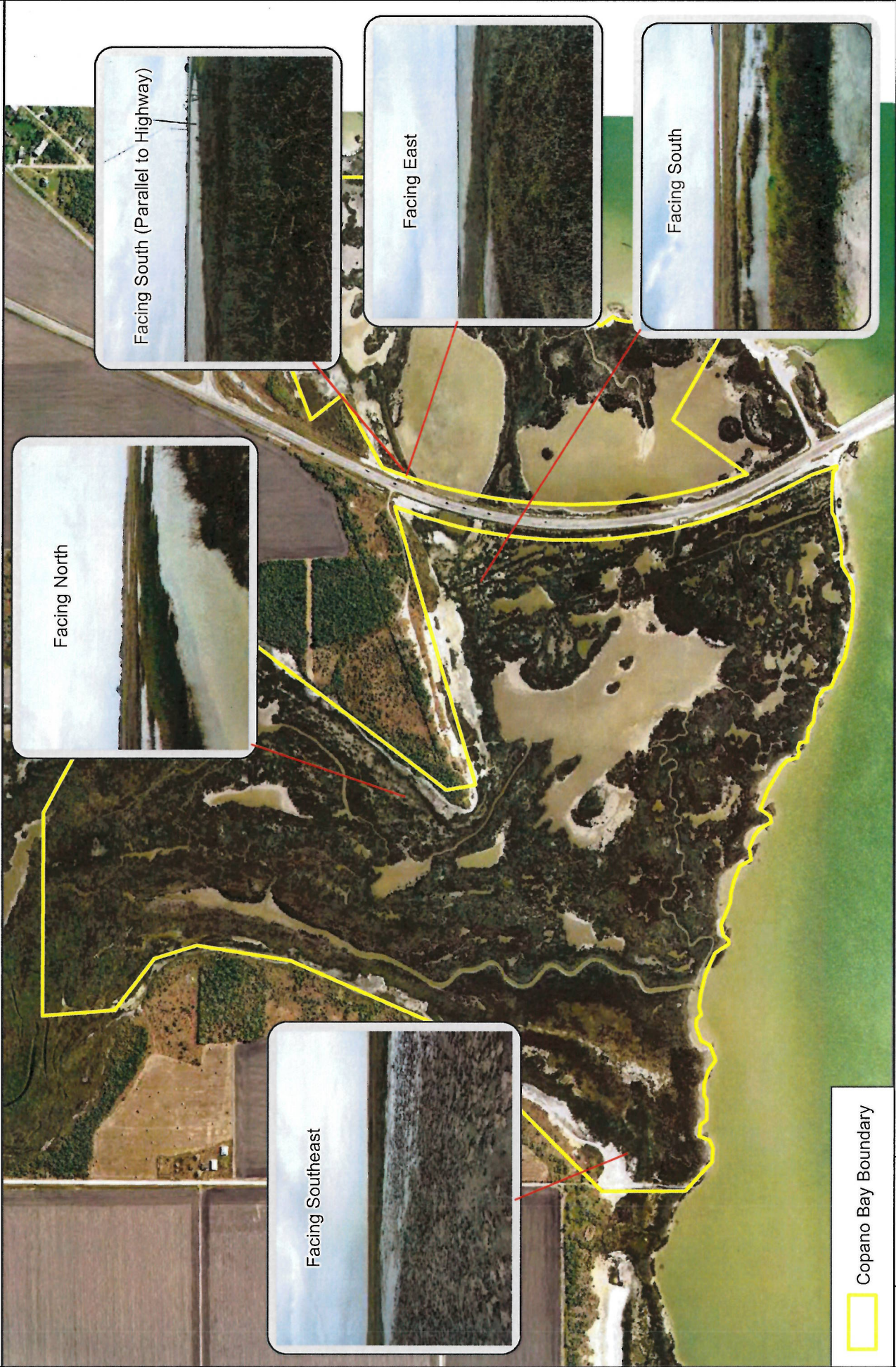
MA Project Figures



Copano Bay Tract - Post Recon Map San Patricio County, Texas

SW9-2015-00404

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 Copano Bay Boundary



1/19/2017
Imagery: 2016



1 Inch = 714 Feet

Texas Office: (936) 598-3033 Louisiana Office: (318) 797-1546



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SWG-2015-00404

Location - Copano Bay Mitigation Area
247.4 Acres
Refugio County, Texas



Tract Boundary

NOTE: The POCCA proposes perpetually protect 65.5 acres of high quality coastal wetland habitat within the boundaries of the Copano Bay Mitigation Area to compensate for proposed impacts at the Project site.



5/5/2017

Imagery: 2009 TOP

0 500 1,000 1,500 2,000 2,500 3,000 Feet

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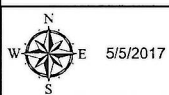
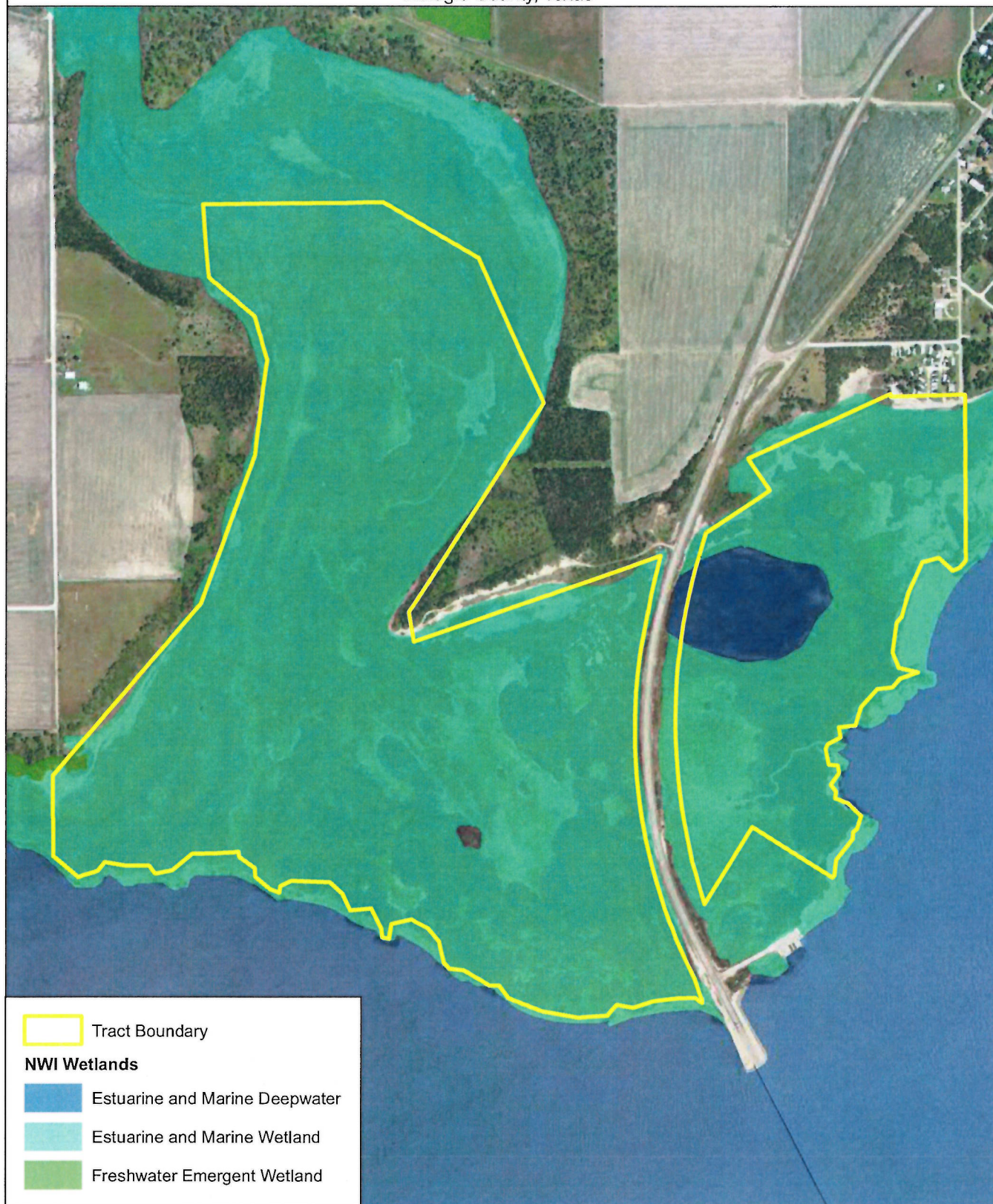
Location - Copano Bay Mitigation Area
247.4 Acres
Refugio County, Texas



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SWC - 2015 - 00404

National Wetlands Inventory
Copano Bay Tract
Refugio County, Texas



5/5/2017

Imagery: 2012 NAIP
Wetlands: USFWS NWI

0 500 1,000 1,500 2,000 2,500 3,000 Feet

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SWC-2015-00404

USDA Soils Map
Copano Bay Tract
Refugio County, Texas

Map Unit	Soil Name	Hydric Rating	Acreage
As	Aransas clay, saline, frequently flooded	80	100.4
Ba	Barrada clay	85	126.8
MoD4	Monteola clay, 5 to 8 percent slopes, gullied	0	7.5
Na	Narta fine sandy loam	90	10.6
W	Water	0	8.8

