Attachment B

Mitigation Plan

Project Background

The Port of Corpus Christi Authority (Port Corpus Christi) proposes to construct a photovoltaic (PV) solar panel development (project) that converts sunlight into electrical energy. The project will help fulfill the need for multiple gigawatts of renewable electricity among the new and existing industrial offtakers in the region, supplanting power derived from fossil energy sources. In doing so Port Corpus Christi will support federal decarbonization and energy transition objectives.

The proposed project will install solar panels in an approximate 1,866ac area. The proposed solar panel array is capable of generating approximately 600 megawatts (MW) of renewable energy.

- Two substations located in uplands will be connected to 295 inverters via elevated pile-supported cable trays.
- Each inverter will be elevated above base flood elevation (BFE) on a 13ft by 7ft concrete pad. Of the 295 inverters, 170 will be placed entirely in uplands, avoiding wetland impacts. For those inverters for which placement in wetlands is necessary to maintain the fundamental operational efficacy of the site, the design team minimized wetland impacts to the greatest extent practical (0.3ac of wetland impacts).
- To maintain basic continuity of operations on the site, full-time access must be provided to all inverters regardless of any flooding that may persist onsite. To create reliable access to the inverters, Port Corpus Christi will construct 10ft-wide (the minimum functional width for required equipment) permeable access routes via crushed limestone or similar material, resulting in 13.4ac of wetland impacts.
- Inverters will be connected to solar panels via elevated cable trays. Solar panels located above the BFE (~5ft above existing grade) will rotate continuously. The rotating mechanism of panels, coupled with their elevation above BFE, will eliminate the shading of vegetation within the PRA, preventing a reduction in the ecological function of the wetlands.

The project site is located northeast of Ingleside, Texas, and west of Aransas Pass, Texas at Latitude 27.9079, Longitude -97.2084. The project review area (PRA) consists of two separate segments transected by Farm to Market Road (FM) 3512 (See **Attachment B – Permit Drawings** of this application)**.** The predominant historic and current site activity is grazing for commercial livestock. The site has limited improvements such as caliche roads, dirt paths, and a drainage ditch that bisects the eastern portion of the property from north to south. This ditch conveys stormwater from the surrounding area and communities, downstream into the McCampbell Slough, providing substantial freshwater influx to the downstream estuaries of Port and Copano Bays.

Approximately 35mi of access paths exist on the site as a result of ongoing ranching activities. 16.3mi of these access paths traverse wetlands, which have been severely

degraded due to historic vehicular traffic. The topography of these impacted wetlands has been significantly modified such that they have become barriers to surface hydrology, limiting sheet flow from the wetlands into existing swales and channels and, ultimately, limiting hydrologic connectivity between the site and downstream estuaries.

Port Corpus Christi conducted a wetland delineation of the property in two separate surveying events between 2019 and 2020. Port Corpus Christi submitted a request for an Approved Jurisdictional Determination (AJD) to USACE on February 22, 2021. On August 12, 2022, USACE issued an Approved and Preliminary Jurisdictional Determination (AJD), No. SWG-2021-00163, for the PRA which expires August 12, 2027. The approximate 2,850ac property is comprised of 1,558.3ac of jurisdictional emergent palustrine and estuarine wetlands, and other jurisdictional water bodies (See **Attachment C – Approved Jurisdictional Determination** of this application)

As detailed above, the project team has avoided and minimized wetland impacts to the fullest extent practical and anticipates that impacts to jurisdictional areas will be limited to 13.7ac (13.4ac from requisite access improvements and 0.3ac from inverter placement). To serve as compensatory mitigation for unavoidable project impacts, Port Corpus Christi proposes a ratio of 2 to 1 onsite in-kind restoration of approximately 29.6ac of emergent wetlands by restoring 16.3 miles of existing access paths within wetlands to natural grade and elevations. This restoration will rectify historic alteration of site hydrology, improving both habitat and stormwater attenuation functions on the site to confer significant ecological and life safety benefits.

1.0 Objectives

1.1 Method of Compensation

The objective of this plan is to provide sufficient onsite, in-kind mitigation to ensure no net loss of wetland function or value occurs as a result of the proposed project. Port Corpus Christi will utilize qualified construction contractors, engineers, and consultants to mitigate permanent impacts resulting from project construction.

Port Corpus Christi's project will impact approximately 13.7ac of emergent wetlands. Therefore, Port Corpus Christi proposes to restore 29.6ac of emergent wetlands that have lost ecological function due to topographic alterations from ongoing ranch activities. Restoration of existing access paths to natural grade and elevation will provide restored hydrology and allow for the natural recruitment of vegetation. Table 1 provides an impact and mitigation summary.

Table 1. Habitat Impact and Mitigation Summary

		Mitigation Method, Acreage & Ratio	
Habitat	**Impact (ac)**	**Restoration (ac)**	**Ratio**
Emergent wetlands	13.4	29.6	2.2:1

1.2 Needs of the Watershed

The existing paths exhibit disturbed sediment that alters the natural hydrology and vegetative communities through the wetlands. Restored hydrology will provide the benefit of homogenous vegetation communities and improved ecological value of the wetlands. Thereby enhancing the overall function and quality of the full 1,538.3ac.

2.0 Site Selection

Port Corpus Christi selected on-site mitigation as a favorable alternative to off-site mitigation because the site possessed significant anthropogenic impacts to wetlands as a result of previous uses of the property. Due to the wetlands' proximity to the McCampbell Slough and Port Bay, the quality of the wetlands on-site have downstream implications for water quality and nutrient filtration. Restoring degraded wetlands onsite will benefit downstream habitats off-site.

3.0 Site Protection Instrument

Port Corpus Christi will deed restrict the restored wetlands on the property to prevent a site operator from modifying restored wetlands. Further, since solar panels will be placed over a portion the restored wetlands at an elevation that allows continued vegetation growth, the wetlands will have a secondary, de facto physical protection by way of the installation of the solar development.

4.0 Baseline Information

4.1 Ecological Characterization of the PRA

Port Corpus Christi contracted Belaire Environmental, Inc. (Belaire) to conduct a wetland delineation of the 2,850ac property in two separate surveying events between 2019 and 2020. The report determined the presence of eleven soils, three of which are hydric and comprise 2,596ac of the survey area. Five distinct cover types identified within the property include emergent wetlands; uplands comprised of mesquite mottes/shrubs and grassland mosaic; drainage features; stock ponds, and previously disturbed access paths. The USACE issued AJD, No. SWG-2021-00163 identified 1558.3ac of jurisdictional wetlands on the site.

Vegetation within the wetlands have similar characteristics throughout the entire survey area and did not change significantly. Vegetation within the wetland sample areas is dominated by Gulf cordgrass (*Spartina spartinae*), brushy sea oxeye daisy (*Borrichia frutescens*), shoregrass (*Distichlis littoralis*), sand spike rush (*Eleocharis palustris*), coastal salt grass (*Distichlis spicata*), bitter panic grass (*Panicum amarum*), seaside American aster (*Symphyotrichum subulatum*), chairmakers club-rush (*Scheonoplectus americanus*), marsh primrose-willow (*Ludwigia palustris),* Kleingrass (*Panicum coloratum*), torpedo grass (*Panicum repens*), seashore dropseed (*Sporobolus virginicus*) in the herb stratum.

***Figure 1**: Existing wetlands within the property dominated by gulf cordgrass.*

4.2 Ecological Characterization of the Mitigation Site

The proposed mitigation plan isolates the disturbed access paths throughout the project site. The paths contain excessive rutting of sediment and degraded or lost vegetation. These paths demonstrate similar wetland characteristics as those described above, with significant disturbances to the hydrology, vegetation, and soil. These paths create segmentation in otherwise expansive, uniform wetland communities. Due to the high quality of wetlands adjacent to the access paths, Port Corpus Christi anticipates the restoration of disturbed paths to provide self-sustaining ecological functions upon reconnecting the wetlands.

***Figure 2:** Existing access paths within the property through wetlands, demonstrating degraded vegetation and hydrology from tire ruts.*

5.0 Determination of Mitigation Ratio

Port Corpus Christi's project construction will impact approximately 13.7ac of emergent wetlands. The majority of the project impacts result from creating access throughout for infrastructure maintenance, rendering the existing access created as a result of ongoing agriculture obsolete. Where these access paths transect wetlands, Port Corpus Christi will restore the elevation and grade to that of the surrounding wetlands. Based on preliminary surveys, Port Corpus Christi estimates there are 16.3mi of paths through wetlands on the property with an average width of 15ft. Port Corpus Christi will restore these paths in existing wetlands, resulting in at minimum 29.6ac of on-site, in-kind restoration, a ratio of 2:1 (restored to impacted habitat).

6.0 Mitigation Work Plan

There are three types of paths through wetlands currently on-site. The work mitigation work plan will differ slightly as the degree of impact vary from one path type to the next. Before any construction, Port Corpus Christi will conduct a topographic survey to establish target elevations based on reference wetlands and to determine cut and fill volumes.

6.1 Improved via Fill from Off-Site

To service former oil and gas well within the property, caliche roads were constructed to provide consistent access. Where roads have been improved with fill from offsite, Port Corpus Christi will remove the fill and restore the path elevations to that of the surrounding wetlands. This fill will either be disposed of offsite at an appropriate disposal facility or reused as structural fill for the proposed project components.

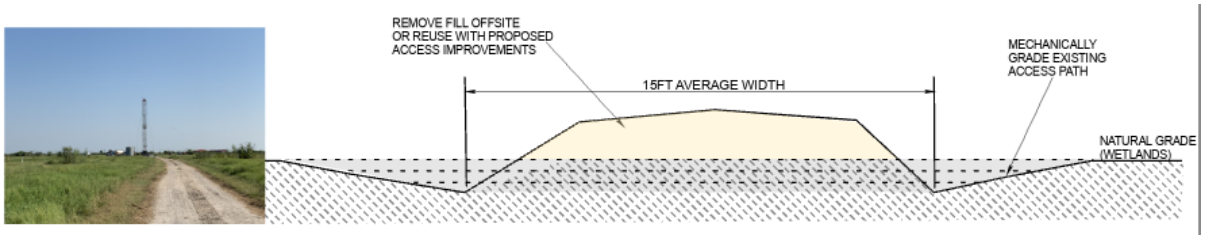


Figure 3. *Proposed restoration for access paths in wetlands with existing fill.*

6.2 Elevated via Mechanical Blading

Mechanical blading created several paths throughout the property, resulting in a central peal with two lower troughs on either side. Where paths were created via mechanical grading/blading, the paths will be regraded to create an elevation consistent with the surrounding wetland. All excess sediment will be removed and placed in uplands. Depending on the results of the survey, some sediment may be relocated to other paths to achieve target elevations.

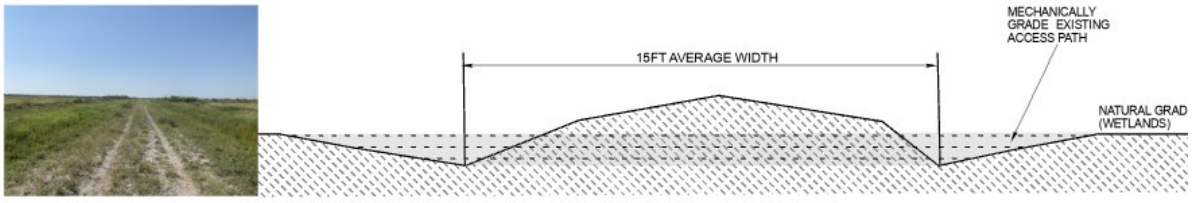


Figure 4. *Proposed restoration for access paths in wetlands created via mechanical blading*

6.3 Totally Unimproved with Significant Tire Ruts

Historic ranching resulted in impromptu paths across the property from repeated vehicle traffic. Excessive tire rutting from this traffic degraded wetland vegetation and hydrology from the surrounding habitat. Where unimproved paths exist, Port Corpus Christi will grade the path to redistribute sediment from tire rutting. The remaining excess sediment will be beneficially reused on-site in uplands or properly disposed of off-site.

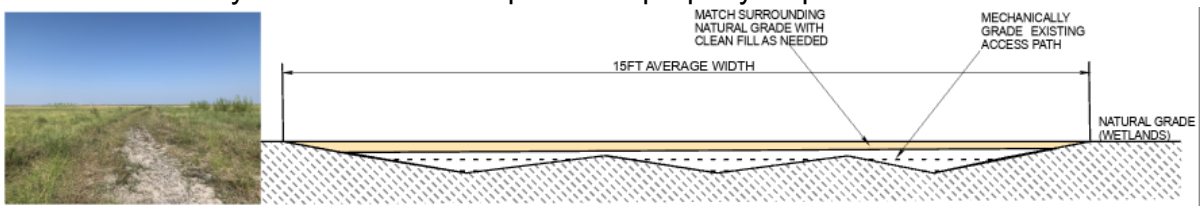


Figure 5*. Proposed restoration for access paths in wetlands with excessive tire rutting.*

7.0 Maintenance Plan

Due to the presence of an existing seed bank throughout the site, natural recruitment is anticipated within the mitigation areas. If the site meets the success criteria established below, then no further action will be needed; however, if criteria are not met, then coordination with USACE would be required to determine appropriate maintenance measures to bring the area into compliance. These measures may include but are not necessarily limited to extension of the monitoring periods, planting of restored wetlands, or identification of additional mitigation acreages and sites.

If performance standards are not met, Port Corpus Christi will resurvey path elevations to determine topographic changes. If topographic changes have occurred, Port Corpus Christi will regrade to elevations suitable for natural recruitment. If elevations are consistent with the surrounding wetlands and revegetation has not occurred, Port Corpus Christi will plant portions of the restoration that have failed with a plug density on 3ft centers.

8.0 Performance Standards

Port Corpus Christi agrees to maintain the integrity of the restored access paths to inhibit their degradation due to changes in elevation and failure of vegetation recruitment during the monitoring period. Except for the 6-month monitoring event, the performance standards will be evaluated each year following the completion of construction:

- 6 months post-construction: ≥10% vegetative aerial coverage of wetland species;
- 1st year monitoring: ≥25% vegetative aerial coverage;
- 2nd year monitoring: ≥50% vegetative aerial coverage;
- 3rd year monitoring: ≥70% vegetative aerial coverage;
- 4th year monitoring: ≥70% vegetative aerial coverage;
- 5th year monitoring: ≥70% vegetative aerial coverage;
- 1st, 3rd, and 5th year monitoring: ≤ 5% invasive species within vegetation coverage.

Written monitoring reports will be submitted within 45 days of either the monitoring event or the replanting effort if deemed necessary. If mitigation monitoring reports describe any difficulties of performance standards not being met, Port Corpus Christi and the USACE will identify potential remedial actions including a timetable. The mitigation site will be considered to have met performance standards if there are at least two consecutive monitoring events that document 70% vegetative cover within the site.

9.0 Monitoring Requirements

The 2008 Mitigation Rule and the USACE's October 10, 2008, Regulatory Guidance Letter "Minimum Monitoring Requirements for Compensatory Mitigation Projects Involving the Restoration, Establishment, and/or Enhancement of Aquatic Resources" (RGL No. 08-03) govern compensatory mitigation for activities authorized by USACE (33 CFR, Parts 325 & 332), including monitoring success criteria. The RGL states that "the monitoring period must be sufficient to demonstrate that the compensatory mitigation project has met performance standards, but not less than five years (33 CFR, 332.6(b)). If a compensatory mitigation project has met its performance standards in less than five years, the monitoring period length can be reduced if there are at least two consecutive monitoring reports that demonstrate that success. Monitoring requirements may be waived upon a determination that the compensatory mitigation project has achieved its performance standards."

Port Corpus Christi proposes to survey the mitigation site 6 months after initial restoration efforts. Monitoring will occur annually for the next five years or until vegetative coverage of ≥70% is documented for two consecutive years. Port Corpus Christi will use vegetative aerial coverage as the metric for mitigation success. Monitoring reports will be submitted in writing to the USACE, Corpus Christi Regulatory Field Office within 45 days of completion of each monitoring event.

These reports will list the monitoring requirements, record site performance, provide site photographs, and evaluate whether the compensatory mitigation sites have achieved these goals. A general statement will be included describing the condition of the sites and any invasive plants found will be discussed. If performance standards are not being met, Port Corpus Christi will notify USACE within 45 days of the monitoring event and the adaptive management plan will be implemented to address the changes.

10.0 Long-term Management Plan

The five-year monitoring aims to ensure that the site is successful in the short term. Should the mitigation site fail to meet the established success criteria, Port Corpus Christi will intervene as specified in section 8.0 Performance Standards. Port Corpus Christi owns the site and will be responsible for the long-term management of the mitigation area.

The panels of the proposed project have a lifespan of 30yrs, meaning that the implementation of a successful short-term mitigation plan will be maintained for this time period. The project will likely continue beyond this lifespan through the systematic replacement of panels. Since the panels physically protect and prevent alterations of the ground below them, the mitigation for this project will be preserved in perpetuity of the site.

11.0 Adaptive Management

Should the mitigation site fail to meet the established success criteria, Port Corpus Christi will intervene as specified in section 8.0 Performance Standards. If recruitment of vegetation does not achieve ≥30% vegetative coverage at the 1st - 2nd year monitoring events, Port Corpus Christi will resurvey path elevations to determine topographic variation. If unsuitable topographic conditions are documented, Port Corpus Christi will regrade to elevations suitable for natural recruitment. If suitable elevations are found to be present, Port Corpus Christi will plant vegetation with plugs on 3ft centers within 60 days of the monitoring. If recruitment of vegetation does not achieve ≥70% vegetative aerial coverage by the 4th year of monitoring, Port Corpus Christi will plant the mitigation site with plugs on 3ft centers within 60 days.

Should the mitigation site be significantly impacted by a natural disaster or determined unsuccessful for an unforeseen event, Port Corpus Christi will coordinate with USACE to determine corrective actions. If corrective actions are not feasible to restore the initial mitigation site, Port Corpus Christi will locate and design a comparable alternative mitigation site.

12.0 Financial Assurances

Port Corpus Christi is a century-old political subdivision of the state of Texas with adequate financial means to expend funds on the required mitigation as described herein. In the event of any changes to the financial assurances for the mitigation site, USACE will be notified at least 120 days in advance of any termination or revocation.

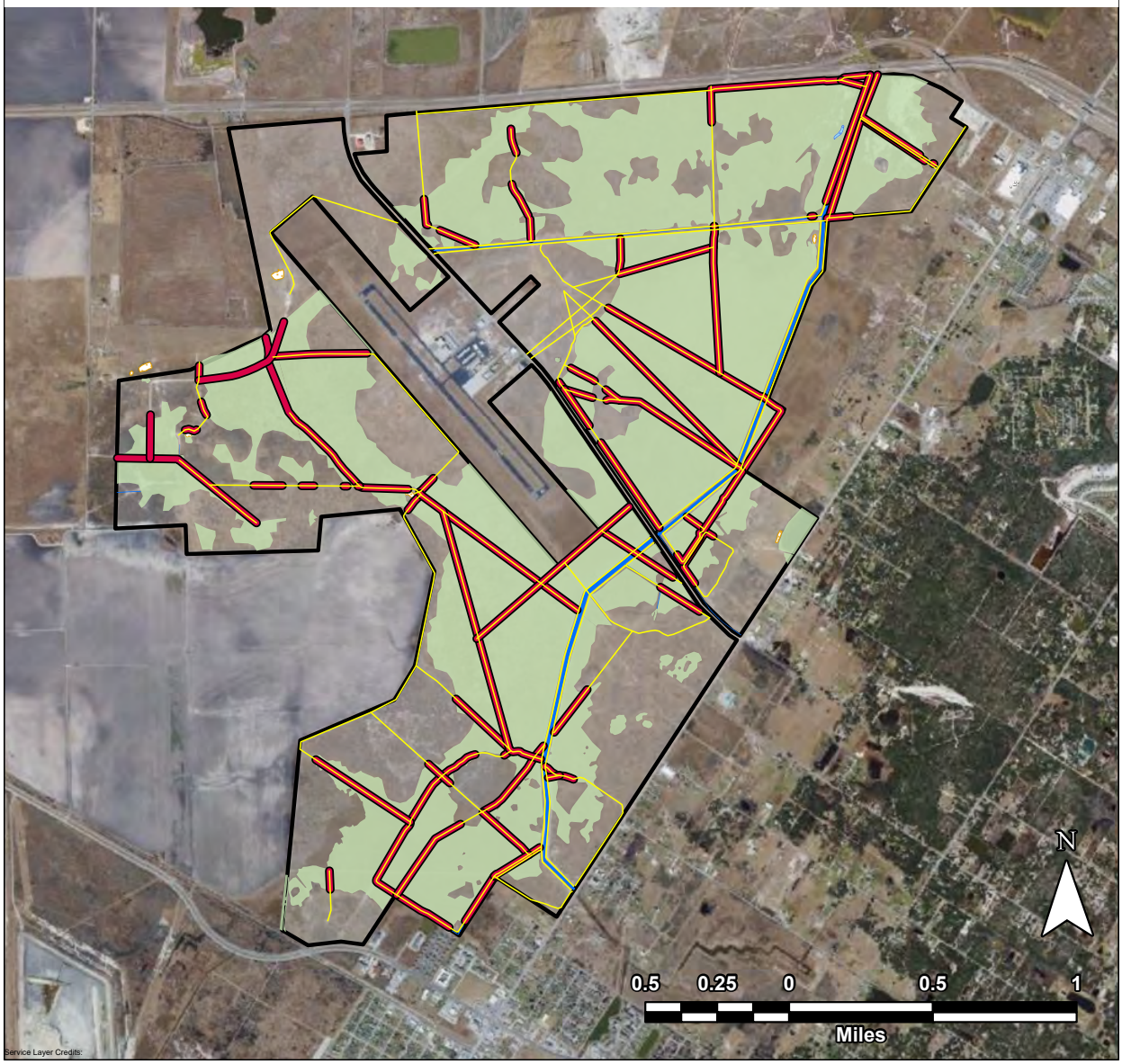
Literature Cited

Code of Federal Regulations, Processing of the Department of the Army Permits, Title 33, Chapter II, Part 325. 1999.

Code of Federal Regulations, Compensatory Mitigation for Losses of Aquatic Resources, Title 33, Chapter II, Part 332. 2008.

U.S. Army Corps of Engineers. 2008. “Final Environmental Assessment, Finding of No Significant Impact, and Regulatory Analysis for the Compensatory Mitigation Regulation”. Director of Civil Works. Operations and Regulatory Community of Practice. Washington, DC 20314-1000.

Note: Approximately 34.98mi of access roads have been created as a result of ongoing ranching activities. 16.25mi of these roads are through wetlands and have resulted in tire rutting and significantly degraded vegetation and topography. To mitigate for unavoidable project impacts, Port Corpus Christi will restore the existing access paths within wetlands to natural grade and elevation. The average width of the existing access paths is 15ft, resulting in approximately 29.55ac of restored wetlands onsite. These wetlands have suffered significant vegetation degradation and topographic changes due to vehicular traffic. These paths not only demonstrate degraded wetland habitat but also hinder sheet flow as wetlands naturally flow out into the ditch and into downstream estuaries.



Legend

- McCampbell Property
- Unimproved Roads (34.89 miles)
- Unimproved Paths thru Wetlands (16.25 miles)

AJD

- Drainage Feature (26.45 acres)
- Open Water (0.34 acres)
- Stock Pond (2.40 acres)
- Wetland (1558.27 acres)

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Mitigation Plan View Map

McCampbell Solar Farm
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Typical Sections:
Piling, Panels and Access Paths

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